

Domain: Faculty of Biosciences and Biotechnology Date: August 18, 2017

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SECTION I	
Introduction to Faculty of Biosciences and Biotec	chnology

1. Introduction:

The scope of Biosciences and related fields in India has witnessed rapid progress in recent years to become one of largest in the world. Considering the wide diversities in the system there is need to enhance its quality, standard and relevance so that graduates passing out from the system can meet the global challenges of 21st century ahead of them. Biosciences and related courses enable students to develop skills that help them to turn out as excellent future researchers, academicians and entrepreneurs. With specialization in different areas, courses under Biosciences domain prepare students to face the constantly advancing scientific world and impart effective research skills. Biosciences and related studies should emphasize not just in creating good professionals but also on improving and enhancing existing skills while passing on research competence to students.

Attention should be laid on aspects such as enhancing the knowledge base, creating highly skilled human resource, generation of innovative products and technologies leading to the upliftment of society.

The potential areas of research in Biosciences and Biotechnology are so vast that it is not possible to make a comprehensive list. Further, new areas of study emerge continuously. However, an indicative list is described under:

Agriculture: Transgenics of rice, wheat, cotton, potato, and vegetables. Higher productivity

Basic research: On all aspects of molecular biology, genetics, genomics, proteomics, and neurosciences

Bioengineering of crops for biofuels and bioenergy, Bio-fertilizers and bio-pesticides

Bioinformatics: Algorithm design and development, software and tools for data mining and data warehousing applications. Strengthening infrastructure for handling complex and computationally intensive problems. Biological Data Curation, phylogenetics. Setting up dedicated network centres for developing data warehouses. Exploitation of microbial genome information. Training competent personnel.

Bioprospecting and Molecular Taxonomy: Prospecting, molecular characterisation and documentation of economically and ecologically important hotspots of biodiversity in the country.

Biotechnology for societal development: Implementing projects for massive employment generation

Development of diagnostics: For major diseases, genetic disorders, cancer, tuberculosis, HIV, malaria, and neurological disorders

Environment and Biodiversity: Many industrial materials like building materials, fibers, dyes, rubber and oil derive directly from biological sources. Biodiversity is also important to the security of resources such as water, timber, paper, fiber, and food.

Human Resource Development: Training teachers, technicians, scientists, industrialists, IPR experts, and so on covering biotechnology research and commercialization.

Industry: More public-private partnerships for developing joint research and development programmes for commercially viable projects.

Low-cost therapeutics: Developing new vaccines, diagnostics, drugs and drug delivery system; to produce low-cost, small proteins and therapeutics using plants and animals as bioreactors

Marine resources: Fisheries, oil, gas, minerals, sand, gravels, renewable energy sources are some of the marine resources that find their applications in Marine tourism, waste disposal and detoxification, Carbon dioxide capture and storage, habitats, nutrient recycling, water circulation and exchange, gas and climate regulation etc.

Medical Biotechnology: Techniques like gene therapy, recombinant DNA technology and polymerase chain retort which employ genes and DNA molecules to diagnose diseases. There are various applications of Biotechnology such as Gene therapy, Biopharmaceuticals, Pharmacogenomics, genetic testing etc. in the field of medicine.

Medicinal and aromatic plants: Introduction and marketing of herbal products

Herbal drugs and Nutraceuticals. Genetic engineering of medicinal plants

Metabolic engineering: Use of recombinant DNA technology

Neurosciences: Neurodegenerative diseases such as Alzheimer's, Parkinson's, and motor neuron disease, which would cover study of molecular genetics of these disorders. Neuro-AIDS, autism, and dyslexia.

Plant tissue culture: Providing tissue culture technology at the grassroots level to cover the most plant rich regions of the country which need massive afforestation and wasteland recovery. Utilisation of tissue culture for enrichment of genetic diversity. Genetic manipulation of cell culture in forestry for disease resistance and reduction of regeneration time.

Vaccine research for major livestock diseases

The industry /profession needs are continuously changing while the global environment of education around the world is witnessing changes.

SECTION II:

Introduction of Outcome Assessment Plan

Outcome Assessment

Outcome assessment is a systematic, evaluative process that is implemented to secure learning experiences that are congruent with original goals and objectives; thereby providing a basis for the effectiveness and continuous quality improvement of the academic unit.

- 1) The annual outcome assessment process is more qualitative and focuses on improving teaching by analyzing student learning outcomes.
- 2) The programme review process is more quantitative and focuses on the programme/discipline as a whole, how effective it is, and that our students are learning.
- 3) To achieve the above, some aspect of each programmes goals and objectives needs to be assessed on an annual basis.
- 4) All programme and general education goals shall be evaluated annually

The outcome assessment plan includes:

- Mission The Mission is defined for the domain which flows down to the Institution level and finally to the programme level. The mission at the institution and programme level is aligned with the domain mission
- **2. Broad Based Goals:** The broad based are defined under the following categories:
 - **2.1 Educational Goals:** The Educational Goals are defined at Domain, Institution and Programme level. The Educational Goals at the institution and programme level are aligned with the domain mission.
 - 2.1.1 **Operational Goals:** The Operational Goals are defined at Domain, Institution and Programme level. The Operational Goals at the institution and programme level are aligned with the domain mission.
- **3. Outcomes:** The Outcomes are defined under the following categories:
 - **3.1 Operational Outcomes:** The operational outcomes are defined for the domain and assessed at the domain level
 - **3.2 Educational Goals The** Learning outcomes are defined for each programme and each learning outcome is assessed to identify that the established learning objectives are achieved.
 - **3.3 Mapping of PEOs and PLOs** The relationship of PEOs and PLOs are clearly indicated through the mapping of learning outcomes with the established Objective. Each outcome addresses some objective and achievement of outcome indicates the attainment of Objective
- **4. Assessment of Learning and Operational Outcomes** Each learning outcome is assessed by at least one direct and one indirect method. Similarly Operational outcomes are also assessed using the operational assessment tools. It also ensures that outcomes achieved are consistent with the mission. The results of the annual assessments and other data are used to determine the effectiveness of the programme during the programme review process.
- **5. Programme Review:** Through the review of our programs we seek to demonstrate that:
 - Students are **learning** the knowledge, skills, and habits necessary to achieve the programme/discipline goals and objectives
 - The **programme/discipline goals** are derived from and support the college mission

- The **curriculum** is coherent, current and consistent
- The **instruction** is effective in enabling student
- The **resources** are adequate for the production of student learning.
- The academic **support services** are adequate to facilitate student learning.

SECTION III:

DOMAIN MISSION AND BROAD-BASED GOALS /OBJECTIVES

DOMAIN MISSION AND BROAD-BASED GOALS /OBJECTIVES

3.1 Mission Statement

Mission of Faculty of Biosciences & Biotechnology

To provide education at all levels in all disciplines of Bio-Sciences and Biotechnology, futuristic and emerging frontier areas of knowledge, learning and research and to develop the overall personality of students by making them not only excellent professionals but also good individuals with understanding and regard for human values, pride in their heritage and culture, a sense of right and wrong, yearning for perfection and courage of conviction and action.

3.2 Broad-Based Goals / Objectives at Domain / Faculty Level

Educati	Educational Goals	
1.	The student shall be able to develop knowledge and skills to integrate principles of Biosciences and Biotechnology to achieve academic excellence	
2.	The student shall demonstrate research skills and conduct innovative research in thrust areas benefitting society which will enhance the intellectual capital of the domain.	
3.	The student shall be able to use and apply latest IT tools to analyze and interpret scientific data	
4.	The student shall be able to interpret and comprehend research in biosciences and biotechnology in order to solve scientific problems.	
5.	The student shall be able to employ effective communication skills to enhance interpersonal relationship.	
6.	The student shall be able to attain leadership skills and perform responsibly as an individual as well as in a team while maintaining accountability and output.	
7.	The student shall be able to develop into a global citizen to build a sustainable world community.	
8.	The student shall practice ethical behavior and develop empathy towards environmentally and culturally sensitive issues of the society.	
9.	The student shall be able to develop networking and entrepreneurship skills and create a strong	
	network with the industry and alumni.	
10.	The student shall be able to evaluate and reflect the virtue of lifelong learning.	
11.	The student shall be able to analyze the need for environmental conservation and develop sustainable technologies.	
12.	The student shall be able to extend various aspects of biosciences to achieve holistic and societal development.	

3.3 Broad-Based Operational Goals (Resources Required) At Faculty / Domain Level

Sl. No.	Operational Goals		
Facul	Faculty of Bio Sciences & Biotechnology will		
1	Create appropriate teaching learning resources, infrastructure and conducive environment for excellence in teaching, learning, research and professional development of students		
2	Provide Professional development programmes/opportunities to the faculty and staff to regularly upgrade their knowledge and skills and bring excellence in teaching, learning and research		
3	Demonstrate sensitivity to the diverse needs of students and accordingly develop facilities and services.		
4	Continuously strive to build strong industry interaction, alumni networks and empanelment of expertise from industry.		
5	Continually improve the quality of facilities, services, resources and processes with an aim to attain national and international accreditations and institutional ranking.		
6	Arrange all necessary support system for the students to facilitate campus recruitment, higher education or starting their own ventures.		
7	Act ethically to ensure transparency and good governance while discharging various responsibilities to its stakeholders and execution of policies and programs		
8	Create opportunities for international exposure for its students and faculty.		

SECTION IV: INSTITUTION MISSION AND BROAD-BASED GOALS /OBJECTIVES

4. INSTITUTION MISSION AND BROAD-BASED GOALS /OBJECTIVES

Name of the Institution: Amity Institute of Anthropology(AIA)

4.1 Mission Statement

Mission of Institution

To provide education at all levels in all areas of Anthropology and in the futuristic and emerging frontier areas of knowledge, learning and research and to develop the overall personality of students by making them not only excellent professionals but also good individuals with understanding and regards for human values, pride in their heritage and culture, a sense of right and wrong and yearning for perfection and imbibe attributes of courage of conviction and action.

4.2 Broad-Based Goals / Objectives at Amity Institute of Anthropology

Educational Goals	
1	The student shall be able develop knowledge and skills in anthropology and attain academic excellence.
2	The student shall demonstrate research capability by performing research based project work/dissertation/field work in collaboration with national and international institutes of repute.
3	The student shall be able to use and apply computational tools to analyze and interpret anthropological data
4	The student shall be able to comprehend and interpret research in anthropology in order to solve scientific and social problems.
5	The student shall be able to develop effective communication skills to enhance interpersonal relationship
6	The student shall be able to develop leadership skills and perform reasonably as an individual as well as in a team while maintaining accountability and output.
7	The student shall be able to develop global citizenship skills to build a sustainable world community.
8	The student shall be able to demonstrate ethical behavior and develop sensitivity towards environmentally and culturally sensitive issues of the society
9	The student shall be able to develop networking and entrepreneurship skills and create a strong network with the organization/industry and alumni
10	The student shall be able to evaluate and reflect the virtue of lifelong learning.
11	The student shall be able to recognize the need for environmental conservation and develop sustainable technologies
12	The student shall be able to integrate various aspects of anthropology to achieve holistic and societal development.

4.3 Broad-Based Operational Goals (Resources Required) At Amity Institute of Anthropology

Opera	Operational Goals	
1	AIA will create appropriate teaching learning resources, infrastructure and conducive environment for	
1	excellence in teaching, learning, research and professional development of students	
2	AIA will provide Professional development programmes/opportunities to the faculty and staff to regularly	
2	upgrade their knowledge and skills and bring excellence in teaching, learning and research	
2	AIA will demonstrate sensitivity to the diverse needs of students and accordingly develop facilities and	
3	services.	
4	AIA will continuously strive to build strong industry interaction, alumni networks and empanelment of	
4	expertise from industry/government/non-government organizations	
-	AIA will continually improve the quality of facilities, services, resources and processes with an aim to attain	
5	national and international accreditations and institutional ranking	
6	AIA will arrange all necessary support system for the students to facilitate placement, higher education or	
0	in starting their own ventures.	
7	AIA will act ethically to ensure transparency and good governance while discharging various	
	responsibilities to its stakeholders and execution of policies and programs	
Q	AIA will create opportunities for international exposure, collaborative ventures with international	
8	academic institutions for its students and faculty.	

Name of the Institution: Amity Institute of Microbial Biotechnology (AIMB)

4.1 Mission Statement

Mission of Institution

To provide education at all levels in all disciplines of Microbial Biotechnology, futuristic and emerging frontier areas of knowledge, learning and research and to develop the overall personality of students by making them not only excellent professionals but also good individuals with understanding and regard for human values, pride in their heritage and culture, a sense of right and wrong, yearning for perfection and courage of conviction and action.

4.2 Broad-Based Goals / Objectives at Institution Level

Educ	Educational Goals	
1.	The student shall develop knowledge and skills to integrate principles of Microbial Biotechnology to achieve academic excellence	
2.	The student shall be able to demonstrate research skills and conduct innovative research in thrust areas of Microbial Biotechnology for benefitting society.	
3.	The student will be able to use IT tools for analyzing biological data.	
4.	The student shall be able to justify and interpret research in Microbial biotechnology in order to solve scientific problems	

5.	The student shall develop effective communication skills to disseminate technical information
6.	The student shall develop leadership and entrepreneurial skills and perform responsibly as an individual as well as in a team while maintaining accountability and output.
7.	The student shall be able to develop global citizenship skills to build a sustainable world community.
8.	The student shall be able to demonstrate ethical behavior and develop sensitivity towards environmentally and culturally sensitive issues of the society
9.	The student shall develop networking skills and build a strong network with the industry and alumni
10.	The student shall be able to evaluate and reflect the virtue of lifelong learning
11.	The student shall be able to identify and analyze and create new understanding with relevance to environment conservation.
12.	The student shall be able to integrate various aspects of learning and achieve holistic development

4.3 Broad-Based Operational Goals (Resources Required) At Institution level

Operat	Operational Goals	
1	Amity Institute of Microbial Biotechnology (AIMB) will create appropriate teaching learning resources, infrastructure and conducive environment for excellence in teaching, learning, research and professional development of students	
2	AIMB will provide Professional development programmes/opportunities to the faculty and staff to regularly upgrade their knowledge and skills and bring excellence in teaching, learning and research	
3	AIMB will demonstrate sensitivity to the diverse needs of students and accordingly develop facilities and services.	
4	AIMB will continuously strive to build strong industry interaction, alumni networks and empanelment of expertise from industry.	
5	AIMB will continually improve the quality of facilities, services, resources and processes with an aim to attain national and international accreditations and institutional ranking.	
6	AIMB will arrange all necessary support system for the students to facilitate campus recruitment, higher education or starting their own ventures.	
7	AIMB will act ethically to ensure transparency and good governance while discharging various responsibilities to its stakeholders and execution of policies and programs	
8	AIMB will create opportunities for international exposure for its students and faculty.	

Name of the Institution: Amity Institute of Microbial Technology (AIMT)

4.1 Mission Statement

Mission of Institution

To provide education at all levels in all disciplines of Microbial Technology and in the futuristic and emerging frontier areas of knowledge, learning, and research and to develop the overall personality of students by making them not only excellent professional but also good individuals with understanding and regards for human values, pride in their heritage and culture, a sense of right and wrong and yearning for perfection and imbibe attributes of courage of conviction and action.

4.2 Broad-Based Goals / Objectives at Institution Level

Educa	Educational Goals	
1.	The student shall be able to develop knowledge and skills to integrate principles of Microbial Technology to achieve academic excellence.	
2.	The student shall be able to integrate various aspects of learning and achieve holistic development.	
3.	The student shall be able to develop intellectual capital of the institute by conducting research and innovation, using modern methods/tools of microbial technology.	
4.	The student shall be able to demonstrate research capability by performing research based project work/dissertation in national and international biotechnology laboratories of repute.	
5.	The student shall be able to develop core values of the university and demonstrate ethical conduct.	
6.	The student shall be able to interpret cultural diversity and the consequent responsibilities in relation to the society and environment.	
7.	The student shall be able to develop networking skills and establish links with industries and alumni.	
8.	The student shall be able to interpret taught concepts to design and undertake practical and professional work thereby improving employment and entrepreneurial skills.	
9.	The student shall be able to apply good governance, in terms of value addition and functioning.	
10.	The student shall be able to evaluate and reflect the habit of lifelong learning.	
11.	The student shall be able to apply scientific implementation to develop learning outcomes	
12.	The student shall be able to interpret perceived knowledge for skill development	

4.3 Broad-Based Operational Goals (Resources Required) At Institution level

Oper	Operational Goals	
1	AIMT intends to provide educational excellence in teaching/academic delivery.	
2	AIMT will provide academically conducive environment for holistic development of students	
3	AIMT will facilitate environment for innovation and research excellence for the intellectual growth of faculty and students.	
4	AIMT will inculcate core values of the university and ethical conduct amongst students, faculty and staff.	
5	AIMT will encourage cultural diversity and a sense of social and environmental responsibility.	
6	The institute will provide opportunities for international collaborations and exposure to faculty and students.	
7	AIMT will proactively build strong relationships with corporates and utilize network of alumni to open communication channels and seek suggestions on curricula, pedagogy, syllabus and training.	
8	AIMT will facilitate employment opportunities and also support students to start their own ventures.	
9	AIMT will facilitate good governance in discharge of responsibilities and execution of policies and programmes.	

Name of the Institution: Amity Institute of Marine Science and Technology (AIMST)

4.1 Mission Statement

Mission of Institution

"To provide education at all levels in the discipline of Marine Science and Technology and in the Futuristic and Emerging frontier area of knowledge, learning and research and to develop the overall personality of students by making them not only excellent professionals but also good individuals with understanding and regards for human values, pride in their heritage and culture, a sense of right and wrong yearning for perfection and imbibe attributes of courage of conviction and action".

4.2 Broad-Based Goals / Objectives at Institution Level

Educational Goals	
1	The students of AIMST shall be able to develop knowledge and skills to integrate principles of Marine science and allied areas to achieve academic excellence
2	The student of AIMST shall demonstrate research skills and conduct innovative research in thrust areas benefitting society which will enhance the intellectual capital in the area of marine science.
3	The student of AIMST shall be able to use and apply latest IT tools to analyze and interpret scientific data.
4	The student of AIMST shall be able to comprehend and interpret research in Marine science and related areas in order to solve scientific problems
5	The student of AIMST shall be able to develop effective communication skills to enhance interpersonal relationship.
6	The student of AIMST shall be able to develop leadership and entrepreneurial skills and perform responsibly as an individual as well as in a team while maintaining accountability and output.
7	The student of AIMST shall be able to develop global citizenship skills to build a sustainable world
8	The student of AIMST shall demonstrate ethical behaviour and develop sensitivity towards coastal environment and culturally sensitive issues of the society.
9	The student of AIMST shall develop networking skills and build a strong network with the industry and alumni
10	The students of AIMST shall be able to evaluate and reflect habit of lifelong learning
11	The student of AIMST shall be able to recognize the need for environmental conservation and develop sustainable technologies
12	The student of AIMST shall be able to integrate various aspects of learning and achieve holistic development

4.3 Broad-Based Operational Goals (Resources Required) At Institution level

Sl. No.	Operational Goals
1	AIMST will Create appropriate teaching learning resources, infrastructure and conducive environment for excellence in teaching, learning, research and professional development of students
2	AIMST will provide Professional development programmes/opportunities to the faculty and staff to regularly upgrade their knowledge and skills and bring excellence in teaching, learning and research
3	AIMST will demonstrate sensitivity to the diverse needs of students and accordingly develop facilities and services.
4	AIMST will I continuously strive to build strong industry interaction, alumni networks and empanelment of expertise from industry.
5	AIMST will I continually improve the quality of facilities, services, resources and processes with an aim to attain national and international accreditations and institutional ranking.
6	AIMST will arrange all necessary support system for the students to facilitate campus recruitment, higher education or starting their own ventures.
7	AIMST will act ethically to ensure transparency and good governance while discharging various responsibilities to its stakeholders and execution of policies and programs
8	AIMST will create opportunities for international exposure for its students and faculty.

Name of the Institution: Amity Institute of Virology & Immunology

4.1 Mission Statement

Mission of Institution

To develop the overall personality of students by making them not only "excellent professionals" but also good individuals, with understanding and regards for "human values", pride in their heritage and culture, a sense of right and wrong, and a yearning for perfection.

4.2 Broad-Based Goals / Objectives at Institution Level

Educational Goals	
1.	The student shall be able to develop knowledge and skills to attain academic excellence in the field of Virology and Immunology.
2.	The student shall demonstrate research skills to conduct research in the thrust areas of Virology and Immunology to benefit the society.
3.	The student shall be able to use and apply modern IT tools to analyze the biological data to arrive

	at logical conclusions.
4.	The student shall be able to analyze and interpret scientific data to solve technical, conceptual and abstract scientific problems.
5.	The student shall be able to develop effective communication skills to disseminate technical information and ability to write effective reports and reviews for scientific journals.
6.	The student shall be able to demonstrate effectiveness and responsibility as an individual as well as in a team while maintaining accountability and output.
7.	The student shall be able to develop global citizenship skills to build a sustainable world community.
8.	The student shall be able to interpret principles of ethics and apply them to develop sensitivity towards various social and cultural issues of the society.
9.	The student shall be able develop networking and entrepreneurship skills and establish links with industry and alumni.
10.	The student shall be able to create the virtue of lifelong learning.
11.	The student shall be able to create and develop thought process for environmental preservation by developing environmentally sustainable technologies.
12.	The student shall be able to integrate various aspects of Virology and Immunology to achieve holistic and societal development.

4.3 Broad-Based Operational Goals (Resources Required) At Institution level

Operati	Operational Goals	
1	Amity Institute of Virology & Immunology aims to provide valuable resources to achieve academic excellence and holistic development of students	
2	AIVI will encourage faculty members and students to obtain funded research projects/consultancy from government agencies and industry and also build international collaborations	
3	AIVI will provide complete support to the faculty members and students to publish their research in highly reputed indexed national and international journals	
4	AIVI will provide support for research excellence and facilitate patenting of innovation and Subsequent commercialization thereby increasing the intellectual capital.	
5	AIVI will facilitate cultivation of core values of the university and ethical conduct amongst students, faculty and staff	
6	AIVI will encourage cultural diversity and a sense of social and environmental responsibility	
7	AIVI will provide strong industry interaction by way of alumni networks and empanelment of expertise from industry to proactively seek suggestions on curricula, pedagogy and training.	
8	AIVI will implement good governance in discharge of responsibilities and execution of policies and programs.	
9	AIVI will facilitate opportunities for employment and also support students to start their own ventures.	

Amity Institute of Molecular Medicine & Stem Cell Research (AIMMSCR)

4.1 Mission Statement

Mission of Institution

"To provide education at all levels in the discipline of Molecular Medicine and Stem Cell Research and in the Futuristic and Emerging frontier area of knowledge, learning and research and to develop the overall personality of students by making them not only excellent professionals but also good individuals with understanding and regards for human values, pride in their heritage and culture, a sense of right and wrong yearning for perfection and imbibe attributes of courage of conviction and action".

4.2 Broad-Based Goals / Objectives at Institution Level

Educati	Educational Goals	
1	The student shall be able to develop knowledge and skills in cancer and stem cell biology and attain academic excellence.	
2	The student shall create intellectual capital by conducting research and innovation, using modern techniques of cancer and stem cell biology.	
3	The student shall be able to apply computational tools in theory and practice of cancer and stem cell biology.	
4	The student shall devise solutions and design experiments using research-based knowledge and scientifically proven methodology.	
5	The student shall be able to develop good communication and networking skills and establish links with industries and alumni.	
6	The student shall be able to analyze effectively as an individual, and as a member or leader in diverse teams in multidisciplinary settings.	
7	The student shall be able to identify cultural and social diversity in the world and the consequent responsibilities in becoming a true global citizen.	
8	The student shall be able to develop core values of the university and demonstrate ethical conduct.	
9	The student shall be able to interpret taught concepts to design and undertake practical and professional work, thereby improving employment and entrepreneurial skills.	
10	The student shall be able to evaluate and reflect the habit of lifelong learning.	
11	The student shall be able to explain the impact of the modifications in existing life forms under standard health and environmental parameters and also solve other issues related to environment, thus ensuring sustainable development.	
12	The student shall apply the knowledge of biosciences and cancer and stem cell biology for the benefit of society.	

4.3 Broad-Based Operational Goals (Resources Required) At Institution level

Operational Goals	
1	AIMMSCR will create appropriate resources, infrastructure and conducive environment for excellence in teaching, learning, research and professional development of students.
2	AIMMSCR will provide opportunities to the faculty and staff to regularly upgrade their knowledge and skills by facilitating their participation in professional development programmes.
3	AIMMSCR will demonstrate sensitivity to the diverse needs of students and accordingly develop facilities and services.
4	AIMMSCR will continuously strive to build strong industry interaction, alumni networks and empanelment of expertise from industry.
5	AIMMSCR will continually improve processes and systems with an aim to attain national and international accreditations and institutional ranking.
6	AIMMSCR will extend support to the students in order to facilitate campus recruitment, higher education or starting their own ventures.
7	AIMMSCR will act ethically to ensure transparency and good governance while discharging various responsibilities to its stakeholders and execution of policies and programs.
8	AIMMSCR will create opportunities for international exposure for its students and faculty.

Amity Institute of Biotechnology

4.1 Mission Statement

Mission of Institution

To impart holistic education in all areas of Biotechnology, emerging areas of knowledge, learning and research and for development of the overall personality of students by making them not only excellent professionals but also good individuals with understanding and regard for human values, pride in their heritage and culture, yearning for perfection and courage of conviction and action.

4.2 Broad-Based Goals / Objectives at Amity Institute of Biotechnology

Educatio	Educational Goals	
1	The student shall be able to develop knowledge and skills in biotechnology and attain academic excellence.	
2	The student shall create intellectual capital by conducting research and innovation, using modern techniques of biotechnology.	
3	The student shall be able to apply computational tools in theory and practice of biotechnology.	
4	The student shall devise solutions and design experiments using research-based knowledge and scientifically proven methodology.	
5	The student shall be able to develop good communication and networking skills and establish links with industries and alumni.	
6	The student shall be able to analyze effectively as an individual, and as a member or leader in diverse teams in multidisciplinary settings.	
7	The student shall be able to identify cultural and social diversity in the world and the consequent responsibilities in becoming a true global citizen.	
8	The student shall be able to develop core values of the university and demonstrate ethical conduct.	
9	The student shall be able to interpret taught concepts to design and undertake practical and professional work, thereby improving employment and entrepreneurial skills.	
10	The student shall be able to evaluate and reflect the habit of lifelong learning.	
11	The student shall be able to explain the impact of the modifications in existing life forms under standard health and environmental parameters and also solve other issues related to environment, thus ensuring sustainable development.	

The student shall apply the knowledge of biosciences and biotechnology for the benefit of

4.3 Broad-Based Operational Goals (Resources Required) At Amity Institute of Biotechnology

Sl. No.	Operational Goals
1	Amity Institute of Biotechnology will create appropriate resources, infrastructure and conducive environment for excellence in teaching, learning, research and professional development of students.
2	AIB will provide opportunities to the faculty and staff to regularly upgrade their knowledge and skills by facilitating their participation in professional development programmes.
3	AIB will demonstrate sensitivity to the diverse needs of students and accordingly develop facilities and services.
4	AIB will continuously strive to build strong industry interaction, alumni networks and empanelment of expertise from industry.
5	AIB will continually improve processes and systems with an aim to attain national and international accreditations and institutional ranking.
6	AIB will extend support to the students in order to facilitate campus recruitment, higher education or starting their own ventures.
7	AIB will act ethically to ensure transparency and good governance while discharging various responsibilities to its stakeholders and execution of policies and programs.
8	AIB will create opportunities for international exposure for its students and faculty.

12

Section V:
Programme Mission, PEO's, PLO's and Assessment Plan for each Programme

Programme - B. Sc. (H)Anthropology

5.1.1 Mission Statement

Programme Mission

To impart education at undergraduate level in all areas of Anthropology and in the futuristic and emerging frontier areas of knowledge, learning and research and to develop the overall personality of students by making them not only excellent professionals but also good individuals with understanding and regards for human values, pride in their heritage and culture, a sense of right and wrong and yearning for perfection and imbibe attributes of courage of conviction and action.

5.1.2 Programme Educational Objectives (PEOs)

Education	ual Goals
1.	The student shall be able to define knowledge and basic understanding of key concepts, methodologies in the key areas of Anthropology and attain academic excellence
2.	The student shall demonstrate research and innovation, by using modern methods/tools of anthropology.
3.	The student shall be able to use and apply latest IT tools/Bio statistical tools to analyze and interpret anthropological data
4.	The student shall be able to comprehend and interpret anthropology in order to solve scientific and societal problems.
5.	The student shall be able to develop effective communication skills to enhance interpersonal relationship
6.	The student shall demonstrate good governance, in terms of value addition and functioning and leadership skills as an individual or as a team.
7.	The student shall be able to develop global citizenship skills to build a sustainable world community.
8.	The student shall be able to develop core values of the university, demonstrate ethical conduct and develop sensitivity towards environmentally and culturally sensitive issues of the society
9.	The student shall demonstrate networking skills and establish links with organizations/industries and alumni.
10.	The student shall be able to illustrate and reflect the virtue of lifelong learning.
11.	The student shall be able to recognize the need for environmental conservation and develop sustainable technologies
12.	The student shall be able to integrate various aspects of anthropology to achieve holistic and societal development.

5.1.3 Programme Operational Objectives

Operation	al Goals
------------------	----------

The program will create appropriate teaching learning resources, infrastructure and conducive environment for excellence in teaching, learning, research and professional development of students in anthropology The program will provide Professional development programme/opportunities to the faculty and staff to regularly upgrade their knowledge and skills and bring excellence in teaching, learning and The program will demonstrate sensitivity to the diverse needs of students and accordingly develop facilities and services. The program will continuously strive to build strong industry interaction, alumni networks and empanelment of expertise from industry/government/non-government organizations The program will continually improve the quality of facilities, services, resources and processes with an aim to attain national and international accreditations and institutional ranking The program will arrange all necessary support system for the students to facilitate placement, higher education or in starting their own ventures. The program will act ethically to ensure transparency and good governance while discharging

The program will create opportunities for international exposure, collaborative ventures with

various responsibilities to its stakeholders and execution of policies and programs

international academic institutions for its students and faculty.

5.1.4 Programme Learning Outcomes

Inter	nded Learning Outcomes
1	Student will be able to demonstrate the understanding of anthropological perspective, theory and methods of the four major sub-fields
2	Student will be able to define anthropological perspective to the understanding of problems effectively using anthropological know how/methods
3	Student will be able to demonstrate skills to conduct research, to communicate verbally and to write in the form according to the standards of the discipline
4	Student will be able to construct anthropological knowledge in a variety of situations outside of the classroom. Be able to explain to their prospective employers with confidence how what they have learned in anthropology will help them do an excellent job.
5	Student will be able to demonstrate skills in explaining clearly, communicating in a team, presenting to a growth
6	Student will be able to use skills for working independently as well as team to achieve goals.
7	Student will be able to use and apply appropriate research tools, techniques and resources for understanding of anthropology
8	Student will be able to state ethical reasoning and ethical issues associated with current Anthropological Research.
9	Students will be able to apply skills to plan, execute and conclude a research project in the area of Anthropology
10	Student will be able to identify the need to engage in independent and lifelong leaning in the context of scientific development in the area of Anthropology
11	Student will be able to apply knowledge gained for the environmental conservation and restoration with sustainable development.
12	Student will be able to define social structure, issues and the solutions by the knowledge from humanity related subjects

5.1.5 Programme Operational Outcomes

Opera	tional Outcomes
1	The programme will promote use of appropriate methodology and pedagogical tools for teaching,

	learning and development.
2	The curriculum will be contemporary and relevant to meet research and industry requirements and benchmarked on global standards by incorporating feedback from all the stakeholders.
3	The student of the programme will graduate in the stipulated time period
4	The institute will provide academic facilities for teaching and learning.
5	The students will be encouraged to participate in co-curricular activities at the university.
5	The student of programme will earn achievements in intra and inter-university extra-curricular activities.
6	The students will effectively communicate with global environment by learning value added courses as a part of their academic curriculum.
7	Faculty and students will be engaged in academic and research in order to enhance their competencies and to contribute to the existing body of Knowledge.
8	The programme will integrate ethics and values in teaching, theory and practice and will aim to develop and retain excellent students, faculty and staff.
9	The programme will facilitate integration of diverse social and cultural environment amongst students and promote environmental conservation values among students
10	The programme will facilitate research collaborations, invite international delegates and speakers for seminars and conferences and various other opportunities for global exposure.
11	The programme will effectively develop and maintain strong relationship with research and academic institutes for joint collaborative research and consultancies in the field of Anthropology. It shall maintain alumni network and keep the curriculum responsive to industry needs
12	The programme will support all the students for quality placements for career development
13	The programme shall establish an internal quality cell for operational quality and process improvement.

5.1.6 Programme Educational Outcome Assessment for B. Sc. (H)Anthropology

#	PEO's	PLO's	Direct	Tool No for Direct Assessme nt	Target Perform ance	Indirect	Assess ment	Target
1	The student shall be able to define knowledge and basic understanding of key concepts, methodologies in the key areas of Anthropology and attain academic excellence	anthropological	*Comprehen sive Exam, End Term Examination	/CE Framewo	70% students shall pass the exam.	Exit	UG/PL O/ Studen t Exit Survey	80% students response range between 4-5 on the Likert Scale in the Student Exit Survey.
2	The student shall demonstrate research and	Student will be able to define anthropological perspective to the	Term Paper, Summer Internship, Viva-voce	UG/PLO2 /TP/SI/V V	100% student s will underta	Student Exit Survey	UG/PL O/ Studen t Exit	Internshi

	innovation, by using modern methods/tools of anthropology.	understanding of problems effectively using anthropological know how/methods	Comprehens ive Exam	UG/PLO2 /CE Framewo rk	ke and complet e the disserta tion.		Survey	students between 4-5 range on the Likert Scale in the feedback
3	The student shall be able to use and apply latest IT tools/Bio statistical tools to analyze and interpret anthropological data	Student will be able to demonstrate skills to conduct research, to communicate verbally and to write in the form according to the standards of the discipline	Term Paper, Summer Internship, Viva-voce Comprehens ive Exam	UG/PLO2 /TP/SI/V V UG/PLO2 /CE Framewo rk	student s shall able to leverag e IT in order to complet e their Assign ments and Projects		UG/PL O/ Studen t Exit Survey	80% students response range between 4-5 on the Likert Scale in the Student Exit Survey
	The student shall be able to comprehend and interpret anthropology in order to solve scientific and societal problems.	Student will be able to construct anthropological knowledge in a variety of situations outside of the classroom. Be able to explain to their prospective employers with confidence how what they have learned in anthropology will help them do an excellent job.	Major Project Comprehens ive Exam	UG/PLO 4/CE Framew ork	80% students shall able to demonst rate Problem Solving and Decision Making Skill	Student Exit Survey	UG/P LO/E xit Surv ey	80% student s respons e range betwee n 4-5 on the Likert Scale in the Student Exit Survey
5	The student shall be able to develop effective communication skills to enhance interpersonal relationship	Student will be able to demonstrate skills in explaining clearly, communicating in a team, presenting to a growth	*Rubrics (Comm unicatio n skills *Comprehen sive Exam	UG/PLO5 / CS UG/PLO5 /CE Framewo rk	80% student s should secure a grade of 6 and above on a 10-point scale in the present		UG/P LO/E xit Surv ey	80% student s shall score ≥ 75% in exit survey

			T		-4.5		1	
			Rubrics		ation compon ent of commu nication course.			
6	The student shall demonstrate good governance, in terms of value addition and functioning and leadership skills as an individual or as a team.	Student will be able to use skills for working independently as well as team to achieve goals.	(Behavi oural Science) *Comprehen sive Exam	UG/PLO6 / BS UG/PLO6 /Co mpre hensi ve Exa m	student s should secure a grade of 6 and above on a 10- point scale	Student Exit Survey	UG/P LO/ Stude nt Exit Surve y	80% students shall score ≥ 75% in exit survey
7	The student shall be able to develop global citizenship skills to build a sustainable world community.	Student will be able to use and apply appropriate research tools, techniques and resources for understanding of anthropology	*Rubrics FBL		a	Student Exit Survey	I -	80% students shall score ≥ 75% in the Exit Survey.
8	The student shall be able to develop core values of the university, demonstrate ethical conduct and develop sensitivity towards environmentally and culturally sensitive issues of the society	Student will be able to state ethical reasoning and ethical issues associated with current Anthropological Research.	Checking of Major	UG/PLO8 /Co mpre hensi ve Exa m/R ubric	submiss ions and are allowed	Student Exit Survey	Ex it	Likert Scale in the feedback

					ng			toleranc
					plagiari			e
					sm %			towards
					below			use of
					15%.			unfair
								means
					50%			
					student			
	TTI				s shall			
	The student shall demonstrate	Students will be able			underg		UG/P	80%
	networking skills	to apply skills to			0		LO/	students
	and establish links	plan, execute and	*Major		project	Student	Stud	shall
9	with	conclude a research	project		work in	Exit	ent	score ≥
	organizations/indu	project in the area of	Rubrics		collabor	Survey	Exit	75% in
	stries and alumni.	Anthropology			ation		Surv	exit
	series and aranini.	1 0			with		ey	survey
					external			
					organiz ations			
					ations	Student	UG/PL	Q00%
						Exit	•	students
	The student shall	Student will be able to identify the need	*Major	UG/PLO1	Mentor	Survey	Survey	
				0/Co mpre	s will	Survey	-	score ≥
					asses			75% in
	be able to illustrate	to engage in	project	hensi	the			exit
10	and reflect the	independent and		ve	Learnin			survey
	virtue of lifelong	lifelong leaning in the		Exa	g curve			,
	learning.	context of scientific		m	of			
		development in the			100%			
		area of Anthropology			student			
			sive		S.			
			Exam					
			*Comprehen	UG/PLO1	100 %	Student	UG/PL	80%
			sive Exam	1/CE	students	Exit	0/Exit	students
	TTI			Framewo	will	Survey	Survey	shall
	The student shall	Student will be able		rk	elaborat			score ≥
	be able to	to apply knowledge			e their			75% in
	recognize the need for environmental	gained for the			research			exit
11	conservation and	environmental			findings			survey.
	develop	conservation and			through			
	sustainable	restoration with			presenta			
	technologies	sustainable			tions			
		development.			and will			
					defend			
					the viva			
					voce			

12	The student shall be able to integrate various aspects of anthropology to achieve holistic and societal development.	Student will be able to define social structure, issues and the solutions by the knowledge from humanity related subjects		UG/PLO1 2/CE Framewo rk	students	Exit	Survey	students
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5.2.7 Mapping of Intended Programme Learning Outcomes to Broad-Based Programme **Educational Objectives (PEOs)**

The broad-based student learning goals identified in Section I above encompass the intended student learning outcomes as articulated in this section, and are general composites or summaries of these outcomes. These relationships are summarized in the outcomes-to-goals mapping below (Note: $\sqrt{\text{in a}}$ given cell of the table indicates the intended learning outcome in that row is associated with the learning goal in that column.):

PEO PLOs	PEO 1	PEO 2	PEO 3	PEO 4	PEO 5	PEO 6	PEO 7	PEO 8	PEO 9	PEO 10	PEO 11	PEO 12
BACHELOR PROGI	RAM											
B.Sc (H) Anthropole	ogy											
PLO1	X		X	X								X
PLO2	X	X	X	X	X	X	X	X	X	X		X
PLO3		X	X	X			X	X		X		
PLO4	X	X	X	X		X		X		X	X	X
PLO5					X	X			X	X		X
PLO6	X					X		X				X
PLO7				X	X		X	X	X	X		

PEO PLOs	PEO 1	PEO 2	PEO 3	PEO 4	PEO 5	PEO 6	PEO 7	PEO 8	PEO 9	PEO 10	PEO 11	PEO 12
PLO8			X	X	X	X	X	X	X	X		X
PLO9	X	X	X	X	X	X				X		X
PL010	Х	X	X	X	X			X	X	X	X	
PL011			X	X	X	X	X	X	X	X		X
PL012	X	X	X	X	X			X	X	X	X	X

5.2 Programme - M. Sc. Anthropology

5.2.1 Mission Statement

Programme Mission

To provide advanced knowledge at post graduate level in all areas of Anthropology and in the futuristic and emerging frontier areas of knowledge, learning and research and to develop the overall personality of students by making them not only excellent professionals but also good individuals with understanding and regards for human values, pride in their heritage and culture, a sense of right and wrong and yearning for perfection and imbibe attributes of courage of conviction and action.

5.2.2 Programme Educational Objectives (PEOs)

Education	al Goals
1.	The student shall be able to apply knowledge of key concepts, methodologies of Anthropology and attain academic excellence
2.	The student shall formulate research and innovation ideas, by using modern methods/tools of anthropology.
3.	The student shall be able to integrate latest IT tools/Bio statistical tools to analyze and interpret anthropological data
4.	The student shall be able to comprehend and interpret anthropology in order to solve scientific and societal problems.
5.	The student shall be able to develop effective communication skills to enhance interpersonal relationship
6.	The student shall demonstrate good governance, in terms of value addition and functioning and leadership skills as an individual or as a team.
7.	The student shall be able to develop global citizenship skills to build a sustainable world community.
8.	The student shall be able to develop core values of the university, demonstrate ethical conduct and develop sensitivity towards environmentally and culturally sensitive issues of the society
9.	The student shall demonstrate networking skills and establish links with organizations/industries and alumni.
10.	The student shall be able to illustrate and reflect the virtue of lifelong learning.
11.	The student shall be able to recognize the need for environmental conservation and develop sustainable technologies
12.	The student shall be able to integrate various aspects of anthropology to achieve holistic and societal development.

5.2.3 Programme Operational Objectives

Operation	al Goals
1.	The program will create appropriate teaching learning resources, infrastructure and conducive environment for excellence in teaching, learning, research and professional development of students in anthropology
2.	The program will provide Professional development programme/opportunities to the faculty and staff to regularly upgrade their knowledge and skills and bring excellence in teaching, learning and research
3.	The program will demonstrate sensitivity to the diverse needs of students and accordingly develop facilities and services.
4.	The program will continuously strive to build strong industry interaction, alumni networks and empanelment of expertise from industry/government/non-government organizations
5.	The program will continually improve the quality of facilities, services, resources and processes with an aim to attain national and international accreditations and institutional ranking
6.	The program will arrange all necessary support system for the students to facilitate placement, higher education or in starting their own ventures.
7.	The program will act ethically to ensure transparency and good governance while discharging various responsibilities to its stakeholders and execution of policies and programs
8.	The program will create opportunities for international exposure, collaborative ventures with international academic institutions for its students and faculty.

5.2.4 Programme Learning Outcomes

2.1.1. Intende	ed Learning Outcomes
1.	Student will identify, apply and interpret the major paradigms, theories, and conceptual frameworks in Anthropological studies.
2.	The student will identify, formulate, research literature, review existing knowledge and analyze complex anthropological problems to reach substantiated conclusions using principles of anthropology.
3.	The student will apply modern IT tools for acquisition and analysis of anthropological data.
4.	Student will interpret and critique research methods used in Anthropological research studies
5.	The student will develop appropriate level of communication skills to effectively disseminate research and technical information and shall be able to summarize scientific results; write effective reports and reviews in scientific journals.
6.	The student will demonstrate the ability to work independently as individuals and flexibly within a team with effectiveness and responsibility.
7.	The student will build skills to evolve into a responsible global citizen.
8.	The student will develop sensitivity to environmental issues and concerns and shall understand principles of ethics within the framework and apply these principles for environmentally and culturally sensitive issues.
9.	Student will analyze and assess the global range of anthropological and practices in historical and cultural context.
10.	Students will organize the role of personal development, self-directed study and discovery in learning to develop life-long learning.

Operational Outcomes

11.	Student will develop their abilities to recognize environmental and social impacts and to provide leadership on sustainable approaches to complex problems.
12.	Student will construct attitude or stance towards the world: global citizens. Aspire to contribute to society in a full and meaningful way through their roles as members of local, national and global communities

5.2.5 Programme Operational Outcomes

1.	The programme will promote use of advanced anthropological methodology and pedagogical tools for teaching, learning and development.
2.	The curriculum will be contemporary, advanced and relevant to meet research and industry/government requirements and benchmarked on global standards by incorporating feedback from all the stakeholders.
3.	The institute will provide students with excellent academic facilities and technological resources for teaching and learning.
4.	The students will effectively communicate with global environment by learning value added courses as a part of their academic curriculum.
5.	Faculty and students will be actively engaged in academic and research in order to enhance their competencies and to contribute to the existing body of Knowledge.
6.	The programme will integrate ethics and values in teaching, theory and practice and will aim to develop and retain excellent students, faculty and staff.
7.	The programme will facilitate integration of diverse social and cultural environment amongst students and promote environmental conservation values among students.
8.	The programme will facilitate research collaborations, invite international delegates and speakers for seminars and conferences and various other opportunities for global exposure.
9.	The programme will effectively develop and maintain strong relationship with research and academic institutes for joint collaborative research and consultancies in the field of Anthropology
10.	The programme will maintain alumni network and keep the curriculum responsive to industry needs.
11.	The programme will support all the students for quality placements in relevant organizations.
12.	The programme shall establish an internal quality cell for operational quality and process improvement.

5.2.6 Programme Educational Outcome Assessment for M. Sc. Anthropology

Sl. No.	PEO's	PLO's	Direct	Tool No for Direct Assessment	Target Performan ce	Indirect	Tool No for Indirect Assessm ent	Targ et
1	The student shall be able to apply knowledge of key concepts, methodolog ies of Anthropolo gy and attain academic excellence	Student will identify, apply and interpret the major paradigms, theories, and conceptual frameworks in Anthropological studies.	Comprehen sive Exam/End Term Exam	PG/PLO1/CE Framework	70% students shall pass the exam.	Student Exit Survey	PG/PLO/ Exit Survey	80% stud ents shall scor e ≥ 75% in exit surv ey.
2	The student shall formulate research and innovation ideas, by using modern methods/to ols of anthropolo gy	The student will identify, formulate, research literature, review existing knowledge and analyze complex anthropological problems to reach substantiated conclusions using principles of anthropology.	Project report submission	PG/PLO2/Dis sertation	100% students will undertake and complete the Project report	Feedback of Industry Internship Guide		The Indu stry Inter nshi p Guid e rates the stud ents betw een 3-5 rang e on the Liker t Scale in the feed back.
3	The student shall be able to integrate latest IT tools/Bio	The student will apply modern IT tools for acquisition and analysis	Comprehen sive Exam /Practical Exams/Diss ertation	PG/PLO3/CE	70% students shall pass the comprehen sive exam	Student Exit Survey	PG/PLO/ Exit Survey	80% stud ents shall scor e ≥

	statistical	of						75%
	tools to	anthropologi						75% in
	analyze and	cal data.						exit
	interpret	cai uata.						surv
	anthropolo							
	gical data							ey.
		0. 1	.	DG /DY O 4 /	1000/	G. 1	DG /DY 0 /	0001
4	The student	Student will	Project	PG/PLO4/	100%	Student	PG/PLO/	80%
	shall be	interpret and	report		students	Exit Survey	Exit	stud
	able to	critique	submission		shall		Survey	ents
	comprehen	research			complete			shall
	d and	methods used		PG/PLO4/CE	their			scor
	interpret	in		Framework	projects			e ≥
	anthropolo	Anthropologi			and submit			75%
	gy in order	cal research			the report			in
	to solve	studies						exit
	scientific							surv
	and societal							ey.
	problems.							
5	The student	The student	*Rubrics	PG/PLO5/	80%	Student	PG/PLO/	80%
	shall be	will develop	Communica	BC	students	Exit Survey	Exit	stud
	able to	appropriate	tion skills		shall		Survey	ents
	develop	level of			achieve the			shall
	effective	communicati			minimum			scor
	communica	on skills to			of			e ≥
	tion skills	effectively			"satisfactor			75%
	to enhance	disseminate			y" outcome			in
	interperson	research and			attainment			exit
	al	technical			level			surv
	relationshi	information						ey.
	р	and shall be						_
		able to						
		summarize						
		scientific						
		results; write						
		effective						
		reports and						
		reviews in						
		scientific						
		journals.						
6	The student	The student	*	PG/PLO6/BS	80%	Student	PG/PLO/	80%
	shall	will	Behavioura		students	Exit Survey	Exit	stud
	demonstrat	demonstrate	l Science		shall		Survey	ents
	e good	the ability to	rubrics		achieve the			shall
	governance	work			minimum			scor
	, in terms of	independentl			of			e ≥
	value	y as			"satisfactor			75%
	addition	individuals			y" outcome			in
	and	and flexibly			attainment			exit
	functioning	within a team			level			surv

	and	with						ey.
	leadership	effectiveness						Cy.
	skills as an	and						
	individual	responsibility						
		responsibility						
	or as a	•						
	team.							
7	The student	The student	* Rubrics	UG/PLO7/CE	80%	Student	PG/PLO/	80%
	shall be	will build	FBL	Framework	students	Exit Survey	Exit	stud
	able to	skills to	122	110	shall		Survey	ents
	develop	evolve into a			achieve the		Sarvey	shall
	global	responsible			minimum			scor
	citizenship	global citizen.			of			e ≥
	skills to	giobai citizeii.			"satisfactor			75%
	build a				y" outcome			
					attainment			in
	sustainable							exit
	world				level			surv
	community.							ey.
8	The student	The student	*Plagiarism	PG/PLO8/CE	100%	Feedback of		The
	shall be	will develop	Checking of	Framework	Students	Internship		Inter
	able to	sensitivity to	project		are checked	Guide		nshi
	develop	environment	report		for	darac		p
	core values	al issues and	report		plagiarism			Guid
	of the	concerns and			in NTCC			e
	university,	shall			report			rates
	demonstrat	understand			submission			the
	e ethical	principles of			s and are			stud
	conduct	ethics within			allowed to			ents
	and	the			appear for			betw
	develop	framework			viva-voce			een
	sensitivity	and apply						3-5
	towards	these			upon obtaining			
					_			rang
	environme	principles for environment			plagiarism % below			e on the
	ntally and culturally							
	sensitive	ally and			15%.			Liker
		culturally						t
	issues of	sensitive						Scale
	the society	issues.						in
								the
								feed
	ml 1	Ct 1 : 23	Desir	DC /DI OC /	100.07	Ct 3 ·	DC /DL C	back.
9	The student	Student will	Project	PG/PLO9/	100 %	Student	PG/PLO	80%
	shall	analyze and	submission		students	Exit Survey	9/	stud
	demonstrat	assess the			shall		Student	ents
	е	global range			submit the		Exit	shall
	networking	of			project		Survey	scor
	skills and	anthropologi						e ≥

	establish links with	cal and practices in	Comprehen sive Exam		70% students			75% in
	organizatio ns/industri es and	historical and cultural context			shall pass the exam			exit surv ey.
	alumni.							
10	The student shall be able to illustrate and reflect the virtue of lifelong learning.	Students will organize the role of personal development, self-directed study and discovery in learning to develop lifelong learning.	* Comprehen sive Exam	PG/PLO10/C E Framework	70% students shall pass the exam	Student Exit Survey	PG/PLO/ Exit Survey	80% stud ents shall scor e ≥ 75% in exit surv ey.
11	The student shall be able to recognize the need for environme ntal conservatio n and develop sustainable technologie s	Student will develop their abilities to recognize environment al and social impacts and to provide leadership on sustainable approaches to complex problems.	*Section 9 of Comprehen sive Exam	PG/PLO11/C E Framework	70% students shall pass the exam		*Section 9 of Compreh ensive Exam	PG/P LO1 1/CE Fram ewor k
12	The student shall be able to integrate various aspects of anthropolo gy to achieve holistic and societal developme nt.	Student will construct attitude or stance towards the world: global citizens. Aspire to contribute to society in a full and meaningful way through their roles as members of local, national and global communities.	*Comprehe nsive Exam	PG/PLO12/C E Framework	70% students shall pass the exam	Student Exit Survey	PG/PLO/ Exit Survey	80% stud ents shall scor e ≥ 75% in exit surv ey.

5.2.7 Mapping of Intended Programme Learning Outcomes to Broad-Based Programme **Educational Objectives (PEOs)**

The broad-based student learning goals identified in Section I above encompass the intended student learning outcomes as articulated in this section, and are general composites or summaries of these outcomes. These relationships are summarized in the outcomes-to-goals mapping below (Note: $\sqrt{\text{in a}}$ given cell of the table indicates the intended learning outcome in that row is associated with the learning goal in that column.):

PEO PLOs	PEO 1	PEO 2	PEO 3	PEO 4	PEO 5	PEO 6	PEO 7	PEO 8	PEO 9	PEO 10	PEO 11	PEO 12
MASTER'S P	ROGRAM											
M.Sc. Anthroj	pology											
PLO1	X		X	X								X
PLO2	X	X	X	X	X	X	X	X	X	X		X
PLO3		X	X	X			X	X		X		
PLO4	X	X	X	X		X		X		X	X	X
PLO5					X	X			X	X		X
PLO6	X					X		X				X
PLO7				X	X		X	X	X	X		
PLO8			X	X	X	X	X	X	X	X		X
PLO9	X	X	X	X	X	X				X		X
PLO10	X	X	X	X	X			X	X	X	X	
PLO11			X	X	X	X	X	X	X	X		X
PLO12	X	X	X	X	X			X	X	X	X	X

5.3 Amity Institute of Microbial Biotechnology

Programme - M.Sc. by Research in Microbial Biotechnology

5.3.1 Mission Statement

-				-			
Pro	σra	m	me) IVI	١s	:517	m

To provide education at all levels in all disciplines of Microbial Biotechnology, futuristic and emerging frontier areas of knowledge, learning and research and to develop the overall personality of students by making them not only excellent professionals but also good individuals with understanding and regard for human values, pride in their heritage and culture, a sense of right and wrong, yearning for perfection and courage of conviction and action.

5.3.2 Programme Educational Objectives (PEOs)

Educational Goals

- 1. Student shall **develop** the specialized theoretical and practical knowledge for microbial biotechnology
- 2. The student shall demonstrate research skills to conduct research in the thrust areas of Microbial Biotechnology to benefit the society.
- **3.** Student shall be able to **use** IT tools for analysis of biological data.
- 4. The student shall be able to analyze scientific data to solve technical and conceptual scientific
- **5.** Student shall **develop** skills to make effective and appropriate communication in both professional and social contexts.
- **6.** Student shall **demonstrate** a capacity for self-management, team work, leadership and decision making based on open mindedness, objectivity and reasoned analysis in order to achieve goals.
- 7. Student shall be able to develop global citizenship skills to build a sustainable world community.
- 8. Student shall **develop** the understanding of ethical principles and codes of conduct of research related to science and to behave consistently with personal respect and commitment to ethical practice.
- 9. Student shall be able to apply sound planning and organizational skills to promote and contribute to the strategic planning of their enterprise or organization.
- **10.** The student shall be able to **reflect** the virtue of lifelong learning.
- 11. Student shall be able to identify problems and expertise in new concept development and create new understanding with relevance to environment, their sustainability and microbial biotechnological profession.
- **12.** The student shall be able to **integrate** various aspects of Microbial Biotechnology to achieve societal and holistic development.

5.3.3 Programme Operational Objectives

Oper	rational Goals
1	The program intends to provide educational excellence in teaching/academic delivery.
2	The program will provide an academically conducive environment for holistic development of students.
3	The program will facilitate environment for innovation and research excellence for the intellectual growth of faculty and students
4	The program will facilitate cultivation of core values of the university and ethical conduct amongst students, faculty and staff.
5	The program will encourage cultural diversity and a sense of social and environmental responsibility.
6	The program will provide ample opportunities for international exposure to faculty and students.
7	The program will formulate an alumni network and build strong relationship with industry while proactively seeking suggestions on curricula and training.

8	The program will facilitate employment opportunities and also support students to start their
	own ventures.
9	The program will implement good governance in discharge of responsibilities and execution of
	policies and programs

5.3.4 Programme Learning Outcomes

2.1.1. In	ntended Learning Outcomes
1.	Students will develop theoretical and practical knowledge in physiological and molecular aspects of microorganisms
2	Students will be able to apply theoretical knowledge in solving the problems of Microbial biotechnology and apply the practical experience in these fields for development of sustainable environmental technologies
3	The student will apply modern IT tools for acquisition and analysis of biological data.
4	Students will be able to analyze problems using a range of different practical approaches and techniques to develop/ manage projects
5	Students will be able to develop appropriate level of communication skills to effectively disseminate research and technical information
6	Students will be able to demonstrate ability to work independently as individual and flexibility in a team with effectiveness and responsibility
7	The student will develop skills to evolve into a responsible global citizen.
8	Students will develop ethical and cultural values in theory and practice.
9	Students will be able to investigate problems using a range of different practical approaches and techniques to develop/ manage projects
10	The Student will develop the lifelong learning to contribute to environment and society
11	Students will be able to apply theoretical knowledge in solving the problems of Microbial biotechnology and apply the practical experience in these fields for development of sustainable environmental technologies
12	The student will be able to combine principals of Microbiology and biotechnology and implement them to handle various societal issues

5.3.5 Programme Operational Outcomes

Operati	ional Outcomes
1	The program M. Sc. by Research will apply appropriate methodology and pedagogical tools to create teaching, learning and development.
2	The curriculum will be relevant to research and industry requirements and benchmarked on global standards by incorporating feedback from all the stakeholders.
3	The student of AIMB will be graduated in the stipulated time period
4	The student of AIMB will earn achievements in intra and inter-university Extra Curricular activities.
5	Faculty and students will be engaged in scholarly and professional activities in order to enhance their competencies and to contribute in the existing body of Knowledge.

6	The AIMB will integrate ethics and values in teaching, theory and practice, develop and retain excellent students, faculty and staff.
7	AIMB will facilitate cultivation of cultural and environmental conservation values among students.
8	AIMB will facilitate joint research collaborations; invite international delegates and speakers for seminars and conferences and various other opportunities for global exposure.
9	AIMB will develop and maintain strong relationship with industries for consultancies.
10	AIMB will maintain alumni network and keep the curriculum responsive to industry needs.
11	AIMB will support all the students for quality placements or join family business or start their own venture
12	AIMB will establish an internal quality cell for operational quality and process improvement.

5.3.6 Programme Educational Outcome Assessment for M. Sc. by Research in Microbial **Biotechnology**

Sl. No.	PEO's	PLO's	Direct	Tool No for Direct Assess ment	Target Performance	Indirect	Tool No for Indirect Assessme nt	Target Performance
1	Student shall develop the specialize d theoretica l and practical knowledg e for microbial biotechno logy	Students will develop theoretical and practical knowledge in physiologic al and molecular aspects of microorgan isms	1. Compreh ensive Exam	PG/PL O1/CE Frame work	1. 75% students shall pass the exam	1. Student Exit Survey	1. PG/PLO/E xit Survey	1. 80% students' response range between 3.75-5 on the Likert Scale in the Student Exit Survey
2	The student shall demonstr ate research skills to conduct research in the thrust areas of Microbial Biotechno logy to benefit the society	Students will be able to apply theoretical knowledge in solving the problems of Microbial biotechnolo gy and apply the practical experience in these fields for developme nt of sustainable environmen tal	1. Compreh ensive Exam 2. Term Paper 3. Dissertati on I	1.PG/P LO2/C E Frame work 2.PG/P LO2/D isserta tion 3. PG/PL O2/Dis sertati on 4. PG/PL O2/Dis	1. 75% students shall pass the exam 2. 100% students will undertake and 90% shall complete the same in first attempt. 3. 100% students shall leverage IT in order to complete their Assignments and Projects 4. Students	1. Student Exit Survey 2. Assessm ent by External Examine rs	1. PG/PLO/E xit Survey 2. PG/PLO/D issertation	1.80% students' response range between 3.75-5 on the Likert Scale in the Student Exit Survey 2. The Industry Internship Guide/externa l examiner rates the 90 % students between grade point 6-10.

1		to ab = al! -		gowtot!	ah ould as			
		technologie s		sertati on	should secure a grade point			
		5		OII	of 5 and above			
			5.	5.	on a 10-point			
			Plagiaris	PG/PL	scale.			
			m	02/Dis	scare.			
			Checking	sertati	5. 100%			
			of Term	on	Students			
			Paper/Pr	OII	should be			
			actical		checked for			
			Training/		plagiarism in			
			Industrial		NTCC report			
			Internshi		submissions			
			p/		and allowed to			
			Dissertati		appear for			
			on I and		viva-voce			
			Dissertati		upon			
			on II		obtaining			
					plagiarism			
					below 15%.			
3	Student	The student	1.	PG/PL	1. 75%	1.	1.	80% students'
	shall be	will apply	Compreh	03/CE	students shall	Student	PG/PLO/E	response
	able to	modern IT	ensive	Frame	pass the exam	Exit	xit Survey	range
	use IT	tools for	Exam	work		Survey		between 3.75-
	tools for	acquisition						5 on the Likert
	analysis	and						Scale in the
	of	analysis of						Student Exit
	biological	biological						Survey
	data	data						
4	m)	C 1 .	4 170	4	4 4000/	4 () 1	4	4 000/
4	The	Students	1. Term	1.	1. 100%	1.Studen	1.	1.80%
4	student	will be able	1. Term Paper	PG/PL	students will	t Exit	PG/PLO/E	students'
4	student shall be	will be able to analyze		PG/PL O4	students will undertake and			students' response
4	student shall be able to	will be able to analyze problems		PG/PL O4 /Disse	students will undertake and 90% shall	t Exit	PG/PLO/E	students' response range
4	student shall be able to analyze	will be able to analyze problems using a		PG/PL O4	students will undertake and 90% shall complete the	t Exit	PG/PLO/E	students' response range between 3.75-
4	student shall be able to analyze scientific	will be able to analyze problems using a range of	Paper	PG/PL 04 /Disse rtation	students will undertake and 90% shall complete the same in first	t Exit	PG/PLO/E	students' response range between 3.75- 5 on the Likert
4	student shall be able to analyze scientific data to	will be able to analyze problems using a range of different	Paper 2.	PG/PL 04 /Disse rtation 2.	students will undertake and 90% shall complete the	t Exit Survey	PG/PLO/E xit Survey	students' response range between 3.75- 5 on the Likert Scale in the
4	student shall be able to analyze scientific data to solve	will be able to analyze problems using a range of different practical	Paper 2. Dissertati	PG/PL O4 /Disse rtation 2. PG/PL	students will undertake and 90% shall complete the same in first attempt.	t Exit Survey 2.	PG/PLO/E xit Survey	students' response range between 3.75- 5 on the Likert Scale in the Student Exit
4	student shall be able to analyze scientific data to solve technical	will be able to analyze problems using a range of different practical approaches	Paper 2.	PG/PL O4 /Disse rtation 2. PG/PL O4	students will undertake and 90% shall complete the same in first attempt. 2. 100%	t Exit Survey 2. Assessm	PG/PLO/E xit Survey 2. PG/PLO/D	students' response range between 3.75- 5 on the Likert Scale in the
4	student shall be able to analyze scientific data to solve technical and	will be able to analyze problems using a range of different practical approaches and	Paper 2. Dissertati	PG/PL O4 /Disse rtation 2. PG/PL O4 /Disse	students will undertake and 90% shall complete the same in first attempt. 2. 100% students shall	t Exit Survey 2. Assessm ent by	PG/PLO/E xit Survey	students' response range between 3.75- 5 on the Likert Scale in the Student Exit Survey
4	student shall be able to analyze scientific data to solve technical and conceptua	will be able to analyze problems using a range of different practical approaches and techniques	Paper 2. Dissertati	PG/PL O4 /Disse rtation 2. PG/PL O4	students will undertake and 90% shall complete the same in first attempt. 2. 100%	t Exit Survey 2. Assessm ent by External	PG/PLO/E xit Survey 2. PG/PLO/D	students' response range between 3.75-5 on the Likert Scale in the Student Exit Survey 2. The
4	student shall be able to analyze scientific data to solve technical and conceptua l scientific	will be able to analyze problems using a range of different practical approaches and techniques to develop/	Paper 2. Dissertati	PG/PL O4 /Disse rtation 2. PG/PL O4 /Disse	students will undertake and 90% shall complete the same in first attempt. 2. 100% students shall leverage IT in order to	t Exit Survey 2. Assessm ent by	PG/PLO/E xit Survey 2. PG/PLO/D	students' response range between 3.75- 5 on the Likert Scale in the Student Exit Survey 2. The Industry
4	student shall be able to analyze scientific data to solve technical and conceptua	will be able to analyze problems using a range of different practical approaches and techniques to develop/manage	Paper 2. Dissertati	PG/PL O4 /Disse rtation 2. PG/PL O4 /Disse	students will undertake and 90% shall complete the same in first attempt. 2. 100% students shall leverage IT in	t Exit Survey 2. Assessm ent by External Examine	PG/PLO/E xit Survey 2. PG/PLO/D	students' response range between 3.75-5 on the Likert Scale in the Student Exit Survey 2. The
4	student shall be able to analyze scientific data to solve technical and conceptua l scientific	will be able to analyze problems using a range of different practical approaches and techniques to develop/	Paper 2. Dissertati	PG/PL O4 /Disse rtation 2. PG/PL O4 /Disse rtation	students will undertake and 90% shall complete the same in first attempt. 2. 100% students shall leverage IT in order to complete their	t Exit Survey 2. Assessm ent by External Examine	PG/PLO/E xit Survey 2. PG/PLO/D	students' response range between 3.75- 5 on the Likert Scale in the Student Exit Survey 2. The Industry Internship
4	student shall be able to analyze scientific data to solve technical and conceptua l scientific	will be able to analyze problems using a range of different practical approaches and techniques to develop/manage	Paper 2. Dissertati on I	PG/PL O4 /Disse rtation 2. PG/PL O4 /Disse rtation	students will undertake and 90% shall complete the same in first attempt. 2. 100% students shall leverage IT in order to complete their Assignments	t Exit Survey 2. Assessm ent by External Examine	PG/PLO/E xit Survey 2. PG/PLO/D	students' response range between 3.75- 5 on the Likert Scale in the Student Exit Survey 2. The Industry Internship Guide/externa
4	student shall be able to analyze scientific data to solve technical and conceptua l scientific	will be able to analyze problems using a range of different practical approaches and techniques to develop/manage	Paper 2. Dissertati on I	PG/PL O4 /Disse rtation 2. PG/PL O4 /Disse rtation 3. PG/PL	students will undertake and 90% shall complete the same in first attempt. 2. 100% students shall leverage IT in order to complete their Assignments and Projects 3. Students	t Exit Survey 2. Assessm ent by External Examine	PG/PLO/E xit Survey 2. PG/PLO/D	students' response range between 3.75- 5 on the Likert Scale in the Student Exit Survey 2. The Industry Internship Guide/externa l examiner rates the 90 % students
4	student shall be able to analyze scientific data to solve technical and conceptua l scientific	will be able to analyze problems using a range of different practical approaches and techniques to develop/manage	Paper 2. Dissertati on I 3. Dissertati	PG/PL O4 /Disse rtation 2. PG/PL O4 /Disse rtation 3. PG/PL O4	students will undertake and 90% shall complete the same in first attempt. 2. 100% students shall leverage IT in order to complete their Assignments and Projects	t Exit Survey 2. Assessm ent by External Examine	PG/PLO/E xit Survey 2. PG/PLO/D	students' response range between 3.75- 5 on the Likert Scale in the Student Exit Survey 2. The Industry Internship Guide/externa l examiner rates the 90 %
4	student shall be able to analyze scientific data to solve technical and conceptua l scientific	will be able to analyze problems using a range of different practical approaches and techniques to develop/manage	Paper 2. Dissertati on I 3. Dissertati	PG/PL O4 /Disse rtation 2. PG/PL O4 /Disse rtation 3. PG/PL O4 /Disse rtation	students will undertake and 90% shall complete the same in first attempt. 2. 100% students shall leverage IT in order to complete their Assignments and Projects 3. Students should secure a grade point	t Exit Survey 2. Assessm ent by External Examine	PG/PLO/E xit Survey 2. PG/PLO/D	students' response range between 3.75-5 on the Likert Scale in the Student Exit Survey 2. The Industry Internship Guide/externa l examiner rates the 90 % students between grade point 6-
4	student shall be able to analyze scientific data to solve technical and conceptua l scientific	will be able to analyze problems using a range of different practical approaches and techniques to develop/manage	2. Dissertati on I 3. Dissertati on II	PG/PL O4 /Disse rtation 2. PG/PL O4 /Disse rtation 3. PG/PL O4 /Disse rtation 4.	students will undertake and 90% shall complete the same in first attempt. 2. 100% students shall leverage IT in order to complete their Assignments and Projects 3. Students should secure a grade point of 5 and above	t Exit Survey 2. Assessm ent by External Examine	PG/PLO/E xit Survey 2. PG/PLO/D	students' response range between 3.75-5 on the Likert Scale in the Student Exit Survey 2. The Industry Internship Guide/externa l examiner rates the 90 % students between
4	student shall be able to analyze scientific data to solve technical and conceptua l scientific	will be able to analyze problems using a range of different practical approaches and techniques to develop/manage	Paper 2. Dissertati on I 3. Dissertati on II 4.	PG/PL O4 /Disse rtation 2. PG/PL O4 /Disse rtation 3. PG/PL O4 /Disse rtation 4. PG/PL	students will undertake and 90% shall complete the same in first attempt. 2. 100% students shall leverage IT in order to complete their Assignments and Projects 3. Students should secure a grade point of 5 and above on a 10-point	t Exit Survey 2. Assessm ent by External Examine	PG/PLO/E xit Survey 2. PG/PLO/D	students' response range between 3.75-5 on the Likert Scale in the Student Exit Survey 2. The Industry Internship Guide/externa l examiner rates the 90 % students between grade point 6-
4	student shall be able to analyze scientific data to solve technical and conceptua l scientific	will be able to analyze problems using a range of different practical approaches and techniques to develop/manage	2. Dissertati on I 3. Dissertati on II 4. Plagiaris	PG/PL O4 /Disse rtation 2. PG/PL O4 /Disse rtation 3. PG/PL O4 /Disse rtation 4. PG/PL O4	students will undertake and 90% shall complete the same in first attempt. 2. 100% students shall leverage IT in order to complete their Assignments and Projects 3. Students should secure a grade point of 5 and above	t Exit Survey 2. Assessm ent by External Examine	PG/PLO/E xit Survey 2. PG/PLO/D	students' response range between 3.75-5 on the Likert Scale in the Student Exit Survey 2. The Industry Internship Guide/externa l examiner rates the 90 % students between grade point 6-
4	student shall be able to analyze scientific data to solve technical and conceptua l scientific	will be able to analyze problems using a range of different practical approaches and techniques to develop/manage	2. Dissertati on I 3. Dissertati on II 4. Plagiaris m	PG/PL O4 /Disse rtation 2. PG/PL O4 /Disse rtation 3. PG/PL O4 /Disse rtation 4. PG/PL O4 /Disse rtation	students will undertake and 90% shall complete the same in first attempt. 2. 100% students shall leverage IT in order to complete their Assignments and Projects 3. Students should secure a grade point of 5 and above on a 10-point scale.	t Exit Survey 2. Assessm ent by External Examine	PG/PLO/E xit Survey 2. PG/PLO/D	students' response range between 3.75-5 on the Likert Scale in the Student Exit Survey 2. The Industry Internship Guide/externa l examiner rates the 90 % students between grade point 6-
4	student shall be able to analyze scientific data to solve technical and conceptua l scientific	will be able to analyze problems using a range of different practical approaches and techniques to develop/manage	2. Dissertati on I 3. Dissertati on II 4. Plagiaris m Checking	PG/PL O4 /Disse rtation 2. PG/PL O4 /Disse rtation 3. PG/PL O4 /Disse rtation 4. PG/PL O4	students will undertake and 90% shall complete the same in first attempt. 2. 100% students shall leverage IT in order to complete their Assignments and Projects 3. Students should secure a grade point of 5 and above on a 10-point scale. 4. 100%	t Exit Survey 2. Assessm ent by External Examine	PG/PLO/E xit Survey 2. PG/PLO/D	students' response range between 3.75-5 on the Likert Scale in the Student Exit Survey 2. The Industry Internship Guide/externa l examiner rates the 90 % students between grade point 6-
4	student shall be able to analyze scientific data to solve technical and conceptua l scientific	will be able to analyze problems using a range of different practical approaches and techniques to develop/manage	2. Dissertati on I 3. Dissertati on II 4. Plagiaris m Checking of Term	PG/PL O4 /Disse rtation 2. PG/PL O4 /Disse rtation 3. PG/PL O4 /Disse rtation 4. PG/PL O4 /Disse rtation	students will undertake and 90% shall complete the same in first attempt. 2. 100% students shall leverage IT in order to complete their Assignments and Projects 3. Students should secure a grade point of 5 and above on a 10-point scale. 4. 100% Students	t Exit Survey 2. Assessm ent by External Examine	PG/PLO/E xit Survey 2. PG/PLO/D	students' response range between 3.75-5 on the Likert Scale in the Student Exit Survey 2. The Industry Internship Guide/externa l examiner rates the 90 % students between grade point 6-
4	student shall be able to analyze scientific data to solve technical and conceptua l scientific	will be able to analyze problems using a range of different practical approaches and techniques to develop/manage	2. Dissertati on I 3. Dissertati on II 4. Plagiaris m Checking of Term Paper/Pr	PG/PL O4 /Disse rtation 2. PG/PL O4 /Disse rtation 3. PG/PL O4 /Disse rtation 4. PG/PL O4 /Disse rtation	students will undertake and 90% shall complete the same in first attempt. 2. 100% students shall leverage IT in order to complete their Assignments and Projects 3. Students should secure a grade point of 5 and above on a 10-point scale. 4. 100% Students should be	t Exit Survey 2. Assessm ent by External Examine	PG/PLO/E xit Survey 2. PG/PLO/D	students' response range between 3.75-5 on the Likert Scale in the Student Exit Survey 2. The Industry Internship Guide/externa l examiner rates the 90 % students between grade point 6-
4	student shall be able to analyze scientific data to solve technical and conceptua l scientific	will be able to analyze problems using a range of different practical approaches and techniques to develop/manage	2. Dissertati on I 3. Dissertati on II 4. Plagiaris m Checking of Term Paper/Pr actical	PG/PL O4 /Disse rtation 2. PG/PL O4 /Disse rtation 3. PG/PL O4 /Disse rtation 4. PG/PL O4 /Disse rtation	students will undertake and 90% shall complete the same in first attempt. 2. 100% students shall leverage IT in order to complete their Assignments and Projects 3. Students should secure a grade point of 5 and above on a 10-point scale. 4. 100% Students should be checked for	t Exit Survey 2. Assessm ent by External Examine	PG/PLO/E xit Survey 2. PG/PLO/D	students' response range between 3.75-5 on the Likert Scale in the Student Exit Survey 2. The Industry Internship Guide/externa l examiner rates the 90 % students between grade point 6-
4	student shall be able to analyze scientific data to solve technical and conceptua l scientific	will be able to analyze problems using a range of different practical approaches and techniques to develop/manage	2. Dissertati on I 3. Dissertati on II 4. Plagiaris m Checking of Term Paper/Pr	PG/PL O4 /Disse rtation 2. PG/PL O4 /Disse rtation 3. PG/PL O4 /Disse rtation 4. PG/PL O4 /Disse rtation	students will undertake and 90% shall complete the same in first attempt. 2. 100% students shall leverage IT in order to complete their Assignments and Projects 3. Students should secure a grade point of 5 and above on a 10-point scale. 4. 100% Students should be	t Exit Survey 2. Assessm ent by External Examine	PG/PLO/E xit Survey 2. PG/PLO/D	students' response range between 3.75-5 on the Likert Scale in the Student Exit Survey 2. The Industry Internship Guide/externa l examiner rates the 90 % students between grade point 6-

			Internshi p/ Dissertati on I and Dissertati on II		submissions and allowed to appear for viva-voce upon obtaining plagiarism below 15%.			
5	Student shall develop skills to make effective and appropria te communic ation in both professional and social contexts	Students will be able to develop appropriate level of communica tion skills to effectively disseminate research and technical information	1. Communi cation skills Course Result analysis of all semesters	1. PG/PL O5/BC	1.80% students should secure a grade of 5 and above on a 10-point scale in the presentation of communication skills course	1.Studen t Exit Survey	1. PG/PLO/E xit Survey	1.80% students' response range between 3.75-5 on the Likert Scale in the Student Exit Survey
6	Student shall demonstr ate a capacity for self-managem ent, team work, leadershi p and decision making based on open mindedne ss, objectivit y and	Students will be able to demonstra te ability to work independen tly as individual and flexibility in a team with effectivenes s and responsibili ty	1. Compreh ensive Exam 2. Behaviora I Science Course Result analysis of all semesters 3. FBL Course Result analysis	1. PG/PL O6/CE Frame work 2. PG/PL O6/BS 3. PG/PL O6 /FBL	1. 75% students shall pass the exam 2. 80% students should secure a grade of 5 and above on a 10-point scale 3. 80% students should secure a grade of 5 and above on a grade of 5 and above on	1. Student Exit Survey	1. PG/PLO/E xit Survey	1. 80% students' response range between 3.75- 5 on the Likert Scale in the Student Exit Survey

			- £ -11		- 10	1		
	reasoned		of all		a 10-point			
	analysis		semesters		scale			
	in order							
		m)		4	4 000/	4		4.000/
7	to achieve goals Student shall be able to develop global citizenshi p skills to build a sustainabl e world communit y	The student will develop skills to evolve into a responsible global citizen	1. Communication skills Course Result analysis of all semesters 2. Behaviora I Science Course Result analysis of all semesters 3. Plagiaris m Checking of Term Paper/Pr actical Training/ Industrial Internshi p/	1. PG/PL O7/CE Famew ork 2. PG/PL O7/BS 3. PG/PL O7 /Disse rtation	1. 80% students should secure a grade of 5 and above on a 10-point scale in the presentation of communicatio n skills course 2. 80% students should secure a grade of 5 and above on a 10-point scale 3. 100% Students should be checked for plagiarism in NTCC report submissions and allowed to appear for viva-voce upon obtaining	1. Student Exit Survey	1. PG/PLO/E xit Survey	1. 80% students' response range between 3.75-5 on the Likert Scale in the Student Exit Survey
			Dissertati on I and		plagiarism below 15%.			
			Dissertati					
			on II					
			J	l		l		

	a. 1	a. 1	1 a m		4.40007			4.000:
8	Student shall develop the understan ding of ethical principles and codes of conduct of research related to science and to behave consistent ly with personal respect and commitm ent to ethical practice	Students will develop ethical and cultural values in theory and practice	1. Term Paper 2. Dissertati on I 3. Dissertati on II 4. Plagiaris m Checking of Term Paper/Pr actical Training/ Industrial Internshi p/ Dissertati on I and Dissertati on II	1. PG/PL O8 /Disse rtation 2. PG/PL O8 /Disse rtation 3. PG/PL O8 /Disse rtation 4. PG/PL O8 /Disse rtation	1. 100% students will undertake and 90% shall complete the same in first attempt. 2. 100% students shall leverage IT in order to complete their Assignments and Projects 3. Students should secure a grade point of 5 and above on a 10-point scale. 4. 100% Students should be checked for plagiarism in NTCC report submissions and allowed to appear for viva-voce upon obtaining plagiarism	1. Student Exit Survey 2. Assessm ent by External Examine rs	1. PG/PLO/E xit Survey 2. PG/PLO/D issertation	1. 80% students' response range between 3.75-5 on the Likert Scale in the Student Exit Survey 2 The Industry Internship Guide/externa l examiner rates the 90 % students between grade point 6-10.
9	Student shall be able to apply sound planning and organizati onal skills to promote and contribute to the strategic planning of their enterprise or organizati on	Students will be able to investigate problems using a range of different practical approaches and techniques to develop/ manage projects	1. Compreh ensive Exam 2. Term Paper 3. Dissertati on I 4. Dissertati on II	1. PG/PL 09/CE Frame work 2. PG/PL 09 /Disse rtation 3. PG/PL 09 /Disse rtation 4. PG/PL 09 /Disse	below 15%. 1. 75% students shall pass the exam 2. 100% students will undertake and 90% shall complete the same in first attempt. 3. 100% students shall leverage IT in order to complete their Assignments and Projects 4. Students	1. Student survey 2. Assessm ent by External Examine rs	1. PG/PLO/E xit Survey 2. PG/PLO/D issertation	1. 80% students' response range between 3.75-5 on the Likert Scale in the Student Exit Survey 2. The Industry Internship Guide/externa l examiner rates the 90 % students between grade point 6-10.

10	The student shall be able to reflect the virtue of lifelong learning	The Student will develop the lifelong learning to contribute to environmen t and society	1. Compreh ensive Exam	1. PG/PL 010/C E Frame work	should secure a grade point of 5 and above on a 10-point scale. 1. 75% students shall pass the exam	1. Student Exit Survey 2. Assessm ent by External Examine rs	1. PG/PLO/E xit Survey 2. PG/PLO/D issertation	1. 80% students' response range between 3.75-5 on the Likert Scale in the Student Exit Survey 2. The Industry Internship Guide/externa l examiner rates the 90 % students between grade point 6-10.
11	Student shall be able to identify problems and expertise in new concept developm ent and create new understan ding with relevance to environm ent, their sustainabi lity and microbial biotechno logical professio n	Students will be able to apply theoretical knowledge in solving the problems of Microbial biotechnolo gy and apply the practical experience in these fields for developme nt of sustainable environmen tal technologie s	1. Compreh ensive Exam	1. PG/PL 011/C E Frame work	1. 75% students shall pass the exam	1. Student Exit Survey 2. Assessm ent by External Examine rs	1. PG/PLO/E xit Survey 2. PG/PLO/D issertation	1.80% students' response range between 3.75-5 on the Likert Scale in the Student Exit Survey 2. The Industry Internship Guide/external examiner rates the 90% students between grade point 6-10.
12	The student shall be able to integrate various aspects of	The student will be able to combine principals of Microbiolog y and	1. Compreh ensive Exam	1. PG/PL O12/C E Frame work	1.75% students shall pass the exam	1. Student Exit Survey	1. PG/PLO/E xit Survey	1.80% students' response range between 3.75-5 on the Likert Scale in the

Microbial	biotechnolo			2.	Student Exit
Biotechno	gy and		2.	PG/PLO/D	Survey
logy to	implement		Assessm	issertation	
achieve	them to		ent by		2. The
societal	handle		External		Industry
and	various		Examine		Internship
holistic	societal		rs		Guide/externa
developm	issues				l examiner
ent					rates the 90 %
					students
					between
					grade point 6-
					10.

5.3.7 Mapping of Intended Programme Learning Outcomes to Broad-Based Programme **Educational Objectives (PEOs)**

The broad-based student learning goals identified in Section I above encompass the intended student learning outcomes as articulated in this section, and are general composites or summaries of these outcomes. These relationships are summarized in the outcomes-to-goals mapping below (**Note:** $\sqrt{\text{in a}}$ given cell of the table indicates the intended learning outcome in that row is associated with the learning goal in that column.):

(PEOs) / (PLOs)	PEO 1	PEO 2	PEO 3	PEO 4	PEO 5	PEO 6	PEO 7	PEO 8	PEO 9	PEO 10	PEO 11	PEO 12
MASTER'S	LEVEL I	ROGRA	4M									
M. Sc. By Re	search											
Learning Outcome 1	$\sqrt{}$	V										
Learning Outcome 2	$\sqrt{}$	V	$\sqrt{}$	V								$\sqrt{}$
Learning Outcome 3		$\sqrt{}$	$\sqrt{}$	$\sqrt{}$			$\sqrt{}$					
Learning Outcome 4	$\sqrt{}$			$\sqrt{}$			$\sqrt{}$					
Learning Outcome 5		$\sqrt{}$			$\sqrt{}$				√			
Learning Outcome 6					$\sqrt{}$	$\sqrt{}$						
Learning Outcome 7	$\sqrt{}$		$\sqrt{}$	$\sqrt{}$			$\sqrt{}$	$\sqrt{}$				
Learning Outcome 8								V			V	
Learning Outcome 9	$\sqrt{}$					$\sqrt{}$			$\sqrt{}$			
Learning Outcome										$\sqrt{}$		

10									
Learning Outcome 11						V		V	
Learning Outcome 12	 $\sqrt{}$	$\sqrt{}$	$\sqrt{}$		$\sqrt{}$				$\sqrt{}$

5.4 Amity Institute of Microbial Technology (AIMT)

BACHELOR'S-Level Programme - B.Sc. (H) Microbiology

5.4.1 Mission Statement

Programme Mission

"To provide basic education in the area of Marine Science, related areas of applied science, humanity related areas and in the Futuristic and emerging frontier areas of knowledge, learning and research and to develop the overall personality of students by making them not only excellent professionals but also good individuals with understanding and regards for human values, pride in their heritage and culture, a sense of right and wrong yearning for perfection and imbibe attributes of courage of conviction and action".

5.4.2 Programme Educational Objectives (PEOs)

Educational Goals

The student shall be able to develop knowledge and skills to integrate principles of Marine science and allied areas to achieve academic excellence

The student shall demonstrate research skills and conduct innovative research in thrust areas benefitting society which will enhance the intellectual capital in the area of marine science.

The student of AIMST shall be able to use and apply latest IT tools to analyze and interpret scientific data.

The student shall be able to comprehend and interpret research in Marine science and related areas in order to solve scientific problems

The student shall be able to develop effective communication skills to enhance interpersonal relationship.

The student shall be able to develop leadership and entrepreneurial skills and perform responsibly as an individual as well as in a team while maintaining accountability and output.

The student shall be able to develop global citizenship skills to build a sustainable world

The student shall demonstrate ethical behaviour and develop sensitivity towards coastal environment and culturally sensitive issues of the society.

The student shall develop networking skills and build a strong network with the industry and alumni

The students of shall be able to evaluate and reflect habit of lifelong learning.

The student shall be able to recognize the need for environmental conservation and develop sustainable technologies

The student of AIMST shall be able to integrate various aspects of learning and achieve holistic development

5.4.3 Programme Operational Objectives

Operational Goals

Program will **create** appropriate teaching learning resources, infrastructure and conducive environment for excellence in teaching, learning, research and professional development of students

- Program will **provide** Professional development opportunities to the faculty and staff to regularly upgrade their knowledge and skills and bring excellence in teaching, learning and research
- Program will **demonstrate** sensitivity to the diverse needs of students and accordingly develop facilities and services.
- Program will continuously strive to build strong industry interaction, alumni networks and empanelment of expertise from industry
- Program will continually **improve** the quality of facilities, services, resources and processes with an aim to attain **national** and international accreditations and institutional ranking.
- Program will **arrange all necessary** support system for the students of all the programs to facilitate campus recruitment, higher education or starting their own ventures.
- Program will act ethically to ensure transparency and good governance while discharging various responsibilities to its stakeholders and execution of policies and programs
- 8 Program will **create** opportunities for international exposure for its students and faculty.

5.4.4 Programme Learning Outcomes

Intended	Learning Outcomes
	dent will be able to demonstrate and understanding of the various components of Marine Science th Fundamental knowledge of Basic Science and Applied Science.
Stu	dent will be able to outline the problem on the basis of principles of Marine Science and Basic Science
Stu	dent will be able to show skills for practical solution in the area of Marine Science.
	dent will be able to recite new knowledge and opportunities for leaning through the process of earch and enquiry.
	dent will be able to demonstrate skills in explaining clearly, communicating in a team, presenting to a with.
Stu	dent will use skills for working independently as well as team to achieve goals.
	dent will be able to use and apply appropriate tools, techniques and resources for understanding of Marine eco-system.
	dent will be able to state ethical reasoning and ethical issues associated with current Marine Science search.
	dents will be able to apply skills to plan, execute and conclude a research project in the area of Marin ence
	dent will identify the need to engage in independent and life long leaning in the context of scientific velopment in the area of Marine Science.
	dent will be able to apply knowledge gained for the environmental conservation and restoration with tainable development.
	dent will be able to define social structure, issues and the solutions by the knowledge from humanity

5.4.5 Programme Operational Outcomes

Operational Outcomes

Program will promote use of appropriate methodology and pedagogical tools for teaching, learning and development.

1

2	The curriculum will be contemporary and relevant to meet research and industry requirements and benchmarked on global standards by incorporating feedback from all the stakeholders.
3	The student of AIMST will graduate in the stipulated time period
4	Program will provide academic facilities, technological Resources for teaching and learning at AIMST
5	The student of AIMST will earn achievements in intra and inter-university Extra Curricular activities.
6	Faculty and students will be engaged in scholarly and professional activities in order to enhance their competencies and to contribute to the existing body of Knowledge.
7	Program will integrate ethics and values in teaching, theory and practice, develop and retain excellent students, faculty and staff.
8	Program will facilitate cultivation of cultural and environmental conservation values among students.
9	Program shall develop and maintain strong relationship with research institutes, alumni and industry.
10	Program will facilitate joint research collaborations; invite international delegates and speakers for seminars and conferences and various other opportunities for global exposure and will support all the students for quality placements or join family business or start their own venture
12	Program will establish an internal quality cell for operational quality and process improvement.

5.4.6 Programme Educational Outcome Assessment for B.Sc. (H) Microbiology

Sl. No.	PEO's	PLO's	Direct	Tool No for Direct Assessment	Target Performa nce	Indirec t	Tool_No for Indirect Assessm ent	Target Performanc e
1	The student shall be able to develop the basic knowledge and skills to integrate principles of Microbiolo gy to achieve academic excellence	The student will define and summariz e basic concepts of Microbiolo gy	Comprehe nsive Exam	UG/PLO1/CE Framework	80% students shall pass the exam	Student Exit Survey	UG/PLO/ Exit Survey	80% students' response range between 4-5 on the Likert Scale in the Student Exit Survey
2	The student shall be able to develop various aspects of learning and achieve holistic	The student will develop various aspects of learning to meet research and industry	Term Paper, Summer Internship , Viva- voce Comprehe nsive Exam	UG/PLO2/Disser tation UG/PLO2/CE Framework	100% students will undertake and complete the Internship	Feedba ck of Interns hip Guide	UG/PLO /Exit Survey	The Internship Guide rates the students between 4-5 range on the Likert Scale in the feedback

Sl. No.	PEO's	PLO's	Direct	Tool No for Direct Assessment	Target Performa nce	Indirec t	Tool_No for Indirect Assessm ent	Target Performanc e
	developme nt	requireme nts benchmark ed on global standards						
3	The student shall be able to develop intellectua l capital by conducting research & developme nt using modern methods/t ools of microbiolo gy	The student will use various modern tools and techniques to develop intellectual capital by conducting research	Comprehe nsive Exam	UG/PLO3/CEFra mework	100% students shall able to use modern microbiol ogical tools in order to complete their research project	Student Exit Survey	UG/PLO /Exit Survey	80% students' response range between 4-5 on the Likert Scale in the Student Exit Survey
4	The student shall be able to develop research capability by performin g research based project work	The student will develop new knowledge through experimen tal methods	Comprehe nsive Exam	UG/PLO4/CE Framework	100% students will undertake and complete the research based project work	Student Exit Survey	UG /PLO/Ex it Survey	80% students' response range between 4-5 on the Likert Scale in the Student Exit Survey
5	The student shall be able to develop core values of the university and demonstra te ethical conduct	The student will develop ethical code of conduct	Plagiaris m Checking of Dissertati on Comprehe nsive Exam	UG/PLO5/ CE Framework	100% NTCC reports will be checked for plagiaris m which should return similarity index below 15%.	Student Exit Survey	UG /PLO/Ex it Survey	80% students' response range between 4-5 on the Likert Scale in the Student Exit Survey
6	The student shall be	The student will	Behaviour al Science course	UG/PLO6/BS	80% students would	Student Exit Survey	UG /PLO/Ex it Survey	80% students' response

Sl. No.	PEO's	PLO's	Direct	Tool No for Direct Assessment	Target Performa nce	Indirec t	Tool_No for Indirect Assessm ent	Target Performanc e
	able to interpret cultural diversity and the consequen t responsibi lities in relation to the society and environme nt.	interpret cultural diversity and develop responsibil ity for society and environme nt	result of all semesters		secure a grade of 6 and above on a 10 point scale in the Journal for Success Compone nt of BS			range between 4-5 on the Likert Scale in the Student Exit Survey
7	The student be able to shall be able to develop networkin g skills and establish links with industries and alumni	The student will develop links with Alumni and Industry	Comprehe nsive Exam	UG/PLO7/ CE Framework	100% students' participati on in self work componen t	Student Exit Survey	UG /PLO/Ex it Survey	80% students' response range between 4-5 on the Likert Scale in the Student Exit Survey
8	The student shall be able to interpret taught concepts to design and undertake practical and profession al work	The student will explain the taught concepts in employme nt and entreprene urship	Comprehe nsive Exam	UG/PLO7/ CE Framework	100% students' participati on in project report preparati on	Student Exit Survey	UG /PLO/Ex it Survey	80% students' response range between 4-5 on the Likert Scale in the Student Exit Survey
9	The student shall be able to apply good governanc e, in terms of value addition and functionin g.	The student will apply principles of good governanc e and perform effectively individuall y and as a team member	Comprehe nsive Exam	UG/PLO7/ CE Framework	100% NTCC reports will be checked for plagiaris m which should return similarity index below	Student Exit Survey In discipli nary Cases	UG /PLO/Ex it Survey	80% students' response range between 4-5 on the Likert Scale in the Student Exit Survey Zero tolerance towards use

Sl. No.	PEO's	PLO's	Direct	Tool No for Direct Assessment	Target Performa nce	Indirec t	Tool_No for Indirect Assessm ent	Target Performanc e
					15%.			of unfair means
10	The student shall be able to develop the habit of lifelong learning.	The student will develop the habit of lifelong learning	Comprehe nsive Exam	UG/PLO7/ CE Framework	100% students submit the research report and 50% students should secure a grade of 6 and above on a 10-point scale	Student Exit Survey	UG /PLO/Ex it Survey	80% students' response range between 4-5 on the Likert Scale in the Student Exit Survey
11	The student shall be able to apply scientific skills to implement translation al approache s	The student will be able to use scientific values to develop learning outcomes	Comprehe nsive Exam	UG/PLO7/ CE Framework	100% students' participati on in self work componen t	Student Exit Survey	UG /PLO/Ex it Survey	80% students' response range between 4-5 on the Likert Scale in the Student Exit Survey
12	The student shall be able to develop learning outcomes for further enhancem ent of knowledge	The student will be able to apply learning practices to develop experimen tation approach to implement knowledge	Comprehe nsive Exam	UG/PLO7/ CE Framework	100% students' participati on in self work componen t	Student Exit Survey	UG /PLO/Ex it Survey	80% students' response range between 4-5 on the Likert Scale in the Student Exit Survey

5.4.7 Mapping of Intended Programme Learning Outcomes to Broad-Based Programme Educational **Objectives (PEOs)**

The broad-based student learning goals identified in Section I above encompass the intended student learning outcomes as articulated in this section, and are general composites or summaries of these outcomes. These relationships are summarized in the outcomes-to-goals mapping below (Note: $\sqrt{\text{in a}}$ given cell of the table indicates the intended learning outcome in that row is associated with the learning goal in that column.):

(PEOs) PLOs	PEO 1	PEO 2	PEO 3	PEO4	PEO5	PEO6	PEO7	PEO8	PEO9	PEO10	PEO11	PEO12
PROGRAMS -	BACHELOR'S LEVEL PROGRAMS – B.Sc. (H) MICROBIOLOGY											
Name of the p	orogran	nme										
Learning Outcome 1	$\sqrt{}$	$\sqrt{}$	$\sqrt{}$				$\sqrt{}$	$\sqrt{}$				
Learning Outcome 2				$\sqrt{}$	$\sqrt{}$				$\sqrt{}$	$\sqrt{}$		
Learning Outcome 3		$\sqrt{}$									$\sqrt{}$	$\sqrt{}$
Learning Outcome 4			$\sqrt{}$					$\sqrt{}$	$\sqrt{}$			
Learning Outcome 5					$\sqrt{}$	$\sqrt{}$						
Learning Outcome 6			$\sqrt{}$				$\sqrt{}$	$\sqrt{}$				
Learning Outcome 7	$\sqrt{}$							$\sqrt{}$	$\sqrt{}$			
Learning Outcome 8	$\sqrt{}$	$\sqrt{}$		$\sqrt{}$	$\sqrt{}$							
Learning Outcome 9	$\sqrt{}$								$\sqrt{}$	$\sqrt{}$		
Learning Outcome 10		$\sqrt{}$	$\sqrt{}$		$\sqrt{}$	$\sqrt{}$					V	$\sqrt{}$
Learning Outcome 11	$\sqrt{}$		$\sqrt{}$					$\sqrt{}$	$\sqrt{}$			
Learning Outcome 12	$\sqrt{}$	$\sqrt{}$	$\sqrt{}$						$\sqrt{}$	$\sqrt{}$		

5.5 Programme - M.Sc. Microbiology

5.5.1 Mission Statement

Programme Mission

To provide education at all levels in all disciplines of microbiology and in the futuristic and emerging frontier areas of knowledge, learning, and research and to develop the overall personality of students by making them not only excellent professional but also good individuals with understanding and regards for human values, pride in their heritage and culture, a sense of right and wrong and yearning for perfection and imbibe attributes of courage of conviction and action.

5.5.2 Programme Educational Objectives (PEOs)

Educa	Educational Goals								
1.	The student shall be able to demonstrate the advanced knowledge and skills to integrate principles of microbiology to achieve academic excellence								
2.	The student shall be able to use various aspects of learning and achieve holistic development								
3.	The student shall be able to demonstrate intellectual capital by conducting independent research								

	& development using modern methods/tools of microbiology
4.	The student shall be able to demonstrate research capability by performing research based project work/dissertation in national and international microbiology laboratories of repute
5.	The student shall be able to demonstrate core values of the university and ethical conduct
6.	The student shall be able to interpret cultural diversity and the consequent responsibilities in relation to the society and environment
7.	The student shall be able to demonstrate networking skills and establish links with industries and alumni
8.	The student shall be able to interpret taught concepts to design and undertake practical and professional work thereby improving employment and entrepreneurial skills
9.	The student shall be able to apply good governance, in terms of value addition and functioning
10.	The student shall be able to evaluate and reflect the habit of lifelong learning
11.	The student shall be able to apply scientific skills to implement translational approaches
12.	The student shall be able to develop learning outcomes for further enhancement of knowledge

5.5.3 Programme Operational Objectives

Operat	ional Goals
1	This programme intends to provide educational excellence in teaching/academic delivery
2	This programme will provide academically conducive environment for holistic development of students
3	This programme will facilitate environment for innovation and research excellence for the intellectual growth of faculty and students
4	This programme will facilitate cultivation of core values of the university and ethical conduct amongst students, faculty and staff
5	This programme will encourage cultural diversity and a sense of social and environmental responsibility
6	This programme will provide opportunities for international collaborations and exposure to faculty and students
7	This programme will proactively build strong relationships with corporates and utilize network of alumni to open communication channels and seek suggestions on curricula, pedagogy, syllabus and training
8	The Programme will facilitate employment opportunities and also support students to start their own ventures
9	The Programme will facilitate good governance in discharge of responsibilities and execution of policies and programmes

5.5. 4 Programme Learning Outcomes

2.1.1.	Intended Learning Outcomes
1	The student will be able to demonstrate and apply concepts of Microbiology in multi-disciplinary context and critically analyze microbiological principles in biosciences and biotechnology
2	The student will be able to use various aspects of learning to meet research and industry requirements benchmarked on global standards
3	The student will be able to use various modern tools and techniques to demonstrate intellectual capital by conducting independent research
4	The student will be able to apply new knowledge through experimental methods, Ability to identify, define, investigate, and analyze the experimental data, and interpret results for driving optimum solutions
5.	The student will be able to demonstrate ethical code of conduct
6	The student will be able to interpret cultural diversity and develop responsibility for society and

	environment
7	The student will be able to develop links with alumni and industry
8	The student will be able to apply the taught concepts in employment and entrepreneurship
9	The student will be able to apply principles of good governance and perform effectively,
	individually and as a team member
10	The student will be able to demonstrate the habit of lifelong learning
11	The student will be able to use scientific values to develop learning outcomes
12	The student will be able to apply learning practices to develop experimentation approach to
	implement knowledge

5.5.5 Programme Operational Outcomes

Opera	tional Outcomes
1	The programme will select appropriate methodology and pedagogical tools for teaching,
	learning and development
	The programme will be assessed in a relevant manner to meet research and industry
2	requirements and benchmarked on global standards by incorporating feedback from all the
	stakeholders
3	The programme will organize research internship and dissertation for innovation and
3	intellectual growth of faculty and students
4	The student of programme will apply the achievements at intra and inter-university level of
4	extra-curricular activities
5	The programme will adapt value added courses and environmental microbiology as a part of
3	academic curriculum
	The programme will identify opportunities for research collaborations and invite international
6	delegates and speakers for seminars and conferences and various other opportunities for global
	exposure
	The programme will effectively demonstrate and maintain strong relationship with research
7	and academic institutes for joint collaborative research and consultancies in the field of
	Microbiology
8	This programme will identify students to obtain practical experience and knowledge to get
0	employment or start their own ventures
9	The programme will devise good governance practices among faculty, students and staff

5.5.6 Programme Educational Outcome Assessment for M.Sc. Microbiology

Sl. No.	PEO's	PLO's	Direct	Tool No for Direct Assess ment	Target Perform ance	Indirec t	Tool No for Indire ct Assess ment	Target Performa nce
1	The student shall be able to demonstrat e the advanced knowledge and skills to integrate principles of Microbiolog	The student will demonstrate and apply concepts of Microbiology in multidisciplinary context and critically analyze microbiological	Comprehe nsive Exam	PG/PLO / CE Frame work	80% students shall pass the exam	Student Exit Survey	PG/PL O/ Exit Survey	80% students response range between 4-5 on the Likert Scale in the Student Exit

Sl. No.	PEO's	PLO's	Direct	Tool No for Direct Assess ment	Target Perform ance	Indirec t	Tool No for Indire ct Assess ment	Target Performa nce
	y to achieve academic excellence	principles in biosciences and biotechnology						Survey
2	The student shall be able to use various aspects of learning and achieve holistic developmen t.	The student will use_various aspects of learning to meet research and industry requirements and benchmarked on global standards	Self Work Summer Internshi p, Dissertati on	PG/PLO / Dissert ation	100% students will undertak e and complete the dissertati on	Feedba ck of Industr y Interns hip Guide	PG/PL O/ Exit Survey	The Industry Internship Guide rates the students between 4-5 range on the Likert Scale in the feedback.
3	Students shall be able to demonstrat e intellectual capital by conducting independen t research & developmen t using modern methods/to ols of microbial	The student will use various modern tools and techniques to demonstrate intellectual capital by conducting independent research	Summer Internshi p, Dissertati on, Viva- voce Comprehe nsive Exam	PG/PLO / Dissert ation PG/PLO /CE Frame work	100% students will undertak e and complete the dissertati on	Feedba ck of Industr y Interns hip Guide	PG/PL O/ Exit Survey	The Industry Internship Guide rates the students between 4-5 range on the Likert Scale in the feedback.
4	The student shall be able to demonstrat e research capability by performing research based project work/disser tation in national and internationa l microbiolog	The student will apply new knowledge through experimental methods, Ability to identify, define, investigate, and analyze the experimental data, and interpret results for driving optimum solutions	Bio- analytical technique s Comprehe nsive Exam	PG/PLO /CE Frame work	100% students shall be able to demonstr ate microbiol ogical tools in order to complete their research project	Student Exit Survey	PG/PL O/ Exit Survey	80% students' response range between 4-5 on the Likert Scale in the Student Exit Survey

Sl. No.	PEO's	PLO's	Direct	Tool No for Direct Assess ment	Target Perform ance	Indirec t	Tool No for Indire ct Assess ment	Target Performa nce
	y laboratories of repute							
5	The student shall be able to demonstrat e core values of the university and demonstrat e ethical conduct	The student will demonstrate ethical code of conduct	Comprehe nsive Exam	PG/PLO /CE Frame work	100% NTCC reports will be checked for plagiaris m which should return similarity index below 15%.	Student Exit Survey	PG/PL O/ Exit Survey	80% students response range between 4-5 on the Likert Scale in the Student Exit Survey
6	The student shall be able to interpret cultural diversity and the consequent responsibili ties in relation to the society and environmen t.	The student will interpret cultural diversity and develop responsibility for society and environment	Communi cation skills Comprehe nsive Exam	PG/PLO 5/BC PG/PLO /CE Frame work	80% students should secure a grade of 6 and above on a 10-point scale in the presentat ion compone nt of communi cation skills course	Student Exit Survey	PG/PL O/ Exit Survey	80% students response range between 4-5 on the Likert Scale in the Student Exit Survey.
7	The student shall be able to demonstrat e networking skills and establish links with industries and alumni	The student will plan links with alumni and industry.	Behaviour al Science Course Result of all semesters Comprehe nsive Exam	PG/PLO /BS PG/PLO /CE Frame work	80% students should secure a grade of 6 and above on a 10-point scale in the Journal for Success compone	Student Exit Survey	PG/PL O/ Exit Survey	80% students response range between 4-5 on the Likert Scale in the Student Exit Survey.

Sl. No.	PEO's	PLO's	Direct	Tool No for Direct Assess ment	Target Perform ance	Indirec t	Tool No for Indire ct Assess ment	Target Performa nce
					nt of Behaviou ral Science course			
8	The student shall be able to interpret taught concepts to design and undertake practical and professional work thereby improving employmen t and entrepreneu rial skills.	The student will apply the taught concepts in employment and entrepreneurshi p	Bio- analytical technique s Comprehe nsive Exam	PG/PLO /CE Frame work	100% students' participat ion in term papers and project report preparati on.	Student Exit Survey	PG/PL O/ Exit Survey	80% students response range between 4-5 on the Likert Scale in the Student Exit Survey.
9	The student shall be able to apply good governance, in terms of value addition and functioning	The student will apply principles of good governance and perform effectively individually and as a team member	Plagiaris m Checking of Dissertati on Comprehe nsive Exam	PG/PLO /CE Frame work	100% NTCC reports will be checked for plagiaris m which should return similarity index below 15%.	Feedba ck of Industr y Interns hip Guide Indiscip line Cases	PG/PL O/ Exit Survey	The Industry Internship Guide rates the students between 4-5 range on the Likert Scale in the feedback. Zero tolerance towards use of unfair means
10	The student shall be able to evaluate and reflect the habit of lifelong learning.	The student will demonstrate the habit of lifelong learning	Viva-voce , Dissertati on Comprehe nsive Exam	PG/PLO / Disssert ation PG/PLO /CE	100% students submit the research report and 50% students	Student Exit Survey	PG/PL O/ Exit Survey	80% students response range between 4-5 on the Likert Scale in

Sl. No.	PEO's	PLO's	Direct	Tool No for Direct Assess ment	Target Perform ance	Indirec t	Tool No for Indire ct Assess ment	Target Performa nce
				Frame work	should secure a grade of 6 and above on a 10- point scale			the Student Exit Survey
					Mentors will assess the Learning curve of 100% students	Student Exit Survey	PG/PL O/ Exit Survey	80% students response range between 4-5 on the Likert Scale in the Alumni Survey
					100 % students will elaborate their research findings through presentat ions and will defend the viva voce	Student Exit Survey	PG/PL O/ Exit Survey	80% students response range between 4-5 on the Likert Scale in the Student Exit Survey.
11	The student shall be able to apply scientific skills to implement translationa l approaches	The student will be able to use scientific values to develop learning outcomes	Comprehe nsive Exam	UG/PL 07/CE Frame work	100% students' participat ion in self work compone nt	Student Exit Survey	UG /PLO/ Exit Survey	80% students' response range between 4-5 on the Likert Scale in the Student Exit Survey

SI. No.	PEO's	PLO's	Direct	Tool No for Direct Assess ment	Target Perform ance	Indirec t	Tool No for Indire ct Assess ment	Target Performa nce
12	The student shall be able to develop learning outcomes for further enhanceme nt of knowledge	The student will be able to apply learning practices to develop experimentation approach to implement knowledge	Comprehe nsive Exam	UG/PL O7/CE Frame work	100% students' participat ion in self work compone nt	Student Exit Survey	UG /PLO/ Exit Survey	80% students' response range between 4-5 on the Likert Scale in the Student Exit Survey

5.5. 7 Mapping of Intended Programme Learning Outcomes to Broad-Based Programme **Educational Objectives (PEOs)**

The broad-based student learning goals identified in Section I above encompass the intended student learning outcomes as articulated in this section, and are general composites or summaries of these outcomes. These relationships are summarized in the outcomes-to-goals mapping below (Note: $\sqrt{\text{in a}}$ given cell of the table indicates the intended learning outcome in that row is associated with the learning goal in that column.):

(PEOs) PLOs	PEO 1	PEO 2	PEO 3	PEO4	PEO5	PEO6	PEO7	PEO8	PEO9	PEO10	PE011	PEO12
MASTER'S LI M.SC. MICRO			AMS –									
Name of the p	orogran	nme										
Learning Outcome 1	$\sqrt{}$	$\sqrt{}$	$\sqrt{}$					$\sqrt{}$				
Learning Outcome 2	$\sqrt{}$			$\sqrt{}$	$\sqrt{}$				$\sqrt{}$	$\sqrt{}$		
Learning Outcome 3		$\sqrt{}$									$\sqrt{}$	$\sqrt{}$
Learning Outcome 4			$\sqrt{}$					$\sqrt{}$	$\sqrt{}$			
Learning Outcome 5	$\sqrt{}$				$\sqrt{}$	$\sqrt{}$						
Learning Outcome 6			$\sqrt{}$				$\sqrt{}$	$\sqrt{}$				
Learning Outcome 7	$\sqrt{}$							$\sqrt{}$	$\sqrt{}$			
Learning Outcome 8	$\sqrt{}$	$\sqrt{}$		$\sqrt{}$	$\sqrt{}$							
Learning Outcome 9	$\sqrt{}$								$\sqrt{}$	$\sqrt{}$		
Learning Outcome 10		$\sqrt{}$	$\sqrt{}$		$\sqrt{}$	$\sqrt{}$					$\sqrt{}$	\checkmark
Learning	$\sqrt{}$		$\sqrt{}$						$\sqrt{}$			

(PEOs) PLOs	PEO 1	PEO 2	PEO 3	PEO4	PEO5	PEO6	PEO7	PEO8	PEO9	PEO10	PEO11	PEO12
Outcome 11												
Learning Outcome 12	V	$\sqrt{}$	$\sqrt{}$						V			

5.6. Amity Institute of Marine Science and Technology (AIMST)

Programme - B. Sc. (H) Marine Science

5.6.1 Mission Statement

Programme Mission

"To provide basic education in the area of Marine Science, related areas of applied science, humanity related areas and in the Futuristic and emerging frontier areas of knowledge, learning and research and to develop the overall personality of students by making them not only excellent professionals but also good individuals with understanding and regards for human values, pride in their heritage and culture, a sense of right and wrong yearning for perfection and imbibe attributes of courage of conviction and action".

5.6.2 Programme Educational Objectives (PEOs)

Educational Goals

- PEO 1: The student shall be able to develop knowledge and skills to integrate principles of Marine science and allied areas to achieve academic excellence
- PEO 2: The student shall demonstrate research skills and conduct innovative research in thrust areas benefitting society which shall enhance the intellectual capital in the area of marine science.
- PEO 3: The student of AIMST shall be able to use and apply latest IT tools to analyze and interpret scientific data.
- PEO 4: The student shall be able to comprehend and interpret research in Marine science and related areas in order to solve scientific problems
- PEO 5: The student shall be able to develop effective communication skills to enhance interpersonal relationship.
- PEO 6: The student shall be able to develop leadership and entrepreneurial skills and perform responsibly as an individual as well as in a team while maintaining accountability and output.
- PEO 7: The student shall be able to develop global citizenship skills to build a sustainable world
- PEO 8: The student shall demonstrate ethical behaviour and develop sensitivity towards coastal environment and culturally sensitive issues of the society.
- PEO 9: The student shall develop networking skills and build a strong network with the industry and alumni
- PEO 10: The students of shall be able to evaluate and reflect habit of lifelong learning.
- PEO 11: The student shall be able to recognize the need for environmental conservation and develop sustainable technologies
- PEO 12: The student of AIMST shall be able to integrate various aspects of learning and achieve holistic development

5.6.3 Programme Operational Objectives

Operational Goals

1 B.Sc. (H) Marine Science will **create** appropriate teaching learning resources, infrastructure and

- conducive environment for excellence in teaching, learning, research and professional development of students
- Program will **provide** Professional development opportunities to the faculty and staff to regularly upgrade their knowledge and skills and bring excellence in teaching, learning and research
- Programme will **demonstrate** sensitivity to the diverse needs of students and accordingly develop facilities and services.
- Program will continuously strive to build strong industry interaction, alumni networks and empanelment of expertise from industry
- Program will continually **improve** the quality of facilities, services, resources and processes with an aim to attain **national** and international accreditations and institutional ranking.
- Programme will **arrange all necessary** support system for the students of all the programs to facilitate campus recruitment, higher education or starting their own ventures.
- Programme will act ethically to ensure transparency and good governance while discharging various responsibilities to its stakeholders and execution of policies and programs
- Programme will **create** opportunities for international exposure for its students and faculty.

5.6.4 Programme Learning Outcomes

Intende	d Learning Outcomes
PLO 1	Student will be able to demonstrate and understanding of the various components of Marine Science with Fundamental knowledge of Basic Science and Applied Science.
PLO 2	Student will be able to outline the problem on the basis of principles of Marine Science and Basic Science.
PLO 3	Student will be able to show skills for practical solution in the area of Marine Science.
PLO 4	Student will be able to recite new knowledge and opportunities for leaning through the process of research and enquiry.
PLO 5	Student will be able to demonstrate skills in explaining clearly, communicating in a team, presenting to a growth.
PLO 6	Student will use skills for working independently as well as team to achieve goals.
PLO 7	Student will be able to use and apply appropriate tools, techniques and resources for understanding of the Marine eco-system.
PLO 8	Student will be able to state ethical reasoning and ethical issues associated with current Marine Science Research.
PLO 9	Students will be able to apply skills to plan, execute and conclude a research project in the area of Marine Science
PLO 10	Student will identify the need to engage in independent and life long leaning in the context of scientific development in the area of Marine Science.
PLO 11	Student will be able to apply knowledge gained for the environmental conservation and restoration with sustainable development.
PLO 12	Student will be able to define social structure, issues and the solutions by the knowledge from humanity related subjects.

5.6.5 Programme Operational Outcomes

Operational Outcomes

Program will promote use of appropriate methodology and pedagogical tools for teaching, learning and development.

2	The curriculum will be contemporary and relevant to meet research and industry requirements and benchmarked on global standards by incorporating feedback from all the stakeholders.
3	The student of AIMST will graduate in the stipulated time period
4	Programme willl provide academic facilities, technological Resources for teaching and learning at AIMST
5	The student of AIMST will earn achievements in intra and inter-university Extra Curricular activities.
6	Faculty and students will be engaged in scholarly and professional activities in order to enhance their competencies and to contribute to the existing body of Knowledge.
7	AIMST will integrate ethics and values in teaching, theory and practice, develop and retain excellent students, faculty and staff.
8	AIMST will facilitate cultivation of cultural and environmental conservation values among students.
9	AIMST shall develop and maintain strong relationship with research institutes, alumni and industry.
10	AIMST will facilitate joint research collaborations; invite international delegates and speakers for seminars and conferences and various other opportunities for global exposure and will support all the students for quality placements or join family business or start their own venture
12	AIMST shall establish an internal quality cell for operational quality and process improvement.

5.6.6 Programme Educational Outcome Assessment for B. Sc. (H) Marine Science

				Tool No for	Target		Tool No for	Target
Sl. No.	PEO's	PLO's	Direct	Direct	Performa	Indirect	Indirect	Performan
110.				Assessment	nce		Assessment	ce
		Student		UG/PLO1/CE	70%	Studen	UG/PLO/Exit	80%
	The	will be	*Com	Framework	students	t Exit	Survey	students
	student	able to	prehe		shall	Survey		response
	shall be	demons	nsive		pass the			range
	able to	trate	Exam		exam.			between
	develop	and						4-5 on the
	knowled	underst						Likert
	ge and	anding						Scale in
	skills to	of the						the
	integrat	various						Student
	e	compon						Exit
1	principl	ents of						Survey.
1	es of	Marine						
	Marine	Science						
	science	with						
	and	Fundam						
	allied	ental						
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	achieve	dge of						
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	С	Science						
	excellen	and						
	ce	Applied						
		Science.						
	The	Student	Term	UG/PLO2/TP	100%	Feedba		The
2	student	will be	Paper	/SI/VV	students	ck		Industry
2	shall	able to	,	•	will	industr		Internshi
	demons	outline	Sum	UG/PLO1/CE	undertak	у		p Guide

	trate research skills and conduct innovati ve research in thrust areas benefitti ng society which will enhance the intellect ual capital in the area of marine science.	the problem on the basis of principl es of Marine Science and Basic Science.	mer Inter nship, Viva- voce Comp rehen sive exam	Framework	e and complete the dissertati on	interns hip guide		rates the students between 4-5 range on the Likert Scale in the feedback.
3	The student of AIMST shall be able to use and apply latest IT tools to analyze and interpre t scientifi c data.	Student will be able to show skills for practica l solution in the area of Marine Science	*Com prehe nsive Exam	UG/PLO3/CE Framework	students shall able to leverage IT in order to complete their Assigne ments and Projects	Studen t Exit Survey	UG/PLO/Exit Survey	80% students shall score ≥ 75% in exit survey.
4	The student shall be able to compre hend and interpre t research in Marine science and related areas in order to solve	Student will be able to recite new knowle dge and opportu nities for leaning through the process of researc h and enquiry.	*Majo r proje ct Rubri cs *Com prehe nsive Exam	UG/PLO4/ UG/PLO3/CE Framework	80% students shall able to demonst rate Problem Solving and Decision Making Skill	Studen t Exit Survey	UG/PLO/Exit Survey	80% students shall score ≥ 75% in exit survey

	scientifi c problem s							
5	The student shall be able to develop effective commu nication skills to enhance interper sonal relation ship.	Student will be able to demons trate skills in explaini ng clearly, commu nicating in a team, presenti ng to a growth.	*Rubri cs (Comm unicati on skills) *Comp rehensi ve Exam	UG/PLO5/ C UG/PLO3/CE Framework	80% students should secure a grade of 6 and above on a 10-point scale in the presentati on componen t of communic ation course.	Student Exit Survey	UG/PLO/Exit Survey	80% students shall score ≥ 75% in exit survey
6	The student shall be able to develop leadersh ip and entrepr eneurial skills and perform responsi bly as an individu al as well as in a team while maintai ning account ability and output.	Student will use skills for working indepen dently as well as team to achieve goals.	*Rubri cs *Comp rehensi ve Exam	UG/PLO3/CE Framework	80% students should secure a grade of 6 and above on a 10-point scale in the Journal for Success componen t of Behaviour al Science course.	Student Exit Survey	UG/PLO/Exit Survey	80% students shall score ≥ 75% in exit survey.
7	The student shall be able to develop global citizens hip skills to build a sustaina	Student will be able to use and apply appropr iate tools, techniq ues and resourc	Major project rubrics *Comp rehensi ve Exam	UG/PLO7/ UG/PLO3/CE Framework	100% students' participati on in term papers and project report preparatio n.	Student Exit Survey	UG/PLO/Exit Survey	80% students shall score ≥ 75% in exit survey.

	1.1.	- C-			1	I	I	1
	ble world	es for underst						
	woriu	anding						
		of the						
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		eco-						
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	The	oj ocenn	*Plagia		100%	Feedbac		The
	student		rism		Students	k		Industry
	shall		Checki		are	industry		Internship
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	ethical	able to	project		plagiarism			students
	behavio	state			in NTCC			between 4-
	ur and	ethical	Rubric		report			5 range on
	develop	reasoni	S		submissio			the Likert
	sensitivi	ng and	(Behav		ns and are			Scale in the
	ty	ethical	ioural		allowed to			feedback.
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	environ	ed with			upon			
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	and	Marine			plagiarism			
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	y sensitiv	Researc h.			15%.			
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	society.	Student	Rubric	UG/PLO9/	100%	Student	UG/PLO/Exit	80%
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				UG/PLO9/ UG/PLO9/CE				
	The	s will be	S		students	Exit		students
	The student shall develop	s will be able to	s (Behav	UG/PLO9/CE	students submit the research report and	Exit		students shall score
	The student shall	s will be able to apply	s (Behav ioural	UG/PLO9/CE	students submit the research report and 50%	Exit		students shall score ≥ 75% in
	The student shall develop network ing	s will be able to apply skills to plan, execute	s (Behav ioural Science)	UG/PLO9/CE	students submit the research report and 50% students	Exit		students shall score ≥ 75% in exit
	The student shall develop network ing skills	s will be able to apply skills to plan, execute and	s (Behav ioural Science) *Comp	UG/PLO9/CE	students submit the research report and 50% students should	Exit		students shall score ≥ 75% in exit
9	The student shall develop network ing skills and	s will be able to apply skills to plan, execute and conclud	s (Behav ioural Science) *Comp rehensi	UG/PLO9/CE	students submit the research report and 50% students should secure a	Exit		students shall score ≥ 75% in exit
9	The student shall develop network ing skills and build a	s will be able to apply skills to plan, execute and conclud e a	s (Behav ioural Science) *Comp rehensi ve	UG/PLO9/CE	students submit the research report and 50% students should secure a grade of 6	Exit		students shall score ≥ 75% in exit
9	The student shall develop network ing skills and build a strong	s will be able to apply skills to plan, execute and conclud e a researc	s (Behav ioural Science) *Comp rehensi	UG/PLO9/CE	students submit the research report and 50% students should secure a grade of 6 and above	Exit		students shall score ≥ 75% in exit
9	The student shall develop network ing skills and build a strong network	s will be able to apply skills to plan, execute and conclud e a researc h	s (Behav ioural Science) *Comp rehensi ve	UG/PLO9/CE	students submit the research report and 50% students should secure a grade of 6 and above on a 10-	Exit		students shall score ≥ 75% in exit
9	The student shall develop network ing skills and build a strong network with the	s will be able to apply skills to plan, execute and conclud e a researc h project	s (Behav ioural Science) *Comp rehensi ve	UG/PLO9/CE	students submit the research report and 50% students should secure a grade of 6 and above on a 10- point	Exit		students shall score ≥ 75% in exit
9	The student shall develop network ing skills and build a strong network with the industry	s will be able to apply skills to plan, execute and conclud e a researc h project in the	s (Behav ioural Science) *Comp rehensi ve	UG/PLO9/CE	students submit the research report and 50% students should secure a grade of 6 and above on a 10-	Exit		students shall score ≥ 75% in exit
9	The student shall develop network ing skills and build a strong network with the industry and	s will be able to apply skills to plan, execute and conclud e a researc h project in the area of	s (Behav ioural Science) *Comp rehensi ve	UG/PLO9/CE	students submit the research report and 50% students should secure a grade of 6 and above on a 10- point	Exit		students shall score ≥ 75% in exit
9	The student shall develop network ing skills and build a strong network with the industry	s will be able to apply skills to plan, execute and conclud e a researc h project in the area of Marine	s (Behav ioural Science) *Comp rehensi ve	UG/PLO9/CE	students submit the research report and 50% students should secure a grade of 6 and above on a 10- point	Exit		students shall score ≥ 75% in exit
9	The student shall develop network ing skills and build a strong network with the industry and	s will be able to apply skills to plan, execute and conclud e a researc h project in the area of	s (Behav ioural Science) *Comp rehensi ve	UG/PLO9/CE	students submit the research report and 50% students should secure a grade of 6 and above on a 10- point	Exit	Survey	students shall score ≥ 75% in exit
9	The student shall develop network ing skills and build a strong network with the industry and alumni	s will be able to apply skills to plan, execute and conclud e a researc h project in the area of Marine Science	s (Behav ioural Science) *Comp rehensi ve Exam	UG/PLO9/CE	students submit the research report and 50% students should secure a grade of 6 and above on a 10- point scale.	Exit Survey		students shall score ≥ 75% in exit survey.
9	The student shall develop network ing skills and build a strong network with the industry and alumni The students of shall	s will be able to apply skills to plan, execute and conclud e a researc h project in the area of Marine Science Student will identify	s (Behav ioural Science) *Comp rehensi ve Exam	UG/PLO9/CE Framework	students submit the research report and 50% students should secure a grade of 6 and above on a 10- point scale. Mentors will asses the	Exit Survey	Survey UG/PLO/Exit	students shall score ≥ 75% in exit survey. 80% students shall score
9	The student shall develop network ing skills and build a strong network with the industry and alumni The students of shall be able	s will be able to apply skills to plan, execute and conclud e a researc h project in the area of Marine Science Student will identify the need	s (Behav ioural Science) *Comp rehensi ve Exam *Major project	UG/PLO9/CE Framework UG/PLO9/CE	students submit the research report and 50% students should secure a grade of 6 and above on a 10- point scale. Mentors will asses the Learning	Exit Survey Student Exit	Survey UG/PLO/Exit	students shall score ≥ 75% in exit survey. 80% students shall score ≥ 75% in
9	The student shall develop network ing skills and build a strong network with the industry and alumni The students of shall be able to	s will be able to apply skills to plan, execute and conclud e a researc h project in the area of Marine Science Student will identify the need to	s (Behav ioural Science) *Comp rehensi ve Exam *Major project Rubric s	UG/PLO9/CE Framework UG/PLO9/CE	students submit the research report and 50% students should secure a grade of 6 and above on a 10- point scale. Mentors will asses the Learning curve of	Exit Survey Student Exit	Survey UG/PLO/Exit	students shall score ≥ 75% in exit survey. 80% students shall score ≥ 75% in exit
	The student shall develop network ing skills and build a strong network with the industry and alumni The students of shall be able to evaluate	s will be able to apply skills to plan, execute and conclud e a researc h project in the area of Marine Science Student will identify the need to engage	s (Behav ioural Science) *Comp rehensi ve Exam *Major project Rubric s *Comp	UG/PLO9/CE Framework UG/PLO9/CE	students submit the research report and 50% students should secure a grade of 6 and above on a 10- point scale. Mentors will asses the Learning curve of 100%	Exit Survey Student Exit	Survey UG/PLO/Exit	students shall score ≥ 75% in exit survey. 80% students shall score ≥ 75% in
9	The student shall develop network ing skills and build a strong network with the industry and alumni The students of shall be able to evaluate and	s will be able to apply skills to plan, execute and conclud e a researc h project in the area of Marine Science Student will identify the need to engage in	s (Behav ioural Science) *Comp rehensi ve Exam *Major project Rubric s *Comp rehensi	UG/PLO9/CE Framework UG/PLO9/CE	students submit the research report and 50% students should secure a grade of 6 and above on a 10- point scale. Mentors will asses the Learning curve of	Exit Survey Student Exit	Survey UG/PLO/Exit	students shall score ≥ 75% in exit survey. 80% students shall score ≥ 75% in exit
	The student shall develop network ing skills and build a strong network with the industry and alumni The students of shall be able to evaluate and reflect	s will be able to apply skills to plan, execute and conclud e a researc h project in the area of Marine Science Student will identify the need to engage in indepen	s (Behav ioural Science) *Comp rehensi ve Exam *Major project Rubric s *Comp rehensi ve	UG/PLO9/CE Framework UG/PLO9/CE	students submit the research report and 50% students should secure a grade of 6 and above on a 10- point scale. Mentors will asses the Learning curve of 100%	Exit Survey Student Exit	Survey UG/PLO/Exit	students shall score ≥ 75% in exit survey. 80% students shall score ≥ 75% in exit
	The student shall develop network ing skills and build a strong network with the industry and alumni The students of shall be able to evaluate and reflect habit of	s will be able to apply skills to plan, execute and conclud e a researc h project in the area of Marine Science Student will identify the need to engage in indepen dent	s (Behav ioural Science) *Comp rehensi ve Exam *Major project Rubric s *Comp rehensi	UG/PLO9/CE Framework UG/PLO9/CE	students submit the research report and 50% students should secure a grade of 6 and above on a 10- point scale. Mentors will asses the Learning curve of 100%	Exit Survey Student Exit	Survey UG/PLO/Exit	students shall score ≥ 75% in exit survey. 80% students shall score ≥ 75% in exit
	The student shall develop network ing skills and build a strong network with the industry and alumni The students of shall be able to evaluate and reflect habit of lifelong	s will be able to apply skills to plan, execute and conclud e a researc h project in the area of Marine Science Student will identify the need to engage in indepen dent and life	s (Behav ioural Science) *Comp rehensi ve Exam *Major project Rubric s *Comp rehensi ve	UG/PLO9/CE Framework UG/PLO9/CE	students submit the research report and 50% students should secure a grade of 6 and above on a 10- point scale. Mentors will asses the Learning curve of 100%	Exit Survey Student Exit	Survey UG/PLO/Exit	students shall score ≥ 75% in exit survey. 80% students shall score ≥ 75% in exit
	The student shall develop network ing skills and build a strong network with the industry and alumni The students of shall be able to evaluate and reflect habit of	s will be able to apply skills to plan, execute and conclud e a researc h project in the area of Marine Science Student will identify the need to engage in indepen dent	s (Behav ioural Science) *Comp rehensi ve Exam *Major project Rubric s *Comp rehensi ve	UG/PLO9/CE Framework UG/PLO9/CE	students submit the research report and 50% students should secure a grade of 6 and above on a 10- point scale. Mentors will asses the Learning curve of 100%	Exit Survey Student Exit	Survey UG/PLO/Exit	students shall score ≥ 75% in exit survey. 80% students shall score ≥ 75% in exit

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		Marine						
		Science.						
		Student	*Comp	UG/PLO11/CE	100 %	Student	UG/PLO/Exit	80%
	The	will be	rehensi	Framework	students	Exit	Survey	students
	student	able to	ve	-	will	Survey		shall score
	shall be	apply	Exam		elaborate			≥ 75% in
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	able to	structur	Exam		seminar			survey
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5.6.7 Mapping of Intended Programme Learning Outcomes to Broad-Based Programme Educational Objectives (PEOs)

The broad-based student learning goals identified in Section I above encompass the intended student learning outcomes as articulated in this section, and are general composites or summaries of these outcomes. These relationships are summarized in the outcomes-to-goals mapping below (Note: $\sqrt{}$ in a given cell of the table indicates the intended learning outcome in that row is associated with the learning goal in that column.):

(PEOs) PLOs	PEO 1	PEO 2	PEO 3	PEO 4	PEO 5	PEO 6	PEO7	PEO 8	PEO 9	PEO 10	PEO 11	PEO 12
BACHELOR'S I	LEVEL PRO	OGRAM	S									
Name of the pr Marine Science		: B.Sc (H)									
Learning Outcome 1	X		X									
Learning Outcome 2	X		X	X								
Learning Outcome 3	X			X								
Learning Outcome 4		X	X									
Learning Outcome 5		X				X	X	X				
Learning Outcome 6		X					X	X				
Learning Outcome 7								X				
Learning Outcome 8			X		X							
Learning Outcome 9				X								
Learning Outcome 10		X							X	X		
Learning Outcome 11					X						X	
Learning Outcome 12		X			X				X			X

5.7 Amity Institute of Virology and Immunology (AIVI)

Programme -M. Sc. Immunology

5.7.1 Mission Statement

Programme Mission

To provide advanced education in the area of immunology and in the futuristic and emerging frontier areas of knowledge, learning and research and to develop the overall personality of students by making them not only excellent professionals but also good individuals with understanding and regards for human values, pride in their heritage and culture, a sense of right and wrong, yearning for perfection and courage of conviction and action.

5.7.2 Programme Educational Objectives (PEOs)

Educational Goals								
1.	The student shall develop knowledge of Immunology, potentially utilized for life science research.							
2.	The student shall be able to employ skills for exploration and investigation of problems in							

	Immunology.
3.	The student shall design new biological solutions (workbench/algorithms) and analyze systematically the complex and specialized concepts in Immunology.
4.	The student shall develop and investigate Immunology based research projects.
5.	The students shall develop good communication and develop networking skills and establish links with industry and alumni.
6.	The student shall be able to demonstrate effectiveness and responsibility as an individual as well as in a team while maintaining accountability and output.
7.	To student shall be oriented to be a responsible global citizen.
8.	The student shall demonstrate knowledge of the ethical principles, law and IPR issues.
9.	The student shall extend short term trainings and dissertation projects in the area of Bioinformatics in various national or international laboratories for experiential learning.
10.	The student shall be able to use good managerial skills to enhance employment and entrepreneurship opportunities and able to create the virtue of lifelong learning.
11.	The student shall be able to create and develop thought process for environmental conservation by developing and implementing environmentally sustainable technologies.
12.	The student shall be able to apply both theoretical as well as practical concepts for the betterment of the society.

5.7.3 Programme Operational Objectives

Operat	Operational Goals							
1.	MSc. Immunology programme will create appropriate resources, infrastructure and conducive environment for excellence in teaching, learning, research and professional development of students.							
2.	The programme will provide opportunities and environment for innovation and research excellence for the intellectual growth of faculty and students.							
3.	The programme will demonstrate sensitivity to the diverse needs of students and accordingly develop facilities and services.							
4.	The programme will continuously strive to build strong industry interaction, alumni networks and empanelment of expertise from industry while proactively seeking suggestions on curricula and training.							
5.	The programme will continually improve processes and systems with an aim to attain national and international accreditations.							
6.	The programme will extend support to the students in order to facilitate campus recruitment, higher education or starting their own ventures.							
7.	The programme will act ethically to ensure transparency and good governance while discharging various responsibilities to its stakeholders and execution of policies and programs.							
8.	The programme will create opportunities for international exposure for its students and faculty.							

5.7.4 Programme Learning Outcomes

Intende	d Learning Outcomes
1.	The student will develop critical thought and practical understanding in the field of
	Immunology and ability to use knowledge and skills and work towards academic excellence.

2.	The student will be able to explore and investigate a devise solution to a range of complex scientific problems of technical, conceptual or abstract nature.
3.	The student will design, identify and review systematically and critically appraise specialized concepts in theoretical and applied aspects of Immunology.
4.	The student will be able to relate research principles and technical skills to plan and execute Immunology research projects.
5.	The student will develop appropriate level of communication skills to effectively disseminate research and technical information.
6.	The student will create the ability to work independently as individuals and flexibly within a team with effectiveness and responsibility.
7.	The student will be oriented to be responsible global citizen.
8.	The student will be able to apply ethical principles in handling various issues concerning Immunology.
9.	The student will apply principles of project management to manage one's own work and/or project work as a member or a leader in a team, by work experience gathered through short term training / dissertation projects.
10.	The student will organize the role of personal development, self-directed study and discovery in learning to develop life-long learning.
11.	The student will be able to implement conservation of environment by using newer and better sustainable technologies.
12.	The student will integrate theory, technical information and appropriate research methods for advancement of science and society.

5.7.5 Programme Operational Outcomes

Operat	Operational Goals								
1.	MSc. Immunology programme will create appropriate resources, infrastructure and conducive environment for excellence in teaching, learning, research and professional development of students.								
2.	The programme will provide opportunities and environment for innovation and research excellence for the intellectual growth of faculty and students.								
3.	The programme will demonstrate sensitivity to the diverse needs of students and accordingly develop facilities and services.								
4.	The programme will continuously strive to build strong industry interaction, alumni networks and empanelment of expertise from industry while proactively seeking suggestions on curricula and training.								
5.	The programme will continually improve processes and systems with an aim to attain national and international accreditations.								
6.	The programme will extend support to the students in order to facilitate campus recruitment, higher education or starting their own ventures.								
7.	The programme will act ethically to ensure transparency and good governance while discharging various responsibilities to its stakeholders and execution of policies and programs.								
8.	The programme will create opportunities for international exposure for its students and faculty.								

5.7.6 Programme Educational Outcome Assessment Plan for M. Sc. Immunology

Sl. No.	PEO	PLO	Direct	Tool No. for Direct Assessment	Target	Indir ect	Too l No. for Indi rect Ass ess me nt	Target
1	The student shall develop knowledge of immunology, potentially utilized for life science research.	The student will develop critical thought and practical understa nding in the field of immunol ogy and ability to use knowledg e and skills and work towards academic excellenc e.	*Compreh ensive Exam	PG/PLO1/CE Framework	70% students shall pass the exam.	Stude nt Exit Surve y	PG/ PLO /Exi t Surv ey	80% student s respons e range betwee n 4-5 on the Likert Scale in the Student Exit Survey.
2	The student shall be able to employ skills for exploration and investigation of problems in immunology.	The student will be able to explore and investigat e a devise solutions to a range of complex scientific problems of technical, conceptual or abstract	Term Paper, Summer Internshi p, Dissertati on rubrics, Viva-voce *Compreh ensive Exam	PG/PLO2/CE Framework	100% students will undertake and complete the dissertation	Feed back analy sis of inter nship guide		The Industr y Interns hip Guide rates the student s betwee n 4-5 ranges on the Likert Scale in the feedbac k.
3	The student shall design	nature. The student	*Compreh ensive	PG/PLO3/CE Framework	100% students	Stude nt	PG/ PLO	80% student

	new biological solutions (workbench/al gorithms) and analyze systematically the complex and specialized concepts in immunology.	will design, identify and review systemati cally and critically appraise specialize d concepts in theoretic al and applied aspects of immunol	Exam		shall be able touse technology in order to complete their Assignments and Projects	Exit Surve y	/Exi t Surv ey	s' respons e range betwee n 4-5 on the Likert Scale in the Student Exit Survey.
4	The student shall develop and investigate immunology based research projects.	ogy. The student will be able to relate research principles and technical skills to plan and execute immunol ogy research projects.	*Compreh ensive Exam	PG/PLO4/CE Framework	80% students shall able to demonstrate Problem Solving and Decision Making Skill	Stude nt Exit Surve y	PG/ PLO /Exi t Surv ey	80% student s respons e range betwee n 4-5 on the Likert Scale in the Student Exit Survey.
5	The students shall develop good communication and develop networking skills and establish links with industry and alumni.	The student will develop appropria te level of communi cation skills to effectivel y dissemin ate research and technical informati on.	*Seminar presentati ons/ Viva-voce / *Rubrics Communi cation skills *Compreh ensive Exam	PG/PLO5/BC PG/PLO5/CE Framework	80% students should secure a grade of 6 and above on a 10-point scale in the presentation component of communicati on course.	Stude nt Exit Surve y	PG/ PLO /Exi t Surv ey	80% student s respons e range betwee n 4-5 on the Likert Scale in the Student Exit Survey.
6	The student shall be able to demonstrate effectiveness	The student will create the			80% students should secure a	Stude nt Exit Surve	PG/ PLO /Exi t	80% student s respons

	and responsibility as an individual as well as in a team while maintaining accountability and output.	ability to work independ ently as individual s and flexibly within a team with effectiven ess and responsib ility.	*Rubrics * Comprehe nsive Exam	PG/PLO6/BS PG/PLO6/CE Framework	grade of 6 and above on a 10- point scale in the Journal for Success component of Behavioural Science course.	y	Surv ey	e range betwee n 4-5 on the Likert Scale in the Student Exit Survey.
7	The student shall be oriented to be responsible global citizen.	The student will be oriented to be responsib le global citizen.	* Comprehe nsive Exam	UG/PLO7/CE Framework	100% students' participation in term papers and project report preparation.	Stude nt Exit Surve y	PG/ PLO /Exi t Surv ey	80% student s respons e range betwee n 4-5 on the Likert Scale in the Student Exit Survey.
8	The student shall demonstrate knowledge of the ethical principles, law and IPR issues.	The student will be able to apply ethical principles in handling various issues concernin g immunol ogy and life sciences.	*Plagiaris m Checking of Dissertati on * Comprehe nsive Exam	PG/PLO8/CE Framework	100% Students are checked for plagiarism in NTCC report submissions and are allowed to appear for viva-voce upon obtaining plagiarism % below 15%.	Feed back indus try inter nship guide		The Industr y Interns hip Guide rates the student s betwee n 4-5 range on the Likert Scale in the feedbac k. The Universi ty will adhere to zero toleranc e towards

								use of unfair means
9	The student shall extend short term trainings and dissertation projects in the area of immunology in various national or international laboratories.	The student will apply principles of project managem ent to manage one's own work and/or project work as a member	*Term paper, viva-voce , *Rubrics(Dissertati on)	PG/PLO9/	100% students submit the research report and 50% students should secure a grade of 6 and above on a 10-point scale.	Stude nt Exit Surve y	PG/ PLO / Exit Surv ey	80% student s respons e range betwee n 4-5 on the Likert Scale in the Student Exit Survey.
		or a leader in a team, by work experienc e gathered through short term training / dissertati on projects.	*Compreh ensive Exam	PG/PLO9/CE Framework		Alum ni Surve y	PG/ PLO / Alu mni Surv ey	80% alumni respons e range betwee n 4-5 on the Likert Scale in the Alumni Survey.
10	The student shall demonstrate good managerial skills to enhance employment and entrepreneurs hip opportunities and able to create the virtue of lifelong learning.	The student will organize the role of personal developm ent, self-directed study and discovery in learning to develop life-long learning.	*Compreh ensive Exam	PG/PLO10/CE Framework	Mentors will asses the Learning curve of 100% students.	Stude nt Exit Surve y	PG/ PLO /Exi t Surv ey	80% student s respons e range betwee n 4-5 on the Likert Scale in the Alumni Survey.

11	The student shall create and spread the thought-process for care of the environment by development of environmentall y sustainable technologies.	The student will be able to implemen t conservat ion of environm ent by using newer and better sustainab le technologies.	*Compreh ensive Exam	PG/PLO11/CE Framework	100 % students will elaborate their research findings through presentation s and will defend the viva voce	Stude nt Exit Surve y	PG/ PLO / Exit Surv ey	80% student s respons e range betwee n 4-5 on the Likert Scale in the Student Exit Survey.
12	The student shall be able to apply both theoretical as well as practical concepts for the betterment of the society.	The student will integrate theory, technical informati on and appropria te research methods for advance ment of science and society.	*Compreh ensive Exam	PG/PLO12/CE Framework	100% students will present the seminar and 50% students should secure a grade of 6 and above on a 10-point scale.	Stude nt Exit Surve y	PG/ PLO / Exit Surv ey	80% student s respons e range betwee n 4-5 on the Likert Scale in the Student Exit Survey.

5.7.7 <u>Mapping of Assessment Measures to Intended Student Learning Outcomes</u>

The broad-based student learning goals identified in Section I above encompass the intended student learning outcomes as articulated in this section, and are general composites or summaries of these outcomes. These relationships are summarized in the outcomes-to-goals mapping below (Note: $\sqrt{\text{in a}}$ given cell of the table indicates the intended learning outcome in that row is associated with the learning goal in that column.):

Matrix Of PEO's and PLO's

PEO/PLO	PEO 1	PEO 2	PEO 3	PEO 4	PEO 5	PEO 6	PEO 7	PEO 8	PEO 9	PEO 10	PEO 11	PEO 12
PLO 1	>	>										
PLO 2	>	>	>	>								\
PLO 3		>	>	>			>					
PLO 4	>			>			>					
PLO 5		>			>							

PLO 6					~	~			~			
PLO 7	>		~	>			>	>				
PLO 8								~			>	
PLO 9	~					>			V			
PLO 10										>		
PLO 11								~			~	
PLO 12	V	V	V	>			>					>

5.8 Amity Institute of Virology and Immunology (AIVI)

Programmes: M. Sc. Virology.

5.8. 1 Mission Statement

Programme Mission

To provide advanced education in the area of virology and in the futuristic and emerging frontier areas of knowledge, learning and research and to develop the overall personality of students by making them not only excellent professionals but also good individuals with understanding and regards for human values, pride in their heritage and culture, a sense of right and wrong, yearning for perfection and courage of conviction and action.

5.8.2 Programme Educational Objectives (PEOs)

Educati	ional Goals
1.	The student shall develop knowledge of Virology, potentially utilized for life science research.
2.	The student shall be able to employ skills for exploration and investigation of problems in Virology.
3.	The student shall design new biological solutions (workbench/algorithms) and analyze systematically the complex and specialized concepts in Virology.
4.	The student shall develop and investigate Virology based research projects.
5.	The students shall develop good communication and develop networking skills and establish links with industry and alumni.
6.	The student shall be able to demonstrate effectiveness and responsibility as an individual as well as in a team while maintaining accountability and output.
7.	To student shall be oriented to be a responsible global citizen.
8.	The student shall demonstrate knowledge of the ethical principles, law and IPR issues.
9.	The student shall extend short term trainings and dissertation projects in the area of Bioinformatics in various national or international laboratories for experiential learning.
10.	The student shall be able to use good managerial skills to enhance employment and entrepreneurship opportunities and able to create the virtue of lifelong learning.
11.	The student shall be able to create and develop thought process for environmental conservation by developing and implementing environmentally sustainable technologies.
12.	The student shall be able to apply both theoretical as well as practical concepts for the betterment of the society.

5.8.3 Programme Operational Objectives

Opera	tional Goals
1.	M. Sc. Virology programme will create appropriate resources, infrastructure and conducive environment for excellence in teaching, learning, research and professional development of students.
2.	The programme will provide opportunities and environment for innovation and research excellence for the intellectual growth of faculty and students.
3.	The programme will demonstrate sensitivity to the diverse needs of students and accordingly develop facilities and services.
4.	The programme will continuously strive to build strong industry interaction, alumni networks and empanelment of expertise from industry while proactively seeking suggestions on curricula and training.
5.	The programme will continually improve processes and systems with an aim to attain national and international accreditations.
6.	The programme will extend support to the students in order to facilitate campus recruitment, higher education or starting their own ventures.
7.	The programme will act ethically to ensure transparency and good governance while discharging various responsibilities to its stakeholders and execution of policies and programs.
8.	The programme will create opportunities for international exposure for its students and faculty.

5.8.4 Programme Learning Outcomes

Intend	ded Learning Outcomes
1.	The student will develop critical thought and practical understanding in the field of virology and ability to use knowledge and skills and work towards academic excellence.
2.	The student will be able to explore and investigate a devise solution to a range of complex scientific problems of technical, conceptual or abstract nature.
3.	The student will design, identify and review systematically and critically appraise specialized concepts in theoretical and applied aspects of virology.
4.	The student will be able to relate research principles and technical skills to plan and execute virology research projects.
5.	The student will develop appropriate level of communication skills to effectively disseminate research and technical information.
6.	The student will create the ability to work independently as individuals and flexibly within a team with effectiveness and responsibility.
7.	The student will be oriented to be responsible global citizen.
8.	The student will be able to apply ethical principles in handling various issues concerning virology.
9.	The student will apply principles of project management to manage one's own work and/or project work as a member or a leader in a team, by work experience gathered through short term training / dissertation projects.
10.	The student will organize the role of personal development, self-directed study and discovery in learning to develop life-long learning.
11.	The student will be able to implement conservation of environment by using newer and better sustainable technologies.

12. The student will integrate theory, technical information and appropriate research methods for advancement of science and society.

5.8.5 Programme Operational Outcomes

Oper	ational Goals
1.	M. Sc. Virology programme will create appropriate resources, infrastructure and conducive environment for excellence in teaching, learning, research and professional development of students.
2.	The programme will provide opportunities and environment for innovation and research excellence for the intellectual growth of faculty and students.
3.	The programme will demonstrate sensitivity to the diverse needs of students and accordingly develop facilities and services.
4.	The programme will continuously strive to build strong industry interaction, alumni networks and empanelment of expertise from industry while proactively seeking suggestions on curricula and training.
5.	The programme will continually improve processes and systems with an aim to attain national and international accreditations.
6.	The programme will extend support to the students in order to facilitate campus recruitment, higher education or starting their own ventures.
7.	The programme will act ethically to ensure transparency and good governance while discharging various responsibilities to its stakeholders and execution of policies and programs.
8.	The programme will create opportunities for international exposure for its students and faculty.

5.8.6 Programme Educational Outcome Assessment for M. Sc. Virology

Sl. No.	PEO	PLO	Direct	Tool No. for Direct Assessment	Target	Indir ect	Too l No. for Indi rect Ass ess me nt	Target
1	The student shall develop knowledge of virology, potentially utilized for life science research.	The student will develop critical thought and practical understanding in the field of virology and	*Compreh ensive Exam	PG/PLO1/CE Framework	70% students shall pass the exam.	Stude nt Exit Surve y	PG/ PLO /Exi t Surv ey	80% student s respons e range betwee n 4-5 on the Likert Scale in the Student Exit Survey.

		ability to use knowledg e and skills and work towards academic excellenc e.						
2	The student shall be able to employ skills for exploration and investigation of problems in virology.	The student will be able to explore and investigat e a devise solutions to a range of complex scientific problems of technical, conceptu al or abstract nature.	Term Paper, Summer Internshi p, Dissertati on rubrics, Viva-voce *Compreh ensive Exam	PG/PLO2/Dis sertation PG/PLO2/CE Framework	100% students will undertake and complete the dissertation	Feed back analy sis of inter nship guide		The Industr y Interns hip Guide rates the student s betwee n 4-5 ranges on the Likert Scale in the feedbac k.
3	The student shall design new biological solutions (workbench/al gorithms) and analyze systematically the complex and specialized concepts in virology.	The student will design, identify and review systemati cally and critically appraise specialize d concepts in theoretic al and applied aspects of virology	*Compreh ensive Exam	PG/PLO3/CE Framework	100% students shall be able touse technology in order to complete their Assignments and Projects	Stude nt Exit Surve y	PG/ PLO /Exi t Surv ey	80% student s' respons e range betwee n 4-5 on the Likert Scale in the Student Exit Survey.

4	The student shall develop and investigate virology based research projects.	The student will be able to relate research principles and technical skills to plan and execute virology research projects.	*Compreh ensive Exam	PG/PLO4/CE Framework	80% students shall able to demonstrate Problem Solving and Decision Making Skill	Stude nt Exit Surve y	PG/ PLO /Exi t Surv ey	80% student s respons e range betwee n 4-5 on the Likert Scale in the Student Exit Survey.
5	The students shall develop good communication and develop networking skills and establish links with industry and alumni.	The student will develop appropria te level of communi cation skills to effectivel y dissemin ate research and technical informati	*Seminar presentati ons/ Viva-voce / *Rubrics Communi cation skills *Compreh ensive Exam	PG/PLO5/BC PG/PLO5/CE Framework	80% students should secure a grade of 6 and above on a 10-point scale in the presentation component of communicati on course.	Stude nt Exit Surve y	PG/ PLO /Exi t Surv ey	80% student s respons e range betwee n 4-5 on the Likert Scale in the Student Exit Survey.
6	The student shall be able to demonstrate effectiveness and responsibility as an individual as well as in a team while maintaining accountability and output.	on. The student will create the ability to work independ ently as individual s and flexibly within a team with effectiven ess and responsib ility.	*Rubrics * Comprehe nsive Exam	PG/PLO6/BS PG/PLO6/CE Framework	80% students should secure a grade of 6 and above on a 10- point scale in the Journal for Success component of Behavioural Science course.	Stude nt Exit Surve y	PG/ PLO /Exi t Surv ey	80% student s respons e range betwee n 4-5 on the Likert Scale in the Student Exit Survey.

7	The student shall be oriented to be responsible global citizen.	The student will be oriented to be responsib le global citizen.	* Comprehe nsive Exam	UG/PLO7/CE Framework	100% students' participation in term papers and project report preparation.	Stude nt Exit Surve y	PG/ PLO /Exi t Surv ey	80% student s respons e range betwee n 4-5 on the Likert Scale in the Student Exit Survey.
8	The student shall demonstrate knowledge of the ethical principles, law and IPR issues.	The student will be able to apply ethical principles in handling various issues concerning virology and life sciences.	*Plagiaris m Checking of Dissertati on * Comprehe nsive Exam	PG/PLO8/CE Framework	100% Students are checked for plagiarism in NTCC report submissions and are allowed to appear for viva-voce upon obtaining plagiarism % below 15%.	Feed back indus try inter nship guide		The Industr y Interns hip Guide rates the student s betwee n 4-5 range on the Likert Scale in the feedbac k. The Universi ty will adhere to zero toleranc e towards use of unfair means
9	The student shall extend short term trainings and dissertation projects in the area of virology in various national or	The student will apply principles of project managem ent to manage one's own	*Term paper, viva-voce , *Rubrics(Dissertati on)	PG/PLO9/	100% students submit the research report and 50% students should secure a	Stude nt Exit Surve y	PG/ PLO / Exit Surv ey	80% student s respons e range betwee n 4-5 on the Likert

	international laboratories.	work and/or project work as a member or a leader in			grade of 6 and above on a 10- point scale.			Scale in the Student Exit Survey.
		a team, by work experienc e gathered through short term training / dissertati on projects.	*Compreh ensive Exam	PG/PLO9/CE Framework		Alum ni Surve y	PG/ PLO / Alu mni Surv ey	80% alumni respons e range betwee n 4-5 on the Likert Scale in the Alumni Survey.
10	The student shall demonstrate good managerial skills to enhance	The student will organize the role of personal	*Compreh	PG/PLO10/CE Framework	Mentors will asses the Learning curve of 100% students.	Stude nt Exit Surve y	PG/ PLO /Exi t Surv ey	80% student s respons e range betwee n 4-5 on
	employment and entrepreneurs hip opportunities and able to create the virtue of lifelong learning.	developm ent, self- directed study and discovery in learning to develop life-long learning.	Exam	Framework				the Likert Scale in the Alumni Survey.
11	The student shall create and spread the thought-process for care of the environment by development of environmentall y sustainable technologies.	The student will be able to implemen t conservat ion of environm ent by using newer and better sustainab le technolog ies.	*Compreh ensive Exam	PG/PLO11/CE Framework	100 % students will elaborate their research findings through presentation s and will defend the viva voce	Stude nt Exit Surve y	PG/ PLO / Exit Surv ey	80% student s respons e range betwee n 4-5 on the Likert Scale in the Student Exit Survey.

12	The student shall be able to apply both theoretical as well as practical concepts for the betterment of the society.	The student will integrate theory, technical informati on and appropria te research methods for advance ment of science and society.	*Compreh ensive Exam	PG/PLO12/CE Framework	students will present the seminar and 50% students should secure a grade of 6 and above on a 10-point scale.	Stude nt Exit Surve y	PG/ PLO / Exit Surv ey	80% student s respons e range betwee n 4-5 on the Likert Scale in the Student Exit Survey.
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5.8. 7 Mapping of Intended Programme Learning Outcomes to Broad-Based Programme **Educational Objectives (PEOs)**

The broad-based student learning goals identified in Section I above encompass the intended student learning outcomes as articulated in this section, and are general composites or summaries of these outcomes. These relationships are summarized in the outcomes-to-goals mapping below (Note: $\sqrt{\text{in a}}$ given cell of the table indicates the intended learning outcome in that row is associated with the learning goal in that column.):

Matrix Of PEO's and PLO's

PEO/PLO	PEO 1	PEO 2	PEO 3	PEO 4	PEO 5	PEO 6	PEO 7	PEO 8	PEO 9	PEO 10	PEO 11	PEO 12
PLO 1	>	>										
PLO 2	>	>	>	>								>
PLO 3		>	>	>			>					
PLO 4	>			>			>					
PLO 5		>			>							
PLO 6					>	<u>></u>			>			
PLO 7	>		>	>			>	>				
PLO 8								>			>	
PLO 9	>					>			>			
PLO 10										>		
PLO 11								V			V	
PLO 12	>	V	>	>			>					V

5.9 Amity Institute of Molecular Medicine and Stem Cell Research (AIMMSCR)

Programme - M. Sc. in Cellular and Molecular Oncology

5.9.1 Mission Statement

Programme Mission

To provide education at M. Sc. level in Cellular and Molecular Oncology and in the futuristic and emerging frontier areas of knowledge, learning and research and to develop the overall personality of students by making them not only excellent professionals but also good individuals with understanding and regards for human values, pride in their heritage and culture, a sense of right and wrong and yearning for perfection and imbibe attributes of courage of conviction and action

5.9.2 Programme Educational Objectives (PEOs)

Educat	ional Goals
1.	The student shall be able to develop knowledge and skills to attain academic excellence in the field of cancer biology.
2.	The student shall demonstrate research skills to conduct research in the thrust areas of cancer biology to benefit the society.
3.	The student shall be able to use and apply modern IT tools to analyze the biological data to arrive at logical conclusions.
4.	The student shall be able to analyze and interpret scientific data to solve technical, conceptual and abstract scientific problems.
5.	The student shall be able to develop effective communication skills to disseminate technical information and ability to write effective reports and reviews for scientific journals.
6.	The student shall be able to demonstrate effectiveness and responsibility as an individual as well as in a team while maintaining accountability and output.
7.	The student shall be able to develop global citizenship skills to build a sustainable world community.
8.	The student shall be able to interpret principles of ethics and apply them to develop sensitivity towards various social and cultural issues of the society.
9.	The student shall be able develop networking and entrepreneurship skills and establish links with industry and alumni.
10.	The student shall be able to create the virtue of lifelong learning.
11.	The student shall be able to create and develop thought process for environmental preservation by developing environmentally sustainable technologies.
12.	The student shall be able to integrate various aspects of cancer biology to achieve holistic and societal development.

5.9.3 Programme Operational Objectives

Oı	perational Goals
1	MSc. CMO programme will create appropriate resources, infrastructure and conducive environment for excellence in teaching, learning, research and professional development of students.
2	The programme will provide opportunities and environment for innovation and research excellence for the intellectual growth of faculty and students.

- The programme will demonstrate sensitivity to the diverse needs of students and accordingly develop facilities and services.
- The programme will continuously strive to build strong industry interaction, alumni networks and empanelment of expertise from industry while proactively seeking suggestions on curricula and training.
- The programme will continually improve processes and systems with an aim to attain national and international accreditations.
- The programme will extend support to the students in order to facilitate campus recruitment, higher education or starting their own ventures.
- The programme will act ethically to ensure transparency and good governance while discharging various responsibilities to its stakeholders and execution of policies and programs.
- 8 The programme will create opportunities for international exposure for its students and faculty.
- MSc. CMO programme will create appropriate resources, infrastructure and conducive environment for excellence in teaching, learning, research and professional development of students.

5.9.4 Programme Learning Outcomes

1	The student will apply knowledge to develop critical thought and practical understanding of in the field of cancer biology to find solutions for human benefits.
2	The student will identify, formulate, research literature, review existing knowledge and analyze complex molecular and biochemical problems to reach substantiated conclusions using principles of biology.
3	The student will apply modern IT tools for acquisition and analysis of biological data.
4	The student will demonstrate awareness of research principles and technical skills to plan independent Biotechnology research projects.
5	The student will develop appropriate level of communication skills to effectively disseminate research and technical information and shall be able to summarize scientific results; write effective reports and reviews in scientific journals.
6	The student will demonstrate the ability to work independently as individuals and flexibly within a team with effectiveness and responsibility.
7	The student will build skills to evolve into a responsible global citizen.
8	The student will develop sensitivity to environmental issues and concerns and shall understand principles of ethics within the framework and apply these principles for environmentally and culturally sensitive issues.
9	The student will apply management principles to manage one's own work and/or projects and ventures.
10	The student will organize the role of personal development, self-directed study and discovery in learning to develop life-long learning.
11	The student will develop appreciation for nature and the need for its preservation and conservation and demonstrate care for the environment by development of environmentally sustainable technologies.
12	The student will develop the capability to integrate theory, technical information and appropriate research methods for the benefit of society.

5.9.5 Programme Operational Outcomes

Op	perational Goals
1	M.Sc. Cellular & Molecular Oncology programme will promote use of appropriate methodology and pedagogical tools for teaching, learning and development.
2	The programme will provide environment for innovation and research and academic facilities, technological resources for teaching and learning to the students.
3	The programme will facilitate resources to cater diverse needs of the students and faculty to achieve academic excellence.
4	The programme will develop and maintain strong relationship with research institutes, alumni and industry.
5	The programme will develop infrastructure and resources to attain national and international accreditations.
6	The programme will extend support to the students to provide employment, avenues for higher education and starting their own ventures.
7	The programme will ensure transparency and good governance by integrating ethics and values in teaching, theory and practice.
8	The programme will invite international delegates and speakers for seminars and conferences and provide various other opportunities for global exposure.
9	M.Sc. Cellular & Molecular Oncology programme will promote use of appropriate methodology and pedagogical tools for teaching, learning and development.

5.9.6 Programme Educational Outcome Assessment for Cellular and Molecular Oncology

Sl. No.	PEO	PLO	Direct	Tool No for Direct Assessment	Target	Indire ct	Tool No for Indirect Assessm ent	Target
1	The student	The student	*Comprehe nsive Exam	PG/PLO1/CE Framework	70% students	Studen t Exit	PG/PLO/ Exit	80% studen
	shall be	will apply	HSIVE LAMIII	Tranicwork	shall pass	Survey	Survey	ts shall
	able to	knowledge			the exam.	Burvey	Barvey	score
	develop	to develop						≥ 75%
	knowledg	critical						in exit
	e and	thought						survey
	skills to	and						•
	attain	practical						
	academic	understan						
	excellence	ding of in						
	in the field	the field of						
	of	Biotechnol						
	Biotechnol	ogy find						
	ogy.	solutions for human						
		benefits.						

2	The student shall demonstra te research skills to conduct research in the thrust areas of Biotechnol ogy to benefit the society.	The student will identify, formulate, research literature, review existing knowledge and analyze complex molecular and biochemic al problems to reach substantiat	Project report submission	PG/PLO2/Diss ertation	100% students will undertake and complete the Project report	Feedb ack of Indust ry Intern ship Guide		The Indust ry Intern ship Guide rates the studen ts betwe en 3-5 range on the Likert Scale in the feedba ck.
		ed conclusion s using principles of biology.	*Comprehe nsive Exam	PG/PLO2/CE Framework				
3	The student shall be able to use and apply modern IT tools to analyze the biological data to arrive at logical conclusion s.	The student will apply modern IT tools for acquisition and analysis of biological data.	*Section 3 of Comprehe nsive Exam	PG/PLO3/CE Framework	70% students shall pass the comprehe nsive exam	Studen t Exit Survey	PG/PLO/ Exit Survey	80% studen ts shall score ≥ 75% in exit survey
4	The student shall be able to analyze and interpret scientific data to solve technical, conceptual and abstract scientific problems.	The student will demonstra te awareness of research principles and technical skills to plan independe nt Biotechnol ogy research projects.	Project report submission	PG/PLO4/CE PG/PLO4/CE Framework	100% students shall complete their projects and submit the report	Studen t Exit Survey	PG/PLO/ Exit Survey	80% studen ts shall score ≥ 75% in exit survey .

_	mı	mi	4D 1 :	<u> </u>	0001	0. 3	DO (DY 0 1	0001
5	The	The	*Rubrics		80%	Studen	PG/PLO/	80%
	student	student	Communic		students	t Exit	Exit	studen
	shall be	will	ation skills		shall	Survey	Survey	ts shall
	able to	develop			achieve			score
	develop	appropriat			the			≥ 75%
	effective	e level of			minimum			in exit
	communic	communic			of			survey
	ation skills	ation skills			"satisfacto			
	to	to			ry"			
	disseminat	effectively			outcome			
	e technical	disseminat			attainmen			
	informatio	e research			t level			
	n and	and		PG/PLO5/BC				
	ability to	technical		, ,				
	write	informatio						
	effective	n and shall						
	reports	be able to						
	and	summarize						
	reviews	scientific						
	for	results;						
	scientific	write						
	journals.	effective						
		reports						
		and		PG/PLO5/CE				
		reviews in		Framework				
		scientific						
		journals.						
6	The	The	*		80%	Studen	PG/PLO6	80%
	student	student	Behaviour		students	t Exit	/Exit	studen
	shall be	will	al Science		shall	Survey	Survey	ts shall
	able to	demonstra	rubrics		achieve			score
	demonstra	te the			the			≥ 75%
	te	ability to			minimum			in exit
	effectivene	work			of			survey
	ss and	independe			"satisfacto			
	responsibi	ntly as			ry"			
	lity as an	individuals			outcome			
	individual	and			attainmen			
	as well as	flexibly			t level			
	in a team	within a						
	while	team with						
	maintainin	effectivene						
	g	ss and		PG/PLO6/BS				
	accountabi	responsibil						
	lity and	ity.	*	DC /DI OC /OT	_			
	output.			PG/PLO6/CE				
	_		Comprehe	Framework				
1			nsive Exam					I

7	The student shall be able to develop global citizenship skills to build a sustainabl e world communit y.	The student will build skills to evolve into a responsibl e global citizen.	* Rubrics FBL	UG/PLO7/CE Framework	80% students shall achieve the minimum of "satisfacto ry" outcome attainmen t level	Studen t Exit Survey	PG/PLO/ Exit Survey	80% studen ts shall score ≥ 75% in exit survey .
8	The student shall be able to interpret principles of ethics and apply them to develop sensitivity towards various environme ntal and cultural issues of the society.	The student will develop sensitivity to environme ntal issues and concerns and shall understan d principles of ethics within the framework and apply these principles for environme ntally and culturally sensitive issues.	*Plagiaris m Checking of project report	PG/PLO8/CE Framework	100% Students are checked for plagiaris m in NTCC report submissio ns and are allowed to appear for viva-voce upon obtaining plagiaris m % below 15%.	Feedb ack of Indust ry Intern ship Guide		The Indust ry Intern ship Guide rates the studen ts betwe en 3-5 range on the Likert Scale in the feedba ck.
9	The student shall be able develop networkin g and entrepren eurship skills and establish links with industry and alumni.	The student will apply manageme nt principles to manage one's own work and/or projects and ventures.	Section 7 of comprehen sive exam Project report submission	PG/PLO9/	70% students shall pass the exam 100% students shall submit the project reports	Studen t Exit Survey	PG/PLO/ Exit Survey	80% studen ts shall score ≥ 75% in exit survey .

10	The student shall be able to create the virtue of lifelong learning.	The student will organize the role of personal developme nt, self-directed study and discovery in learning to develop life-long learning.	*Section 8 of Comprehe nsive Exam	PG/PLO10/CE Framework	70% students shall pass the exam	Studen t Exit Survey	PG/PLO/ Exit Survey	80% studen ts shall score ≥ 75% in exit survey
11	The student shall be able to create and develop thought process for environme ntal preservati on by developin g environme ntally sustainabl e technologi es.	The student will develop appreciation for nature and the need for its preservation and conservation and demonstrate care for the environment by development of environmentally sustainable technologies.	*Section 9 of Comprehe nsive Exam	PG/PLO11/CE Framework	70% students shall pass the exam	Studen t Exit Survey	PG/PLO/ Exit Survey	80% studen ts shall score ≥ 75% in exit survey .
12	The student shall be able to integrate various aspects of biotechnol ogy to achieve holistic and Societal developm ent.	The student will develop the capability to integrate theory, technical informatio n and appropriat e research methods for the benefit of	*Comprehe nsive Exam	PG/PLO12/CE Framework	70% students shall pass the exam	Studen t Exit Survey	PG/PLO/ Exit Survey	80% studen ts shall score ≥ 75% in exit survey

<i>y</i> .	society.	

5.9.7 Mapping of Intended Programme Learning Outcomes to Broad-Based Programme **Educational Objectives (PEOs)**

The broad-based student learning goals identified in Section I above encompass the intended student learning outcomes as articulated in this section, and are general composites or summaries of these outcomes. These relationships are summarized in the outcomes-to-goals mapping below (Note: $\sqrt{\text{in a}}$ given cell of the table indicates the intended learning outcome in that row is associated with the learning goal in that column.):

Mapping of Assessment Measures to Operational Outcomes

Assessment Tools Programme Operational Outcomes (example)	Student Feedback	Faculty Qualification	Graduation rate	Co-curricular and Extra Curricular activities	Publications and Professional membership	Attrition rate	Value Added courses	Feedback system	Plagiarism	Community and social sector	Organizing cultural programs	Day of belongingness	Study abroad and exchange program for students)	Accreditation	Seminar/Workshop/Gu est lecture/Conference	Placement	Involvement of all stake holders
Programme Operational Outcome 1 M.Sc. CMO programme will promote use of appropriate methodology and pedagogical tools for teaching, learning and development.	x	X															
Programme Operational Outcome 2 The programme will provide environment for innovation and research and																	x

academic facilities, technological resources for teaching and learning to the students										
Programme Operational Outcome 3 The programme will facilitate resources to cater diverse needs of the students and faculty to achieve academic excellence.		X								
The programme will develop and maintain strong relationship with research institutes, alumni and industry.				X						
Programme Operational Outcome 5 The programme will develop infrastructure and resources to attain national and international accreditation s.			X							
Programme Operational Outcome 6 The programme will extend various opportunities for global exposure and will support all the students for quality				X						

placements or join family business or start their own venture												
Programme Operational Outcome 7 The programme will ensure transparency and good governance by integrating ethics and values in teaching, theory and practice.			X	X	X	X						
Programme Operational Outcome 8 The programme will invite international delegates and speakers for seminars and conferences and provide various other opportunities for global exposure.							X	X	x			

5.10 Programme - M. Sc. in Stem Cell Science & Technology

5.10.1 Mission Statement

Programme Mission

To provide education at M. Sc levels in Stem Cell Science and Technology (SST) and in the futuristic and emerging frontier areas of knowledge, learning and research and to develop the overall personality of students by making them not only excellent professionals but also good individuals with understanding and regards for human values, pride in their heritage and culture, a sense of right and wrong and yearning for perfection and imbibe attributes of courage of conviction and action.

5.10.2 Programme Educational Objectives (PEOs)

1	The students shall be able to develop specialized theoretical and practical knowledge in stem cell science
	and allied areas
2	The students shall be able to develop in-depth understanding of tissue regeneration
3	The students shall be able to develop ability for analyses and interpretation of scientific data to solve
	technical, conceptual and abstract scientific problems using modern IT tools
4	The students shall be able to facilitate ability to develop research projects related to various aspects of
	stem cells

5	The students shall be able to develop effective communication skills to author articles, reports and
	reviews in order to disseminate technical knowledge and information
6	The students shall be able to develop effectively as an individual as well as a member in a team
7	The students shall be able to solve problems in this specific area of life sciences and by contributing to society exemplify the role of a Global citizen
8	The students shall be able to develop an understanding of ethical conduct of stem cell research
9	The students shall demonstrate applicability of their learning for sustainability and environmental responsibility
10	The student shall be able to integrate advancement of research at the National level with the International level
11	The student shall demonstrate applicability of their learning for sustainability and environmental responsibility
12	The students shall demonstrate capabilities to integrate theory and practice for applied research to develop novel products, processes and technologies in related areas

5.10.3 Programme Operational Objectives

1	M.Sc. (Stem Cell Science and Technology) programme aims to help advance the University's goal of achieving academic excellence by providing valuable resources to students.
2	The programme will facilitate an academically conducive environment for holistic development of students.
3	The institute will provide support for research excellence and facilitate patenting of innovation and subsequent commercialization. This will contribute to increase in intellectual capital of the institute.
4	The programme aims to inculcate core values of the university and ethical conduct amongst students, faculty and staff.
5	The programme will encourage cultural diversity and a sense of social and environmental responsibility.
6	The institute will provide opportunities for international collaborations and exposure to faculty and students.
7	The programme will proactively build strong relationships with corporates and utilize network of alumni to open communication channels and seek suggestions on curricula, pedagogy, syllabus and training.
8	The programme will facilitate employment opportunities and also support students to start their own ventures.
9	The programme will facilitate good governance in discharge of responsibilities and execution of policies and programs.

5.10.4 Programme Learning Outcomes

1	The student will develop theoretical and practical knowledge in all aspects of stem cells
2	The student will develop in-depth understanding of stem cells and their applications
3	The student will develop an ability to evaluate and interpret range of complex technical, conceptual or abstract problems related to stem cells using IT tools
4	The student will develop awareness of research principles and technical skills to plan independent stem cell research. Evaluate and interpret results for advancement of science.
5	The student will develop effective communicate in order to author articles, reports and reviews in order to disseminate technical information
6	The student will demonstrate working as individuals and flexibly within a team with effectiveness and responsibility.
7	The students will solve problems in this specific area of life sciences and by contributing to society exemplify the role of a Global citizen learning.
8	The student will develop appreciation of ethical standards and issues related to stem cell research and their practice in clinical applications.
9	The student will develop comprehension capability to integrate theory, appropriate research methods and technical information and apply to develop new products/technologies.
10	The student will develop the correct viewpoints on latest breakthroughs in stem cell science and be able to translate them confidently

11	The student will develop their abilities to recognize solutions for environmental and social impacts on
	sustainable approaches to complex problems.
12	The student will contribute to science, technology and society

5.10.5 Programme Operational Outcomes

1	M.Sc.(Stem Cell Science and Technology) programme aims to help advance the University's goal of achieving academic excellence by providing valuable resources to students.
2	The programme will facilitate an academically conducive environment for holistic development of students.
3	The institute will provide support for research excellence and facilitate patenting of innovation and subsequent commercialization. This will contribute to increase in intellectual capital of the institute.
4	The programme aims to inculcate core values of the university and ethical conduct amongst students, faculty and staff.
5	The programme will encourage cultural diversity and a sense of social and environmental responsibility.
6	The institute will provide opportunities for international collaborations and exposure to faculty and students.
7	The programme will proactively build strong relationships with corporates and utilize network of alumni to open communication channels and seek suggestions on curricula, pedagogy, syllabus and training.
8	The programme will facilitate employment opportunities and also support students to start their own ventures.
9	The programme will facilitate good governance in discharge of responsibilities and execution of policies and programs.

${\bf 5.10.6\ Programme\ Educational\ Outcome\ Assessment\ for\ Stem\ Cell\ Science\ \&\ Technology}$

Sl. No.	PEO	PLO	Direct	Tool No for Direct Assessment	Target	Indire ct	Tool No for Indirect Assessm ent	Target
1	The student shall be able to develop knowledge and skills to attain academic excellence in the field of Biotechnolo gy.	The student will apply knowledge to develop critical thought and practical understand ing of in the field of Biotechnolo gy find solutions for human benefits.	*Comprehe nsive Exam	PG/PLO1/CE Framework	70% students shall pass the exam.	Studen t Exit Survey	PG/PLO/ Exit Survey	80% student s shall score ≥ 75% in exit survey.

2	The student shall demonstrate research skills to conduct research in the thrust areas of Biotechnolo gy to benefit the society.	The student will identify, formulate, research literature, review existing knowledge and analyze complex molecular and biochemical problems to reach substantiat ed conclusions using principles of biology.	Project report submission *Comprehe nsive Exam	PG/PLO2/Disse rtation PG/PLO2/CE Framework	100% students will undertake and complete the Project report	Feedba ck of Industr y Interns hip Guide	PG/PLO/ Exit Survey	The Industr y Interns hip Guide rates the student s betwee n 3-5 range on the Likert Scale in the feedba ck
3	The student shall be able to use and apply modern IT tools to analyze the biological data to arrive at logical conclusions.	The student will apply modern IT tools for acquisition and analysis of biological data.	*Section 3 of Comprehen sive Exam	PG/PLO3/CE Framework	70% students shall pass the comprehe nsive exam	Studen t Exit Survey	PG/PLO/ Exit Survey	80% student s shall score ≥ 75% in exit survey.
4	The student shall be able to analyze and interpret scientific data to solve	The student will demonstrat e awareness of research principles	Project report submission	PG/PLO4/	100% students shall complete their projects and	Studen t Exit Survey	PG/PLO/ Exit Survey	80% student s shall score ≥ 75% in exit survey.

	technical,	and		PG/PLO4/CE	submit the			
	conceptual and abstract	technical skills to		Framework	report			
	scientific	plan						
	problems.	independen t						
		Biotechnolo gy research						
		projects.						
5	The student shall be able to develop effective communicat ion skills to disseminate technical information and ability to write effective reports and reviews for scientific journals.	The student will develop appropriate level of communica tion skills to effectively disseminat e research and technical information and shall be able to summarize scientific results; write effective reports and reviews in scientific	*Rubrics Communica tion skills	PG/PLO5/BC	80% students shall achieve the minimum of "satisfacto ry" outcome attainment level	Studen t Exit Survey	PG/PLO/ Exit Survey	80% student s shall score ≥ 75% in exit survey.
		journals.		Framework				
6	The student shall be able to demonstrate effectivenes s and responsibilit y as an individual as well as in a team while maintaining accountabili ty and output.	The student will demonstrat e the ability to work independen tly as individuals and flexibly within a team with effectivenes s and responsibili ty.	* Behavioura I Science rubrics	PG/PLO6/BS	80% students shall achieve the minimum of "satisfacto ry" outcome attainment level	Studen t Exit Survey	PG/PLO/ Exit Survey	80% student s shall score ≥ 75% in exit survey.
			*	PG/PLO6/CE	_			
			Comprehen sive Exam	Framework				

7	The student shall be able to develop global citizenship skills to build a sustainable world community.	The student will build skills to evolve into a responsible global citizen.	* Rubrics FBL	UG/PLO7/CE Framework	80% students shall achieve the minimum of "satisfacto ry" outcome attainment level	Studen t Exit Survey	PG/PLO/ Exit Survey	80% student s shall score ≥ 75% in exit survey.
8	The student shall be able to interpret principles of ethics and apply them to develop sensitivity towards various environmen tal and cultural issues of the society.	The student will develop sensitivity to environme ntal issues and concerns and shall understand principles of ethics within the framework and apply these principles for environme ntally and culturally sensitive issues.	*Plagiarism Checking of project report	PG/PLO8/CE Framework	100% Students are checked for plagiarism in NTCC report submissio ns and are allowed to appear for viva-voce upon obtaining plagiarism % below 15%.	Feedba ck of Industr y Interns hip Guide		The Industr y Interns hip Guide rates the student s betwee n 3-5 range on the Likert Scale in the feedba ck.
9	The student shall be able develop networking and entrepreneu rship skills and establish links with industry and alumni.	The student will apply manageme nt principles to manage one's own work and/or projects and ventures.	Section 7 of comprehen sive exam Project report submission	PG/PLO9/	70% students shall pass the exam 100% students shall submit the project reports	Studen t Exit Survey	PG/PLO/ Exit Survey	80% student s shall score ≥ 75% in exit survey.
10	The student shall be able to create the	The student will organize	*Section 8 of Comprehen	PG/PLO10/CE Framework	70% students shall pass	Studen t Exit Survey	PG/PLO/ Exit Survey	80% student s shall

	virtue of lifelong learning.	the role of personal developme nt, self-directed study and discovery in learning to develop life-long learning.	sive Exam		the exam			score ≥ 75% in exit survey.
11	The student shall be able to create and develop thought process for environmen tal preservation by developing environmen tally sustainable technologies .	The student will develop appreciatio n for nature and the need for its preservatio n and conservatio n and demonstrat e care for the environme nt by developme nt of environme ntally sustainable technologie s.	*Section 9 of Comprehen sive Exam	PG/PLO11/CE Framework	70% students shall pass the exam	Studen t Exit Survey	PG/PLO/ Exit Survey	80% student s shall score ≥ 75% in exit survey.
12	The student shall be able to integrate various aspects of biotechnolo gy to achieve holistic and Societal developmen t.	The student will develop the capability to integrate theory, technical information and appropriate research methods for the benefit of society.	*Comprehe nsive Exam	PG/PLO12/CE Framework	70% students shall pass the exam	Studen t Exit Survey	PG/PLO/ Exit Survey	80% student s shall score ≥ 75% in exit survey.

5.10.7 Mapping of Intended Programme Learning Outcomes to Broad-Based Programme **Educational Objectives (PEOs)**

The broad-based student learning goals identified in Section I above encompass the intended student learning outcomes as articulated in this section, and are general composites or summaries of these outcomes. These relationships are summarized in the outcomes-to-goals mapping below (Note: $\sqrt{\text{in a}}$ given cell of the table indicates the intended learning outcome in that row is associated with the learning goal in that column.):

Matrix Of PEO's and PLO's

PEO/PLO	PEO 1	PEO 2	PEO 3	PEO 4	PEO 5	PEO 6	PEO 7	PEO 8	PEO 9	PEO 10	PE0 11	PEO 12
PLO 1	>	>	>	>								
PLO 2	>	>						Y				
PLO 3			•						V			
PLO 4				~				~				
PLO 5	V	V	V	V	V				V			
PLO 6	>	>		>		V			V			
PLO 7			>	>		V						>
PLO 8			~	~			~	~				
PLO 9		~		~	•		~		•	~	V	
PLO 10			~			•	~			~		
PLO 11				~				~		>	~	
PLO 12		~	~	~	~	~	V	~	~	~	~	V

5.11 Amity Institute of Biotechnology

Programme - B. Tech. Biotechnology

5.11.1 Mission Statement

Programme Mission

To impart education at undergraduate level in the area of Biotechnology, emerging areas of knowledge, learning and research and to develop the overall personality of students by making them not only excellent professionals but also good individuals with understanding and regards for human and cultural values along with attributes of courage of conviction and action.

5.11.2 Programme Educational Objectives (PEOs)

Education	Educational Goals									
1.	The student shall be able to assemble knowledge in order to attain academic excellence and contribute to development in upcoming areas of biotechnology.									
2.	The student shall be able to develop research skills for recognizing and solving problems in the frontier areas of biotechnology									
3.	The student shall be able to apply the latest IT tools to interpre t and analyze the scientific data.									

4.	The student shall be able to comprehend and interpret the research data to solve the scientific problems
5.	The students shall be able to develop effective communication skills to enhance interpersonal relationship.
6.	The student shall be able to demonstrate leadership qualities and work effectively as an individual as well as a team.
7.	The student shall be able to develop global citizenship skills to build a sustainable world community
8.	The student shall be able to implement ethical behavior and demonstrate sensitivity towards various social and cultural issues.
9.	The student shall be able to develop entrepreneurship skills and create networking with industry and academia.
10.	The student shall be able to evaluate and reflect the virtue of life- long learning.
11.	The student shall be able to demonstrate sensitivity towards environmental conservation and sustainable technology.
12.	The student shall be able to translate the biotechnology based knowledge for holistic and societal development.

5.11.3 Programme Operational Objectives

1.	B. Tech. Biotechnology program will create conducive environment for excellence in teaching,
	learning, research and professional development of students.
2.	The program will provide opportunities to the faculty and staff to regularly upgrade their
	knowledge and skills by facilitating their participation in professional development
	programmes.
3.	The program will demonstrate sensitivity to the diverse needs of students and accordingly
	develop facilities and services
4.	The programme will build strong relationship with industry and formulate an alumni network
	while proactively seeking suggestions on curricula and training.
5.	The programme will improve processes and systems with an aim to attain national and
	international accreditations.
6.	The programme will facilitate employment opportunities and also support students to start
	their own ventures.
7.	The programme will implement good governance in discharge of responsibilities and execution
	of policies and programs.
8.	The programme will provide ample opportunities for international exposure to faculty and
	students

5.11.4 Programme Learning Outcomes

Intend	Intended Learning Outcomes							
1	The student will develop the knowledge in key areas of biotechnology with relevance to the profession of biotechnology							
2	The student will identify biotechnological problems by reviewing existing knowledge to derive substantiated conclusions.							
3	The student will develop IT based analytical aptitude for cutting edge areas of biotechnology.							
4	The student will apply understanding of research based knowledge and scientifically validated methods to provide valid conclusions.							
5	The student will develop skills to make effective and appropriate communication in both professional and social contexts.							

6	The student will be able combine individual contribution and team work to produce an outcome.
7	The student will be able to evolve as a responsible global citizen.
8	The student will be able to show commitment to ethical practice and social responsibility.
9	The student will implemen t basic management principles to various projects and ventures.
10	The student will develop attitude and ability to engage in life-long learning
11	The student will be able to solve issues related to environmental and sustainable development
12	The student will apply biotechnological aspect and information for the benefit and betterment of society.

5.11.5 Programme Operational Outcomes

Operat	ional Outcomes
1	B. Tech. biotechnology programme will promote the use of appropriate methodology and pedagogical tools for teaching, learning and development.
2	The programme will provide environment for innovation and research and academic facilities, technological resources for the intellectual growth of faculty and students.
3	The programme will facilitate resources to cater diverse need of the students and faculty to achieve academica excellence.
4	The programme will develop building of strong relationships with corporates and utilize network of alumni to open communication channels and seek suggestions on curricula, pedagogy, syllabus and training.
5	The programme will develop infrastructure and resources to attain national and international accreditations
6	The programme will extend support to the students to provide employment, avenues for higher education and start their own ventures
7	The programme will ensure transparency and good governance by inculcating ethics and values in teaching , theory and research
8	The programme will invite delegates and speakers in conferences and seminars and provide various other opportunities for global exposure

5.11.6 Programme Educational Outcome Assessment for B. Tech. Biotechnology

Sl. No.	PEO	PLO	Direct	Tool No for Direct Assessme nt	Target	Indire ct	Tool No for Indirec t Assess ment	Target
1	The	The student		UG/PLO1	70%	Stude	UG/P	80%
	student	will	*Compre	/CE	students	nt	LO/Ex	stude
	shall be	develop the	hensive	Framewo	shall	Exit	it	nts
	able to	knowledge	Exam	rk	pass the	Surv	Surve	respo
	assemble	in key areas			exam.	ey	y	nse
	knowledge	of						range
	in order to	biotechnolo						betwe
	attain	gy with						en 4-5

	academic excellence and contribute to developme nt in upcoming areas of biotechnol	relevance to the profession of biotechnolo gy						on the Likert Scale in the Stude nt Exit Surve y.
2	ogy. The student shall be able to develop the research skills for recognizin g problems in the frontier areas of biotechnol ogy	The student will identify biotechnolo gical problems by reviewing existing knowledge to derive substantiat ed conclusions.	Term Paper, Summer Internshi p, Viva- voce *Compre hensive Exam	UG/PLO2 /TP/SI/V V UG/PLO2 /CE Framewo rk	100% students will undertak e and complete the dissertati on	Feed back indus try inter nship guide		The Indust ry Intern ship Guide rates the stude nts betwe en 4-5 range on the Likert Scale in the feedba ck.
3	The student shall be able to apply the latest IT tools to interpret and analyse the scientific data	The student will develop IT based analytical aptitude for cutting edge areas of biotechno logy	*Compre hensive Exam	UG/PLO3 /CE Framewo rk	100% students shall able to leverage IT in order to complete their Assigne ments and Projects	Stude nt Exit Surv ey	UG/P LO/Ex it Surve y	80% stude nts shall score ≥ 75% in exit survey .
4	The student shall be able to comprehe nd and interpret the research data to solve the scientific problems	The student will apply understa nding of research based knowledg e and scientifica lly validated methods to provide	*Major project Rubrics *Comprehe nsive Exam	UG/PLO4 / UG/PLO4/ CE Framewor k	80% students shall able to demonst rate Problem Solving and Decision Making Skill	Stude nt Exit Surv ey	UG/P LO/Ex it Surve y	80% stude nts shall score ≥ 75% in exit survey

		valid conclusio ns.						
5	The students shall be able to develop effective communicat ion skills to enhance interperson al relationship	The student will develop skills to make effective and appropriate communica tion in both professiona l and social contexts.	*Rubrics (Communi cation skills) *Comprehe nsive Exam	UG/PLO5/ C UG/PLO5/ CE Framewor	80% students should secure a grade of 6 and above on a 10-point scale in the presentati on componen t of communic ation course.	Studen t Exit Survey	UG/PL O/Exit Survey	80% student s shall score ≥ 75% in exit survey
6	The student shall be able to develop leadership qualities and work effectively as an individual as well as a team.	The student will be able combine individual contributio n and team work to produce an outcome.	*Rubrics (Majorproj ect) * Comprehe nsive Exam	UG/PLO6/ UG/PLO6/ CE Framewor k	80% students should secure a grade of 6 and above on a 10- point scale in the Journal for Success componen t of Behaviour al Science course.	Studen t Exit Survey	UG/PL O/Exit Survey	80% student s shall score ≥ 75% in exit survey.
7	The student shall be able to develop global citizenship skills to build a sustainable world community	The student will be able to evolve as a responsible global citizen.	Major project rubrics * Comprehe nsive Exam	UG/PLO7/ UG/PLO7/ CE Framewor k	100% students' participati on in term papers and project report preparatio n.	Studen t Exit Survey	UG/PL O/Exit Survey	80% student s shall score ≥ 75% in exit survey.
8	The student shall be able to implement ethical behavior and demonstrat e sensitivity towards various social and cultural	The student will be able to show commitme nt to ethical practice and social responsibil ity	*Plagiaris m Checking of Major project		100% Students are checked for plagiarism in NTCC report submissio ns and are allowed to appear for viva-voce	Feedb ack indust ry interns hip guide		The Industr y Interns hip Guide rates the student s betwee n 4-5 range

	issues.				upon			on the
					obtaining plagiarism			Likert Scale in
					% below			the
					15%.			feedbac k.
			Rubrics					The
			(Behaviour					Univers
			al Science)					ity will
								adhere to zero
								toleranc
								e
								towards use of
								unfair
								means
9	The	The student	Rubrics (Behaviour	UG/PLO9/	100% students	Studen t Exit	UG/PL O/Exit	80% student
	student shall be	will	al Science)		submit the	Survey	Survey	s shall
	able to	implement			research			score ≥
	develop	basic			report and 50%			75% in exit
	entrepren eurship	manageme nt			students			survey.
	skills and	principles	*Comprehe	UG/PLO9/	should	Alumn	UG/PL	80%
	create	to various projects	nsive Exam	CE Framewor	secure a grade of 6	i Survey	O/Alum ni	student s shall
	networki ng with	and		k	and above	Survey	Survey	s snan score ≥
	industry	ventures.			on a 10-			75% in
	and				point scale.			exit
10	academia.	Trle e	*1/1-:			Ch., Jan.	IIC /DI	survey.
10	The student shall be able	The student	*Major project		Mentors will asses	Studen t Exit	UG/PL O/Exit	80% student
	to evaluate	will	Rubrics		the	Survey	,	s shall
	and reflect the virtue of	develop	*Comprehe	UG/PLO10	Learning			score ≥
	life- long	attitude and ability	nsive Exam	/CE Framewor	curve of 100%			75% in exit
	learning	to engage		k	students.			survey.
		in life-						
		long learning						
11	The student	The	*Comprehe	UG/PLO11	100 %	Studen	UG/PL	80%
	shall be able	student will be able	nsive Exam	/CE Framewor	students will	t Exit Survey	0/Exit	student s shall
	to demonstrat	to solve		k	elaborate	Survey	Survey	s snan score ≥
	e the	issues			their			75% in
	sensitivity towards	related to			research			exit
	towards environmen	environme ntal and			findings through			survey.
	tal	sustainable			presentati			
	conservatio	developme			ons and			
	n and.sustaina	nt			will defend the			
	ble				viva voce			
	technology							

12	The student shall be able to translate the biotechnolo gy based knowledge for holistic and societal developmen t	The student will apply biotechnol ogical aspect and informatio n for the benefit and betterment of society.	Term Paper,*Co mprehensi ve Exam	UG/PLO12 /CE Framewor k	100% students will present the seminar and 50% students should secure a grade of 6	UG/PL O/Exit Survey	80% student s shall score ≥ 75% in exit survey
	developmen	betterment			secure a		

5.11.7 Mapping of Intended Programme Learning Outcomes to Broad-Based Programme **Educational Objectives (PEOs)**

The broad-based student learning goals identified in Section I above encompass the intended student learning outcomes as articulated in this section, and are general composites or summaries of these outcomes. These relationships are summarized in the outcomes-to-goals mapping below (Note: $\sqrt{\text{in a}}$ given cell of the table indicates the intended learning outcome in that row is associated with the learning goal in that column.):

fPEO/PLO	PEO 1	PEO 2	PEO 3	PEO 4	PEO 5	PEO 6	PEO 7	PEO 8	PEO 9	PEO 10	PEO 11	PEO 12
PLO 1	V	>				>				V		>
PLO 2		>								V		~
PLO 3			>	>								
PLO 4				>		>						
PLO 5					>	>					>	
PLO 6						>			>	V		
PLO 7				>			>					
PLO 8								>		V		
PLO 9									>			>
PLO 10	>									>		
PLO 11				>							>	>
PLO 12	~							>				>

Programme - B. Tech. Bioinformatics

5.12.1 Mission Statement

Programme Mission

To impart education at undergraduate level in the area of Bioinformatics, emerging areas of knowledge, learning and research and to develop the overall personality of students by making them not only excellent professionals but also good individuals with understanding and regards for human and cultural values along with attributes of courage of conviction and action.

5.11.2 Programme Educational Objectives (PEOs)

Educa	tional Goals
1.	The student shall be able to assemble knowledge in order to attain professional excellence and contribute to development in upcoming areas of bioinformatics.
2.	The student shall be able to develop an aptitude for exploration and investigation of problems in the area of bioinformatics.
3.	The student shall be able to identify problems and prepare solutions in the form of workflows and algorithms in bioinformatics.
4.	The student shall use research based knowledge, learn the usage of scientific literature and proven methodology for deriving valid conclusions.
5.	The students shall show effective communication skills to disseminate technical information and ability to write effective reports for professional and societal impact.
6.	The student shall be able to demonstrate interpersonal skills and team spirit in various individual as well as team activities like debates, seminars.
7.	The student shall be able to develop skill set to be a responsible global citizen.
8.	The student shall apply commitment to ethical practice and social responsibility by following bioethical principles and cultural values.
9.	The student shall be able to develop decision making capability and management skills in order to handle various projects in bioinformatics.
10	The student shall be able to develop networking skills and inculcate the habit of life-long learning.
11	The student shall be able to apply taught concepts to undertake practical, environmental and professional work thereby improving employment and entrepreneurial skills.
12	The student shall be able to translate the bioinformatics based knowledge and expertise to the benefit of society.

5.12.3 Programme Operational Objectives

1.	B. Tech. Bioinformatics program will create conducive environment for excellence in teaching,
	learning, research and professional development of students.
2.	The program will provide opportunities to the faculty and staff to regularly upgrade their
	knowledge and skills by facilitating their participation in professional development programmes.
3.	The program will demonstrate sensitivity to the diverse needs of students and accordingly
	develop facilities and services
4.	The programme will built strong relationship with industry and formulate an alumni network while proactively seeking suggestions on curricula and training.
5.	The programme will improve processes and systems with an aim to attain national and
	international accreditations.

6. The programme will facilitate employment opportunities and also support students to start their own ventures.
7. The programme will implement good governance in discharge of responsibilities and execution of policies and programs.
8. The programme will provide ample opportunities for international exposure to faculty and

5.12.4 Programme Learning Outcomes

students

Inte	nded Learning Outcomes
1	The student will demonstrate an understanding of knowledge and skills including new developments in key areas of bioinformatics with relevance to the profession of bioinformatics.
2	The student will be able to demonstrate practical that involve problem solving and learn how to make decisions regarding choice of tools/algorithms.
3	The student will develop analytical aptitude for cutting edge areas of bioinformatics.
4	The student will apply understanding of research based knowledge and scientifically validated methods to provide valid conclusions.
5	The student will develop skills to make effective and appropriate communication in both professional and social contexts.
6	The student will be able combine individual contribution and team work for various activities to produce an outcome.
7	The student will analyze new concept and apply them using technology based tools
8	The student will develop and imbibe ethical principles which give deep insight to be culturally sensitive and socially responsible.
9	The student will demonstrate capability for management, team work, leadership and decision making based on open mindedness, objectivity and reasoned analysis in order to achieve targets.
10	The student will develop attitude, aptitude and ability to engage in lifelong learning
11	The student will apply the concepts of knowledge gained in bioinformatics for designing efficient environmentally sustainable technologies.
12	The student will be able to apply bioinformatics knowledge to solving problems in the society.

5.12.5 Programme Operational Outcomes

Operat	ional Outcomes
1	B. Tech. Bioinformatics programme will promote the use of appropriate methodology and pedagogical tools for teaching, learning and development.
2	The programme will provide environment for innovation and research and academic facilities, technological resources for the intellectual growth of faculty and students.
3	The programme will facilitate resources to cater diverse need of the students and faculty to achieve academica excellence.
4	The programme will develop building of strong relationships with corporates and utilize network of alumni to open communication channels and seek suggestions on curricula, pedagogy, syllabus and training.
5	The programme will develop infrastructure and resources to attain national and international accreditations
6	The programme will extend support to the students to provide employment , avenues for higher education and start their own ventures

7	The programme will ensure transparency and good governance by inculcating ethics and values in teaching, theory and research
8	The programme will invite delegates and speakers in conferences and seminars and provide various other opportunities for global exposure

5.12.6 Programme Educational Outcome Assessment for B. Tech. Bioinformatics

Sl. No.	PEO	PLO	Direct	Tool No for Direct Assessme nt	Target	Indire ct	Tool No for Indirec t Assess ment	Target
1	The student shall be able to assemble knowledge in order to attain professional excellence and contribute to developmen t in upcoming areas of bioinformati cs.	The student will demonstrat e an understand ing of knowledge and skills including new developme nts in key areas of bioinforma tics with relevance to the profession of bioinforma tics.	*Comprehe nsive Exam	UG/PLO1/ CE Framewor k	70% students shall pass the exam.	Studen t Exit Survey	UG/PL O/Exit Survey	80% students shall score ≥ 75% in exit survey.
2	The student shall develop an aptitude for recognizing and resolving problems in the area of bioinformatics.	The student will be able to demonstrat e practical that involve problem solving and learn how to make decisions regarding choice of tools/algor ithms.	Project report submission	UG/PLO2/ TP/SI/VV UG/PLO2/ CE Framewor k	100% students will undertake and complete the project report	Indust ry feedba ck analysi s		The Industry Internship Guide rates the students between 3-5 range on the Likert Scale in the feedback.
3	The student shall be able to identify problems	The student will develop	*section 3 of Comprehe nsive Exam	UG/PLO3/ CE Framewor k	70% students shall pass the exam	Studen t Exit Survey	UG/PL O/Exit Survey	80% students shall score ≥ 75% in exit

	and prepare solutions using holistic approaches in bioinformati cs. They will be able to efficiently design workflows and algorithms in bioinformati cs.	analytical aptitude for cutting edge areas of bioinforma tics.						survey
4	The student shall use research based knowledge, learn the usage of scientific literature and proven methodolog y for deriving valid conclusions.	The student will apply understand ing of research based knowledge and scientificall y validated methods to provide valid conclusion s.	Project report submission	UG/PLO4/ CE Framewor k	100% students shall complete their projects and submit the report	Studen t Exit Survey	UG/PL O/Exit Survey	80% students shall score ≥ 75% in exit survey.
5	The students shall show effective communicat ion skills to disseminate technical information and ability to write effective reports for professional and societal impact.	The student will develop skills to make effective and appropriat e communica tion in both professiona l and social contexts.	*Rubrics (Communi cation skills)	UG/PLO5/ C UG/PLO5/ CE Framewor	80% students shall achieve a minimum of "Satisfacto ry" outcome attainment level	Studen t Exit Survey	UG/PL O/Exit Survey	80% students shall score ≥ 75% in exit survey.
6	The student shall be able to demonstrat e interperson al skills and team spirit in various	The student will be able combine individual contributio n and team work for various	*Rubrics Behaviour al Science	UG/PLO6/ UG/PLO6/ CE Framewor k	80% students shall achieve a minimum of "Satisfacto ry" outcome	Studen t Exit Survey	UG/PL O/Exit Survey	80% students shall score ≥ 75% in exit survey

	individual as well as team activities like debates, seminars.	activities to produce an outcome.			attainment level			
7	The student shall be able to use technology based tools to design and understand the biological workbench and software packages.	The student will analyze new concept and apply them using technology based tools	Rubrics FBL	UG/PLO7/ UG/PLO7/ CE Framewor k	80% students shall achieve a minimum of "Satisfacto ry" outcome attainment level	Studen t Exit Survey	UG/PL O/Exit Survey	80% students shall score ≥ 75% in exit survey.
8	The student shall apply commitmen t to ethical practice and social responsibilit y by following bioethical principles and cultural values.	The student will develop and imbibe ethical principles which give deep insight to be culturally sensitive and socially responsible .	*Plagiaris m Checking		100% Students are checked for plagiarism in NTCC report submissio ns and are allowed to appear for viva-voce upon obtaining plagiarism % below 15%.	Indust ry feedba ck Analys is		The Industry Internship Guide rates the students between 3-5 range on the Likert Scale in the feedback.
9	The student shall be able to develop decision making capability and managemen t skills in order to handle various projects in bioinformati cs.	The student will demonstrat e capability for manageme nt, team work, leadership and decision making based on open mindednes s, objectivity and reasoned	*Section 7 of Comprehe nsive Exam Project report submission	UG/PLO9/ CE Framewor k	70% students shall pass the exam 100 % students shall submit the project report	Studen t Exit Survey	UG/PL O/Exit Survey UG/PL O/Alum ni Survey	80% students shall score ≥ 75% in exit survey. 80% students shall score ≥ 75% in exit survey.

10	The student shall be able to develop networking skills with alumni and inculcate the habit of lifelong learning.	analysis in order to achieve targets. The student will develop attitude, aptitude and ability to engage in lifelong learning	*Section 8 of Comprehe nsive Exam	UG/PLO10 /CE Framewor k	70% Students shall pass the exam	Studen t Exit Survey	UG/PL O/Exit Survey	80% students shall score ≥ 75% in exit survey
11	The student shall be able to apply taught concepts to undertake practical, environmen tal and professional work thereby improving employment and entrepreneu rial skills.	The student will apply the concepts of knowledge gained in bioinforma tics for designing efficient environme ntally sustainable technologie s.	*Section 9 of Comprehe nsive Exam	UG/PLO11 /CE Framewor k	70 % students shall pass the exam	Studen t Exit Survey	UG/PL O/Exit Survey	80% students shall score ≥ 75% in exit survey.
12	The student shall be able to translate the bioinformati cs based knowledge and expertise to the benefit of society.	The student will be able to apply bioinforma tics knowledge to solving problems in the society.	*Comprehe nsive Exam	UG/PLO12 /CE Framewor k	70% students shall pass the exam.		UG/PL O/Exit Survey	80% students shall score ≥ 75% in exit survey.

5.12.7 Mapping of Intended Programme Learning Outcomes to Broad-Based Programme **Educational Objectives (PEOs)**

The broad-based student learning goals identified in Section I above encompass the intended student learning outcomes as articulated in this section, and are general composites or summaries of these outcomes. These relationships are summarized in the outcomes-to-goals mapping below (Note: $\sqrt{\text{in a}}$ given cell of the table indicates the intended learning outcome in that row is associated with the learning goal in that column.):

fPEO/PLO	PEO 1	PEO 2	PEO 3	PEO 4	PEO 5	PEO 6	PEO 7	PEO 8	PEO 9	PEO 10	PEO 11	PEO 12
PLO 1	>	>				<				>		<

	_	_	_	_	_	_	_	_	_	_	_	
PLO 2		>								>		>
PLO 3			~	~								
PLO 4				>		>						
PLO 5					V	~					V	
PLO 6						>			>	>		
PLO 7				>			>					
PLO 8								>		>		
PLO 9									~			>
PLO 10	>									V		
PLO 11				V							V	>
PLO 12	>							~				>

5.13 Programme - B. Tech. + M. Tech. (Dual) Biotech.

5.13.1 Mission Statement

Programme Mission

To provide applied education in the area of Biotechnology, related areas of applied science, humanity related areas and in the futuristic and emerging frontier areas of knowledge, learning and research and to develop the overall personality of students by making them not only excellent professionals but also good individuals with understanding and regards for human values, pride in their heritage and culture, a sense of right and wrong, yearning for perfection and courage of conviction and action.

5.13.2 Programme Educational Objectives (PEOs)

1.	The student shall be able to develop knowledge and skills to integrate principles of Biosciences and Biotechnology to achieve academic excellence.
2.	The student shall demonstrate research skills and conduct innovative research in thrust areas of Biotechnology and apply these to benefit the society.
3.	The students shall be able to use latest technology based expertise for planning, designing new experiments and troubleshooting methods to be applied in bio- processes of plants, animals and microbes, on industrial scale.
4.	The student shall be able to comprehend and interpret the research data to execute formulation and justification of conclusion at industry level.
5.	The student shall be able to develop effective communication skills to enhance interpersonal relationship and shall explain effective and judicial practices in Biotechnology.
6.	The student shall be able to develop leadership skills and perform responsibly as an individual as well as in a team while maintaining accountability and output.
7.	The student shall be able to apply their knowledge and skills throughout their careers and serve society at national and global level.
8.	The student shall be able to choose to follow ethical principles and apply them to solve social and culturally sensitive issues in the society.
9.	The student shall be able to develop networking and entrepreneurship skills and create a strong

	network with the industry and alumni.
10.	The student shall be able to develop their skills and knowledge throughout their professional career, thereby adopting life-long learning.
11.	The student shall be able to recognize the need for environmental conservation and develop sustainable technologies.
12.	The student shall be able to integrate various aspects of Biotechnology and apply these to achieve holistic and societal development.

5.13.3 Programme Operational Objectives

B. Tech. + M. Tech. Biotechnology programme will create appropriate resources, infrastructure and conducive environment for excellence in teaching, learning, research and professional development of students.

The programme will provide opportunities and environment for innovation and research excellence for the intellectual growth of faculty and students.

The programme will demonstrate sensitivity to the diverse needs of students and accordingly develop facilities and services.

The programme will continuously strive to build strong industry interaction, alumni networks and empanelment of expertise from industry while proactively seeking suggestions on curricula and training.

The programme will continually improve processes and systems with an aim to attain national and international accreditations.

The programme will extend support to the students in order to facilitate campus recruitment, higher education or starting their own ventures.

The programme will act ethically to ensure transparency and good governance while discharging various responsibilities to its stakeholders and execution of policies and programs.

The programme will create opportunities for international exposure for its students and faculty.

5.13.4 Programme Learning Outcomes

Intend	ed Learning Outcomes
1.	The student will attain and apply knowledge of Biotechnology to solve diverse problems and find solutions for human benefits.
2.	The student will review and apply existing knowledge of Biotechnology to analyze complex biotechnology problems to reach substantiated conclusions using principles of biology.
3.	The student will use latest technology to acquire and analyze biological data.
4.	The student will innovate in terms of new ideas and products and interpret research in biosciences and biotechnology in order to solve scientific problems.
5.	The student will develop ability to communicate effectively to improve interpersonal communications.
6.	The student will develop leadership skills and perform responsibly as an individual as well as in a team while maintaining accountability and output.
7.	The student will apply knowledge and skills throughout the career and serve society at

	national and global level.
8.	The student will implement ethical principles and show professional, personal and academic integrity to tackle various issues.
9.	The student will apply sound planning and organizational skills that promotes and contributes to the strategic planning of their enterprise or organization.
10	The student will recognize the need for independent and life-long learning.
11	The student will develop ability to recognize environmental and social impacts and to provide leadership on sustainable approaches to complex problems.
12	The student will apply the knowledge of biosciences for the benefit of society.

5.13.5 Programme Operational Outcomes

Operation	nal Outcomes
1	B. Tech+ M. Tech Biotechnology programme will promote use of appropriate methodology and pedagogical tools for teaching, learning and development.
2	The programme will provide environment for innovation and research and academic facilities, technological resources for teaching and learning to the students.
3	The programme will facilitate resources to cater diverse needs of the students and faculty to achieve academic excellence.
4	The programme will develop and maintain strong relationship with research institutes, alumni and industry.
5	The programme will develop infrastructure and resources to attain national and international accreditations.
6	The programme will extend support to the students to provide employment, avenues for higher education and starting their own ventures.
7	The programme will ensure transparency and good governance by integrating ethics and values in teaching, theory and practice.
8	The programme will invite international delegates and speakers for seminars and conferences and provide various other opportunities for global exposure.

5.13.6 Programme Educational Outcome Assessment for B. Tech. +M. Tech. Biotechnology

SI. No.	PEO	PLO	Direct	Tool No for Direct Assessme nt	Target	Indire ct	Tool No for Indirec t Assess ment	Target
1	The student shall be able to develop knowledge and skills to integrate principles of Biosciences and Biotechnolo gy to achieve	The student will attain and apply knowledge of Biotechnol ogy to solve diverse problems and find	*Compreh ensive Exam	PG/PLO1/ CE Framewor k	70% students shall pass the exam.	Stude nt Exit Surve y	PG/PL O/ Exit Survey	80% students shall score ≥ 75% in exit survey

	academic excellence.	solutions for human benefits.						
2	The student	The student will review and apply	Project Report submissio n	PG/PLO2/ Dissertatio n				The
	demonstrat e research skills and conduct innovative research in thrust areas of Biotechnolo gy and apply these to benefit the society.	existing t knowledge of Biotechnol ogy to analyze complex s biotechnol ogy o problems to reach substantiat ed		PG/PLO2/ CE Framewor k	100% students will undertake and complete the Project Report	Syllab us Analys is		Industry Internship Guide rates the students between 3-5 range on the Likert Scale in the feedback.
3	The students shall be able to use latest technology based expertise for planning, designing new experiment s and troubleshoo ting methods to be applied in bioprocesses of plants, animals and microbes, on industrial scale.	The student will use latest technology to acquire and analyse biological data.	*Section 3 of Comprehe nsive Exam	PG/PLO3/ CE Framewor k	70% students shall pass the exam	Stude nt Exit Surve y	PG/PL O/ Exit Survey	80% students shall score ≥ 75% in exit survey.
4	The student shall be	The student		PG/PLO4/	100% students	Stude nt Exit	PG/PL O/	80% students

	able to comprehen d and interpret the research data to execute formulation and justification of conclusion at industry level.	will innovate in terms of new ideas and products and interpret research in bioscience s and biotechnol ogy in order to solve scientific problems	Project Report submissio n	PG/PLO4/ CE Framewor k	shall complete their projects and submit the report.	Surve y	Exit Survey	shall score ≥ 75% in exit survey.
5	The student shall be able to develop effective communicat ion skills to	The student will develop ability to	*Rubrics Communic ation skills	PG/PLO5/ BC	80% students shall achieve a			80%
	interperson al a relationship and shall texplain if effective and judicial	communic ate effectively to improve interperso nal communic ations.		PG/PLO5/ CE Framewor k	minimum of 'satisfacto ry' outcome attainmen t level.	Stude nt Exit Surve y	PG/PL O/ Exit Survey	students shall score ≥ 75% in exit survey.
6	The student shall be able to develop leadership	The student will develop leadership skills and	*Rubrics Behavioral Sciences	PG/PLO6/ BS	80% students			
	skills and perform responsibly as an individual as well as in a team while maintaining accountabili ty and output.	perform responsibl y as an individual as well as in a team while maintainin g accountabi lity and output.		PG/PLO6/ CE Framewor k	shall achieve a minimum of 'satisfacto ry' outcome attainmen t level.	Stude nt Exit Surve y	PG/PL O/ Exit Survey	80% students shall score ≥ 75% in exit survey.
7	The student shall be able to apply their	The student will apply their	Rubrics Foreign Language		80% students shall achieve a	Stude nt Exit Surve y	PG/PL O/ Exit	80% students shall score ≥ 75% in

	knowledge and skills throughout their careers and serve society at national and global level.	knowledge and skills throughou t their careers and serve society at national and global level.	* Comprehe nsive Exam	PG/PLO7/ UG/PLO7/ CE Framewor k	minimum of 'satisfacto ry' outcome attainmen t level.		Survey	exit survey.
8	The student shall be able to choose to follow ethical principles and apply them to solve social and culturally	The student will implement ethical principles and show profession al, personal and academic	*Plagiaris m Checking of Dissertatio n		100% Students are checked for plagiarism in NTCC report submissio ns and are allowed to appear for viva-voce	Syllab us Analys is		The Industry Internship Guide rates the students between 3-5 range on the Likert Scale in the feedback.
	sensitive issues in the society.	integrity to tackle various issues.	* Comprehe nsive Exam	PG/PLO8/ CE Framewor k	upon obtaining plagiarism % below 15%.			
9	The student shall be able to develop	The student will apply sound planning and	Project Report submissio n	PG/PLO9/	100% students shall	Stude nt Exit Surve y	PG/PL O/ Exit Survey	80% students shall score ≥ 75% in exit survey.
	networking and entrepreneu rship skills and create a strong network with the industry and alumni.	organizati onal skills that promotes and contribute s to the strategic planning of their enterprise or organizati on.	*Section 7 of Comprehe nsive Exam	PG/PLO9/ CE Framewor k	submit the Project Report. 70% students shall pass the comprehe nsive exam.			
10	The student shall be able to develop their skills and	The student will recognize the need for	*Section 8 of Comprehe nsive Exam	PG/PLO10 /CE Framewor k	70% students shall pass the coprehens ive exam.	Stude nt Exit Surve y	PG/PL O/Exit Survey	80% students shall score ≥ 75% in exit survey.

	knowledge throughout their professional career, thereby adopting life-long learning.	independe nt and life- long learning.	*Term paper, viva-voce, *Rubrics(Dissertatio n)					
11	The student shall be able to recognize the need for environmen tal conservatio n and develop sustainable technologie s.	The student will develop ability to recognize environm ental and social impacts and to provide leadershi p on sustainab le approach es to complex problems.	*Section 9 of Comprehen sive Exam	PG/PLO11 /CE Framewor k	70% students shall pass the comprehe nsive exam	Stude nt Exit Surve y	PG/PL O/Exit Survey	80% students shall score ≥ 75% in exit survey.
12	The student shall be able to integrate various aspects of Biotechnolo gy and apply these to achieve holistic and societal developmen t.	The student will apply the knowledge of bioscience s for the benefit of society.	*Compreh ensive Exam	PG/PLO12 /CE Framewor k	70% students shall pass the comprehe nsive exam	Stude nt Exit Surve y	PG/PL O/Exit Survey	80% students shall score ≥ 75% in exit survey.

5.13.7 Student Learning Assessment for B. Tech. +M. Tech.(Dual) Biotechnology

Mapping of Intended Programme Learning Outcomes to Broad-Based Programme Educational **Objectives (PEOs)**

The broad-based student learning goals identified in Section I above encompass the intended student learning outcomes as articulated in this section, and are general composites or summaries of these outcomes. These relationships are summarized in the outcomes-to-goals mapping below (Note: $\sqrt{\text{in a}}$ given cell of the table indicates the intended learning outcome in that row is associated with the learning goal in that column.):

PEO/PLO	PEO 1	PEO 2	PEO 3	PEO 4	PEO 5	PEO 6	PEO 7	PEO 8	PEO 9	PEO 10	PEO 11	PEO 12
PLO 1	V	V				V				V		V
PLO 2		V								V		>
PLO 3			~	>								
PLO 4				>		~						
PLO 5					>	~					V	
PLO 6						~			~	V		
PLO 7				>			~					
PLO 8								V		V		
PLO 9									V			<
PLO 10	V									V		
PLO 11				>							V	<
PLO 12	V							>				>

5.14 Programme - B. Sc.+M. Sc. (Dual) Biotechnology

5.14.1 Mission Statement

Programme Mission

To provide in depth knowledge and advanced education in the area of Biotechnology and in the futuristic and emerging frontier areas of knowledge, learning and research and to develop the overall personality of students by making them not only excellent professionals but also good individuals with understanding and regards for human values, pride in their heritage and culture, a sense of right and wrong, yearning for perfection and courage of conviction and action..

5.14.2 Programme Educational Objectives (PEOs)

- 1. The students shall be able to develop critical and practical understanding in the field of biotechnology, bioinformatics, medical, industrial, environmental and agricultural biotechnology.
- 2. The students shall be able to create research skills to solve a range of complex scientific problems, design experiments, interpretation and analysis of data, towards constructing significant results.
- 3. The students shall be able to use and apply theoretical knowledge and appropriate modern IT tools in solving problems related to research and development.
- 4. The students shall be able to interpret and comprehend specialized cognitive and creative skills to identity, review, systematically analyze and critically appraise specialized concepts of biotechnology.
- 5. The students shall be able to develop good communication skills to effectively disseminate research and technical information.
- 6. The students shall be able to analyze effectively as an individual, and as a member or leader in diverse tea and in multidisciplinary settings.
- 7. The students shall be able to identify intercultural competence and global citizenship by interpreting

aspects of other cultures and countries with nuance and accuracy.

- 8. The students shall be able to develop principles of ethics within the framework and apply these principles for environmentally, technically and socially sensitive issues with acceptance in the society.
- 9. The students shall be able to interpret taught concepts and understanding of management principles and entrepreneurship.
- 10. The students shall be able to evaluate and reflect habit to acquire knowledge and skills to become lifelong learners
- 11. The students shall be able to explain thought process for care of the environment by designing environmentally sustainable technologies.
- 12. The students shall be able to apply knowledge to recognize, formulate and evaluate research principles and technical skills to plan and implement research projects for advancement of science and society.

5.14.3 Programme Operational Objectives

The B. Sc. +M.Sc. (Biotechnology) programme will aim to achieve the University's goal of achieving academic excellence by creating and providing valuable resources to students.

The programme will provide an academically conducive environment for holistic development of students and encourage them to obtain funded research projects from various agencies

The program will demonstrate support to the students by providing resources to communicate their scientific ideas and research work in highly reputed indexed journals.

The programme will build strong relationships with corporates and utilize network of alumni to open communication channels and seek suggestions on curricula, pedagogy, syllabus and training and employment

The programme will improve processes and systems by encouraging students to provide constructive inputs for execution of policies and programs towards achieving good governance

The programme will extend support to the students in order to facilitate employment opportunities and also support students to develop entrepreneurial skills.

The programme will inculcate core values of the university and ethical conduct amongst students, faculty and staff.

The programme will create opportunities for international exposure for its students.

The B. Sc. +M. Sc. (Biotechnology) programme will aim to achieve the University's goal of achieving academic excellence by creating and providing valuable resources to students.

5.14.4 Programme Learning Outcomes

2.1.1. Intended Learning Outcomes

- 1. The student will demonstrate academic excellence and practical understanding in the field of biotechnology, bioinformatics, medical, industrial, environmental and agricultural biotechnology
- 2. The student will be able to identify and solve a range of complex scientific problems, design experiments, interpretation and analysis of data, towards constructing significant results.
- 3. The student will have practical skills and theoretical knowledge and application of appropriate modern IT tools in solving problems related to research and development.
- 4. The student will be able to translate specialized cognitive and creative skills to identity, review, systematically analyze and critically appraise specialized concepts of biotechnology.
- 5. The student will have an appropriate level of communication skills to effectively disseminate research and technical information.

- 6. The student will be able to work effectively as an individual, and as a member or leader in diverse teams, and in multidisciplinary settings.
- 7. The student will be able to understand interconnectedness and interdependency of different countries and populations
- 8. The student will be able to translate principles of ethics within the framework and apply these principles for environmentally, technically and socially sensitive issues with acceptance in the society.
- 9 The student will demonstrate knowledge and understanding of technical and management principles in order to achieve self as well as organizational goals
- 10. The student will demonstrate the aim of improving knowledge, skills and competences throughout life.
- 11. The student will appraise and appreciate nature and the need for its preservation and conservation. Designing thought process for care of the environment by development of environmentally sustainable technologies.
- 12. The student will be able to recognize, formulate and correlate research principles and technical skills to plan and implement research projects for advancement of science and society

5.14.5 Programme Operational Outcomes

Operational Outcomes BSc.+ MSc. Biotechnology programme will create appropriate resources, infrastructure, and develop 1 appropriate methodology and pedagogical tools for excellence in teaching, learning and development of students. The programme will provide opportunities to the faculty and staff to regularly upgrade their knowledge 2

- and skills by facilitating their participation in professional development programmes. The programme shall provide academic facilities, technological resources for teaching and learning to the 3
- students
- The student of the programme will earn achievements in intra and inter-university Extra Curricular 4 activities.
- 5 Faculty and students will be engaged in scholarly and professional activities in order to enhance their competencies and to contribute to the existing body of Knowledge.
- The programme will integrate ethics and values in teaching, theory and practice, develop and retain 6 excellent students, faculty and staff.
- 7 The programme will facilitate cultivation of cultural and environmental conservation values among students.
- The programme will develop and maintain strong relationship with research institutes, alumni and 8 industry.
- The programme will invite international delegates and speakers for seminars and conferences and various 9 other opportunities for global exposure and will support all the students for quality placements or join family business or start their own venture
- The programme will establish an internal quality cell for operational quality and process improvement for 10 students.

5.14.6 Programme Educational Outcome Assessment for B. Sc. +M. Sc. (Dual) Biotechnology

Sl. No.	PEO	PLO	Direct	Tool No for Direct Assessment	Target	Indir ect	Tool No for Indirect Assessm ent	Target
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1	The students shall be able to develop critical and practical understand ing in the field of biotechnol ogy, bioinformatics, medical, industrial, environme ntal and agricultura l biotechnol ogy.	The student will develop academic excellence as well as application of critical thought and practical understanding in the field of biotechnology, .bioinformatics, medical, industrial, environmental and agricultural biotechnology.	*Compreh ensive Exam	PG/PLO1/CE Framework	70% students shall pass the exam.	Stude nt Exit Surve y	PG/PLO/ Exit Survey	80% student s shall score ≥ 75% in the Exit Survey.
2	The students shall be able to create research skills to solve a range of complex scientific problems, design	The student will be able to identify and solve a range of complex scientific problems, design	Project report submissio	PG/PLO2/Dis sertation	100% students will underta ke and	Intern ship feedb ack		The Industr y Interns hip Guide rates the student s
	range of solve a range complex scientific problems, problems,		n	PG/PLO2/CE Framework	complet e the project report	analys is		betwee n 3-5 range on the Likert Scale in the feedbac k.

3	The students shall be able to use and apply theoretical knowledge and appropriat e modern IT tools in solving problems related to research and developme nt.	. The student will have practical skills and theoretical knowledge and application of appropriate modern IT tools in solving problems related to research and development.	*Section 3 of Comprehe nsive Exam	PG/PLO3/CE Framework	70 % students shall pass the exam	Stude nt Exit Surve y	PG/PLO/ Exit Survey	80% student s shall score ≥ 75% in the Exit Survey.
	The students			PG/PLO4/				
4	shall be able to interpret and comprehen d specialized cognitive and creative skills to identity, review, systematic ally analyze and critically appraise specialized concepts of biotechnol ogy.	The student will translate specialized cognitive and creative skills to work on specialized concepts of biotechnology	*Project report submissio n	PG/PLO4/CE Framework	100% students shall complet e their projects and submit the report	Stude nt Exit Surve y	PG/PLO/ Exit Survey	80% student s shall score ≥ 75% in the Exit Survey.
5	The students shall be able to develop good communica tion skills	The student will create an appropriate level of communication skills to effectively disseminate	*Rubrics Communi cation skills		80% students shall achieve a minimu m of "Satisfac	Stude nt Exit Surve y	PG/PLO/ Exit Survey	80% student s shall score ≥ 75% in the Exit Survey.

	to effectively disseminat e research and technical informatio n.	research and technical information.		PG/PLO5/BC	tory" outcom e attainm ent level.			
6	The students shall be able to analyze effectively as an individual, and as a member or leader in diverse teams, and in multidiscip linary settings.	The student will be able to work effectively as an individual, and as a member or leader in diverse teams, and in multidisciplina ry settings.	*Rubrics Behaviour al Science	PG/PLO6/BS PG/PLO6/CE Framework	80% students shall achieve a minimu m of "Satisfac tory" outcom e attainm ent level.	Stude nt Exit Surve y	PG/PLO/ Exit Survey	80% student s shall score ≥ 75% in the Exit Survey.
7	The students shall be able to identify intercultur al competenc e and global citizenship by interpretin g aspects of other cultures and countries with nuance and accuracy.	The student will be able to understand interconnected ness and interdependen cy of different countries and populations	*Rubrics FBL	PG/PLO7/ UG/PLO7/CE Framework	80% students shall achieve a minimu m of "Satisfac tory" outcom e attainm ent level.	Stude nt Exit Surve y	PG/PLO/ Exit Survey	80% student s shall score ≥ 75% in the Exit Survey.

8	The students shall be able to develop principles of ethics within the framework and apply these principles	The student will be able to translate principles of ethics within the framework and apply these principles for	*Plagiaris m Checking of project		100% Student s are checked for plagiaris m in NTCC report submiss ions and are allowed	Facult y intern ship feedb ack		The Industr y Interns hip Guide rates the student s betwee n 3-5 range on the
	l nrincinloc		report	PG/PLO8/CE Framework	to appear for viva- voce upon obtainin g plagiaris m % below 15%.			Likert Scale in the feedbac k.
9	The students shall be able to interpret taught concepts and understand ing of manageme nt principles and entreprene urship.	The student will be able to demonstrate understanding of management principles in order to achieve self as well as organizational goals.	Section 7 of Comprehe nsive exam Project report submissio n	PG/PLO9/	70% students shall pass the exam 100% students shall submit the project report	Stude nt Exit Surve y	PG/PLO/ Exit Survey	80% student s shall score ≥ 75% in the Exit Survey.

				PG/PLO9/CE Framework		Alum ni Surve y	PG/PLO/ Alumni Survey	
10	The students shall be able to evaluate and reflect habit to acquire knowledge and skills to become life long learners	The student will be able to demonstrate the aim of improving knowledge, skills and competences t hroughout life.	*Section 8 of Comprehe nsive Exam	PG/PLO10/C E Framework	70% students shall pass the exam	Stude nt Exit Surve y	PG/PLO/ Exit Survey	80% student s shall score ≥ 75% in the Exit Survey.
11	The students shall be able to explain thought process for care of the environme nt by designing environme ntally sustainable technologie s.	The student will be able to appraise and appreciate nature and the need for its preservation and conservation. Designing thought process for care of the environment by development of environmentall y sustainable technologies.	*Section 9 of Comprehe nsive Exam	PG/PLO11/C E Framework	100 % students will elaborat e their researc h findings through present ations and will defend the viva voce	70% stude nt shall pass the exam	PG/PLO/ Exit Survey	80% student s shall score ≥ 75% in the Exit Survey.

12	The students shall be able to apply knowledge to recognize, formulate and evaluate research principles and technical skills to plan and implement research projects for advanceme nt of science and society.	The student will formulate and correlate research principles and technical skills to plan and implement research projects for advancement of science and society.	*Compreh ensive Exam	PG/PLO12/C E Framework	70% students shall pass the exam.	Stude nt Exit Surve y	PG/PLO/ Exit Survey	80% student s shall score ≥ 75% in the Exit Survey.	
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5.14.7 Matrix Of PEO's and PLO's

PEO/PLO	PEO 1	PEO 2	PEO 3	PEO 4	PEO 5	PEO 6	PEO 7	PEO 8	PEO 9	PEO 10	PEO 11	PEO 12
PLO 1	~											
PLO 2		>										
PLO 3			V									
PLO 4				>								
PLO 5					>							
PLO 6						>						
PLO 7							~					
PLO 8								~				
PLO 9									>			
PLO 10										V		
PLO 11											~	
PLO 12												V

5.15 B.Sc. (H) Biotechnology

5.15.1 Mission Statement

Programme Mission

To provide basic education in the area of Biotechnology, related areas of applied science and in the futuristic and emerging frontier areas of knowledge, learning and research and to develop the overall personality of students by making them not only excellent professionals but also good individuals with understanding and regards for human values, pride in their heritage and culture, a sense of right and wrong, yearning for perfection and courage of conviction and action.

5.15.2 Programme Educational Objectives (PEOs)

Educati	onal Goals
1.	The student shall be able to develop concepts in theoretical and applied aspects of biotechnology
2.	The student shall be able to demonstrate systematic understanding of fundamental relevant questions and practical skills related to biotechnology.
3.	The student shall be able to use and apply modern IT tools in relation to Biotechnology.
4.	The student shall be able to interpret and comprehend research problems, propose solutions and prioritize work.
5.	The student shall be able to employ effective communication skills on various topics of biosciences and biotechnology
6.	The student shall be able to attain leadership skills and perform responsibly as an individual, and as a member in diverse teams in multidisciplinary settings.
7.	The student shall be able to develop into a responsible global citizen.
8.	The student shall practice ethical behaviour and shall know the ethical issues associated with current Biotechnological research
9.	The student shall be able to develop management and entrepreneurship skills.
10.	The student shall be able to evaluate intellectual curiosity, and reflect the habit of life long learning.
11.	The student shall be able to analyze the interrelationship between environment, social and economic sustainability.
12.	The student shall be able to apply biotechnology to fulfil societal needs from time to time.

5.15.3 Programme Operational Objectives

1.	The B.Sc.(Biotechnology) programme aims to create academic excellence by providing valuable resources to students
2.	The program will provide environment for innovation and research for the intellectual growth of faculty and students
3.	The program will demonstrate sensitivity to the diverse needs of students and accordingly develop facilities and services.
4.	The program will strive to build strong industry interaction, alumni networks and empanelment of expertise from industry.
5.	The program will continually improve processes and systems with an aim to attain national and international accreditations and institutional ranking.
6.	The programme will extend support to the students to create employment opportunities and develop entrepreneurial skills.
7.	The programme will act ethically to ensure good governance in discharge of responsibilities and execution of policies and programs
8.	The programme will create opportunities for international exposure for its students and faculty.

5.15.4 Programme Learning Outcomes

Intend	ed Learning Outcomes
1	The student will be able to use and apply appropriate techniques and resources for understanding of the basic biotechnological concepts.
2	The student will develop critical skills to analyze problems in a holistic manner.
3	The student will develop analytical skills to solve biological problems by using modern IT tools in relation to Biotechnology
4	The student will be able to arrange and review biotechnological data, investigate implications systematically and propose solutions
5	The student will be able to apply good communication skills and write effective reports on various topics in biotechnology.
6	The students will develop skills in interpersonal understanding, and teamwork.
7	The student will be able to analyse international interconnections, with attention to both international differences and global trends
8	The student will be able to comply to ethical principles associated with biotechnology and society.
9	The student will be able to extend management ability and leadership qualities to decision making while performing various types of projects.
10	The student will be able to value the importance of life-long learning.
11	The student will be able to apply their environmental and sustainability literacy in a diverse context.
12	The student will be able to apply biotechnological learning to societal issues.

5.15.5 Programme Operational Outcomes

Operati	onal Outcomes
1	BSc (H) Biotechnology programme will promote use of appropriate methodology and pedagogical tools for teaching, learning and development.
2	The curriculum of the programme will be contemporary and relevant to meet research and industry requirements and benchmarked on global standards by incorporating feedback from all the stakeholders.
3	The programme will provide academic facilities, technological resources for teaching and learning according to diverse needs of the students
4	The programme will develop and maintain strong relationship with research institutes, alumni students and industry experts.
5	The programme will improve processes to attain and sustain a good national and international ranking.
6	The programme will extend various opportunities for global exposure and will support all the students for quality placements or join family business or start their own venture
7	The programme will establish an internal quality cell for operational quality and process improvement for students.
8	The programme will create opportunities for international exposure for its students and faculty.

5.15.6 Programme Educational Outcome Assessment for B. Sc. Biotechnology

Sl. No.	PEO	PLO	Direct	Tool No for Direct Assess ment	Target	Indirect	Tool No for Indire ct Assess ment	Target
1	The student shall be able to develop concepts in theoretical and applied aspects of biotechnolog y	The student will be able to use and apply appropriate techniques and resources for understanding of the basic biotechnologic al concepts	*Compr ehensiv e Exam	UG/PL O1/CE Frame work	70% studen ts shall pass the exam.	Student Exit Survey	UG/PL O/Exit Survey	80% students shall score ≥ 75% in exit survey.
2	The student shall be able to demonstrate systematic understanding of fundamental relevant questions and practical skills related to biotechnolog y.	The student will develop critical skills to analyze problems in a holistic manner.	Project Report submiss ion	UG/PL O2/CE Frame work	100% studen ts will undert ake and compl ete the project report.	Feedback of Industry Internship Guide		The Industry Internshi p Guide rates the students between 3-5 range on the Likert Scale in the feedback.
3	The student shall be able to use and apply modern IT tools in relation to Biotechnolo gy.	The student will develop analytical skills to solve biological problems by using modern IT tools in relation to Biotechnology	Section 3 of compre hensive exam.	UG/PL 03/	70% studen ts shall pass the exam.	Student Exit Survey	UG/PL O/Exit Survey	80% students shall score ≥ 75% in exit survey.
4	The student shall be able to interpret and comprehend research problems, propose solutions and prioritize work	The student will be able to arrange and review biotechnologic al data, investigate implications systematically and propose solutions	Project report submiss ion	UG/PL O4/ UG/PL O4/CE Frame work	studen ts shall compl ete their project and submit the report	Student Exit Survey	UG/PL O/Exit Survey	80% students shall score ≥ 75% in exit survey.

5	The student shall be able to employ effective communicati on skills on various topics of biosciences and biotechnolog	The student will be able to apply good communication skills and write effective reports on various topics in biotechnology	*Rubric s (Comm unicatio n skills)	UG/PL O5/ UG/PL O5/CE Frame work	80% studen ts shall achiev e a minim um of satisfa ctory outco me attain ment level.	Student Exit Survey	UG/PL O/Exit Survey	80% students shall score ≥ 75% in exit survey.
6	The student shall be able to attain leadership skills and perform responsibly as an individual, and as a member in diverse teams in multidiscipli nary settings.	The students will develop skills in interpersonal understanding, and teamwork.	*Rubric s (Behavi oural Science s)	UG/PL 06/CE Frame work	80% studen ts shall achiev e a minim um of satisfa ctory outco me attain ment level.	Student Exit Survey	UG/PL O/Exit Survey	80% students shall score ≥ 75% in exit survey.
7	The student shall be able to develop into a responsible global citizen.	The student will be able to analyse international interconnecti ons, with attention to both international differences and global trends	Rubrics (FBL)	UG/PL 07/ UG/PL 07/CE Frame work	80% studen ts shall achiev e a minim um of satisfa ctory outco me attain ment level.	Student Exit Survey	UG/PL O/Exit Survey	80% students shall score ≥ 75% in exit survey.
8	The student shall practice ethical behaviour and shall know the ethical issues associated with current Biotechnolo gical	The student will be able to comply to ethical principles associated with biotechnology and society.	*Plagiar ism Checkin g of project		100% Studen ts are checke d for plagiar ism in NTCC report submis sions and are	Feedback of External Internship Guide		The External Internshi p Guide rates the students between 3-5 range on the Likert Scale in the feedback.

	research		*Rubric s (Behavi oural Science) Rubrics		allowe d to appear for viva-voce upon obtaini ng plagiar ism % below 15%.			
9	The student shall be able to develop management and entrepreneu rship skills.	The student will be able to extend management ability and leadership qualities to decision making while performing various types of projects.	*Section 7 of Compre hensive Exam Project Report submiss ion	UG/PL O9/CE Frame work	70% studen ts shall pass the exam 100% studen ts shall submit the project report s.	Student Exit Survey	UG/PL O/Exit Survey	80% students shall score ≥ 75% in exit survey.
10	The student shall be able to evaluate intellectual curiosity, and reflect the habit of life long learning.	The student will be able to value the importance of life-long learning.	Section 8 of compre hensive exam *Compr ehensiv e Exam	UG/PL O10/C E Frame work	70% studen ts shall pass the exam	Student Exit Survey	UG/PL O/Exit Survey	80% students shall score ≥ 75% in exit survey.
11	The student shall be able to analyze the interrelation ship between environment, social and economic sustainabilit y.	The student will be able to apply their environment al and sustainability literacy in a diverse context.	*Section 9 of Compre hensive exam	UG/PL O11/C E Frame	70% studen ts shall pass the	Student Exit	UG/PL O/Exit	80% students shall score ≥ 75% in exit survey.
11	The student shall be able to apply biotechnolog y to fulfil societal needs from	The student will be able to apply biotechnologic al learning to societal issues.	*Compr ehensiv e Exam	work UG/PL 012/C E Frame work	exam 70% studen ts shall pass the exam	Survey Student exit survey	Survey UG/PL O/Exit Survey	80% students shall score ≥ 75% in exit survey.

time to time.				

5.15.7 Student Learning Assessment for B.Sc. (H) Biotechnology

Mapping of Intended Programme Learning Outcomes to Broad-Based Programme Educational Objectives (PEOs)

The broad-based student learning goals identified in Section I above encompass the intended student learning outcomes as articulated in this section, and are general composites or summaries of these outcomes. These relationships are summarized in the outcomes-to-goals mapping below (Note: $\sqrt{}$ in a given cell of the table indicates the intended learning outcome in that row is associated with the learning goal in that column.):

/PLO	PEO 1	PEO 2	PEO 3	PEO 4	PEO 5	PEO 6	PEO 7	PEO 8	PEO 9	PEO 10	PEO 11	PEO 12
PLO 1									V			
PLO 2										V		
PLO 3											V	
PLO 4												V
PLO 5	~											
PLO 6		~										
PLO 7			~									
PLO 8	V			V								
PLO 9					~							
PLO 10						>						
PLO 11							~					
PLO 12								~				

5.16 B.Sc. (H) Medical Biotechnology

5.16.1 Mission Statement

Programme Mission

To provide basic education in the area of Biotechnology, related areas of applied science and in the futuristic and emerging frontier areas of knowledge, learning and research and to develop the overall personality of students by making them not only excellent professionals but also good individuals with understanding and regards for human values, pride in their heritage and culture, a sense of right and wrong, yearning for perfection and courage of conviction and action.

5.16.2 Programme Educational Objectives (PEOs)

,	1.	The student shall be able to develop concepts in theoretical and applied aspects of Medical
		biotechnology
	2.	The student shall be able to demonstrate systematic understanding of fundamental
		relevant questions and practical skills related to Medical biotechnology.
	3.	The student shall be able to use and apply modern IT tools in relation to Medical

	Biotechnology.
4.	The student shall be able to interpret and comprehend research problems, propose
	solutions and prioritize work.
5.	The student shall be able to employ effective communication skills on various topics of
	biosciences and Medical biotechnology
6.	The student shall be able to attain leadership skills and perform responsibly as an
	individual, and as a member in diverse teams in multidisciplinary settings.
7.	The student shall be able to develop into a responsible global citizen.
8.	The student shall practice ethical behavior and shall know the ethical issues associated with
	current Biotechnological research
9.	The student shall be able to develop management and entrepreneurship skills.
10.	The student shall be able to evaluate intellectual curiosity, and reflect the habit of life long
	learning.
11.	The student shall be able to analyze the interrelationship between environment, social and
	economic sustainability.
12.	The student shall be able to apply biotechnology to fulfill societal needs from time to time.

5.16.3 Programme Operational Objectives

The B.Sc. (Medical Biotechnology) programme aims to help achieve the University's goal of achieving academic excellence by providing valuable resources to students.

The programme will provide opportunities to the faculty and staff to regularly upgrade their knowledge and skills by facilitating their participation in professional development programmes.

The programme will demonstrate sensitivity to the diverse needs of students and accordingly develop facilities and services.

The programme aims to continuously strive to build strong industry interaction, alumni networks and empanelment of expertise from industry.

The programme will improve processes and systems with an aim to attain national and international accreditations.

The programme will support students in order to facilitate campus recruitment, higher education or starting their own ventures.

The programme will act ethically to ensure transparency and good governance while discharging various responsibilities to its stakeholders and execution of policies and programs

The programme will create opportunities for international exposure for its students and faculty

5.16.4 Programme Learning Outcomes

Intended Learning Outcomes The student will be able to define integrated approach to knowledge factual and theoretical 1 basis of Medical Biotechnology on the molecular, cellular, and organism levels. 2 The student will develop critical skills for the analysis of complex medical biotechnological problems to reach sustained conclusions using logical principles.

3	The student will be able to use IT tool show problem solving skills to develop, plan and
	implement practical solutions within a diverse range of medical biotechnology divisions.
4	The student will use knowledge and scientifically proven methodologies to perform experiments and result interpretation for the generation of informative data to provide meaningful definitive conclusions.
5	The student will be able to develop effective communication skills on various disciplines of medical biotechnology with community, apply knowledge to become effective written and oral communicators in their profession with tenacity in multidisciplinary settings
6	. The student will demonstrate effectively as an individual and as a member or leader of team in diverse disciplines and cultures of medical biotechnology for achieving logical rationale.
7	The student will recognize the responsibility of being a global citizen.
8	The student will apply to intercede with in the defined limits of bioethical principles to be implemented in the Biomedical research and academia.
9	The student will demonstrate knowledge and understanding of the technical and management principles in order to achieve the organizational goal in multidisciplinary environments.
10	The student will develop technical skills which will enable effective lifelong learning in the field of health and allied sciences.
11	The student will demonstrate knowledge and understanding of human biological system and their place in the natural environment, recognize the significance of societal and environmental contexts with special stress on sustainable development.
12	The student will analyze and investigate professional, ethical, societal, environmental and economic responsibility to the professional practice.

5.16.5 Programme Operational Outcomes

Operat	ional Outcomes
1	The B.Sc. (Medical Biotechnology) programme will help to achieve the University's goal of achieving academic excellence by providing valuable resources to students.
2	The programme will provide environment for innovation and research and academic facilities, technological resources for the intellectual growth of faculty and students
3	The programme will facilitate resources to cater diverse need of the students and faculty to achieve academia excellence.
4	The programme will develop building of strong relationships with corporates and utilize network of alumni to open communication channels and seek suggestions on curricula, pedagogy, syllabus and training
5	The programme will develop infrastructure and resources to attain national and international accreditations.
6	The programme will extent support to the students to provide employment, avenues for higher education and starting their own ventures.
7	The programme will ensure transparency and good governance by inculcating ethics and values in teaching theory and research

5.16.6 Programme Educational Outcome Assessment for B.Sc. (Medical) Biotechnology

Sl. No	PEO	PLO	Direct	Tool No for Direct Assessm ent	Target	Indirect	Tool No for Indirect Assessm ent	Target
1	The student shall be able to develop concepts in theoretical and applied aspects of Medical biotechnol ogy	The student will be able to define integrated approach to knowledge factual and theoretical basis of Medical Biotechnolo gy on the molecular, cellular, and organism levels.	*Comprehe nsive Exam	UG/PLO1 /CE Framewo rk	70% student s shall pass the exam.	Student Exit Survey.	UG/PLO/ Exit Survey	80% studen ts shall score ≥ 75% in exit survey.
2	T The student shall be able to demonstrat e systematic understand ing of fundament al relevant questions and practical skills related to Medical biotechnol ogy.	The student will develop critical skills for the analysis of complex medical biotechnolo gical problems to reach sustained conclusions using logical principles.	Project report submission. *Comprehe nsive Exam	UG/PLO2 /Project/ Viva-voce UG/PLO2 /CE Framewo rk	100% student s will undert ake and comple te the dissert ation	Feedback of Industry Internship Guide		The Industr y Interns hip Guide rates the studen ts betwee n 3-5 range on the Likert Scale in the feedba ck.

3	The student shall be able to use and apply modern IT tools in relation to Medical Biotechnol ogy.	The student will be able to use IT tool show problem solving skills to develop, plan and implement practical solutions within a diverse range of medical biotechnolo gy divisions.	*Comprehe nsive Exam	UG/PLO3 /Quiz/cla ss tests/CE Framewo rk	80% student s shall pass the exam	Student Exit Survey	UG/PLO/ Exit Survey	80% studen ts shall score ≥ 75% in exit survey.
4	The student shall be able to interpret and comprehen d research problems, propose solutions and prioritize work.	The student will use knowledge and scientificall y proven methodolog ies to perform experiment s and result interpretati on for the generation of informative data to provide meaningful definitive conclusions.	*Project Rubrics *Comprehe nsive Exam	UG/PLO4 /viva- voce UG/PLO4 /CE Framewo rk	80% student s shall pass the exam	Student Exit Survey	UG/PLO/ Exit Survey	80% studen ts shall score ≥ 75% in exit survey.
5	The student shall be able to employ effective communica	The student will be able to develop effective communica tion skills	Rubrics Communica tion skills		80% student s shall achieve a minim	Student Exit Survey	UG/PLO/ Exit Survey	80% studen ts shall score ≥ 75% in exit

	tion skills on various topics of biosciences and Medical biotechnol ogy	on various disciplines of medical biotechnolo gy with community, apply knowledge to become effective written and oral communica tors in their profession with tenacity in multidiscipl inary settings.	*Comprehe nsive Exam	UG/PLO5 / BC UG/PLO5 /CE Framewo rk	um "Satisfa ctory" outcom e attain ment level			survey.
6	The student shall be able to attain leadership skills and perform responsibly as an individual, and as a member in diverse teams in multidiscip linary settings.	The student will demonstrat e effectively as an individual and as a member or leader of team in diverse disciplines and cultures of medical biotechnolo gy for achieving logical rationale.	*Behavioural Science rubrics *Comprehe nsive Exam	UG/PL06 /BS UG/PL06 /CE Framewo	80% student s shall achieve a minim um "Satisfa ctory" outcom e attain ment level	Student Exit Survey	UG/PLO/ Exit Survey	80% studen ts shall score ≥ 75% in exit survey.
7	The	The student	Rubrics		80%	Student Exit	UG/PLO/	80%

	student shall be able to develop into a responsible global citizen.	will recognize the responsibili ty of being a global citizen.	FBL	UG/PLO7 / UG/PLO7 /CE Framewo rk	student s shall achieve a minim um "Satisfa ctory" outcom e attain ment level	Survey	Exit Survey	studen ts shall score ≥ 75% in exit survey.
8	The student shall practice ethical behavior and shall know the ethical issues associated with current Biotechnol ogical research	The student will apply to intercede with in the defined limits of bioethical principles to be implemente d in the Biomedical research and academia.	*Plagiarism Checking of Project report, * Comprehen sive Exam	UG/PLO8 /CE Framewo rk	100% Studen ts are checke d for plagiar ism in NTCC report submis sions and are allowe d to appear for viva- voce upon obtaini ng plagiar ism % below 15%.	Feedback of Industry Internship Guide		The Industr y Interns hip Guide rates the studen ts betwee n 3-5 range on the Likert Scale in the feedba ck.

9	The student shall be able to develop manageme nt and entreprene urship skills.	The student will demonstrat e knowledge and understanding of the technical and managemen t principles in order to achieve the organizational goal in multidisciplinary environments.	Section 7of comprehen sive exam	UG/PLO9 /EMP UG/PLO9 /CE Framewo rk	70% student shall pass the exam. 100% student s shall submit the project reports .	Student Exit Survey	UG/PLO/ Exit Survey	80% studen ts shall score ≥ 75% in exit survey.
10	The student shall be able to evaluate intellectual curiosity, and reflect the habit of life long learning.	The student will develop technical skills which will enable effective lifelong learning in the field of health and allied sciences.	*Section 8 of Comprehen sive Exam	UG/PLO1 0/CE Framewo rk	70% student s shall pass th e exam	Student Exit Survey	UG/PLO/ Exit Survey	80% studen ts shall score ≥ 75% in exit survey.

	The student shall be able to analyze the interrelationship between environment, social and economic sustainability.	The student will demonstrat e knowledge and understanding of human biological system and their place in the natural environment, recognize the significance of societal and environmental contexts with special stress on sustainable development.	*Section 9 of Comprehen sive Exam	UG/PLO1 1/CE Framewo rk	70% student s shall pass the exam	Student Exit Survey	UG/PLO/ Exit Survey	80% studen ts shall score ≥ 75% in exit survey.
12	The student shall be able to apply biotechnol ogy to fulfil societal needs from time to time.	The student will analyze and investigate professional , ethical, societal, environmen tal and economic responsibili ty to the professional practice.	*Comprehe nsive Exam,	UG/PLO1 2/CE Framewo rk	70% student s shall pass the exam.			

5.16.7 Student Learning Assessment for B. Sc.(H) Medical Biotechnology

Mapping of Intended Programme Learning Outcomes to Broad-Based Programme Educational **Objectives (PEOs)**

The broad-based student learning goals identified in Section I above encompass the intended student learning outcomes as articulated in this section, and are general composites or summaries of these outcomes. These relationships are summarized in the outcomes-to-goals mapping below (Note: $\sqrt{\text{in a}}$ given cell of the table indicates the intended learning outcome in that row is associated with the learning goal in that column.):

PEO/PLO	PEO 1	PEO 2	PEO 3	PEO 4	PEO 5	PEO 6	PEO 7	PEO 8	PEO 9	PEO 10	PEO 11	PEO 12
PLO 1	>			>								
PLO 2	•	>		>								
PLO 3	V	>	>	V								
PLO 4	V	>	>	V								
PLO 5			>	V	>							
PLO 6						V	>					
PLO 7							>					>
PLO 8								V	V			>
PLO 9									V	V		>
PLO 10										V		
PLO 11											V	
PLO 12												>

5.17 B.Sc. (Hons) Zoology

5.17.1 Mission Statement

Programme Mission

"To provide basic education in the area of Zoology and related areas of applied sciences, and to develop the overall personality of students by making them not only excellent professionals but also good individuals with understanding and regards for human values, pride in their heritage and culture, a sense of right and wrong, yearning for perfection and courage of conviction and action.

5.17.2 Programme Educational Objectives (PEOs)

1.	The student shall be able to develop concepts in theoretical and applied aspects of
	Zoology
2.	The student shall develop critical skills for the analysis of complex medical
	biotechnological problems to reach sustained conclusions using logical principles
3.	The student shall be able to use and apply modern IT tools in relation to zoology.
4.	The student shall be able to interpret and comprehend research problems, propose

	solutions and prioritize work.
5.	The student shall be able to employ effective communication skills on various topics of
	biosciences and zoology
6.	The student shall be able to attain leadership skills and perform responsibly as an
	individual, and as a member in diverse teams in multidisciplinary settings.
7.	The student shall be able to develop into a responsible global citizen.
8.	The student shall practice ethical behaviour and shall know the ethical issues associated
	with current animal research
9.	The student shall be able to develop management and entrepreneurship skills.
10.	The student shall be able to evaluate intellectual curiosity, and reflect the habit of life
	long learning.
11.	The student shall be able to analyze the interrelationship between environment, social
	and economic sustainability.
12.	The student shall be able to apply zoological sciences to fulfil societal needs from time to
	time.

5.17.3 Programme Operational Objectives

	The B.Sc. (Zoology) programme aims to help achieve the University's goal of achieving academic excellence by providing valuable resources to students
1.	The programme will facilitate an academically conducive environment for holistic development of students
2.	The programme will provide environment for innovation and research for the intellectual growth of faculty and students.
3.	The programme will aim to inculcate core values of the university and ethical conduct amongst students, faculty and staff.
4.	The programme will encourage cultural diversity and a sense of social and environmental responsibility.
5.	The programme will facilitate building of strong relationships with corporates and utilize network of alumni to open communication channels and seek suggestions on curricula, pedagogy, syllabus and training.
6.	The programme will facilitate to create employment opportunities and also support students to develop entrepreneurial skills.
7.	The B.Sc. (Zoology) programme aims to help achieve the University's goal of achieving academic excellence by providing valuable resources to students

5.17.4 Programme Learning Outcomes

Intende	d Learning Outcomes
1.	The student will define integrated approach to knowledge factual and theoretical basis of
	Zoology.
2.	The student will develop critical skills for the analysis of complex zoological problems to
	reach sustained conclusions using logical principles.
3.	The student will be able to use IT tool show problem solving skills to develop, plan and
	implement practical solutions within a diverse range of zoology divisions.
4.	The student will use knowledge and scientifically proven methodologies to perform
	experiments and result interpretation for the generation of informative data to provide
	meaningful definitive conclusions.
5.	The student will develop effective communication skills on various disciplines of Animal
	science with community, apply knowledge to become effective written and oral
	communicators in their profession with tenacity in multidisciplinary settings.
6.	The student will demonstrate effectively as an individual and as a member or leader of
	team in diverse disciplines.
7.	The student will implement all characteristics of a truly responsible global citizen.
8.	The student will apply to intercede with in the defined limits of bioethical principles to be
	implemented in the Zoological research and academia.

9.	The student will demonstrate knowledge and understanding of the technical and
	management principles in order to achieve the organizational goal in multidisciplinary
	environments.
10.	The student will develop technical skills which will enable effective lifelong learning in
	the field of Animal and allied sciences.
11.	The student will demonstrate knowledge and understanding of animal biological system
	and their place in the natural environment.
12.	The student will analyze and investigate professional, ethical, societal, environmental and
	economic responsibility to the professional practice

5.17.5 Programme Operational Outcomes

P00 1	The B.Sc. (Zoology) programme aims to help achieve the University's goal of achieving academic excellence by providing valuable resources to students.
POO 2	The programme will facilitate an academically conducive environment for holistic development of students
P00 3	The programme will provide environment for innovation and research for the intellectual growth of faculty and students.
POO 4	The programme aims to inculcate core values of the university and ethical conduct amongst students, faculty and staff.
POO 5	The programme will encourage cultural diversity and a sense of social and environmental responsibility.
P00 6	The programme will facilitate building of strong relationships with corporates and utilize network of alumni to open communication channels and seek suggestions on curricula, pedagogy, syllabus and training.
POO 7	The programme will facilitate to create employment opportunities and also support students to develop entrepreneurial skills.

5.17.6 Programme Educational Outcome Assessment for B.Sc. (Hons) Zoology

Sl. No.	PEO	PLO	Direct	Tool No for Direct Assessme nt	Target	Indirect	Tool No for Indirect Assessm ent	Target
1	The student shall be able to develop concepts in theoretical and applied aspects of Zoology.	The student will define integrated approach to knowledge factual and theoretical basis of Zoology.	*Compr ehensiv e Exam	UG/PLO1/ CE Framewor k	70% studen ts shall pass the exam.	Student Exit Survey.	UG/PLO/ Exit Survey	80% students shall score ≥ 75% in exit survey.
2	The student shall be able to demonstrate systematic understandi	The student will develop critical skills for the analysis of complex zoological	Project report submiss ion	UG/PLO2/ Project/Vi va-voce	100% studen ts will undert ake and	Feedback of Industry Internshi p Guide		The Industry Internship Guide rates the students

	ng of fundamental relevant questions and practical skills related to Zoology.	problems to reach sustained conclusions using logical principles.	*Compr ehensiv e Exam	UG/PLO2/ CE Framewor k	compl ete the dissert ation			between 3-5 range on the Likert Scale in the feedback.
3	The student shall be able to use and apply modern IT tools in relation to zoology.	The student will be able to use IT tool show problem solving skills to develop, plan and implement practical solutions within a diverse range of zoology divisions.	*Sectio n 3 of Compre hensive Exam	UG/PLO3/ Quiz/class tests/CE Framewor k	100% studen ts shall able to levera ge IT in order to compl ete their Assign ments and Project s	Student Exit Survey	UG/PLO/ Exit Survey	80% students shall score ≥ 75% in exit survey.
4	The student shall be able to interpret and comprehend research problems, propose solutions and prioritize work.	The student will use knowledge and scientifically proven methodologies to perform experiments and result interpretation for the generation of informative data to provide meaningful definitive conclusions.	Project report submiss ion *Compr ehensiv e Exam	UG/PLO4/ viva-voce UG/PLO4/ CE Framewor k	100% studen ts shall compl ete their project s and submit the report	Student Exit Survey	UG/PLO/ Exit Survey	80% students shall score ≥ 75% in exit survey.
5	The student shall be able to employ effective communicat ion skills on various topics of biosciences and zoology .	The student will develop effective communication skills on various disciplines of Animal science with community,	Rubrics Commu nication Skills	UG/PLO5/ BC	80% studen ts shall achiev e a minim um of "satisf actory" outco	Student Exit Survey	UG/PLO/ Exit Survey	80% students shall score ≥ 75% in exit survey.

		Apply knowledge to become effective written and oral communicators in their profession with tenacity in multidisciplina ry settings.		UG/PLO5/ CE Framewor k	me attain ment level.			
6	The student shall demonstrate effective and responsible action as an individual as well as in a team leader for achieving logical rationale and maintain accountabilit y and output.	The student will demonstrate effectively as an individual and as a member or leader of team in diverse disciplines and cultures of Zoology for achieving logical rationale.	* Behavio ural Science rubrics	UG/PLO6/ BS UG/PLO6/ CE Framewor	80% studen ts shall achiev e a minim um of "satisf actory" outco me attain ment level.	Student Exit Survey	UG/PLO/ Exit Survey	80% students shall score ≥ 75% in exit survey.
7	The student shall be able to develop into a responsible global citizen.	The student will implement all characteristics of a truly responsible global citizen.	Rubrics Foreign languag e	UG/PLO7/ CE Framewor	80% studen ts shall achiev e a minim um of "satisf actory" outco me attain ment level.	Student Exit Survey	UG/PLO/ Exit Survey	80% students shall score ≥ 75% in exit survey.
8	The student shall practice ethical behaviour and shall know the ethical issues associated with current animal	The student will apply to intercede with in the defined limits of bioethical principles to be implemented in the Zoological research and academia.	*Plagiar ism Checkin g of Project report,		100% Studen ts are checke d for plagiar ism in NTCC report submis sions and	Feedback of Industry Internshi p Guide		The Industry Internship Guide rates the students between 3-5 range on the Likert Scale in the

	research		* Compre hensive Exam	UG/PLO8/ CE Framewor k	are allowe d to appear for viva- voce upon obtaini ng plagiar ism %			The University will adhere to zero tolerance towards
					below 15%.			use of unfair means
	The student shall be able to develop managemen t and entrepreneu	The student will demonstrate knowledge and understanding of the technical	*Sectio n 7 of Compre hensive Exam	UG/PLO9/ EMP	70% studen ts shall pass the exam.	Student Exit Survey	UG/PLO/ Exit Survey	80% students shall score ≥ 75% in exit survey.
9	rship skills.	and management principles in order to achieve the organizational goal in multidisciplina ry environments.	*Project report submiss ion	UG/PLO9/ CE Framewor k	100% studen ts shall submit the project report			
10	The student shall be able to evaluate intellectual curiosity, and reflect the habit of life long learning.	The student will develop technical skills which will enable effective lifelong learning in the field of Animal and allied sciences.	*Sectio n 8 of Compre hensive Exam	UG/PLO10 /CE Framewor k	70% studen ts shall pass the exam.	Student Exit Survey	UG/PLO/ Exit Survey	80% students shall score ≥ 75% in exit survey.
11	The student shall be able to analyze the interrelation ship between environment , social and economic sustainabilit y.	The student will demonstrate knowledge and understanding of animal biological system and their place in the natural environment.	*Sectio n 9 of Compre hensive Exam	UG/PLO11 /CE Framewor k	70% studen ts shall pass the exam	Student Exit Survey	UG/PLO/	80% students shall score ≥ 75% in exit survey.

12	The student shall be able to apply zoological sciences to fulfil societal needs from time to time.	The student will analyze and investigate professional, ethical, societal, environmental and economic responsibility to the professional	*Compr ehensiv e Exam,	UG/PLO12 /CE Framewor k	70% studen ts shall pass the exam.	Exit Survey	80% students shall score ≥ 75% in exit survey.
		to the professional practice					

5.17.7 Student Learning Assessment for B.Sc. (Hons) Zoology

Matrix Of PEO's and PLO's

PEO/PLO	PEO 1	PEO 2	PEO 3	PEO 4	PEO 5	PEO 6	PEO 7	PEO 8	PEO 9	PEO 10	PE0 11	PEO 12
PLO 1	>			V								
PLO 2	>	V		V								
PLO 3	>	>	>	>								
PLO 4	>	>	>	>								
PLO 5			>	>	>							
PLO 6						>	>					
PLO 7							>					<
PLO 8								>	V			<
PLO 9									V	V		<
PLO 10										V		
PLO 11											V	
PLO 12												>

5.18 M. Sc. Biotechnology

5.18.1 Mission Statement

Programme Mission

To provide advanced education in the area of Biotechnology and in the futuristic and emerging frontier areas of knowledge, learning and research and to develop the overall personality of students by making them not only excellent professionals but also good individuals with understanding and regards for human values, pride in their heritage and culture, a sense of right and wrong, yearning for perfection and courage of conviction and action.

5.18.2 Programme Educational Objectives (PEOs)

1	The student shall be able to develop knowledge and skills to attain academic excellence in the field of Biotechnology.
2	The student shall demonstrate research skills to conduct research in the thrust areas of Biotechnology to benefit the society.
3	The student shall be able to use and apply modern IT tools to analyze the biological data to arrive at logical conclusions.
4	The student shall be able to analyze and interpret scientific data to solve technical, conceptual and abstract scientific problems.
5	The student shall be able to develop effective communication skills to disseminate technical information and ability to write effective reports and reviews for scientific journals.
6	The student shall be able to demonstrate effectiveness and responsibility as an individual as well as in a team while maintaining accountability and output.
7	The student shall be able to develop global citizenship skills to build a sustainable world community.
8	The student shall be able to interpret principles of ethics and apply them to develop sensitivity towards various social and cultural issues of the society.
9	The student shall be able develop networking and entrepreneurship skills and establish links with industry and alumni.
10	The student shall be able to create the virtue of lifelong learning.
11	The student shall be able to create and develop thought process for environmental preservation by developing environmentally sustainable technologies.
12	The student shall be able to integrate various aspects of biotechnology to achieve holistic and societal development.

5.18.3 Programme Operational Objectives

Programme Operational Objectives

MSc. Biotechnology programme will create appropriate resources, infrastructure and conducive environment for excellence in teaching, learning, research and professional development of students.

The programme will provide opportunities and environment for innovation and research excellence for the intellectual growth of faculty and students.

The programme will demonstrate sensitivity to the diverse needs of students and accordingly develop facilities and services.

The programme will continuously strive to build strong industry interaction, alumni networks and empanelment of expertise from industry while proactively seeking suggestions on curricula and training.

The programme will continually improve processes and systems with an aim to attain national and international accreditations.

The programme will extend support to the students in order to facilitate campus recruitment, higher

education or starting their own ventures.

The programme will act ethically to ensure transparency and good governance while discharging various responsibilities to its stakeholders and execution of policies and programs.

The programme will create opportunities for international exposure for its students and faculty.

5.18.4 Programme Learning Outcomes

Intende	d Learning Outcomes
1	The student will apply knowledge to develop critical thought and practical understanding of in the field of Biotechnology to find solutions for human benefits.
2	The student will identify, formulate, research literature, review existing knowledge and analyze complex molecular and biochemical problems to reach substantiated conclusions using principles of biology.
3	The student will apply modern IT tools for acquisition and analysis of biological data.
4	The student will demonstrate awareness of research principles and technical skills to plan independent Biotechnology research projects.
5	The student will develop appropriate level of communication skills to effectively disseminate research and technical information and shall be able to summarize scientific results; write effective reports and reviews in scientific journals.
6	The student will demonstrate the ability to work independently as individuals and flexibly within a team with effectiveness and responsibility.
7	The student will build skills to evolve into a responsible global citizen.
8	The student will develop sensitivity to environmental issues and concerns and shall understand principles of ethics within the framework and apply these principles for environmentally and culturally sensitive issues.
9	The student will apply management principles to manage one's own work and/or projects and ventures.
10	The student will organize the role of personal development, self-directed study and discovery in learning to develop life-long learning.
11	The student will develop appreciation for nature and the need for its preservation and conservation and demonstrate care for the environment by development of environmentally sustainable technologies.
12	The student will develop the capability to integrate theory, technical information and appropriate research methods for the benefit of society.

5.18. 5 Programme Operational Outcomes

Operation	Operational Outcomes								
1.	M.Sc. Biotechnology programme will promote use of appropriate methodology and pedagogical tools for teaching, learning and development.								
2.	The programme will provide environment for innovation and research and academic facilities, technological resources for teaching and learning to the students.								
3.	The programme will facilitate resources to cater diverse needs of the students and faculty to achieve academic excellence.								
4.	The programme will develop and maintain strong relationship with research institutes,								

	alumni and industry.
5.	The programme will develop infrastructure and resources to attain national and international accreditations.
6.	The programme will extend support to the students to provide employment, avenues for higher education and starting their own ventures.
7.	The programme will ensure transparency and good governance by integrating ethics and values in teaching, theory and practice.
8.	The programme will invite international delegates and speakers for seminars and conferences and provide various other opportunities for global exposure.

5.18.6 Programme Educational Outcome Assessment for M.Sc. Biotechnology

Sl. No.	PEO	PLO	Direct	Tool No for Direct Assessment	Target	Indire ct	Tool No for Indirect Assess ment	Target
1	The student shall be able to develop knowledge and skills to attain academic excellence in the field of Biotechnol ogy.	The student will apply knowledge to develop critical thought and practical understan ding of in the field of Biotechnol ogy find solutions for human benefits.	*Comprehe nsive Exam	PG/PLO1/CE Framework	70% students shall pass the exam.	Studen t Exit Survey	PG/PLO /Exit Survey	80% studen ts shall score ≥ 75% in exit survey.
2	The student shall demonstra te research skills to conduct research in the thrust areas of Biotechnol ogy to benefit the society.	The student will identify, formulate, research literature, review existing knowledge and analyze complex molecular and biochemica l problems to reach substantiat ed	Project report submission	PG/PLO2/Diss ertation	100% students will undertake and complete the Project report	Feedba ck of Indust ry Interns hip Guide		The Indust ry Interns hip Guide rates the studen ts betwe en 3-5 range on the Likert Scale in the feedba ck.

3	The student shall be able to use and apply modern IT tools to analyze the biological data to arrive at	conclusion s using principles of biology. The student will apply modern IT tools for acquisition and analysis of biological data.	*Comprehe nsive Exam *Section 3 of Comprehe nsive Exam	PG/PLO2/CE Framework PG/PLO3/CE Framework	70% students shall pass the comprehe nsive exam	Studen t Exit Survey	PG/PLO /Exit Survey	80% studen ts shall score ≥ 75% in exit survey.
4	logical conclusion s. The student shall be able to analyze and interpret scientific data to solve technical, conceptual and abstract scientific problems.	The student will demonstra te awareness of research principles and technical skills to plan independe nt Biotechnol ogy research projects.	Project report submission	PG/PLO4/ PG/PLO4/CE Framework	100% students shall complete their projects and submit the report	Studen t Exit Survey	PG/PLO /Exit Survey	80% studen ts shall score ≥ 75% in exit survey.
5	The student shall be able to develop effective communic ation skills to disseminat e technical informatio	The student will develop appropriat e level of communic ation skills to effectively disseminat e research	*Rubrics Communic ation skills		80% students shall achieve the minimum of "satisfacto ry" outcome attainmen t level	Studen t Exit Survey	PG/PLO /Exit Survey	80% studen ts shall score ≥ 75% in exit survey.

	1	1	Ι	DC /DI OF / DC		1	1	
	n and	and		PG/PLO5/BC				
	ability to	technical						
	write	informatio						
	effective	n and shall						
	reports	be able to						
	and	summarize						
	reviews	scientific						
	for	results;						
	scientific	write						
	journals.	effective						
		reports						
		and		PG/PLO5/CE				
		reviews in		Framework				
		scientific						
		journals.						
6	The	The	*		80%	Studen	PG/PLO	80%
	student	student	Behavioura		students	t Exit	/Exit	studen
	shall be	will	l Science		shall	Survey	Survey	ts shall
	able to	demonstra	rubrics		achieve			score
	demonstra	te the			the			≥ 75%
	te	ability to			minimum			in exit
	effectivene	work			of			survey.
	ss and	independe			"satisfacto			
	responsibi	ntly as			ry"			
	lity as an	individuals			outcome			
	individual	and			attainmen			
	as well as	flexibly			t level			
	in a team	within a						
	while	team with						
	maintainin	effectivene						
	g	ss and		PG/PLO6/BS				
	accountabi	responsibil						
	lity and	ity.	*	DG /DI O C /OF				
	output.			PG/PLO6/CE				
	_		Comprehe	Framework				
	m	mi	nsive Exam	110 /D1 05 /05	000/	Ct 1	DC (D) C	0007
7	The	The	* Rubrics	UG/PLO7/CE	80%	Studen	PG/PLO	80%
	student	student	FBL	Framework	students	t Exit	/Exit	studen
	shall be	will build			shall	Survey	Survey	ts shall
	able to	skills to			achieve			score
	develop	evolve into			the			≥ 75%
	global	a			minimum			in exit
	citizenship	responsibl			of			survey.
	skills to	e global			"satisfacto			
	build a	citizen.			ry"			
	sustainabl				outcome			
	e world				attainmen			
	communit				t level			
	y.							
1		1	Ĩ	i	ĺ	1		

8	The	The	*Plagiaris	PG/PLO8/CE	100%	Feedba		The
	student	student	m	Framework	Students	ck of		Indust
	shall be	will	Checking		are	Indust		ry
	able to	develop	of project		checked	ry		Interns
	interpret	sensitivity	report		for	Interns		hip
	principles	to			plagiarism	hip		Guide
	of ethics	environme			in NTCC	Guide		rates
	and apply	ntal issues			report			the
	them to	and			submissio			studen
	develop	concerns			ns and are			ts
	sensitivity	and shall			allowed to			betwe
	towards	understan			appear for			en 3-5
	various	d			viva-voce			range
	environme	principles			upon			on the
	ntal and	of ethics			obtaining			Likert
	cultural	within the			plagiarism			Scale
	issues of	framework			% below 15%.			in the feedba
	the	and apply these			15%.			ck.
	society.	principles						CK.
		for						
		environme						
		ntally and						
		culturally						
		sensitive						
		issues.						
9	The	The	Section 7	PG/PLO9/	70%	Studen	PG/PLO	80%
	student	student	of		students	t Exit	/Exit	studen
	shall be	will apply	comprehen		shall pass	Survey	Survey	ts shall
	able	manageme	sive exam		the exam			score
	develop	nt						≥ 75%
	networkin	principles	Project		100%			in exit
	g and	to manage	report		students			survey.
	entrepren	one's own	submission		shall			
	eurship skills and	work			submit			
	establish	and/or			the			
	links with	projects and			project			
	industry	ventures.			reports			
	and	ventures.						
	alumni.							
10	The	The	*Section 8	PG/PLO10/CE	70%	Studen	PG/PLO	80%
10	student	student	of	Framework	students	t Exit	/Exit	studen
	shall be	will	Comprehe	- 1 0 0 1 1	shall pass	Survey	Survey	ts shall
	able to	organize	nsive Exam		the exam		· - · - · ·	score
	create the	the role of						≥ 75%
	virtue of	personal						in exit
	lifelong	developme						survey.
	learning.	nt, self-						
		directed						
		study and						
			İ	l	1			1
		discovery						
		in learning						
		in learning to develop						
		in learning						

11	The	The	*Section 9	PG/PLO11/CE	70%	Studen	PG/PLO	80%
	student	student	of	Framework	students	t Exit	/Exit	studen
	shall be	will	Comprehe	Tramework	shall pass	Survey	Survey	ts shall
	able to	develop	nsive Exam		the exam	Survey	Survey	score
	create and	appreciatio	IISIVE EXUIT		the exam			≥ 75%
	develop	n for						in exit
	thought	nature and						survey.
	process	the need						Survey.
	for	for its						
	environme	preservati						
	ntal	on and						
	preservati	conservati						
	on by	on and						
	developing	demonstra						
	environme	te care for						
	ntally	the						
	sustainabl	environme						
	e	nt by						
	technologi	developme						
	es.	nt of						
		environme						
		ntally						
		sustainable						
		technologi						
		es.						
12	The	The	*Comprehe	PG/PLO12/CE	70%	Studen	PG/PLO	80%
	student	student	nsive Exam	Framework	students	t Exit	/Exit	studen
	shall be	will			shall pass	Survey	Survey	ts shall
	able to	develop			the exam			score
	integrate	the						≥ 75%
	various	capability						in exit
	aspects of	to						survey.
	biotechnol	integrate						
	ogy to	theory,						
	achieve	technical						
	holistic	informatio						
	and	n and						
	Societal	appropriat						
	developme	e research						
	nt.	methods						
		for the						
		benefit of						
		society.						

5.18.7 Mapping of Intended Programme Learning Outcomes to Broad-Based Programme **Educational Objectives (PEOs)**

The broad-based student learning goals identified in Section I above encompass the intended student learning outcomes as articulated in this section, and are general composites or summaries of these outcomes. These relationships are summarized in the outcomes-to-goals mapping below (Note: $\sqrt{\text{in a}}$ given cell of the table indicates the intended learning outcome in that row is associated with the learning goal in that column.):

Matrix Of PEO's and PLO's

PEO/PLO	PEO 1	PEO 2	PEO 3	PEO 4	PEO 5	PEO 6	PEO 7	PEO 8	PEO 9	PEO 10	PEO 11	PEO 12
PLO 1	>	>										
PLO 2	>	>	>	>								>
PLO 3		>	~	>			>					
PLO 4	>			>			>					
PLO 5		V			V							
PLO 6					>	>			>			
PLO 7	V		V	~			>	V				
PLO 8								V			V	
PLO 9	V					>			~			
PLO 10										~		
PLO 11								V			V	
PLO 12	V	V	V	V			>					V

5.19 M. Sc. Bioinformatics

5.19. 1 Mission Statement

Programme Mission

To provide advanced education in the area of Bioinformatics and in the futuristic and emerging frontier areas of knowledge, learning and research and to develop the overall personality of students by making them not only excellent professionals but also good individuals with understanding and regards for human values, pride in their heritage and culture, a sense of right and wrong, yearning for perfection and courage of conviction and action.

5.19.2 Programme Educational Objectives (PEOs)

1.	The student shall develop knowledge of bioinformatics, potentially utilized for life science
	research.
2.	The student shall be able to employ skills for exploration and investigation of problems in bioinformatics.
3.	The student shall design new biological solutions (workbench/algorithms) and analyze systematically the complex and specialized concepts in Bioinformatics.
4.	The student shall develop and investigate Bioinformatics based research projects.
5.	The students shall develop good communication and develop networking skills and establish links with industry and alumni.
6.	The student shall be able to demonstrate effectiveness and responsibility as an individual as well as in a team while maintaining accountability and output.
7.	To student shall be oriented to be a responsible global citizen.
8.	The student shall demonstrate knowledge of the ethical principles, law and IPR issues.
9.	The student shall extend short term trainings and dissertation projects in the area of Bioinformatics in various national or international laboratories for experiential learning.
10.	The student shall be able to use good managerial skills to enhance employment and

	entrepreneurship opportunities and able to create the virtue of lifelong learning.
11.	The student shall be able to create and develop thought process for environmental conservation by developing and implementing environmentally sustainable technologies.
12.	The student shall be able to apply both theoretical as well as practical concepts for the betterment of the society.

5.19.3 Programme Operational Objectives

1	MSc. Bioinformatics programme will create appropriate resources, infrastructure and conducive environment for excellence in teaching, learning, research and professional development of students.
2	The programme will provide opportunities and environment for innovation and research excellence for the intellectual growth of faculty and students.
3	The programme will demonstrate sensitivity to the diverse needs of students and accordingly develop facilities and services.
4	The programme will continuously strive to build strong industry interaction, alumni networks and empanelment of expertise from industry while proactively seeking suggestions on curricula and training.
5	The programme will continually improve processes and systems with an aim to attain national and international accreditations.
6	The programme will extend support to the students in order to facilitate campus recruitment, higher education or starting their own ventures.
7	The programme will act ethically to ensure transparency and good governance while discharging various responsibilities to its stakeholders and execution of policies and programs.
8	The programme will create opportunities for international exposure for its students and faculty.

5.19.4 Programme Learning Outcomes

Intended	Learning Outcomes
1.	The student will develop critical thought and practical understanding in the field of bioinformatics and ability to use knowledge and skills and work towards academic excellence.
2.	The student will be able to explore and investigate a devise solutions to a range of complex scientific problems of technical, conceptual or abstract nature.
3.	The student will design, identify and review systematically and critically appraise specialized concepts in theoretical and applied aspects of bioinformatics.
4.	The student will be able to relate research principles and technical skills to plan and execute bioinformatics research projects.
5.	The student will develop appropriate level of communication skills to effectively disseminate research and technical information.
6.	The student will create the ability to work independently as individuals and flexibly within a team with effectiveness and responsibility.
7.	The student will be oriented to be responsible global citizen.
8.	The student will be able to apply ethical principles in handling various issues concerning biotechnology and bioinformatics.

9.	The student will apply principles of project management to manage one's own work and/or project work as a member or a leader in a team, by work experience gathered through short term training / dissertation projects.
10.	The student will organize the role of personal development, self-directed study and discovery in learning to develop life-long learning.
11.	The student will be able to implement conservation of environment by using newer and better sustainable technologies.
12.	The student will integrate theory, technical information and appropriate research methods for advancement of science and society.

5.19.5 Programme Operational Outcomes

Operational	Outcomes
1.	M.Sc. Bioinformatics programme will promote use of appropriate methodology and pedagogical tools for teaching, learning and development.
2.	The programme will provide environment for innovation and research and academic facilities, technological resources for teaching and learning to the students.
3.	The programme will facilitate resources to cater diverse needs of the students and faculty to achieve academic excellence.
4.	The programme will develop and maintain strong relationship with research institutes, alumni and industry.
5.	The programme will develop infrastructure and resources to attain national and international accreditations.
6.	The programme will extend support to the students to provide employment, avenues for higher education and starting their own ventures.
7.	The programme will ensure transparency and good governance by integrating ethics and values in teaching, theory and practice.
8.	The programme will invite international delegates and speakers for seminars and conferences and provide various other opportunities for global exposure.

5.19.6 Programme Educational Outcome Assessment for M. Sc. Bioinformatics

Sl. No.	PEO	PLO	Direct	Tool No. for Direct Assessment	Target	Indire ct	Tool No. for Indirect Assess ment	Target
1	The student shall develop knowledge of bioinformatics , potentially utilized for life science research.	The student will develop critical thought and practical understan ding in the field of bioinform atics and	*Compreh ensive Exam	PG/PLO1/CE Framework	70% students shall pass the exam.	Studen t Exit Survey	PG/PLO /Exit Survey	80% studen ts shall score ≥ 75% in exit survey .

		ability to use knowledg e and skills and work towards academic excellence						
2	The student shall be able to employ skills for exploration and investigation of problems in bioinformatics .	The student will be able to explore and investigat e and devise solutions to a range of	Project report submissio n	PG/PLO2/Diss ertation	100% students will undertake and complete the project report	Feedb ack analysi s of intern ship guide		The Indust ry Intern ship Guide rates the studen ts betwe en 3-5
		complex scientific problems of technical, conceptua l or abstract nature.	*	PG/PLO2/CE Framework				ranges on the Likert Scale in the feedba ck.
3	The student shall design new biological solutions (workbench/a lgorithms) and analyze systematically the complex and specialized concepts in Bioinformatics .	The student will design, identify and review systemati cally and critically appraise specialize d concepts in theoretica l and applied aspects of bioinform atics.	*Section 3 Comprehe nsive Exam	PG/PLO3/CE Framework	70% students shal pass the section 3 of comprehe nsive exam.	Studen t Exit Survey	PG/PLO /Exit Survey	80% studen ts shall score ≥ 75% in exit survey .

4	The student shall develop and investigate Bioinformatics based research projects.	The student will be able to relate research principles and technical skills to plan and execute bioinform atics research projects.	*Project Report submissio n	PG/PLO4/CE Framework	100% students shall complete their project and submit the report	Studen t Exit Survey	PG/PLO /Exit Survey	80% studen ts shall score ≥ 75% in exit survey .
5	The students shall develop good communicatio n and develop networking skills and establish links with industry and alumni.	The student will develop appropria te level of communic ation skills to effectively dissemina te research and technical informati	*Rubrics Communic ation skills	PG/PLO5/BC PG/PLO5/CE Framework	80% students shall achieve a minimum of 'satisfacto ry' outcome attainmen t level	Studen t Exit Survey	PG/PLO /Exit Survey	80% studen ts shall score ≥ 75% in exit survey
6	The student shall be able to demonstrate effectiveness and responsibility as an individual as well as in a team while maintaining accountability and output.	on. The student will create the ability to work independe ntly as individual s and flexibly within a team with effectiven ess and responsibi lity.	*Rubrics (Behaviora l Science)	PG/PLO6/BS PG/PLO6/CE Framework	80% students shall achieve a minimum of 'satisfacto ry' outcome attainmen t level	Feedb ack extern al intern ship guide	PG/PLO /Exit Survey	80% studen ts shall score ≥ 75% in exit survey .

7	The student shall be oriented to be responsible global citizen.	The student will be oriented to be responsibl e global citizen.	Rubrics FBL	UG/PLO7/CE Framework	80% students shall achieve a minimum of 'satisfacto ry' outcome attainmen t level	Studen t Exit Survey	PG/PLO /Exit Survey	80% studen ts shall score ≥ 75% in exit survey
8	The student shall demonstrate knowledge of the ethical principles, law and IPR issues.	The student will be able to apply ethical principles in handling various issues concernin g biotechnol ogy and bioinform atics.	*Plagiaris m Checking of Project Report	PG/PL08/CE Framework	100% Students are checked for plagiaris m in NTCC report submissio ns and are allowed to appear for viva-voce upon obtaining plagiaris m % below 15%.	Feedb ack indust ry intern ship guide		The Indust ry Intern ship Guide rates the studen ts betwe en 3-5 range on the Likert Scale in the feedba ck. The Univer sity will adhere to zero tolera nce towar ds use of unfair
9	The student shall extend short term trainings and dissertation projects in the area of	The student will apply principles of project managem ent to		PG/PLO9/	70% students shall pass the exam.	Studen t Exit Survey	PG/PLO / Exit Survey	means 80% studen ts shall score ≥ 75% in exit survey

	Bioinformatics in various national or international laboratories.	manage one's own work and/or project work as a member or a leader in a team, by work experienc e gathered through short term training / dissertati on	*Section 7 of Comprehe nsive Exam	PG/PLO9/CE Framework	students shall submit the project report.			
10	The student shall demonstrate good managerial skills to enhance employment and entrepreneurs hip opportunities and able to create the virtue of lifelong learning.	projects. The student will organize the role of personal developm ent, self-directed study and discovery in learning to develop life-long learning.	*Section 8 of Comprehe nsive Exam	PG/PLO10/CE Framework	70% students shall pass the exam.	Studen t Exit Survey	PG/PLO /Exit Survey	80% studen ts shall score ≥ 75% in exit survey .
11	The student shall create and spread the thought-process for care of the environment by development of environmental ly sustainable technologies.	The student will be able to implemen t conservati on of environm ent by using newer and better sustainabl e technologi es.	*Section 9 of Comprehe nsive Exam	PG/PLO11/CE Framework	70% students shall pass the exam	Studen t Exit Survey	PG/PLO / Exit Survey	80% studen ts shall score ≥ 75% in exit survey .

12	The student shall be able to apply both theoretical as well as practical concepts for the betterment of the society.	The student will integrate theory, technical informati on and appropria te research methods for advancem ent of science and society.	*Compreh ensive Exam	PG/PLO12/CE Framework	70% students shall pass the exam	Studen t Exit Survey	PG/PLO / Exit Survey	80% studen ts shall score ≥ 75% in exit survey .
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5.19.7 Matrix of PEOs and PLOs

PEO/PLO	PEO 1	PEO 2	PEO 3	PEO 4	PEO 5	PEO 6	PEO 7	PEO 8	PEO 9	PEO 10	PEO 11	PEO 12
PLO 1	>		>				>			<		
PLO 2		~					>				>	
PLO 3	>	>	>	>			>			<	>	
PLO 4	>	>	>	>						₹	>	
PLO 5					<	>			>	₹		
PLO 6					<	>			>			
PLO 7	V	V		>			>					
PLO 8								V				V
PLO 9									>		>	V
PLO 10					>					>		
PLO 11								~		>	>	V
PLO 12												V

5.20 M. Tech. Biotechnology

5.20.1 Mission Statement

Programme Mission

To provide applied education in the area of Biotechnology, related areas of applied science, humanity related areas and in the futuristic and emerging frontier areas of knowledge, learning and research and to develop the overall personality of students by making them not only excellent professionals but also good individuals with understanding and regards for human values, pride in their heritage and culture, a sense of right and wrong, yearning for perfection and courage of conviction and action.

5.20.2 Programme Educational Objectives (PEOs)

1.	The student shall be able develop knowledge and skills and practically apply the same in the field of Biotechnology to attain academic excellence.
2.	The student shall demonstrate research skills and conduct research in applied areas of Biotechnology thereby benefitting the society.
3.	The student shall be able to use and apply latest IT tools to analyses and interpret scientific data.
4.	The student shall be able to innovate in terms of new ideas and products and interpret research in biosciences and biotechnology in order to solve scientific problems.
5.	The student shall be able to develop confidence through effective communication skills and utilize the same in enhancing interpersonal skills.
6.	The student shall be able to develop leadership skills and perform responsibly as an individual as well as in a team while maintaining accountability and output.
7.	The student shall be able to apply their knowledge and skills throughout their careers and serve society at national and global level.
8.	The student shall be able to practice the ethical principles and articulate the innovation capabilities to help society and environment.
9.	The student shall be able to develop networking and entrepreneurship skills and create a strong network with the industry and alumni.
10.	The student shall be able to develop their skills and knowledge throughout their professional career, thereby adopting life-long learning.
11.	The student shall be able to recognize the need for environmental conservation and develop sustainable technologies.
12.	The student shall be able to integrate and apply the knowledge to solve problems in contemporary life sciences and society thereof.

5.20.3 Programme Operational Objectives

Programme Name - M. Tech. (Biotechnology)

Programme Operational Objectives

M. Tech. Biotechnology programme will **create** appropriate resources, infrastructure and conducive environment for excellence in teaching, learning, research and professional development of students.

The programme will provide opportunities and environment for innovation and research excellence for

the intellectual growth of faculty and students.

The programme will **demonstrate** sensitivity to the diverse needs of students and accordingly develop facilities and services.

The programme will continuously strive to **build** strong industry interaction, alumni networks and empanelment of expertise from industry while proactively seeking suggestions on curricula and training.

The programme will continually **improve** processes and systems with an aim to attain national and international accreditations.

The programme will **extend** support to the students in order to facilitate campus recruitment, higher education or starting their own ventures.

The programme will act ethically to ensure transparency and good governance while discharging various responsibilities to its stakeholders and execution of policies and programs.

The programme will **create** opportunities for international exposure for its students and faculty.

5.20.4 Programme Learning Outcomes

Intended	l Learning Outcomes
1.	The student will attain innovative and relevant knowledge and understanding through inquiry, critique and synthesis and apply their knowledge to solve diverse problems and communicate their knowledge confidently and effectively.
2.	The student will solve problems using holistic approaches and techniques.
3.	The student will apply theoretical knowledge in Biotechnology, and practical experience of applications in these fields and gain insight into business and how projects are planned and carried out in the biotechnology industry.
4.	The student will critically devise reflective and transformative approaches to generate new ideas, artifacts, products and interpretations of viewing professional projects.
5.	The student will develop good communication skills and attain the confidence to approach employment with enthusiasm and knowledge to develop the ability to contribute to their community and the development of the industry in which they work.
6.	The student will develop interpersonal flexibility and confidence to engage across difference: interact with people from a variety of backgrounds and imagination to understand the viewpoints of others.
7.	The student will identify core subjects to focus on advances in key technologies & scientific understanding of how discoveries progress from the lab to the marketplace.
8.	The student will demonstrate ethically, environmentally and socially aware attitude as critical and responsible members of local, national, international and professional communities.
9.	The student will apply sound planning and organizational skills that promotes and contributes to the strategic planning of their enterprise or organization.
10.	The student will develop attitude or stance towards themselves and confident lifelong learners, committed to and capable of continuous collaborative and individual learning.
11.	The student will develop an ability to recognize environmental and social impacts and to provide leadership on sustainable approaches to complex problems.
12.	The student will create attitude and aspire to contribute to society in a full and meaningful way through their roles as members of local, national and global communities.

5.20.5 Programme Operational Outcomes

Operation	onal Outcomes
1.	M. Tech. Biotechnology programme will promote use of appropriate methodology and pedagogical tools for teaching, learning and development.
2.	The curriculum of the programme will be contemporary and relevant to meet research and industry requirements and benchmarked on global standards by incorporating feedback from all the stakeholders.
3.	The programme shall provide academic facilities, technological resources for teaching and learning to the students
4.	The student of the programme will earn achievements in intra and inter-university Extra Curricular activities.
5.	Faculty and students will be engaged in scholarly and professional activities in order to enhance their competencies and to contribute to the existing body of Knowledge.
6.	The programme will integrate ethics and values in teaching, theory and practice, develop and retain excellent students, faculty and staff.
7.	The programme will facilitate cultivation of cultural and environmental conservation values among students.
8.	The programme shall develop and maintain strong relationship with research institutes, alumni and industry.
9.	The programme shall invite international delegates and speakers for seminars and conferences and various other opportunities for global exposure and will support all the students for quality placements or join family business or start their own venture
10.	The programme shall establish an internal quality cell for operational quality and process improvement for students.

5.20.6 Programme Educational Outcome Assessment for M. Tech. Biotechnology

Sl. No.	PEO	PLO	Direct	Tool No. for Direct Assessment	Target	Indirect	Tool No. for Indir ect Asse ssme nt	Target
1	The student shall be able develop knowledge and skills and practically apply the same in the field of Biotechnol ogy to attain academic	The student will attain and apply knowledge of Biotechnol ogy to solve diverse problems and find solutions for human benefits.	*Compr ehensiv e Exam	PG/PLO1/CE Framework	70% students shall pass the exam.	Student Exit Survey	PG/P LO/E xit Surv ey	80% students shall score ≥ 75% in exit survey.

	excellence.							
2	The student shall demonstrat e research skills and conduct research in applied areas of Biotechnol ogy thereby benefitting the society.	The student will review and apply existing knowledge of Biotechnol ogy and analyze complex molecular and biochemic al problems to reach substantiat ed conclusion s using principles	Project Report submis sion	PG/PLO2/Disse rtation PG/PLO2/CE Framework	100% students will undertake and complete the Project Report	Feedback analysis of internshi p guide		The Industry Internsh ip Guide rates the students between 3-5 ranges on the Likert Scale in the feedbac k.
3	The student shall be able to use and apply latest IT tools to analyse and interpret scientific data.	of biology. The student will apply modern IT tools for acquisition and analysis of biological data.	*Sectio n 3 of Compr ehensiv e Exam	PG/PLO3/CE Framework	70% students shall pass the comprehensive exam.	Student Exit Survey	PG/P LO/E xit Surv ey	80% students shall score ≥ 75% in exit survey.
4	The student shall be able to innovate in terms of new ideas and products and interpret research in biosciences and biotechnol ogy in order to solve scientific problems.	The student will use research-based knowledge and scientifical ly proven methodolo gy to analyze and apply to provide valid conclusion s.	Project Report submis sion	PG/PLO4/CE Framework	100%students shall complete their project and submit the report.	Student Exit Survey	PG/P LO/E xit Surv ey	80% students shall score ≥ 75% in exit survey.

5	The student shall be able to develop confidence through effective communica tion skills and utilize the same in enhancing interperso nal skills.	The student will develop good communic ation skills and attain the confidence to communic ate effectively.	*Rubric s Commu nicatio n skills	PG/PLO5/BC PG/PLO5/CE Framework	80% students shall achieve a minimum of 'satisfactory' outcome attainment level	Student Exit Survey	PG/P LO/E xit Surv ey	80% students shall score ≥ 75% in exit survey.
6	The student shall be able to develop leadership skills and perform responsibly as an individual as well as in a team while maintainin g accountabil ity and	The student will relate effectively as an individual, and as a member in diverse teams in multidiscip linary settings.	*Rubric s Behavi oural Science	PG/PLO6/BS PG/PLO6/CE Framework	80% students shall achieve a minimum of 'satisfactory' outcome attainment level	Student Exit Survey	PG/P LO/E xit Surv ey	80% students shall score ≥ 75% in exit survey.
7	output. The student shall be able to apply their knowledge and skills throughout their careers and serve society at national and global level.	The student will build skills to evolve into a responsibl e global citizen.	* Rubrics Foreign languag e	UG/PLO7/CE Framework	80% students shall achieve a minimum of 'satisfactory' outcome attainment level	Student Exit Survey	PG/P LO/E xit Surv ey	80% students shall score ≥ 75% in exit survey.
8	The student shall be able to practice the ethical principles and articulate	The student will demonstra te ethically, environme ntally and socially	*Plagia rism Checki ng of Dissert ation		100% Students are checked for plagiarism in NTCC report submissions and are allowed to appear for	Feedback industry internshi p guide		The Industry Internsh ip Guide rates the students between 3-5

	the innovation capabilities to help society and environme nt.	aware attitude as critical and responsibl e members of local, national, internation al and profession al communiti		PG/PLO8/CE Framework	viva-voce upon obtaining plagiarism % below 15%.			range on the Likert Scale in the feedbac k.
9	The student shall be able to develop networking and	rhe student will apply sound planning and organizati	Section 7 of compre hensive exam.	PG/PLO9/	70% students shall pass the exam. 100% students shall submit the project	Student Exit Survey	PG/P LO/ Exit Surv ey	80% students shall score ≥ 75% in exit survey.
	and entreprene urship skills and create a strong network with the industry and alumni.	onal skills that promotes and contribute s to the strategic planning of their enterprise or organizati on.	Project Report submis sion	PG/PLO9/CE Framework	report	Alumni Survey	PG/P LO/ Alum ni Surv ey	80% students shall score ≥ 75% in exit survey.
10	The student shall be able to develop their skills and knowledge throughout their professional career, thereby adopting life-long learning.	The student will develop attitude or stance towards themselves and develop into confident lifelong learners, committed to and capable of continuous collaborati ve and individual learning.	*Sectio n 8 of Compr ehensiv e Exam	PG/PLO10/CE Framework	70% students shall pass the exam.	Student Exit Survey	PG/P LO/E xit Surv ey	80% students shall score ≥ 75% in exit survey.

11	The student shall be able to recognize the need for environme ntal conservation and develop sustainable technologie s.	The student will develop ability to recognize environme ntal and social impacts and to provide leadership on sustainabl e approache s to complex problems.	*Sectio n 9 of Compr ehensiv e Exam	PG/PLO11/CE Framework	70% students shall pass the comprehensive exam	Student Exit Survey	PG/P LO/ Exit Surv ey	80% students shall score ≥ 75% in exit survey.
12	The student shall be able to integrate and apply the knowledge to solve problems in contempor ary life sciences and society thereof.	The student will create attitude and aspire to contribute to society in a full and meaningful way through their roles as members of local, national and global communiti es.	*Compr ehensiv e Exam	PG/PLO12/CE Framework	70% students shall pass the comprehensive exam	Student Exit Survey	PG/P LO/ Exit Surv ey	80% students shall score ≥ 75% in exit survey.

5.20.7 Matrix Of PEO's and PLO's

PEO/PLO	PEO 1	PEO 2	PEO 3	PEO 4	PEO 5	PEO 6	PEO 7	PEO 8	PEO 9	PEO 10	PEO 11	PEO 12
PLO 1	>		>				>			~		
PLO 2		V					V				V	
PLO 3	V	V	V	V			V			~	V	
PLO 4	V	V	V	V						~	V	
PLO 5					>	<			>	~		
PLO 6					~	V			V			
PLO 7	~	~		~			V					

PLO 8					V				~
PLO 9						>		~	~
PLO 10			>				V		
PLO 11					>		V	~	>
PLO 12									V

	6 .: W		
Domain Operational Ou	<u>Section VI:</u> tcomes & Operational Out	come Assessment Plan	

Operational Assessment

OPERATIONAL OUTCOME ASSESSMENT PLAN

Sl. No.	Broad-Based Operational Goals	Intended Operational Outcomes for the DBB	Assessment Measures/Methods for Intended Operational Outcomes	Performance objectives (Targets/Criteria
1	FBB intends to provide educational excellence in teaching/academic delivery.	1.1 FBB will promote use of appropriate methodology and pedagogical tools for teaching, learning and development.	 Student feedback of course faculty. Faculty Qualifications and Experience Files. 	 80% faculty shall have satisfactory feedback. 90% faculty shall be either Ph.D or have industry experience
		1.2 The curriculum will be contemporary and relevant to meet research and industry requirements and benchmarked on global standards by incorporating feedback from all the stakeholders.	 Stakeholders feedback, peergroup feedback and analysis of the same for incorporation in curriculum. Minutes of Meetings of Area Advisory Board, Board of Studies and Academic Council. 	Curriculum shall be reviewed periodically (at least once in 3 years)
		1.3 The student of FBB will graduate in the stipulated time period	 Graduation rate in convocation report. on completion of Registration period (N) during extended period for (N+N for Ph.D, N+1+1 for PG and N+2+1 for UG) 	 At least 85% students shall graduate on completion of registration period (N) 15% or remaining shall pass during extended period for (N+N for Ph.D, N+1+1 for PG and N+2+1 for UG)
		1.4 University shall provide academic facilities, technological	 Teaching, learning aids, resources, such as labs, library, journals, database, 	 90% classrooms, teaching laboratories, computer labs., academic offices

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		Resources for teaching and learning in FBB	softwares, Inventory of all technology equipment in classrooms, computer labs, academic offices, and faculty offices.	and faculty offices are equipped with technical equipments.
2	FBB will provide an academically conducive environment for holistic development of students.	2.1 The student of FBB will earn achievements in intra and inter-university Extra Curricular activities.	 Functional and area specific club, Committees, Sports Events, co- curricular and extra curricular activities and student's participation in inter institutional competition, under guidance of faculty members. List of Award winners 	Every student and faculty member shall be a part of at least one club or committee.
3	FBB will facilitate environment for innovation and research excellence for the intellectual growth of faculty and students	3.1 Faculty and students will be engaged in scholarly and professional activities in order to enhance their competencies and to contribute to the existing body of Knowledge.	Data about research work and other scholar activities such as: • Scholarship of teaching; published and unpublished articles, manuscripts, books, curriculum review and evaluation of teaching material. • Scholarship of Discovery: published articles, manuscripts, papers presented, dissertations/ thesis, • Scholarship of Integration: published articles, reviews, manuscripts, papers presented, dissertations/ thesis, conference and workshops attended. • Scholarship of application: published articles, manuscripts, papers presented, dispersion: published articles, manuscripts, papers presented, manuscripts, papers presented, manuscripts, papers presented,	100% faculty shall be engaged in at least one scholarly activity. Students will be encouraged to perform research and also publish their findings.

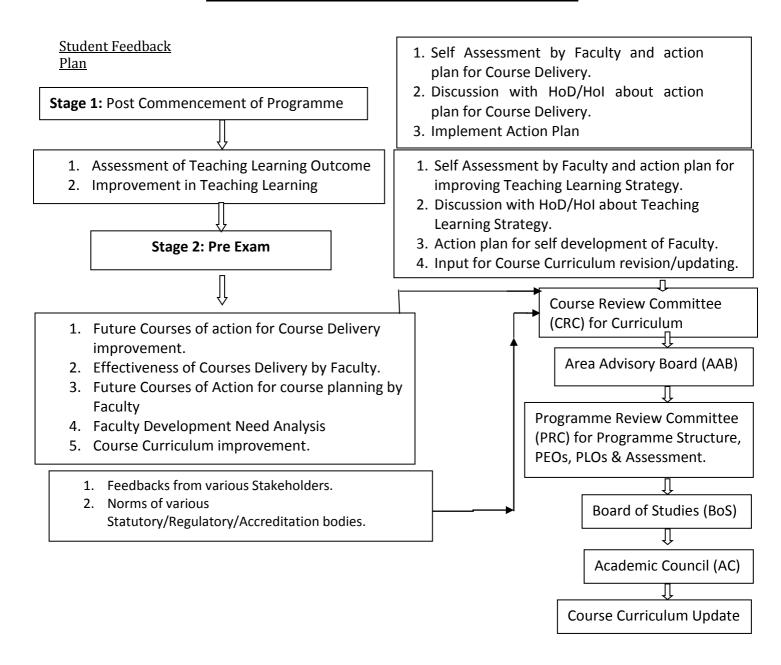
			consultations, programme evaluation. Professional activities: Conference, workshop, professional meeting attendance, professional membership. Patenting innovation- filing of provisional and complete patents	
4	FBB will facilitate cultivation of core values of the university and ethical conduct amongst students, faculty and staff.	4.1 The FBB will integrate ethics and values in teaching, theory and practice, develop and retain excellent students, faculty and staff.	 Attrition Rate Courses embedded in curriculum such as behavioural sciences Human values quarter activities Plagiarism check Feedback system. 	Attrition rate shall be below 10% annually
5	FBB will encourage cultural diversity and a sense of social and environmental responsibility.	5.1 FBB will facilitate cultivation of cultural and environmental conservation values among students.	 List of community/social service projects Organizing events related to sensitizing faculty and students to environmental and societal issues. Day of Belongingness. Celebration of festivals for culturally diverse set of students 	At least 80% faculty and students should be engaged in organizing/participating in various events and activities
6	FBB will provide ample opportunities for international exposure to faculty and students.	6.1 FBB will facilitate joint research collaborations, invite international delegates and speakers for seminars and conferences and various other opportunities	 Study Abroad Programme with renowned	100% students and faculty of DBB shall be offered opportunity for international exposure through various programmes designed for the purpose

7	an alumni network and build strong relationship with industry while proactively sooking.	exposure. 7.1 FBB shall develop and maintain strong relationship with research institutes, consultancies.	 International Collaborative Research. Alumni Database Industrial Interaction Forums 	Industry experts shall be invited at least once a semester.
	suggestions on curricula and training.	7.2 Shall maintain alumni network and keep the curriculum responsive to industry needs.	 Industry visits Empanelment of experts from research organizations and industry on Area advisory board and Board of studies. Career Counseling Sessions 	At least one member representing alumni and /or industry shall be on the board deciding program structure
8	FBB will facilitate employment opportunities and also support students to start their own ventures.	8.1 FBB will support all the students for quality placements or join family business or start their own venture	 Quality of placements (company profile, job profile, salary package offered) List of students placed. List of industries visiting campus List of students opting for and securing higher education 	80% students shall either be placed or shall opt for higher education or shall join family business or shall start their own ventures.
9	FBB will implement good governance in discharge of responsibilities and execution of policies and programs	9.1 FBB shall establish an internal quality cell for operational quality and process improvement.	Reports of various: Statutory bodies, Accreditation bodies, External evaluators report. BSI Report. Quality Audit Report by QAE.	FBB shall conduct periodic meetings as per regulations

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Linkage of outcomes assessment with strategic planning

STRATEGIC PROCESS OF CONTINUOUS IMPROVEMENTS



Section - VIII

APPENDICES

RUBRICS

PROGRAMME OUTCOME ASSESSMENT FOR COMMUNICATION SKILLS THROUGH RUBRICS

Amity University Uttar Pradesh has designed this outcome assessment plan with an objective to assess the programme outcome for communication skills through rubrics and evaluate the satisfactory implementation of the programme.

1. **Short Title, Application and Commencement**

- 1.1 The Assessment Plan may be called Programme Outcome Assessment (POA) for Communication Skills (CS) through Rubrics.
- 1.2 The Assessment Plan shall apply to all the students of Amity University, Noida Campus.
- 1.3 The Assessment Plan shall come into force with effect from the date of approval.

2. Introduction

The Communication Skills courses aim at improving the quality of verbal and non-verbal communication of students of Amity University by enabling them to learn this important life skill through a systematic implementation of the courses by incorporating them in the various programmes run by the departments. It is a planned course designed at improving effective communication by combining a set of skills including visual codes and signals, engaged listening and the ability to communicate assertively.

The Assessment methods are ways to ascertain ("measure") student achievement levels associated with stated student learning outcomes (SLOs). Programs are free to select assessment methods appropriate to their discipline or service but the choices must be valid and reliable. Amity University acknowledges that as an educational provider it has a unique responsibility to provide a rationale for assigning grades to subjectively scored assessments. A rubric is a powerful communication tool and when shared among constituents it communicates in concrete and observable terms what we value most. It also provides a means to clarify our vision of excellence and conveys it to our students.

Objectives of PROA of CS through Rubrics

- i. To assess the intended student learning outcome of the course being implemented.
- ii. To evaluate if the recipients have been capable of developing an engaging and responsive communication style.
- iii. To reflect on the development of communication skills as a tool to sustain in a modern globalized
- iv. To help students understand what the desired performance is and what it looks like.

4. **Guidelines**

- **A)** The composition of the **PROA Committee of CS through Rubrics** shall be:
 - a) HOI/Nominee (Host Institution)
 - b) PL/Programme Coordinator
 - c) Core Faculty/Member Corporate Resource Center
 - d) Communication Skills Faculty

B) Functions:

The Committee shall be responsible for:

- Organizing the Board and implementation of Rub

- rics
- Preparing list of students for the board
- Scheduling of the implementation of Rubrics in the Annual Academic Planning
- Liasoning with the concerned **PROA Committee** for the implementation of the Rubrics
- The HOI would suggest dates for implementation of the Rubrics to the concerned institution. The said dates would be confirmed by the HOI- AIESR & AICC
- The Boards for the implementation of the Rubrics would be conducted at a designated place specified by the concerned HOI.
- The Institutional **PROA Committee** would be responsible for the arrangement of resources for the smooth implementation of the Rubrics.
- The Institutional PROA Committee will also be responsible for compilation and submission of results to the Controller of Examinations.
- The Board after the completion of implementation of Rubrics will submit the assessment countersigned by all designated members to the concerned HOI.
- A copy of attendance sheet needs to be maintained by the respective institution as well as the concerned Communication Skills faculty.

C) Assessment:

- a) On the completion of every even semester the student would be evaluated on the basis of four descriptors which are in tandem with the course objectives and SLOs of courses taught in every two successive semester.
- b) The descriptors are evaluated on the basis of parameters listed below:
- a) Unsatisfactory
- b) Needs Improvement
- c) Satisfactory
- d) Proficient
- e) Distinguished
- **D)** The Institutional **PROA Committee** will also be responsible for compilation and submission of results to the Controller of Examinations.

E) Scale for Assessment

1. The student would be rated for the descriptor on the parameters mentioned. The parameters are assigned weightage which is as follows:

0	Unsatisfactory
1	Needs Improvement
2	Satisfactory
3	Proficient
4	Distinguished

2. A score of the student would be generated for all descriptors and would be analyzed according to the mentioned scale.

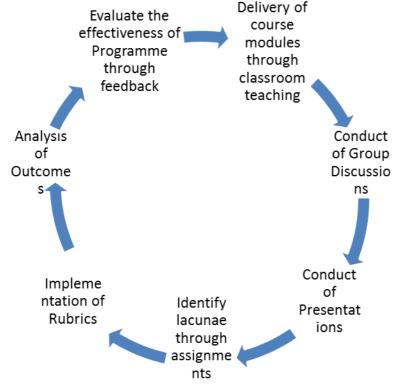
<=8	Needs Improvement
09-11	Satisfactory
12-14	Partly Achieved
15-16	Fully Achieved

3. We would have to generate this assessment for all sections and then calculate the same for the complete programme.

4. The compiled result sheets student-vise, section-vise, and programme-vise need to be submitted by the constituted PROA Committee to the concerned HOI to be further handed over to the Controller of Examinations.

5. Process:

Amity University follows a systematic Process commencing from the delivery of the course modules to conduct of group discussions and presentations and finally evaluate the effectiveness of Programme in terms of learning outcomes through implementation of Rubrics. The process is as follows:



6) Evaluate the effectiveness of Programme through feedback

An important function of the **PROA Committee** is to assess the impact of communication skills which is very essential for continuous improvement and to assess whether the objectives of the various programmes are realized. This will also help to identify the gaps for further improvement of the courses to help the students to face the challenges of the present day globalized competitive environment.

This can be done through a graphical analysis after the completion of each semester.

Faculty of Arts, Humanities & Social Sciences and Journalism/ Mass Communication/ Media Rubrics for Assessment of Communication Skills for 1st Year of Three Year Undergraduate **Programme**

ASSESSMENT PARAMETERS:

- Verbal communication
- Non-verbal communication

TOOLS USED FOR ASSESSMENT:

- Written Test
- **Group Discussion**
- Presentations

COMPOSITION OF ASSESSMENT BOARD

- **Communication Skills Faculty**
- Program Leader/ Program Co-coordinator

• Any other senior faculty

SCORE SHEET: INDIVIDUAL

If the student scores between	Outcome Attainment Levels
<=8	Needs improvement
9-11	Satisfactory
12-14	Partly Achieved
15-16	Fully Achieved

*Students scoring 9 or above fall in the passing criteria. SCORE SHEET: PROGRAMME/ BATCH

Outcome Attainment Levels	Percentage of Students
Needs improvement	
Satisfactory	
Partly Achieved	
Fully Achieved	

Communication Skills - UG						
Name : Enrolment No :				Programme :		
Components	Unsatisfactor y (0)	Needs Improvemen t (1)	Satisfactory (2)	Proficient (3)	Distinguishe d (4)	Scor e
Usage of Grammar	The learner is unable to use correct grammar in paragraphs and in other forms of written communication	The learner is able to manifest proper usage of basics of grammar in paragraphs and in other forms of written communicatio n	The learner exhibits proficiency in correct usage of simple grammatical concepts and in other forms of written communicatio n	The learner shows advanced proficiency in correct usage of simple grammatical concepts and in other forms of written communicatio n	The learner shows advanced proficiency in correct usage of complex grammatical concepts and in other forms of written communicatio n	
Linguistic Accuracy in Oral Communicatio n	The learner is unable to use appropriate accent and intonation	The learner is able to use appropriate accent and intonation	The learner is able to use suitable accent and intonation	The learner is able to show developed proficiency in delivering proper accent and intonation	The learner is able to show expertise in delivering the subtle nuances of a developed accent and intonation	

Aspects of Verbal Communication	The learner is unable to manifest communicative competence with the 7c's of communication The learner exhibits inadequate comprehension of visual codes and KOPPACT.	The learner is able to manifest communicativ e competence with the 7c's of communicatio n The learner exhibits developing proficiency in understandin g of visual codes and KOPPACT	The learner shows proficiency in the manifestation of communicative competence with the 7c's of communication The learner exhibits increased proficiency in understanding of visual codes and KOPPACT	The learner shows developed proficiency in the understandin g and manifestation of communicativ e competence with the 7c's of communicatio n The learner exhibits developed proficiency in understandin g and KOPPACT	The learner will be able to apply analytical capability in comprehensio n of complex texts with communicativ e competence with the 7c's of communicatio n The learner's Visual codes are in concurrence with the verbal communicatio n and KOPPACT	
					Total Score	

Faculty of Arts, Humanities & Social Sciences and Journalism/ Mass Communication/ Media Rubrics for Assessment of Communication Skills for 2nd Year of Three Year Undergraduate **Programme**

ASSESSMENT PARAMETERS:

- Verbal communication
- Non-verbal communication

TOOLS USED FOR ASSESSMENT:

- Written Test
- Group Discussion
- Presentations

COMPOSITION OF ASSESSMENT BOARD

- **Communication Skills Faculty**
- Program Leader/ Program Co-coordinator
- Any other senior faculty

If the student scores between	Outcome Attainment Levels
<=8	Needs improvement
9-11	Satisfactory
12-14	Partly Achieved
15-16	Fully Achieved

*Students scoring 9 or above fall in the passing criteria. SCORE SHEET: PROGRAMME/ BATCH

Outcome Attainment Levels	Percentage of Students
Needs improvement	
Satisfactory	
Partly Achieved	
Fully Achieved	

	Communication Skills - UG					
Name :	Enroln	nent No :	Progr	ramme :		
Components	Unsatisfactory (0)	Needs Improvement (1)	Satisfactory (2)	Proficient (3)	Distinguished (4)	Score
Aspects of Written Communication	The learner displays inability to write class notes, memos and other forms of correspondence	The learner displays ability to write class notes, memos and other forms of correspondence	The learner displays proficiency in writing class notes, memos and other forms of correspondence	The learner displays competence in writing class notes, memos and other forms of correspondence	The learner displays advanced capability in all forms of written communication	
Comprehending Letter Writing	The learner is unable to write structured letters and format is not evident	The learner is able to write structured letter but format is not evident	The learner is able to write structured letters with proper usage of format	The learner is competent in writing simple formal letters with correct content and form	The learner shows advanced proficiency in writing letters which is relevant to the particular situation	
Employability Skills	The learner is unable to understand the basics of dynamics of GD and interview skills	The learner can partially understand the basics of dynamics of GD and interview skills	The learner can respond to the dynamics of GD and interview skills	The learner can respond to the dynamics of GD and interview skills with confidence	The learner can deliver competent and accurate and befitting replies during GD and Interview	
Effective Resume Writing	The learner displays inability in writing Resume using appropriate language and format	The learner displays partial improvement in writing the resume by using satisfactory language and format	The learner can write resume satisfactorily using the language and format according to instructions	The learner can write effective resume using the language and format in an innovative manner	The learner can write flawless resumes by using language and format convincingly with precision	

Total	Score
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Faculty of Arts, Humanities & Social Sciences and Journalism/ Mass Communication/ Media Rubrics for Assessment of Communication Skills for 3rd Year of Three Year Undergraduate **Programme**

ASSESSMENT PARAMETERS:

- Verbal communication
- Non-verbal communication

TOOLS USED FOR ASSESSMENT:

- Written Test
- Group Discussion
- Presentations

COMPOSITION OF ASSESSMENT BOARD

- Communication Skills Faculty
- Program Leader/ Program Co-coordinator
- Any other senior faculty

If the student scores between	Outcome Attainment Levels	
<=8	Needs improvement	
9-11	Satisfactory	
12-14	Partly Achieved	
15-16	Fully Achieved	

^{*}Students scoring 9 or above fall in the passing criteria. **SCORE SHEET: PROGRAMME/ BATCH**

Outcome Attainment Levels	Percentage of Students
Needs improvement	
Satisfactory	
Partly Achieved	
Fully Achieved	

Communication Skills - UG						
Name :	Enrolment No : Programme :					
Components	Unsatisfactory (0)	Needs Improvement (1)	Satisfactory (2)	Proficient (3)	Distinguished (4)	Score
Enhancing	The learner is	The learner is	The learner is	The learner is	The learner is	
Comprehension	unable to	able to	able to	able to grasp	able to fathom	
& vocabulary	comprehend	comprehend	comprehend	the meaning of	the intricacies	
	simple texts	simple texts	complex texts	complex texts	of complex	
	and also lacks	and shows	and improved	and shows	texts and	
	vocabulary	improvement	vocabulary	expertise in	effectively uses	
	skills	in vocabulary	skills	vocabulary	complicated	
		skills		skills	vocabulary	

Presentation	The learner				
Skills and its	hesitates	delivers	delivers fluent	displays	displays fluent
Delivery	throughout the	improved	presentation	effective	oratory with
	delivery with	presentation	with	oratory with	persuasive and
	pauses and	with adequate	satisfactory	confident	apt conclusion
	weak	conclusion	conclusion	conclusion	•
	conclusions				
Professional	The learner is	The learner is	The learner	The learner	The learner
Interpersonal	unable to	able to	comprehends	comprehends	comprehends
Skills	comprehend	comprehend	the	the	the
	the traits of	the	importance of	importance of	importance of
	team work in	traits of team	coordination	initiative,	motivation,
	the workplace	work in the	and team	coordination	initiative and
		workplace	work in the	and	team work in
			workplace	team work in	the workplace
				the workplace	
Visual Codes	The learner	The learner	The learner	The learner	The learner's
and Etiquettes	exhibits	exhibits	exhibits	exhibits	Visual codes
	inadequate	developing	increased	developed	are in concord
	comprehension	proficiency in	proficiency in	proficiency in	with the verbal
	of visual codes	understanding	understanding	understanding	communication
	with improper	of visual codes	of visual codes	and	and exhibits
	etiquettes	with basic	and develops	comprehension	efficiency,
		etiquettes	basic	of visual codes	accuracy in
			etiquettes	with expertise	basic
				in basic	etiquettes
				etiquettes	
					Total Score

Faculty of Arts, Humanities & Social Sciences and Journalism/ Mass Communication/ Media

Rubrics for Assessment of Communication Skills for 1st Year of Postgraduate Programme **ASSESSMENT PARAMETERS:**

- Verbal communication
- Non-verbal communication

TOOLS USED FOR ASSESSMENT:

- Written Test
- Group Discussion
- Presentations

COMPOSITION OF ASSESSMENT BOARD

- Communication Skills Faculty
- Program Leader/ Program Co-coordinator
- Any other senior faculty

If the student scores between	Outcome Attainment Levels	
<=8	Needs improvement	
9-11	Satisfactory	

12-14	Partly Achieved
15-16	Fully Achieved

*Students scoring 9 or above fall in the passing criteria. SCORE SHEET: PROGRAMME/ BATCH

Outcome Attainment Levels	Percentage of Students
Needs improvement	
Satisfactory	
Partly Achieved	
Fully Achieved	

Communication Skills - PG						
Name :	Name : Enrolment No : Programme :					
Components	Unsatisfactory (0)	Needs Improvement (1)	Satisfactory (2)	Proficient (3)	Distinguished (4)	Score
Effective use of LSRW Skills	The learner is unable to manifest analytical capability along with coherence, clarity and conciseness	The learner is able to manifest analytical capability but not with coherence, clarity and conciseness	The learner shows proficiency in the manifestation of analytical capability with coherence, clarity and conciseness	The learner shows developed proficiency in the understanding and manifestation of analytical capability with comprehensive coherence, clarity and conciseness	The learner will be able to apply analytical capability in comprehension of complex texts with comprehensive coherence, clarity and conciseness	
Fluency in oral communication	The learner is unable to initiate communication with clarity in ideas	Learner adequately starts the communication but lacks clarity in ideas	Ability of learner to coherently initiate the communication with clarity in ideas	Learner impressively opens the argument with innovative use of ideas	Learner demonstrates capability of a confident and suave initiation of communication with complex use of ideas	
Interviews and its assessment	The learner is unable to fathom interview questions and shows feelings of nervousness	The learner can partially fathom the interview questions and feels slightly nervous	The learner can respond to interview questions with ease and comfort	The learner can respond to interview questions with confidence and alacrity	The learner can deliver competent and accurate and befitting replies to interview questions with conviction and	

Resume and its	The learner	The learner	The learner	The learner	The learner	
formats	displays	displays partial	can write	can write	can write	
	inability in	improvement	resume	effective	customised	
	writing	in writing the	satisfactorily	resume using	resumes by	
	Resume by	resume by	using the	the language	using language	
	using correct	using	language and	and format in	and format	
	language and	satisfactory	format	an innovative	convincingly	
	format	language and	according to	manner	with precision	
		format	instructions			
					Total Score	

Faculty of Arts, Humanities & Social Sciences and Journalism/ Mass Communication/ Media

Rubrics for Assessment of Communication Skills for 2nd Year of Postgraduate Programme **ASSESSMENT PARAMETERS:**

- Verbal communication
- Non-verbal communication

TOOLS USED FOR ASSESSMENT:

- Written Test
- Group Discussion
- Presentations

COMPOSITION OF ASSESSMENT BOARD

- Communication Skills Faculty
- Program Leader/ Program Co-coordinator
- Any other senior faculty

If the student scores between	Outcome Attainment Levels
<=8	Needs improvement
9-11	Satisfactory
12-14	Partly Achieved
15-16	Fully Achieved

^{*}Students scoring 9 or above fall in the passing criteria. **SCORE SHEET: PROGRAMME/ BATCH**

Outcome Attainment Levels	Percentage of Students
Needs improvement	
Satisfactory	
Partly Achieved	
Fully Achieved	

	Communication Skills	- PG
Name :	Enrolment No :	Programme :

Components	Unsatisfactory (0)	Needs Improvement (1)	Satisfactory (2)	Proficient (3)	Distinguished (4)	Score
Presentation- Fluency and Delivery	The learner halts and mumbles throughout the delivery with forced pauses and weak conclusions	The learner delivers Improved presentation with adequate conclusion	The learner delivers fluent presentation with satisfactory conclusion	The learner displays effective oratory with confident rhetoric and apt conclusion	The learner displays fluent oratory with persuasive rhetoric and apt conclusion	
Official Correspondence and Technical Writing	The learner displays inappropriate style with inaccurate sentence structures filled with lexical ambiguity	The learner develops formal style with clarity in thought and expression	The learner displays developed formal style and clarity in thought and expression	The learner displays efficiency in writing effective emails, reports, articles and drafting policies	The learner displays ability in drafting and all other forms of technical writing	
Cultural Diversity in Professional Environment	The learner displays inability in adjusting to other cultures and fails to realise importance of maintaining rapport in multicultural context	The learner displays basic idea of cultural diversity in multicultural context	The learner displays good understanding of cultural diversity in multicultural context	The learner demonstrates good understanding of cultural diversity and importance of maintaining rapport in multicultural context	The learner will demonstrate respect for other cultures and simultaneously maintain rapport in multicultural context	
Soft Skills	The learner demonstrates inappropriate gestures, postures, eye movement and inadequate use of space language	The learner delivers appropriate body language which suits the occasion and apt use of space language	The learner delivers suitable body language and also makes maximum use of proxemics	The learner carries perfect body language and also modifies it based on the situation and also displays perfect use of space and definition of zones through the use	The learner carries perfect and original body language along with optimum and perfect use of proxemics	
					Total Score	

Faculty of Arts, Humanities & Social Sciences and Journalism/ Mass Communication/ Media

Rubrics for Assessment of Communication Skills for $3^{\rm rd}$ Year of Three Year Postgraduate **Programme**

ASSESSMENT PARAMETERS:

• Verbal communication

• Non-verbal communication

TOOLS USED FOR ASSESSMENT:

- Written Test
- Group Discussion
- Presentations

COMPOSITION OF ASSESSMENT BOARD

- Communication Skills Faculty
- Program Leader/ Program Co-coordinator
- Any other senior faculty

If the student scores between	Outcome Attainment Levels
<=4	Needs improvement
5-6	Satisfactory
7	Partly Achieved
8	Fully Achieved

^{*}Students scoring 5 or above fall in the passing criteria. SCORE SHEET: PROGRAMME/ BATCH

Outcome Attainment Levels	Percentage of Students
Needs improvement	
Satisfactory	
Partly Achieved	
Fully Achieved	

Communication Skills - PG						
Name :	Name : Enrolment No : Programme :					
Components	Unsatisfactory (0)	Needs Improvement (1)	Satisfactory (2)	Proficient (3)	Distinguished (4)	Score
Extemporaneity and speaking publicly	The learner is impervious to the requirement of the target group and fails to handle interactions and discussions	The learner falls inappropriately short of gauging audience reaction and shows adequate management and participation in interactions	The learner tries to improve comprehension of audience reaction and shows appropriate management and participation in interactions	The learner appropriately fathoms and delivers to suit response of target audience and shows originality in interactions	The learner is perfect in gauging and responding to the target audience and manifests creative & befitting administration of interactions/discussions	

Soft Skills	The learner	The learner	The learner	The learner	The learner carries	
	demonstrates	delivers	delivers	carries	perfect and original	
	inappropriate	appropriate	suitable body	perfect body	body language along	
	gestures,	body language	language and	language and	with optimum and	
	postures, eye	which suits the	also makes	also modifies	perfect use of proxemics	
	movement and	occasion and	maximum use	it based on		
	inadequate use	apt use of	of proxemics	the situation		
	of space	space language		and also		
	language			displays		
				perfect use of		
				space and		
				definition of		
				zones		
				through the		
				use		
					Total Score	

Faculty of Arts, Humanities & Social Sciences and Journalism/ Mass Communication/ Media Rubrics for Assessment of Business Communication for 1st Year of Masters Programme **ASSESSMENT PARAMETERS:**

- Verbal communication
- Non-verbal communication

TOOLS USED FOR ASSESSMENT:

- Written Test
- Presentations
- Group Discussion

COMPOSITION OF ASSESSMENT BOARD

- **Business Communication Faculty**
- Program Leader/ Program Co-coordinator
- Any other senior faculty

If the student scores between	Outcome Attainment Levels		
<=8	Needs improvement		
9-11	Satisfactory		
12-14	Partly Achieved		
15-16	Fully Achieved		

^{*}Students scoring 9 or above fall in the passing criteria. **SCORE SHEET: PROGRAMME/ BATCH**

Outcome Attainment Levels	Percentage of Students
Needs improvement	
Satisfactory	
Partly Achieved	
Fully Achieved	

Business Communication - PG Name: Enrolment No: Programme:						
Components	Unsatisfactory (0)	Needs Improvement (1)	Satisfactory (2)	Proficient (3)	Distinguished (4)	Score
Communication & Its Process	The learner is unable to understand the process of formal communication in organizations	The learner is able to understand the Nature but cannot understand the process Formal Communication in organizations	The learner shows proficiency in the understanding of the Nature and Process of Formal Communication in organizations	The learner can understand the complex nature of Communication processes in organizations	The learner can apply the nature and process of formal Communication effectively	
Barriers to Effective Communication	The learner cannot understand the barriers to formal communication	The learner has basic understanding of the barriers of formal communication	The learner has a clear understanding of the barriers to effective formal communication	The learner understands the complexity of the barriers to formal communication and can remove some of the barriers	The learner has advanced knowledge of barriers to formal communication and can communicate effectively.	
Strategies for Effective Business Correspondence	The learner cannot write Business Reports and Letters in the proper language and format	The learner can write Business Reports and Letters with some inaccuracies in language and format	The learner can write Business Reports and Letters in a satisfactory manner	The learner can write Business Reports and Letters in an effective manner	The learner can write Business Reports and Letters in a convincing manner	
Job Applications Resumes	The learner cannot write Resumes in proper language and format	The learner cannot write Resume without errors in language and format	The learner can write Resume in a satisfactory manner	The learner can write effective resumes	The learner can write convincing win-win resumes	
					Total Score	

Faculty of Arts, Humanities & Social Sciences and Journalism/ Mass Communication/ Media Rubrics for Assessment of Business Communication for 2nd Year of Masters

Programme

ASSESSMENT PARAMETERS:

- Verbal communication
- Non-verbal communication

TOOLS USED FOR ASSESSMENT:

- Written Test
- Presentations

• Group Discussion

COMPOSITION OF ASSESSMENT BOARD

- Business Communication Faculty
- Program Leader/ Program Co-coordinator
- Any other senior faculty

If the student scores between	Outcome Attainment Levels
<=8	Needs improvement
9-11	Satisfactory
12-14	Partly Achieved
15-16	Fully Achieved

^{*}Students scoring 9 or above fall in the passing criteria. SCORE SHEET: PROGRAMME/ BATCH

Outcome Attainment Levels	Percentage of Students
Needs improvement	
Satisfactory	
Partly Achieved	
Fully Achieved	

Name :	Business Communication - PG Name : Enrolment No : Programme :				_	
Components	Unsatisfactory (0)	Needs Improvement (1)	Satisfactory (2)	Proficient (3)	Distinguished (4)	Score
Formal Presentations Information Packaging and its delivery	The learner does not seem to understand the nature of clarity and confidence in formal presentations.	The learner has a basic understanding of clarity and confidence in formal presentation	The learner can give presentation and with confidence in formal context	The learner can give presentation in formal context with clarity and ease	The learner is proficient in information packaging and can make presentation with precision, clarity and confidence in the formal context	
Interviews as stepping stones to placements	The learner cannot understand the questions of interviewer and feels nervous	The learner can only partially respond to the questions of interviewer and feels slightly nervous	The learner can respond to questions of interviewer with ease.	The learner can respond to questions of the interviewer with clarity and ease and make a favorable impression.	The learner can competently and accurately handle the interviews	

Workplace Communication amidst different cultures	The learner does not have much idea of respecting other cultures and finds it difficult to maintain rapport in the multicultural context	The learner shows some awareness of cultural diversity and understands its important in the multicultural context	The learner has good understanding of cultural diversity in multicultural context	The learner has good understanding of cultural diversity importance of maintaining rapport in multicultural context	The learner will demonstrate respect for other cultures and at the same time maintain rapport in the multicultural context	
Etiquettes, Ethics & rules of conduct in the corporate world	The student has deficient knowledge of business ethics and organizational protocol	The student has a very basic idea of business ethics and organizational protocol	The student demonstrates knowledge of business ethics and organizational protocol	The student is completely aware of business ethics and organizational protocol	The student can behave with proper business etiquette and follow organizational protocol	

Total Score

Faculty of Arts, Humanities & Social Sciences and Journalism/ Mass Communication/ Media Rubrics for Assessment of Communication Skills for 1st Year of Five Year Integrated Undergraduate & Postgraduate Programme

ASSESSMENT PARAMETERS:

- Verbal communication
- Non-verbal communication

TOOLS USED FOR ASSESSMENT:

- Written Test
- Group Discussion
- Presentations

COMPOSITION OF ASSESSMENT BOARD

- Communication Skills Faculty
- Program Leader/ Program Co-coordinator
- Any other senior faculty

SCORE SHEET: INDIVIDUAL

If the student scores between	Outcome Attainment Levels
<=8	Needs improvement
9-11	Satisfactory
12-14	Partly Achieved
15-16	Fully Achieved

*Students scoring 9 or above fall in the passing criteria. SCORE SHEET: PROGRAMME/ BATCH

Outcome Attainment Levels	Percentage of Students

Needs improvement	
Satisfactory	
Partly Achieved	
Fully Achieved	

Communication Skills - UG+PG INTEGRATED (5 YRS)						
Name :	Enrol	ment No :	Pro	ogramme :		
Components	Unsatisfactory (0)	Needs Improvement (1)	Satisfactory (2)	Proficient (3)	Distinguished (4)	Score
Usage of Grammar	The learner is unable to use correct grammar in paragraphs and in other forms of written communication	The learner is able to manifest proper usage of basics of grammar in paragraphs and in other forms of written communication The learner is	The learner exhibits proficiency in correct usage of simple grammatical concepts and in other forms of written communication The learner is	The learner shows advanced proficiency in correct usage of simple grammatical concepts and in other forms of written communication The learner is	The learner shows advanced proficiency in correct usage of complex grammatical concepts and in other forms of written communication The learner is	
Accuracy in Oral Communication	unable to use appropriate accent and intonation	able to use appropriate accent and intonation	able to use suitable accent and intonation	able to show developed proficiency in delivering proper accent and intonation	able to show expertise in delivering the subtle nuances of a developed accent and intonation	
Aspects of Verbal Communication	The learner is unable to manifest communicative competence with the 7c's of communication	The learner is able to manifest communicative competence with the 7c's of communication	communicative competence with the 7c's of communication	The learner shows developed proficiency in the understanding and manifestation of communicative competence with the 7c's of communication	The learner will be able to apply analytical capability in comprehension of complex texts with communicative competence with the 7c's of communication	
Significance of Non-Verbal Communication	The learner exhibits inadequate comprehension of visual codes and KOPPACT.	The learner exhibits developing proficiency in understanding of visual codes and KOPPACT	The learner exhibits increased proficiency in understanding of visual codes and KOPPACT	The learner exhibits developed proficiency in understanding and KOPPACT	The learner's Visual codes are in concurrence with the verbal communication and KOPPACT	

Faculty of Arts, Humanities & Social Sciences and Journalism/ Mass Communication/ Media Rubrics for Assessment of Communication Skills for 2nd Year of Five Year Integrated **Undergraduate & Postgraduate Programme**

ASSESSMENT PARAMETERS:

- Verbal communication
- Non-verbal communication

TOOLS USED FOR ASSESSMENT:

- Written Test
- Group Discussion
- Presentations

COMPOSITION OF ASSESSMENT BOARD

- Communication Skills Faculty
- Program Leader/ Program Co-coordinator
- Any other senior faculty

If the student scores between	Outcome Attainment Levels
<=8	Needs improvement
9-11	Satisfactory
12-14	Partly Achieved
15-16	Fully Achieved

^{*}Students scoring 9 or above fall in the passing criteria. **SCORE SHEET: PROGRAMME/ BATCH**

Outcome Attainment Levels	Percentage of Students
Needs improvement	
Satisfactory	
Partly Achieved	
Fully Achieved	

Communication Skills – UG+PG INTEGRATED (5 YRS)						
Name :		Enrolment No	:	Programme	·	
Components	Unsatisfactory (0)	Needs Improvement (1)	Satisfactory (2)	Proficient (3)	Distinguished (4)	Score
Aspects of Written Communication	The learner displays inability to write class notes, memos and other forms of correspondence	The learner displays ability to write class notes, memos and other forms of correspondence	The learner displays proficiency in writing class notes, memos and other forms of correspondence	The learner displays competence in writing class notes, memos and other forms of correspondence	The learner displays advanced capability in all forms of written communication	
Comprehending Letter Writing	The learner is unable to write structured letters and format is not evident	The learner is able to write structured letter but format is not evident	The learner is able to write structured letters with proper usage of format	The learner is competent in writing simple formal letters with correct content and form	The learner shows advanced proficiency in writing letters which is relevant to the particular situation	
Employability Skills	The learner is unable to understand the basics of dynamics of GD and interview skills	The learner can partially understand the basics of dynamics of GD and interview skills	The learner can respond to the dynamics of GD and interview skills	The learner can respond to the dynamics of GD and interview skills with confidence	The learner can deliver competent and accurate and befitting replies during GD and Interview	
Effective Resume Writing	The learner displays inability in writing Resume using appropriate language and format	The learner displays partial improvement in writing the resume by using satisfactory language and format	The learner can write resume satisfactorily using the language and format according to instructions	The learner can write effective resume using the language and format in an innovative manner	The learner can write flawless resumes by using language and format convincingly with precision	
Total Score						

Faculty of Arts, Humanities & Social Sciences and Journalism/ Mass Communication/ Media Rubrics for Assessment of Communication Skills for 3rd year of Five Year Integrated Undergraduate & Postgraduate Programme

ASSESSMENT PARAMETERS:

- Verbal communication
- Non-verbal communication

TOOLS USED FOR ASSESSMENT:

- Written Test
- Group Discussion
- Presentations

COMPOSITION OF ASSESSMENT BOARD

- Communication Skills Faculty
- Program Leader/ Program Co-coordinator
- Any other senior faculty

SCORE SHEET: INDIVIDUAL

If the student scores between	Outcome Attainment Levels
<=8	Needs improvement
9-11	Satisfactory
12-14	Partly Achieved
15-16	Fully Achieved

*Students scoring 9 or above fall in the passing criteria. SCORE SHEET: PROGRAMME/ BATCH

Outcome Attainment Levels	Percentage of Students
Needs improvement	
Satisfactory	
Partly Achieved	
Fully Achieved	

	Communication Skills - UG + PG Integrated (5 Yrs)							
Name :	ame : Enrolment No : Programme :							
Components	Unsatisfacto ry (0)	Needs Improveme nt (1)	Satisfactory (2)	Proficient (3)	Distinguished(4)	Scor e		
Enhancing Comprehensio n & vocabulary	The learner is unable to comprehend simple texts and also lacks vocabulary skills	The learner is able to comprehend simple texts and shows improvemen t in vocabulary skills	The learner is able to comprehend complex texts and improved vocabulary skills	The learner is able to grasp the meaning of complex texts and shows expertise in vocabulary skills	The learner is able to fathom the intricacies of complex texts and effectively uses complicated vocabulary			
Presentation Skills and its Delivery	The learner hesitates throughout the delivery with pauses and weak conclusions	The learner delivers improved presentation with adequate conclusion	The learner delivers fluent presentation with satisfactory conclusion	The learner displays effective oratory with confident conclusion	The learner displays fluent oratory with persuasive and apt conclusion			

Professional	The learner is	The learner	The learner	The learner	The learner	
Interpersonal	unable to	is able to	comprehend	comprehends	comprehends	
Skills	comprehend	comprehend	s the	the	the	
	the traits of	the	importance	importance of	importance of	
	team work in	traits of team	of	initiative,	motivation,	
	the workplace	work in the	coordination	coordination	initiative and	
		workplace	and team	and	team work in	
			work in the	team work in	the workplace	
			workplace	the workplace		
Visual Codes	The learner	The learner	The learner	The learner	The learner's	
and Etiquettes	exhibits	exhibits	exhibits	exhibits	Visual codes are	
	inadequate	developing	increased	developed	in concord with	
	comprehensio	proficiency	proficiency	proficiency in	the verbal	
	n of visual	in	in	understandin	communication	
	codes with	understandin	understandi	g and	and exhibits	
	improper	g of visual	ng of visual	comprehensio	efficiency,	
	etiquettes	codes with	codes and	n of visual	accuracy in	
		basic	develops	codes with	basic etiquettes	
		etiquettes	basic	expertise in		
			etiquettes	basic		
				etiquettes		
						
					Total Score	

Faculty of Arts, Humanities & Social Sciences and Journalism/ Mass Communication/ Media Rubrics for Assessment of Communication Skills for 4th Year of Five Year Integrated Undergraduate & Postgraduate Programme

ASSESSMENT PARAMETERS:

- Verbal communication
- Non-verbal communication

TOOLS USED FOR ASSESSMENT:

- Written Test
- Group Discussion
- Presentations

COMPOSITION OF ASSESSMENT BOARD

- Communication Skills Faculty
- Program Leader/ Program Co-coordinator
- Any other senior faculty

If the student scores between	Outcome Attainment Levels
<=8	Needs improvement
9-11	Satisfactory
12-14	Partly Achieved
15-16	Fully Achieved

^{*}Students scoring 9 or above fall in the passing criteria. **SCORE SHEET: PROGRAMME/ BATCH**

Outcome Attainment Levels	Percentage of Students

Needs improvement	
Satisfactory	
Partly Achieved	
Fully Achieved	

Communication Skills - UG+PG INTEGRATED (5 YRS)							
Name :	Enrol	ment No :					
Components	Unsatisfactory (0)	Needs Improvement (1)	Satisfactory (2)	Proficient (3)	Distinguished (4)	Score	
Enhancing Competence in Workplace Communication	The learner is not able to showcase basic comprehension of the intricacies of office communication	The learner is able to showcase basic comprehension of the intricacies of office communication	The learner is able to showcase developed comprehension of the intricacies of office communication	The learner is able to showcase advanced comprehension of the intricacies of office communication	The learner is able to showcase expert comprehension of the intricacies of office communication		
Effective Business Correspondence	The learner is unable to write different kinds of business correspondence in proper language and format	The learner is able to write different kinds of business correspondence in proper language and format	The learner delivers satisfactory performance in writing different kinds of business correspondence in correct language and format	The learner can effectively write different kinds of business correspondence in appropriate language and format	The learner can convincingly write all kinds of business correspondence in apt language and format		
Importance of Cross Cultural Communication in Professional Environment	The learner is unable to understand the nuances of cultural adjustment and the sensitivity attached to it	The learner is able to understand the basic nuances of cultural adjustment and the sensitivity attached to it	The learner displays appropriate understanding of cultural adjustment and the sensitivity attached to it	The learner demonstrates effective understanding of cultural adjustment and the sensitivity attached to it	The learner will demonstrate apt understanding of cultural adjustment and the sensitivity attached to it		
Enhancing Public Speaking Skills	The learner is unable to speak fluently and fails to handle interactions and discussions	The learner is able to speak fluently but fails to handle interactions and discussions	The learner is able to speak fluently and handles interactions and discussions	The learner appropriately speaks and confidently handles interactions and discussions	The learner speaks perfectly and effectively handles interactions and discussions		
					TOTAL SCORE		

Faculty of Arts, Humanities & Social Sciences and Journalism/ Mass Communication/ Media Rubrics for Assessment of Communication Skills for 5th Year of Five Year Integrated Undergraduate & Postgraduate Programme

ASSESSMENT PARAMETERS:

- Verbal communication
- Non-verbal communication

TOOLS USED FOR ASSESSMENT:

- Written Test
- Group Discussion
- Presentations

COMPOSITION OF ASSESSMENT BOARD

- Communication Skills Faculty
- Program Leader/ Program Co-coordinator
- Any other senior faculty

SCORE SHEET: INDIVIDUAL

If the student scores between	Outcome Attainment Levels
<=8	Needs improvement
9-11	Satisfactory
12-14	Partly Achieved
15-16	Fully Achieved

*Students scoring 9 or above fall in the passing criteria. **SCORE SHEET: PROGRAMME/ BATCH**

Outcome Attainment Levels	Percentage of Students
Needs improvement	
Satisfactory	
Partly Achieved	
Fully Achieved	

	Communication Skills – UG+PG INTEGRATED (5 YRS)									
Name : Enrolment No : Programme :										
Components	Unsatisfactory (0)	Needs Improvement (1)	Satisfactory (2)	Proficient (3)	Distinguished (4)	Score				
Essentials of Creative Writing for Media	The learner is unable to understand the fundamentals of creative writing.	The learner is able to understand the nuances of writing skills specifically meant for media and TV content writing.	The learner shows proficiency in the understanding of formal writing with emphasis on writing for media.	The learner can understand the complexities of creative writing.	The learner should be able to write articles, short stories and novella.					
Barriers to professional language use	The learner cannot understand the barriers of professional language.	The learner develops basic understanding of the barriers of professional use of language.	The learner understands how to use language to his advantage.	The learner understands the complexities of using jargons, clichés, euphemism and code switching.	The learner distinguishes himself in the field of creative writing, content writing, advertisements, scripts for media and brochures.					

Professional	The learner	The learner	The learner	The learner	The learner
Communication	displays	displays ability	displays	displays	displays
in Global	inability in	in analysing	developed	proficiency in	innovativeness
Context	analysing the	the complexity	ability in	analysing the	in analysing the
	complexity of	of cross	analysing the	complexity of	complexity of
	cross	functional	complexity of	cross	cross functional
	functional	communication	cross	functional	communication
	communication	but	functional	communication	and
	and application	incapability in	communication	and	competence in
	of the language	application of	and capability	effectiveness	application of
		the language	in application	in application	the language
			of the language	of the language	
Developing	The learner	The learner	The learner	The learner	The learner
Contextual	displays	displays ability	displays	displays	displays
	inability in	in	increased	proficiency	advanced
Communication	identifying the	identification	ability in	developing	proficiency in
	context of	of formal and	identification	case based	analysis and
	communication	informal	of formal and	communication	constructive
	and lacks skill	contexts and	informal	and	criticism of
	to describe the	developing	contexts and	effectiveness in	context and
	theme with	impactful	develops	creation of	uses good
	precision	content	original	original	rhetoric and
			content	content	design in
					different
					professional
				l	communication.

Name	Behavioral Science - PG Name: Enrolment No.: Programme:							
Sl. NO.	Description of Rubrics	Unsatisfacto ry (0)	Needs Improvement (1)	Satisfactory (2)	Proficient (3)	Distinguished (4)	Score	
1	Able to Understand Self with reference to strength and Weakness	The JOS Does not reflect the conceptual understandin g	The JOS slightly reflects the conceptual understanding	The JOS moderately reflects the conceptual understandin g	The JOS mostly reflects the conceptual understandin g	The JOS completely reflect the conceptual understanding		
2	Able to display and demonstrate the concept of Self and associated areas& its application	The individual's JOS did not cover relevant information of the application based learning	The individual's JOS slightly covered relevant information of the application based learning	The individual's JOS somewhat covered relevant information of the application based learning	The individual's JOS mostly covered relevant information of the application based learning	The individual's JOS completely covered relevant information of the application based learning		
3	Able to Understand and demonstrate the management of conflict	The individual did not initiate and scored low in demonstratio n of conflict resolution.	The individual slightly initiated and scored relatively better than low in demonstration of conflict resolution.	The individual initiated and scored average on demonstratio n of conflict resolution.	The individual initiated and scored moderately on demonstratio n of conflict resolution.	The individual effectively initiated and scored high on demonstration of conflict resolution.		
4	Able to Understand and demonstrate interpersona l communicati on for enhanced interpersona l Relationship	The individual did not initiate and did not exhibit the clarity in terms of interpersonal communication for enhanced interpersonal Relationship	The individual slightly initiated and did exhibit the clarity in terms of better than low interpersonal communication for enhanced interpersonal Relationship	The individual initiated and did exhibit average on the clarity in terms interpersonal communicatio n for enhanced interpersonal Relationship	The individual initiated and did exhibit moderately on demonstratio n of interpersonal communicatio n for enhanced interpersonal Relationship.	The individual effectively initiated and did exhibit average high on demonstration interpersonal communication for enhanced interpersonal Relationship.		
5	The student would be able to engage in collaborative learning with team members to achieve a shared goal.	The individual could not engage at all and collaborative learning with team members to achieve a shared goal	The individual could not engage much in collaborative learning with team members to achieve a shared goal	The individual could somewhat engage in collaborative learning with team members to achieve a shared goal	The individual could moderately engage in collaborative learning with team members to achieve a shared goal	The individual could completely engage in collaborative learning with team members to achieve a shared goal		

	1	T	T	T			
6	The student	The			The		
	would be	individual	The individual	The	individual	The individual	
	able to	could not		individual		could	
	engage in		could not	could	could	completely	
	articulation	engage at all	engage much	somewhat in	moderately	comprehend	
	of strengths	in	in articulation	articulation	engage in	engage in	
	and	articulation	of strengths	of strengths	articulation	articulation of	
	weaknesses	of strengths	and	and	of strengths	strengths and	
	of team	and	weaknesses of	weaknesses	and	weaknesses of	
	members	weaknesses	team	of team	weaknesses	team	
	and	of team	members and	members and	of team	members and	
	constructive	members and	constructively	constructivel	members and	constructively	
	ly evaluate	constructivel	evaluate	y evaluate	constructivel	evaluate	
	others'	y evaluate	others' work	others' work	y evaluate	others' work	
	work.	others' work		Others work	others' work	Others work	
	WOIK.			The	The		
7	Able to	The	The individual	individual	individual	The individual	
'	demonstrate	individual		could	could	could	
		could not	could slightly			completely	
	the learning	demonstrate	demonstrate	somewhat	moderately	demonstrate	
	of	the learning	the learning of	demonstrate	demonstrate	the learning of	
	leadership	of leadership	leadership	the learning	the learning	leadership	
	concept and	concept and	concept and	of leadership	of leadership	concept and	
	developing	developing	developing	concept and	concept and	developing	
	own style of	own style of	own style of	developing	developing	own style of	
	leadership	leadership	leadership	own style of	own style of	leadership	
0		•		leadership	leadership		
8		The	The individual	The	The	The individual	
	Able to	individual	The individual	individual	individual	could	
	demonstrate	could not	could slightly	could	could	completely	
	the learning	demonstrate	demonstrate	somewhat	moderately	demonstrate	
	of excellence	the learning	the learning of	demonstrate	demonstrate	the learning of	
		of excellence	excellence	the learning	the learning	excellence	
0				of excellence	of excellence		
9			The individual	ml	The	The : 1:- 1	
	Ability to	The	slightly scored	The	individual	The individual	
	demonstrati	individual	relatively	individual	initiated and	effectively	
1	on of	scored low in	better than	scored	scored	initiated and	
	enhanced	demonstratio	low in	average on	moderately	scored high on	
	personal	n of enhanced	demonstration	demonstratio	on	demonstration	
	effectivenes	personal	of enhanced	n of enhanced	demonstratio	of enhanced	
	S	effectiveness.	personal	personal	n of enhanced	personal	
			effectiveness.	effectiveness.	personal	effectiveness.	
10					effectiveness.		
10	A1.1	The		The	The		
	Able to	individual	The individual	individual	individual	The individual	
	Understand	could not	could slightly	could average	could	could fully	
	and	demonstrate	demonstrate	demonstrate	moderately	demonstrate	
	comprehend	practicing the	practicing the	practicing the	demonstrate	practicing the	
	the concept	concept of	concept of	concept of	practicing the	concept of	
	of lifelong	lifelong	lifelong	lifelong	concept of	lifelong	
	learning	learning	learning	learning	lifelong	learning	
	through	through	through social	through	learning	through social	
	social	social	practices and	social	through	practices and	
	practices	practices and	ethical	practices and	social	ethical	
213	and ethical	sessmena Plan	- 20 be havior.		practices and		ALILID
213	behavior As	behavior.	- 2010-17	behavior.	Biosciences and	bioteciniology, i	100P
		2011471011		2011471011	behavior.		

If the student scores between	Outcome Attainment Levels
<=20	Needs improvement
21-27	Satisfactory
28-34	Partly Achieved
35-40	Fully Achieved

Behavioral Science - UG							
Name):	Enrolment No.:			Programme:		
Sl. No.	Descripti on of Rubrics	UNSATISFACT ORY (0)	NEEDS IMPROVEM ENT (1)	SATISFACT ORY (2)	PROFICIEN T (3)	DISTINGUIS HED (4)	Score
1	Able to Understan d Self with reference to strength and Weakness	The JOS Does not reflect the conceptual understanding	The JOS slightly reflects the conceptual understandin g	The JOS moderately reflects the conceptual understandi ng	The JOS mostly reflects the conceptual understandi ng	The JOS completely reflect the conceptual understandin g	
2	Able to display and demonstr ate Self Confidenc e	The individual's JOS did not cover relevant information of the application based learning	The individual's JOS slightly covered relevant information of the application based learning	The individual's JOS somewhat covered relevant information of the application based learning	The individual's JOS mostly covered relevant information of the application based learning	The individual's JOS completely covered relevant information of the application based learning	
3	Able to apply the technique s of Impressio n managem ent	The individual did not demonstrate critical thinking and analytical ability in reference techniques of Impression management	The individual did not demonstrate critical thinking and analytical ability in reference to techniques of Impression management	The individual somewhat demonstrate d critical thinking and analytical ability in reference to techniques of Impression management	The individual mostly demonstrat ed critical thinking and analytical ability in reference to techniques of Impression managemen t	The individual completely demonstrated critical thinking and analytical ability in reference to techniques of Impression management	

4	Able to recognize and manage Individual Difference s	The individual did not demonstrate critical thinking and analytical ability in managing Individual	The individual did not demonstrate critical thinking and analytical ability in managing	The individual somewhat demonstrate d critical thinking and analytical ability in managing	The individual mostly demonstrat ed critical thinking and analytical ability in managing	The individual completely demonstrated critical thinking and analytical ability in managing	
5	Able to Learn and Play in Groups	The individual did not initiate and exhibit the clarity in terms of Group Dynamics	Individual Differences The individual slightly initiated and did exhibit the clarity in terms of better than low Group Dynamics	Individual Differences The individual initiated and did exhibit average on the clarity in terms Group Dynamics	Individual Differences The individual initiated and did exhibit moderately on demonstrati on of Group Dynamics	Individual Differences The individual effectively initiated and did exhibit average high on demonstratio n Group Dynamics	
6	Able to apply creative thinking in Various situations of Problem Solving	The individual was not able to apply creative thinking in various Problem solving situation	The individual tried to apply creative thinking in various problem solving situation	The individual could somewhat apply creative thinking in various problem solving situation	The individual could moderately apply creative thinking in various problem solving situation	The individual could completely apply creative thinking in various problem solving situation	
7	Able to demonstr ate good character and value based behavior in various situations.	The individual could not demonstrate good character and value based behavior in various situations.	The individual initiated to demonstrate good character and value based behavior in various situations.	The individual could somewhat demonstrate good character and value based behavior in various situations.	The individual could moderately demonstrat e good character and value based behavior in various situations.	The individual completely demonstrated good character and value based behavior in various situations.	
	Able to apply positive emotions for creating healthy climate.	The individual could not apply positive emotions for creating healthy climate.	The individual could slightly apply positive emotions for creating healthy climate.	The individual could somewhat apply positive emotions for creating healthy climate.	The individual could moderately apply positive emotions for creating healthy climate.	The individual could completely apply positive emotions for creating healthy climate.	

9	Able to demonstr ate the learning of excellence	The individual could not demonstrate the learning of excellence	The individual could slightly demonstrate the learning of excellence	The individual could somewhat demonstrate the learning of excellence	The individual could moderately demonstrat e the learning of excellence	The individual could completely demonstrate the learning of excellence	
10	Able to learn and practice their personal success strategies.	The individual scored low in demonstration of practicing their personal success strategies.	The individual slightly scored relatively better than low in demonstratio n of practicing their personal success strategies.	The individual scored average on demonstrati on of practicing their personal success strategies.	The individual initiated and scored moderately on demonstrati on of practicing their personal success strategies.	The individual effectively initiated and scored high on demonstratio n of practicing their personal success strategies.	
11	Able to apply behavioral communic ation for effective leadership	The individual could not apply behavioral communication for effective leadership.	The individual could initiate the application of behavioral communicati on for effective leadership.	The individual could slightly apply behavioral communicati on for effective leadership.	The individual could moderately apply behavioral communicat ion for effective leadership.	The individual could fully apply behavioral communicati on for effective leadership.	
12	Able to demonstr ate value based insights to deal effectively in personal and profession al life	The individual was not able to demonstrate value based insights to deal effectively in personal and professional life.	The individual could initiate the demonstratio n of value based insights to deal effectively in personal and professional life.	The individual could slightly demonstrate value based insights to deal effectively in personal and professional life.	The individual could moderately demonstrat e value based insights to deal effectively in personal and professional life.	The individual could fully demonstrate value based insights to deal effectively in personal and professional life.	
13	Able to manage their stress in healthy manner	The individual was not able to manage their stress in healthy manner	The individual could initiate the management of stress in a healthy manner.	The individual could slightly manage the stress in healthy manner.	The individual could moderately manage stress in a healthy manner.	The individual could completely manage stress in a healthy manner.	

Total Score

If the student scores between	Outcome Attainment Levels		
<=25	Needs improvement		
26-34	Satisfactory		
35-43	Partly Achieved		
44-52	Fully Achieved		

Sl. No.	Descriptio n of	UNSATISFACT ORY	NEEDS IMPROVEME NT	SATISFACT ORY	PROFICIEN T	DISTINGUIS HED	Score
110.	Rubrics	(0)	(1)	(2)	(3)	(4)	
1	Able to Understan d Self with reference to strength and Weakness	The JOS Does not reflect the conceptual understanding	The JOS slightly reflects the conceptual understandin g	The JOS moderately reflects the conceptual understandi ng	The JOS mostly reflects the conceptual understandi ng	The JOS completely reflect the conceptual understandin	
2	Able to display and demonstra te Self Confidence	The individual's JOS did not cover relevant information of the application based learning	The individual's JOS slightly covered relevant information of the application based learning	The individual's JOS somewhat covered relevant information of the application based learning	The individual's JOS mostly covered relevant information of the application based learning	The individual's JOS completely covered relevant information of the application based learning	
3	Able to apply the techniques of Impression manageme nt	The individual did not demonstrate critical thinking and analytical ability in reference techniques of Impression management	The individual slightly demonstrate d critical thinking and analytical ability in reference to techniques of Impression management	The individual somewhat demonstrate d critical thinking and analytical ability in reference to techniques of Impression management	The individual mostly demonstrat ed critical thinking and analytical ability in reference to techniques of Impression managemen t	The individual completely demonstrated critical thinking and analytical ability in reference to techniques of Impression management	
4	Able to recognize and manage Individual Differences	The individual was not able to recognize and manage Individual Differences	The individual was Slightly able to recognize and manage Individual Differences	The individual was somewhat able to recognize and manage Individual Differences	The individual was moderately able to recognize and manage Individual Differences	The individual was completely able to recognize and manage Individual Differences	

5	Able to Learn and Play in Groups	The individual did not initiate and exhibit clarity in terms of Group Dynamics	The individual slightly exhibited clarity in terms of demonstrati ng Group Dynamics	The individual initiated and exhibited somewhat Group Dynamics	The individual initiated and moderately exhibited Group Dynamics	The individual effectively initiated and completely exhibited Group Dynamics	
6	Able to apply creative thinking in Various situations of Problem Solving	The individual was not able to apply creative thinking in various Problem solving situation	The individual tried to apply creative thinking in various problem solving situation	The individual could somewhat apply creative thinking in various problem solving situation	The individual could moderately apply creative thinking in various problem solving situation	The individual could completely apply creative thinking in various problem solving situation	
7	Able to demonstra te good character and value based behavior in various situations.	The individual could not demonstrate good character and value based behavior in various situations.	The individual initiated to demonstrate good character and value based behavior in various situations.	The individual could somewhat demonstrate good character and value based behavior in various situations.	The individual could moderately demonstrat e good character and value based behavior in various situations.	The individual completely demonstrated good character and value based behavior in various situations.	
	Able to apply positive emotions for creating healthy climate.	The individual could not apply positive emotions for creating healthy climate.	The individual could slightly apply positive emotions for creating healthy climate.	The individual could somewhat apply positive emotions for creating healthy climate.	The individual could moderately apply positive emotions for creating healthy climate.	The individual could completely apply positive emotions for creating healthy climate.	
9	Able to demonstra te the learning of excellence	The individual could not demonstrate the learning of excellence	The individual could slightly demonstrate the learning of excellence	The individual could somewhat demonstrate the learning of excellence	The individual could moderately demonstrat e the learning of excellence	The individual could completely demonstrate the learning of excellence	

Total Score							
14	Able to coordinate and Empower Team	The individual was not able to coordinate and Empower Team	The individual was able to initiate the coordination and Empower Team	The individual was able to somewhat coordinate and Empower Team	The individual was able to moderately coordinate and Empower Team	The individual was completely able to coordinate and Empower Team	
13	Able to manage their stress in healthy manner.	The individual was not able to manage their stress in healthy manner.	The individual could slightly initiate the management of stress in a healthy manner.	The individual could somewhat manage the stress in healthy manner.	The individual could moderately manage stress in a healthy manner.	The individual could completely manage stress in a healthy manner.	
12	Able to demonstra te value based insights to deal effectively in personal and profession al life	The individual was not able to demonstrate value based insights to deal effectively in personal and professional life.	The individual could initiate the demonstratio n of value based insights to deal effectively in personal and professional life.	The individual could somewhat demonstrate value based insights to deal effectively in personal and professional life.	The individual could moderately demonstrat e value based insights to deal effectively in personal and professional life.	The individual could fully demonstrate value based insights to deal effectively in personal and professional life.	
11	Able to apply behavioral communica tion for effective leadership.	The individual could not apply behavioral communication for effective leadership.	The individual could initiate the application of behavioral communicati on for effective leadership.	The individual could somewhat apply behavioral communicati on for effective leadership.	The individual could moderately apply behavioral communicat ion for effective leadership.	The individual could fully apply behavioral communicati on for effective leadership.	
10	Able to learn and practice their personal success strategies.	The individual scored low in demonstration of practicing their personal success strategies.	The individual slightly scored relatively better than low in demonstratio n of practicing their personal success strategies.	The individual scored average on demonstrati on of practicing their personal success strategies.	The individual initiated and scored moderately on demonstrati on of practicing their personal success strategies.	The individual effectively initiated and scored high on demonstration of practicing their personal success strategies.	

If the student scores between	Outcome Attainment Levels		
<28	Needs improvement		
28-37	Satisfactory		
38-46	Partly Achieved		
47-56	Fully Achieved		

RUBRICS FOR ASSESMENT OF FOREIGN BUSINESS LANGUAGE FOR _____ PROGRAMME

Assessment Parameters:

- 4. Language
- 5. Culture
- 6. Vocabulary

SCORING:

- \square If the student's performance is **unsatisfactory** on a criteria then he scores 0
- If the student's performance is **needs improvement** on a criteria then he scores 1
- If the student's performance is satisfactory on a criteria then he scores 2
- ☑ If the student's performance is **proficient** on a criteria then he scores 3
- 2 If the student's performance is **distinguished** on a criteria then he scores 4

TOOLS USED FOR ASSESSMENT:

- Role play
- ② Exercises in class
- Class performance
- Assignments

COMPOSITION OF ASSESSMENT BOARD

- Foreign Business Language Faculty
- Program coordinator
- Senior Core Course Faculty

Rubrics for Foreign Business Languages – 2 Years PG Programmes

	Attributes	Unsatisfactory (0)	Needs improvement (1)	Satisfactory (2)	Proficient (3)	Distinguished (4)
1	Introduction to language & Culture Greetings & Basic Vocabulary	Student does not understand the concepts.	Sometimes takes initiative & asks questions.	Is able to comprehend and utilize appropriate study material.	Student eagerly participates in class. Asks questions and speaks spontaneously.	Student shows great interest in class activities & instantly responds with the right answer.
2	Description of people and locations	Uses limited vocabulary and mispronunciations impede comprehensibility.	Relies on basic vocabulary. Speech is comprehensible in spite of mispronunciation.	Utilizes old and new vocabulary. Attempts to use idiomatic expressions according to the topic.	Speaks clearly and uses idiomatic expressions fluently as per the topic.	Uses variety of vocabulary as per the context. Has good command over expressions.
3	Regular &	Makes sentences	Makes errors	Makes a few	Uses correct word	Makes error

	Irregular verbs	which are so brief that there is little evidence of structure & comprehension.	which may interfere with comprehensibility.	errors which do not affect the overall comprehension.	order and article adjectives. Errors do not hinder comprehensibility.	free sentences using correct sentence formations.
4	Describing self, Possessions & places	Uses very few approaches to initiate a conversation.	Uses some strategies and needs frequent prompting to further the conversation.	Uses some strategies yet requires occasional prompting.	Clarifies and continues conversation using good strategies like intonation, self-correction, and verbal cues.	Is able to speak on any given topic using expressions. Is also able to comprehend other person clearly.
5	Likes & Dislikes	Rarely uses/interprets cultural manifestations.	Sometimes uses/interprets cultural manifestations when appropriate to the task.	Frequently uses/interprets cultural manifestations when appropriate to the task.	Almost always uses /interprets cultural manifestations when appropriate to the task.	Has in-depth knowledge about other countries culture & other perspectives.
6	On-going actions & plans	Student does not understand the concepts.	Sometimes takes initiative & asks questions.	Is able to comprehend and utilize appropriate study material.	Student eagerly participates in class. Asks questions and speaks spontaneously.	Student shows great interest in class activities & instantly responds with the right answer.
7	Recent past situations	Makes sentences which are so brief that there is little evidence of structure & comprehension.	Makes errors which may interfere with comprehensibility.	Makes a few errors which do not affect the overall comprehension.	Uses correct word order and article adjectives. Errors do not hinder comprehensibility.	Makes error free sentences using correct sentence formations.
8	Expressing emotions, dialogues used at public places	Student does not understand the concepts.	Sometimes takes initiative & asks questions.	Is able to comprehend and utilize appropriate study material.	Student eagerly participates in class. Asks questions and speaks spontaneously.	Student shows great interest in class activities & instantly responds with the right answer.

If the student scores between	Outcome Attainment Levels
50%	Needs improvement
51%-60%	Satisfactory
61%-70%	Partly Achieved
71%-100%	Fully Achieved

RUBRICS FOR ASSESMENT OF FOREIGN BUSINESS LANGUAGE FOR _____ PROGRAMME

Assessment Parameters:

- 1. Language
- 2. Culture
- 3. Vocabulary

SCORING:

- ☑ If the student's performance is **unsatisfactory** on a criteria then he scores 0
- If the student's performance is needs improvement on a criteria then he scores 1
- ☑ If the student's performance is **satisfactory** on a criteria then he scores 2
- ☑ If the student's performance is **proficient** on a criteria then he scores 3
- If the student's performance is **distinguished** on a criteria then he scores 4

TOOLS USED FOR ASSESSMENT:

- Role play
- Exercises in class
- Class performance
- 2 Assignments

COMPOSITION OF ASSESSMENT BOARD

- Foreign Business Language Faculty
- Program coordinator
- Senior Core Course Faculty

Rubrics for Foreign Business Languages - 3 Years UG Programmes

	Attributes	Unsatisfactory	Needs	Satisfactory	Proficient (3)	Distinguished
		(0)	improvement (1)	(2)		(4)
1	Introduction	Student does not	Sometimes takes	Is able to	Student eagerly	Student shows
	to language	understand the	initiative & asks	comprehend	participates in	great interest
	& Culture	concepts.	questions.	and utilize	class. Asks	in class
	Greetings &			appropriate	questions and	activities &
	Basic			study material.	speaks	instantly
	Vocabulary				spontaneously.	responds with
						the right
						answer.
2	Description	Uses limited	Relies on basic	Utilizes old and	Speaks clearly and	Uses variety of
	of people	vocabulary and	vocabulary.	new	uses idiomatic	vocabulary as
	and	mispronunciations	Speech is	vocabulary.	expressions	per the
	locations	impede	comprehensible in	Attempts to use	fluently as per the	context. Has
		comprehensibility.	spite of	idiomatic	topic.	good
			mispronunciation.	expressions		command
				according to		over
_		_		the topic.	_	expressions.
3	Regular &	Makes sentences	Makes errors	Makes a few	Uses correct word	Makes error
	Irregular	which are so brief	which may	errors which do	order and article	free sentences
	verbs	that there is little	interfere with	not affect the	adjectives. Errors	using correct
		evidence of	comprehensibility.	overall	do not hinder	sentence
		structure &		comprehension.	comprehensibility.	formations.
		comprehension.				
4	Describing	Uses very few	Uses some	Uses some	Clarifies and	Is able to
	self,	approaches to	strategies and	strategies yet	continues	speak on any
	Possessions	initiate a	needs frequent	requires	conversation	given topic

	& places	conversation.	prompting to further the conversation.	occasional prompting.	using good strategies like intonation, self- correction, and verbal cues.	using expressions. Is also able to comprehend other person clearly.
5	Likes & Dislikes	Rarely uses/interprets cultural manifestations.	Sometimes uses/interprets cultural manifestations when appropriate to the task.	Frequently uses/interprets cultural manifestations when appropriate to the task.	Almost always uses /interprets cultural manifestations when appropriate to the task.	Has in-depth knowledge about other countries culture & other perspectives.
6	On-going actions & plans	Student does not understand the concepts.	Sometimes takes initiative & asks questions.	Is able to comprehend and utilize appropriate study material.	Student eagerly participates in class. Asks questions and speaks spontaneously.	Student shows great interest in class activities & instantly responds with the right answer.
7	Recent past situations	Makes sentences which are so brief that there is little evidence of structure & comprehension.	Makes errors which may interfere with comprehensibility.	Makes a few errors which do not affect the overall comprehension.	Uses correct word order and article adjectives. Errors do not hinder comprehensibility.	Makes error free sentences using correct sentence formations.
8	Expressing emotions, dialogues used at public places	Student does not understand the concepts.	Sometimes takes initiative & asks questions.	Is able to comprehend and utilize appropriate study material.	Student eagerly participates in class. Asks questions and speaks spontaneously.	Student shows great interest in class activities & instantly responds with the right answer.
9	Conversation in future tense	Makes sentences which are so brief that there is little evidence of structure & comprehension.	Makes errors which may interfere with comprehensibility.	Makes a few errors which do not affect the overall comprehension.	Uses correct word order and article adjectives. Errors do not hinder comprehensibility.	Makes error free sentences using correct sentence formations.
10	Informal letters & emails	Student does not understand the concepts.	Sometimes takes initiative & asks questions.	Is able to comprehend and utilize appropriate study material.	Student eagerly participates in class. Asks questions and speaks spontaneously.	Student shows great interest in class activities & instantly responds with the right answer.
11	Orders and Instructions	Makes sentences which are so brief that there is little evidence of structure & comprehension.	Makes errors which may interfere with comprehensibility.	Makes a few errors which do not affect the overall comprehension.	Uses correct word order and article adjectives. Errors do not hinder comprehensibility.	Makes error free sentences using correct sentence formations.
12	Request and	Student does not understand the	Sometimes takes initiative & asks	Is able to comprehend	Student eagerly participates in	Student shows great interest

Enquiry	concepts.	questions.	and utilize	class. Asks	in class
			appropriate	questions and	activities &
			study material.	speaks	instantly
				spontaneously.	responds with
					the right
					answer.

If the student scores between	Outcome Attainment Levels
50%	Needs improvement
51%-60%	Satisfactory
61%-70%	Partly Achieved
71%-100%	Fully Achieved

RUBRICS FOR ASSESMENT OF FOREIGN BUSINESS LANGUAGE FOR _____ PROGRAMME

Assessment Parameters:

- 1. Language
- 2. Culture
- 3. Vocabulary

SCORING:

- ☑ If the student's performance is **unsatisfactory** on a criteria then he scores 0
- If the student's performance is needs improvement on a criteria then he scores 1
- If the student's performance is satisfactory on a criteria then he scores 2
- ☑ If the student's performance is **proficient** on a criteria then he scores 3
- 2 If the student's performance is **distinguished** on a criteria then he scores 4

TOOLS USED FOR ASSESSMENT:

- Role play
- ② Exercises in class
- Class performance
- 2 Assignments

COMPOSITION OF ASSESSMENT BOARD

- Foreign Business Language Faculty
- Program coordinator
- Senior Core Course Faculty

Rubrics for Foreign Business Languages – 4 Years UG Programmes

	Attributes	Unsatisfactory	Needs	Satisfactory	Proficient (3)	Distinguished
		(0)	improvement (1)	(2)		(4)
1	Introduction to language & Culture Greetings & Basic Vocabulary	Student does not understand the concepts.	Sometimes takes initiative & asks questions.	Is able to comprehend and utilize appropriate study material.	Student eagerly participates in class. Asks questions and speaks spontaneously.	Student shows great interest in class activities & instantly responds with
	, seas arary				oponumeo uozy.	the right answer.

2	Description of people and locations	Uses limited vocabulary and mispronunciations impede comprehensibility.	Relies on basic vocabulary. Speech is comprehensible in spite of mispronunciation.	Utilizes old and new vocabulary. Attempts to use idiomatic expressions according to the topic.	Speaks clearly and uses idiomatic expressions fluently as per the topic.	Uses variety of vocabulary as per the context. Has good command over expressions.
3	Regular & Irregular verbs	Makes sentences which are so brief that there is little evidence of structure & comprehension.	Makes errors which may interfere with comprehensibility.	Makes a few errors which do not affect the overall comprehension.	Uses correct word order and article adjectives. Errors do not hinder comprehensibility.	Makes error free sentences using correct sentence formations.
4	Describing self, Possessions & places	Uses very few approaches to initiate a conversation.	Uses some strategies and needs frequent prompting to further the conversation.	Uses some strategies yet requires occasional prompting.	Clarifies and continues conversation using good strategies like intonation, self-correction, and verbal cues.	Is able to speak on any given topic using expressions. Is also able to comprehend other person clearly.
5	Likes & Dislikes	Rarely uses/interprets cultural manifestations.	Sometimes uses/interprets cultural manifestations when appropriate to the task.	Frequently uses/interprets cultural manifestations when appropriate to the task.	Almost always uses /interprets cultural manifestations when appropriate to the task.	Has in-depth knowledge about other countries culture & other perspectives.
6	On-going actions & plans	Student does not understand the concepts.	Sometimes takes initiative & asks questions.	Is able to comprehend and utilize appropriate study material.	Student eagerly participates in class. Asks questions and speaks spontaneously.	Student shows great interest in class activities & instantly responds with the right answer.
7	Recent past situations	Makes sentences which are so brief that there is little evidence of structure & comprehension.	Makes errors which may interfere with comprehensibility.	Makes a few errors which do not affect the overall comprehension.	Uses correct word order and article adjectives. Errors do not hinder comprehensibility.	Makes error free sentences using correct sentence formations.
8	Expressing emotions, dialogues used at public places	Student does not understand the concepts.	Sometimes takes initiative & asks questions.	Is able to comprehend and utilize appropriate study material.	Student eagerly participates in class. Asks questions and speaks spontaneously.	Student shows great interest in class activities & instantly responds with the right answer.
9	Conversation in future tense	Makes sentences which are so brief that there is little evidence of structure &	Makes errors which may interfere with comprehensibility.	Makes a few errors which do not affect the overall comprehension.	Uses correct word order and article adjectives. Errors do not hinder comprehensibility.	Makes error free sentences using correct sentence formations.

		comprehension.				
10	Informal letters & emails	Student does not understand the concepts.	Sometimes takes initiative & asks questions.	Is able to comprehend and utilize appropriate study material.	Student eagerly participates in class. Asks questions and speaks spontaneously.	Student shows great interest in class activities & instantly responds with the right answer.
11	Orders and Instructions	Makes sentences which are so brief that there is little evidence of structure & comprehension.	Makes errors which may interfere with comprehensibility.	Makes a few errors which do not affect the overall comprehension.	Uses correct word order and article adjectives. Errors do not hinder comprehensibility.	Makes error free sentences using correct sentence formations.
12	Request and Enquiry	Student does not understand the concepts.	Sometimes takes initiative & asks questions.	Is able to comprehend and utilize appropriate study material.	Student eagerly participates in class. Asks questions and speaks spontaneously.	Student shows great interest in class activities & instantly responds with the right answer.
13	Telephonic Conversations	Makes sentences which are so brief that there is little evidence of structure & comprehension.	Makes errors which may interfere with comprehensibility.	Makes a few errors which do not affect the overall comprehension.	Uses correct word order and article adjectives. Errors do not hinder comprehensibility.	Makes error free sentences using correct sentence formations.
14	Conversation & describing past events.	Student does not understand the concepts.	Sometimes takes initiative & asks questions.	Is able to comprehend and utilize appropriate study material.	Student eagerly participates in class. Asks questions and speaks spontaneously.	Student shows great interest in class activities & instantly responds with the right answer.
15	Interview skills	Makes sentences which are so brief that there is little evidence of structure & comprehension.	Makes errors which may interfere with comprehensibility.	Makes a few errors which do not affect the overall comprehension.	Uses correct word order and article adjectives. Errors do not hinder comprehensibility.	Makes error free sentences using correct sentence formations.
16	Story reading and comprehension	Student does not understand the concepts.	Sometimes takes initiative & asks questions.	Is able to comprehend and utilize appropriate study material.	Student eagerly participates in class. Asks questions and speaks spontaneously.	Student shows great interest in class activities & instantly responds with the right answer.

If the student scores between	Outcome Attainment Levels
50%	Needs improvement
51%-60%	Satisfactory
61%-70%	Partly Achieved

STUDENT EXIT SURVEY

Student Exit Survey

Programme:	В.	Tech	ı Bi	otec	hno	logy
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Batch		

Dear Student, the objective of this Survey is to seek your candid assessment regarding the various learning aspects of the programme. The information from this survey will be analysed and used to identify the areas of improvement.

Sl.	Statements	Strongl	Agree	Neither	Somewh	Not
No.		y agree		agree nor	at Agree	at all agre
				disagree		e
PLO 1	: Knowledge and skills in Biotechnology			, 		
1	I have developed clear understanding about Biotechnology					
2	I have acquired basic skills in biotechnology.					
3	I am able to apply academic learning to practical issues.					
4	I am able to use the acquired skills in various areas of					
	biotechnology.					
	: Problem solving					
1	I am able to identify the problem in specific area of					
	biotechnology.					
2	I have the ability to practically solve the problem in					
	biotechnology					
3	I have ability to understand research problems					
4	I am able to analyse data/information and interpret results					
	for driving optimum solutions.					
	: Concepts in biotechnological techniques			1		
1	I have learned and acquired the basic concepts and					
	learning of biotechnological skills					
2	I am able to analyse and apply the concepts in					
_	biotechnological techniques to come to conclusion					
3	I am able to implement the skills learned in research and					
_	development					
4	I have acquired the clear concepts in various techniques of					
	biotechnology					
	: Communication Skills			T		1
1	I can communicate clearly and effectively with my team					
	members.					
2	I can deliver effective presentations					
3	I have ability to speak proficiently.					
4	I have ability to write effectively and clearly.					
	:Interpersonal skills					
1	I am able to collect and design relevant information.					
2	I have acquired adequate skills to present the information					
	to my coworkers in effective manner.					
3	I am able to organise information and disseminate it					
	effectively					
4	I have learned to present the information to R&D					
DI O	companies.					
	: Behavioural skills					
1	I have acquired sufficient behavioural skills like convincing					
	and analytical thinking.					<u> </u>

2	I have learned behavioural skills like answering a				
	complaint etc.				
3	I am able to apply the various behavioural skills to be successful at workplace				
4	I am able to lead my professional life efficiently with these				
	behavioural skills				
PLO'	7 : Self-management and teamwork	ı	I	I	1
1	I am reliable.				
2	I am dependable.				
3	I am able to communicate effectively in interdisciplinary				
	teams.				
4	I am able to work effectively in interdisciplinary teams.				
PLO 8	B : Recognition of novel ideas in Biotechnology				
1	I am able to recognise novel ideas in biotechnology				
2	I am capable of applying knowledge and skills in				
	biotechnology.				
3	I am able to understand it from different perspectives.				
4	I am capable to develop the novel idea for the betterment				
	of the society.				
PLO 9	9 : Bio-Ethical Practice and Social Responsibility		<u></u>	<u></u>	
1	I understand the highest standards of ethical behaviour.				
2	I am ethically responsible towards colleagues and research				
	subjects.				
3	I practice the highest standards of ethical behaviour				
	associated with my profession.				
4	I have bio-ethical responsiblity towards the wider				
1					
1	Community and the environment				
DI O	community, and the environment.				
	10 : Employability skills				
1	I have employability skills in biotechnology				
	I have advanced learning in developing business and				
2	I have employability skills in biotechnology I have advanced learning in developing business and employment skills				
1 2 3	I have employability skills in biotechnology I have advanced learning in developing business and employment skills I possess entrepreneur skill				
1 2 3 4	I have employability skills in biotechnology I have advanced learning in developing business and employment skills I possess entrepreneur skill I possess intellectual business skills				
1 2 3 4 PLO 2	I have employability skills in biotechnology I have advanced learning in developing business and employment skills I possess entrepreneur skill I possess intellectual business skills I: Environmental sensitivity				
1 2 3 4 PLO :	I have employability skills in biotechnology I have advanced learning in developing business and employment skills I possess entrepreneur skill I possess intellectual business skills I: Environmental sensitivity I am sensitive towards the environment.				
1 2 3 4 PLO 2	I have employability skills in biotechnology I have advanced learning in developing business and employment skills I possess entrepreneur skill I possess intellectual business skills I: Environmental sensitivity I am sensitive towards the environment. I strive to develop environmentally sustainable				
1 2 3 4 PLO :	I have employability skills in biotechnology I have advanced learning in developing business and employment skills I possess entrepreneur skill I possess intellectual business skills I: Environmental sensitivity I am sensitive towards the environment. I strive to develop environmentally sustainable technologies				
1 2 3 4 PLO 1 1 2	I have employability skills in biotechnology I have advanced learning in developing business and employment skills I possess entrepreneur skill I possess intellectual business skills I: Environmental sensitivity I am sensitive towards the environment. I strive to develop environmentally sustainable				
1 2 3 4 PLO 1 1 2	I have employability skills in biotechnology I have advanced learning in developing business and employment skills I possess entrepreneur skill I possess intellectual business skills I: Environmental sensitivity I am sensitive towards the environment. I strive to develop environmentally sustainable technologies I understand the need to preserve and conserve the environment.				
1 2 3 4 PLO: 1 2	I have employability skills in biotechnology I have advanced learning in developing business and employment skills I possess entrepreneur skill I possess intellectual business skills I: Environmental sensitivity I am sensitive towards the environment. I strive to develop environmentally sustainable technologies I understand the need to preserve and conserve the				
1 2 3 4 PLO: 1 2	I have employability skills in biotechnology I have advanced learning in developing business and employment skills I possess entrepreneur skill I possess intellectual business skills I: Environmental sensitivity I am sensitive towards the environment. I strive to develop environmentally sustainable technologies I understand the need to preserve and conserve the environment. I have skills to understand the pros and cons of				
3 4 PLO: 1 2 3	I have employability skills in biotechnology I have advanced learning in developing business and employment skills I possess entrepreneur skill I possess intellectual business skills I: Environmental sensitivity I am sensitive towards the environment. I strive to develop environmentally sustainable technologies I understand the need to preserve and conserve the environment. I have skills to understand the pros and cons of biotechnological advancement on environment and				
3 4 PLO: 1 2 3	I have employability skills in biotechnology I have advanced learning in developing business and employment skills I possess entrepreneur skill I possess intellectual business skills I: Environmental sensitivity I am sensitive towards the environment. I strive to develop environmentally sustainable technologies I understand the need to preserve and conserve the environment. I have skills to understand the pros and cons of biotechnological advancement on environment and surroundings.				
1 2 3 4 PLO: 1 2 3 4 PLO:	I have employability skills in biotechnology I have advanced learning in developing business and employment skills I possess entrepreneur skill I possess intellectual business skills I: Environmental sensitivity I am sensitive towards the environment. I strive to develop environmentally sustainable technologies I understand the need to preserve and conserve the environment. I have skills to understand the pros and cons of biotechnological advancement on environment and surroundings. 12: Lifelong Learning				
1 2 3 4 PLO: 1 2 3 4 PLO:	I have employability skills in biotechnology I have advanced learning in developing business and employment skills I possess entrepreneur skill I possess intellectual business skills I: Environmental sensitivity I am sensitive towards the environment. I strive to develop environmentally sustainable technologies I understand the need to preserve and conserve the environment. I have skills to understand the pros and cons of biotechnological advancement on environment and surroundings. I: Environment. I have the ability to acquire knowledge. I can apply the learned skills to set my profession				
3 4 PLO: 3 4 PLO: 1 2	I have employability skills in biotechnology I have advanced learning in developing business and employment skills I possess entrepreneur skill I possess intellectual business skills I: Environmental sensitivity I am sensitive towards the environment. I strive to develop environmentally sustainable technologies I understand the need to preserve and conserve the environment. I have skills to understand the pros and cons of biotechnological advancement on environment and surroundings. I am a curious learner. I have the ability to acquire knowledge. I can apply the learned skills to set my profession I have the ability to acquire information on my own via				
3 4 PLO: 3 4 PLO: 3 4	I have employability skills in biotechnology I have advanced learning in developing business and employment skills I possess entrepreneur skill I possess intellectual business skills I: Environmental sensitivity I am sensitive towards the environment. I strive to develop environmentally sustainable technologies I understand the need to preserve and conserve the environment. I have skills to understand the pros and cons of biotechnological advancement on environment and surroundings. I2: Lifelong Learning I am a curious learner. I have the ability to acquire knowledge. I can apply the learned skills to set my profession I have the ability to acquire information on my own via various sources.				
3 4 PLO: 3 4 PLO: 3 4 4 PLO: 4	I have employability skills in biotechnology I have advanced learning in developing business and employment skills I possess entrepreneur skill I possess intellectual business skills I: Environmental sensitivity I am sensitive towards the environment. I strive to develop environmentally sustainable technologies I understand the need to preserve and conserve the environment. I have skills to understand the pros and cons of biotechnological advancement on environment and surroundings. I2: Lifelong Learning I am a curious learner. I have the ability to acquire knowledge. I can apply the learned skills to set my profession I have the ability to acquire information on my own via various sources. rience at AMITY				
3 4 PLO: 3 4 PLO: 3 4 4 PLO: 4	I have employability skills in biotechnology I have advanced learning in developing business and employment skills I possess entrepreneur skill I possess intellectual business skills I: Environmental sensitivity I am sensitive towards the environment. I strive to develop environmentally sustainable technologies I understand the need to preserve and conserve the environment. I have skills to understand the pros and cons of biotechnological advancement on environment and surroundings. I am a curious learner. I have the ability to acquire knowledge. I can apply the learned skills to set my profession I have the ability to acquire information on my own via various sources. rience at AMITY I am overall satisfied with the methodologies and				
1 2 3 4 PLO 1 1 2 3 4 Expe 1	I have employability skills in biotechnology I have advanced learning in developing business and employment skills I possess entrepreneur skill I possess intellectual business skills I Environmental sensitivity I am sensitive towards the environment. I strive to develop environmentally sustainable technologies I understand the need to preserve and conserve the environment. I have skills to understand the pros and cons of biotechnological advancement on environment and surroundings. I am a curious learner. I have the ability to acquire knowledge. I can apply the learned skills to set my profession I have the ability to acquire information on my own via various sources. rience at AMITY I am overall satisfied with the methodologies and pedagogical tools used by my faculty.				
1 2 3 4 PLO : 1 2 3 4 PLO : 3 4 Expe	I have employability skills in biotechnology I have advanced learning in developing business and employment skills I possess entrepreneur skill I possess intellectual business skills I: Environmental sensitivity I am sensitive towards the environment. I strive to develop environmentally sustainable technologies I understand the need to preserve and conserve the environment. I have skills to understand the pros and cons of biotechnological advancement on environment and surroundings. I2: Lifelong Learning I am a curious learner. I have the ability to acquire knowledge. I can apply the learned skills to set my profession I have the ability to acquire information on my own via various sources. rience at AMITY I am overall satisfied with the methodologies and pedagogical tools used by my faculty. I find the curriculum contemporary and relevant to the				
1 2 3 4 PLO : 1 2 3 4 Expe 1 2	I have employability skills in biotechnology I have advanced learning in developing business and employment skills I possess entrepreneur skill I possess intellectual business skills I: Environmental sensitivity I am sensitive towards the environment. I strive to develop environmentally sustainable technologies I understand the need to preserve and conserve the environment. I have skills to understand the pros and cons of biotechnological advancement on environment and surroundings. I2: Lifelong Learning I am a curious learner. I have the ability to acquire knowledge. I can apply the learned skills to set my profession I have the ability to acquire information on my own via various sources. rience at AMITY I am overall satisfied with the methodologies and pedagogical tools used by my faculty. I find the curriculum contemporary and relevant to the industry.				
1 2 3 4 PLO 1 1 2 3 4 Expe 1	I have employability skills in biotechnology I have advanced learning in developing business and employment skills I possess entrepreneur skill I possess intellectual business skills I: Environmental sensitivity I am sensitive towards the environment. I strive to develop environmentally sustainable technologies I understand the need to preserve and conserve the environment. I have skills to understand the pros and cons of biotechnological advancement on environment and surroundings. I2: Lifelong Learning I am a curious learner. I have the ability to acquire knowledge. I can apply the learned skills to set my profession I have the ability to acquire information on my own via various sources. rience at AMITY I am overall satisfied with the methodologies and pedagogical tools used by my faculty. I find the curriculum contemporary and relevant to the				

5	I am satisfied with the University Infrastructure.			
6	I am overall satisfied with the Faculties who taught me.			
7	I am overall satisfied with the Programme.			

Student Exit Survey

Programme - B Sc. (Honours) Biotechnolo	Programme -	B Sc.	(Honours)	Biotechnolog
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Batch	
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Dear Student, the objective of this Survey is to seek your candid assessment regarding the various learning aspects of the programme. The information from this survey will be analysed and used to identify the areas of improvement.

Sl. No.	Statements	Strongly	Agree	Neithe	So	Not
		agree		r	me	at all
				agree	wh	agree
				nor	at	
				disagr	Agr	
				ee	ee	
	hical issues associated with Biotechnology re	search				1
1	I understand the ethical issues related to					
	research and knowledge in biotechnology.					
2	I strive for honesty and responsibility					
	towards the environment and the					
	knowledge we gain so as to put it to best					
	use.					
3	I am ethical responsible towards colleagues,					
	research subjects, the wider community,					
	and the environment;					
4	I strive for justice, equality, honesty, and					
1	integrity in all my personal and professional					
	pursuits					
PLO 2: Tea	am work Leadership and Behavioural Skills					I
1	I have developed in the program to be					
	reliable and dependable.					
2	I am Respectful & Empathetic towards					
	others views irrespective of caste, race,					
	class, gender, religion etc.					
3	I have learnt skills to complete assignments					
	and projects on time.					
4	I am confident and have learnt how to adapt					
	to change					
PLO 3 : Le	arning attitude					I
1	I have intellectual curiosity towards					
	learning the various processes of life					
	sciences.					
2	I am competent to use a range of learning					
	strategies and acquire knowledge on my					
	own through various sources.					
3	I feel I am a self-directed learner who					
	continues to learn and grow.					
4	I use my prior learning to approach a new					

	nnohlom				
DI O 4 . I	problem. Environment sensitivity			1 1	
1	I understand the need for conservation of				
1	environment				
2	I recognize the relationship between				
	Environmental, Social and economic				
	sustainability and my role towards it.				
3	I apply my knowledge in a diverse range of				
	contexts pertaining to Environmental, Social				
	and economic sustainability.				
4	I strive to develop environmentally				
	sustainable technologies				
PLO 5 : E	Biotechnology applications	<u>.</u>	•		
1	I am competent of identifying the highly				
	specialized concepts in theoretical and				
	applied aspects of Biotechnology.				
2	I have developed the attitude of review and				
	critically appraise the practical aspects of				
	biotechnology.				
3	I try to relate academic learning to practical				
	issues.			1 1	
4	I have ability to develop creative, innovative				
DV 0 -	and practical solution.			1 1	
	Knowledge of Biosciences and Biotechnology			1 1	
1	I have developed the basic understanding				
	towards fundamental and relevant				
2	questions in lifescience				
2	I am able to understand modern				
2	biotechnology in a synergistic framework.				
3	I am able to apply concepts of Biosciences				
	and Biotechnology in multi-disciplinary				
4	I have developed curiosity to learn new				
4	things and grow in terms of knowledge.				
PLO 7 : 0	Critical and analytical skills and problem solving	<u> </u>			
1	I am able to describe and critically analyse				
1	problems in Biosciences & Biotechnology in				
	a research or industrial environment.				
2	I try to relate academic learning to practical			1	
	issues.				
3	I have ability to develop creative, innovative			1 1	
	and practical solution and to prioritize my				
	work.			<u> </u>	
4	I have ability to implement and test				
	solutions.			<u> </u>	
PLO 8 : 0	Good lab practices				
1	I am well equipped with most of the				
	practical skills related to basic				
	biotechnology.			1 1	
2	I have developed and an awareness of good				
	lab practice in biotechnology			1	
3	I am aware of the safety issues related to				
	environment and health.				
4	I am able to apply practical techniques in a				
	way so as to ensure health and safety.			1	
	iological Data analysis and interpretation		T	1 1	
1	I am able to critical analyse			1 1	

		1		
	data/information			
2	I am able to interpret results for driving			
	optimum solutions.			
3	I am able to use various tools and			
	technologies for data processing and			
	analysis.			
4	I am able to review and systematically			
	interpret information			
	Oral and written Communication Skills			
1	I have ability to effectively communicate and			
	impart knowledge which I have acquired on			
	the topics of biosciences and biotechnology			
2	I am competent to analyse and convey			
	information in writing.			
3	I can Communicate clearly and effectively			
	pertaining to the topics of life sciences.			
4	I am good making presentation in global			
	/cross cultural environment.			
PLO 11: I	nterpersonal skills			
1	I have grown to be self-managed.			
2	I am quite responsible and accountable.			
3	I am a socially aware person with skills of			
	problem solving			
4	I am able to effectively communicate in a			
	group as well as individual basis.			
PLO 12: F	Practical Skills in Biotechnology			
1	I am competent of using all the basic tools			
	and techniques in basic biotechnology.			
2	I am aware of resources and tools to be used			
	in understanding the basics of			
	biotechnology research.			
3	I am capable of the efficient use of resources			
	and tools.			
4	I am aware of good lab practices to ensure			
	health and safety.			
Experien	ice at AMITY	·		
1	I am overall satisfied with the			
	methodologies and pedagogical tools used			
	by my faculty.			
2	I find the curriculum contemporary and			
	relevant to the industry.			
3	I got ample opportunities for Industry			
	Interaction.			
4	I am satisfied with the Internship facility			
	provided to me.			
5	I am satisfied with the University			
	Infrastructure.			
6	I am overall satisfied with the Faculties who			
	taught me.			
7	I am overall satisfied with the Programme.			
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Student Exit Survey

Programme -	В.	Tech.	Bioinf	orm	atics
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Batch		

Dear Student, the objective of this Survey is to seek your candid assessment regarding the various learning aspects of the programme. The information from this survey will be analysed and used to identify the areas of improvement.

Sl. No.	Statements	Strongly agree	Agree	Neither agree nor disagree	Somewhat Agree	at all ree
PLO 1 : F	Knowledge of Bioinformatics and	Computational Bio	technology		1	
1	I am able to define, summarize		<u> </u>			
	concepts in Bioinformatics &	ļ				
	Computational Biotechnology					
2	I am able to apply concepts of	ļ				
	Bioinformatics &					
	Computational Biotechnology					
	in multi-disciplinary context.					
3	I am able to understand	ļ				
	Bioinformatics &					
	Computational Biotechnology					
	in a synergistic framework.					
4	I have developed curiosity to					
	learn new things and grow in					
	terms of knowledge.					
PLO 2: P	roblem solving					
1	I am able to describe and	ļ				
	analyse problems in					
	Bioinformatics &					
	Computational Biotechnology					
	in a research or industrial					
	environment.					
2	I try to relate academic					
	learning to practical issues.					
3	I have ability to develop					
	innovative and practical					
	solution.					
4	I have ability to implement and					
	test solutions.					
PLO 3:0	Computational Algorithm develop	pment				
1	I have ability to formulate					
	multidisciplinary research and					
	interface between modern					
	biology & informatics.					
2	I am able to review and					
	systematically develop					
	computational algorithm and					
	databases.					
3	I am aware of resources and					
	tools to be used to develop					
	computational algorithm and					
	databases.					

4	I am capable of the efficient use				
	of resources and tools.				
PLO4:	Scientific Reading & Learning				
1	I have quest for scientific				
	reading which promotes				
	knowledge				
2	I have developed learning				
	attitude to gain knowledge				
	from the fields of computer				
	science, biology, and				
	mathematics that are critical				
	for students considering				
	bioinformatics research.				
3	I have developed programming				
	knowledge and general				
	computer skills which are essential for success in				
	bioinformatics research				
	projects.				
4	I have the ability to use the				
-	knowledge efficiently in				
	bioinformatics research				
	projects.				
PLO 5: 0	Communication Skills		1		
1	I have ability to speak				
	proficiently.				
2	I am competent to convey				
	information in writing.				
3	I can communicate clearly and				
	effectively.				
4	I think, I am quite a good				
	listener in professional				
	business setting.				
5	I am good making presentation				
	in global /cross cultural				
DV 0 4 F	environment.	1 1 01 111			
	eam work Leadership and Behav	vioural Skills	-	T	
1	I am reliable and dependable.				
2	I am Respectful & Empathetic				
	towards others views				
	irrespective of caste, race, class,				
	gender, religion etc.				
3	I am a collaborative team				
	worker.				
4	I can stay calm in crisis				
	situations and motivate my				
	team.				
5	I am confident to initiate and				
	lead my peer group in any				
	situation.				
PLO7:	Theoretical & Practical				
	Learning				
1	I can easily apply my concepts				
1	of theoretical bioinformatics				
	knowledge in practical				
	monicage in practical		<u> </u>	<u> </u>	

		I	1		1	
	contexts.					
2	I have better understanding					
	towards working on biological					
	workbench for better data					
	analysis and information					
	processing.					
3	I am able to use various tools					
	and technologies for data					
	processing and analysis.					
4	I am able to critically analyze					
4						
	· ·					
	results for driving optimum					
	solutions.					
DI OC	Ethical and Durafaceter of					
PLO8:	Ethical and Professional Conduct					
1	I understand and practice the					
_	highest standards of ethical					
	behaviour associated with					
	management profession.					
2	I am ethical responsible					
	towards colleagues, research					
	subjects, the wider community,					
	and the environment;					
3	I strive for justice, equality,					
	honesty, and integrity in all my					
	personal and professional					
	pursuits.					
4	7 1 . 1 . 1 . 1 . 1 . 1 . 1					
4	I understand the ethical issues					
	related to research and knowledge in bioinformatics.					
	Miowicuge in bioiinoi manes.	<u> </u>		<u> </u>	<u> </u>	
PLO9:	Employability					
1 20).	Entrepreneurship Skill					
1	I have basic business acumen &					
	business skills to be					
	employable.					
2	I can create visibility for myself					
	to draw attention of a recruiter.					
3	I possess entrepreneur skill; I					
4	am a risk taker.					
4	I always find opportunities to improve the business value					
	chain.					
	· · · · · · · · · · · · · · · · · · ·	I	I	I	I	<u> </u>
PLO10:	Analytical skills					
1	I am able to analyse biological					
_	data/information and interpret					
	results for driving optimum					
	solutions.					
2	I have developed analytical					
	skills which are beneficial					
	beyond the scoop of books					

	through the didactic phase of				
	the program.				
3	I try to relate academic				
3					
4	learning to practical issues.				
4	I have ability to develop creative, innovative and				
	· · · · · · · · · · · · · · · · · · ·				
	practical solution and to				
	implement and test solutions				
DI Ω 1	1: Environment sensitivity				
1	I understand the need for conserva	ntion of			
1	environment	ition of			
2	I strive to develop environmentally	z sustainahle			
4	technologies	Justamable			
3	I recognize the relationship between	en Environmental			
3	Social and economic sustainability				
	towards it.	and my role			
4	I apply my knowledge in a diverse	range of contexts			
-	pertaining to Environmental, Socia				
	sustainability.				
			-IL		
PLO 1	2: Lifelong Learning				
1	I have curiosity to learn new				
	things.				
2	I am competent to acquire				
	knowledge on my own through				
	various sources.				
3	I feel I am a self-directed				
	learner.				
4	Translate the scientific finding				
	for the benefit of the society.				
	rience at AMITY			1	
1	I am overall satisfied with the				
	methodologies and pedagogical				
	tools used by my faculty.				
2	I find the curriculum				
	contemporary and relevant to				
	the industry.				
3	I got ample opportunities for				
	Industry Interaction.			ļ	
4	I am satisfied with the				
	Internship facility provided to				
	me.				
5	I am satisfied with the				
	University Infrastructure.				
6	I am overall satisfied with the				
	Faculties who taught me.				
7	I am overall satisfied with the				
	Programme.				

Student Exit Survey

Programme Group : B. Sc. (Hons) Medical Biotechnology

Dear Student, the objective of this Survey is to seek your candid assessment regarding the various learning aspects of the B.Sc (Hons) Medical Biotechnology programme. The information from this survey will be analysed and used to identify the areas of improvement.

Sl.	Statements	Strongl	Agree	Neithe	Som	Not
No.		y agree		r	ewh	at
				agree	at	all
				nor	Agre	agre
				disagr	е	е
PI.0 1	 : Knowledge of Medical Biotechnology			ee		
1	I can summarize the basic understanding					
1	towards fundamental and relevant questions in					
	lifescience and medical biotechnology in a					
	synergistic framework.					
2	I am able to explain and analyse the concept of					
	medical biotechnology in context to healthcare.					
3	I can translate academic learning to practical					
	issues.					
4	I am able to apply the acquired skills in various					
	areas of biotechnology.					
PLO 2:	Analytical skills					
1	I am able to describe and outline the problems in					
	Biosciences and medical biotechnology in a					
	research environment.					
2	I can translate academic learning to practical					
	issues and I am able to identify problems and					
	prepare small projects for the analysis of the					
	same.					
3	I am able to reach sustained conclusions of the					
	problems related to medical biotechnology using					
4	logical principles.					
4	I am able to translate data/information and					
DI 02 .	interpret results for driving optimum solutions. Problem Solving					
1	I have developed skills to solve the problems in					
1	medical biotechnology					
2	I am able to list the skills to plan a diverse range					
-	of medical biotechnology divisions.					
3	I am able to describe practical solutions within					
	medical biotechnology area.					
4	I can apply various decision making methods to					
-	scientifically solve any medical biotechnology					
	problem.					
PLO 4	: Data analysis and interpretation	ı		·	•	
1	I am able to use knowledge and scientifically					
	proven methodologies to demonstrate basic					

2 I am able to produce data to provide meaningful definitive conclusions. 3 I am able to solve research problem in medical biotechnology. 4 I am able to produce results to basic problems in medical biotechnology area PLO5: Individual and team work 1 I am reliable and dependable. 2 I am confident to initiate and lead my peer group in any situation. 3 I have developed in the program to be reliable and dependable. 4 I can complete assignments and projects on time. PLO6: Communication Skills 1 I have ability to effectively communicate and impart knowledge which I have acquired on the topics of hasic medical biotechnology 2 I can communicate clearly and effectively pertaining to the topics of Iffe sciences. 3 I have ability to speak proficiently 4 I have ability to speak proficiently 5 I am able to demonstrate the defined limits of bioethical principles 1 I am able to demonstrate the defined limits of bioethical principles 2 I am able to apply principles in the Biomedical research and academia. 3 I am ethically responsible towards colleagues and research subjects. 4 I have ethical responsibility towards the wider community, and the environment. PLO8: Modern Tool Usage 1 I can identify resources and tools to be used in understanding the basic soft biotechnology. 2 I can identify resources and tools to be used in understanding the basics of biotechnology research and capable to their efficient use. 3 I can demonstrate the use of tools with the respective techniques. 4 I can prepare standard operating procedure for the basic tools used in basic medical biotechnology. PLO9: If can identify resources and resources and research subjects. 4 I can demonstrate the use of tools with the respective techniques. 5 I can demonstrate the use of tools with the respective techniques. 6 I can prepare standard operating procedure for the basic tools used in basic medical biotechnology. PLO9: If con glearning 1 I can demonstrate lifelong learning in the field of health and allied sciences. 8 I am able to apply plearning of human biolog		1: 11: . 1 1				
definitive conclusions. I am able to solve research problem in medical biotechnology I am able to produce results to basic problems in medical biotechnology area PLO5: Individual and team work I am reliable and dependable. I am reliable and dependable. I am reliable and dependable. I have developed in the program to be reliable and dependable. I can complete assignments and projects on time. PLO6: Communication Skills I have ability to effectively communicate and impart knowledge which I have acquired on the topics of basic medical biotechnology I can communicate clearly and effectively pertaining to the topics of life sciences. I have ability to speak proficiently HO7: Ethical and Professional Conduct I have ability to write clearly. I am able to demonstrate the defined limits of biotehical principles I am able to apply principles in the Biomedical research and cardemia. I am ethically responsible towards colleagues and research and cardemia. I am ethically responsible towards to elleagues and research and eardemia. I can apply all the basic tools and techniques in basic medical biotechnology. I can demonstrate the use of tools with the respective techniques. I can demonstrate the use of tools with the respective techniques. I can demonstrate the use of tools with the respective techniques. I can demonstrate the use of tools with the respective techniques. I can demonstrate the use of tools with the respective techniques. I can demonstrate the use of tools with the respective techniques. I can demonstrate the use of tools with the respective techniques. I can demonstrate the use of tools with the respective techniques. I can demonstrate the use of tools with the respective techniques. I can demonstrate the use of tools with the respective techniques. I can demonstrate the use of tools with the respective techniques. I can demonstrate the use of tools with the respective techniques. I can demonstrate the use of tools with the respective techniques.		medical biotechnology experiments				
I am able to solve research problem in medical biotechnology	2					
biotechnology		definitive conclusions.				
biotechnology	3	I am able to solve research problem in medical				
4 I am able to produce results to basic problems in medical biotechnology area PLO 5: Individual and team work 1 I am reliable and dependable. 2 I am confident to initiate and lead my peer group in any situation. 3 I have developed in the program to be reliable and dependable. 4 I can complete assignments and projects on time. PLO 6: Communication Skills 1 I have ability to effectively communicate and impart knowledge which I have acquired on the topics of basic medical biotechnology 2 I can communicate clearly and effectively pertaining to the topics of life sciences. 3 I have ability to speak proficiently 4 I have ability to write clearly. PLO 7: Ethical and Professional Conduct 1 I am able to demonstrate the defined limits of bioethical principles 2 I am able to apply principles in the Biomedical research and academia. 3 I am ethically responsible towards colleagues and research subjects. 4 I have ethical responsiblity towards the wider community, and the environment. PLO 8: Modern Tool Usage 1 I can apply all the basic tools and techniques in basic medical biotechnology 2 I can identify resources and tools to be used in understanding the basics of biotechnology 2 I can identify resources and tools to be used in understanding the basics of biotechnology 2 I can identify resources and tools to be used in understanding the basics of biotechnology 3 I can demonstrate lifelong learning in the field of health and allied sciences. 2 I am able to apply learning 1 I can demonstrate lifelong learning in the field of health and allied sciences. 2 I am able to apply learning of human biological system in various practical contexts. 2 I am able to apply learning of human biological system in various practical contexts.		-				
medical biotechnology area	1.					
PLO 5: Individual and team work	4					
1 I am reliable and dependable. 2 I am confident to initiate and lead my peer group in any situation. 3 I have developed in the program to be reliable and dependable. 4 I can complete assignments and projects on time. PLO 6: Communication Skills	DI O F					
1 I am confident to initiate and lead my peer group in any situation.				<u> </u>	1	T
in any situation. 3 I have developed in the program to be reliable and dependable. 4 I can complete assignments and projects on time. PLO 6: Communication Skills I have ability to effectively communicate and impart knowledge which I have acquired on the topics of basic medical biotechnology 2 I can communicate clearly and effectively pertaining to the topics of life sciences. 3 I have ability to speak proficiently 4 I have ability to speak proficiently 1 I am able to demonstrate the defined limits of bioethical principles 2 I am able to demonstrate the defined limits of bioethical principles 2 I am able to apply principles in the Biomedical research and academia. 3 I am ethically responsible towards colleagues and research subjects. 4 I have ethical responsibility towards the wider community, and the environment. PLO 8: Modern Tool Usage 1 I can apply all the basic tools and techniques in basic medical biotechnology. 2 I can identify resources and tools to be used in understanding the basics of biotechnology research and capable to their efficient use. 3 I can demonstrate the use of tools with the respective techniques. 4 I can prepare standard operating procedure for the basic tools used in basic medical biotechnology. PLO 9: Life Long learning 1 I can demonstrate the use of tools with the respective techniques. 4 I can prepare standard operating procedure for the basic tools used in basic medical biotechnology. PLO 9: Life Long learning 1 I can demonstrate the field of medical biotechnology. 2 I am able to apply learning of human biological system in various practical contexts. 2 I am able to apply learning of human biological system in various practical contexts.		I am reliable and dependable.				
I have developed in the program to be reliable and dependable.	2	I am confident to initiate and lead my peer group				
I have developed in the program to be reliable and dependable.		in any situation.				
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system in various practical contexts. 2 I am able to apply skills in medical						
2 I am able to apply skills in medical	1					
biotechnology various multidisciplinary	2					
		biotechnology various multidisciplinary				

	problems.			
3	I can demonstrate academic learning to practical			
	issues.			
4	I am able to demonstrate the skills learned in			
	research and development			
PLO11	: Environment and Sustainability			
1	I am able to recognize the significance of societal			
	and environmental contexts			
2	I am able to define and emphasize special stress			
	in gaining sustainable development.			
3	I can demonstrate the need to preserve and			
	conserve the environment.			
4	I have skills to distinguish the pros and cons of			
	biotechnological advancement on environment			
	and surroundings.			
PLO12	:Medical Biotechnology and Society			
1	I am able to analyse and investigate professional,			
	ethical and societal.			
2	I am able analyse and investigate environmental			
	and economic responsibility with respect to			
	medical biotechnology.			
3	I am able to demonstrate responsibility for the			
	implementation of targeted investigations in			
	professional practices.			
4	I am able to show relation between medical			
	biotechnology to societal issues.			
Experi	ence at AMITY	 	 -	
1	I am overall satisfied with the methodologies and			
	pedagogical tools used by my faculty.			
2	I find the curriculum contemporary and relevant			
	to the industry.			
3	I got ample opportunities for Industry			
	Interaction.			
4	I am satisfied with the Internship facility			
	provided to me.			
5	I am satisfied with the University Infrastructure.			
6	I am overall satisfied with the Faculties who			
	taught me.			
7	I am overall satisfied with the Programme.			

Student Exit Survey

Programme - M. Sc. Biotechnology

D . 1		
Batch		

Dear Student, the objective of this Survey is to seek your candid assessment regarding the various learning aspects of the programme. The information from this survey will be analysed and used to identify the areas of improvement.

Sl. No.	Statements	Strong	Agree	Neither	Some	Not at all
		ly		agree nor	what	agree
		agree		disagree	Agree	
PLO 1:		,			1	
1	I am able to recall factual					
	information on broad					
	knowledge based proficiency					
	in central themes, principles					
_	and components of bioscience					
2	I am able to apply concepts of					
	Biosciences and					
	Biotechnology in multi-					
0	disciplinary context					
3	I am able to analyse					
	implications of biotechnology					
	in societal, environmental and					
4	educational frameworks.					
4	I can apply theoretical					
DI O 2 .	knowledge into practice.					
PLO 2 :	- CV					
1	I am updated with the tools and techniques in					
	and techniques in biotechnology					
2	I am competent of identifying					
	the highly specialized					
	concepts in theoretical and					
	applied aspects of					
	Biotechnology.					
3	I have developed the attitude					
	of review and critically					
	appraise the practical aspects					
	of biotechnology.					
4	I am able utilize the skills for					
	disseminating information.					
5	I have ability to develop					
	creative, innovative and					
	practical solution					
PLO 3:	Problem solving					
1	I am able to describe and					
	critically analyse problems in					
	Bioscienes & Biotechnology in					
	a research or industrial					
	environment with scientific					
	literacy.					
2	I am able to demonstrate					

	, , ,				
	knowledge of biological				
	processes from the molecular				
	and cellular perspectives.				
3	I am to employ the				
	appropriate techniques				
	effectively and safely,				
	including the appropriate use				
	of equipment and tools to				
	produce an acceptable				
	outcome when performing a				
	technical laboratory task.				
4	I have ability to develop				
	creative, innovative and				
	practical solution and to				
DI O 4	prioritize my work.				
	Research acumen		1	1	I
1	I have ability to plan, conduct,				
	evaluate and report the				
	results of investigations,				
	including the use of				
2	secondary data in this process I have ability to formulate				
	research questions and set				
	research goals.				
3	I am able to critically analyze				
3	data/information and to				
	interpret results for driving				
	optimum solutions.				
4	I am able to review and				
1	design a scientific research				
	proposal and set its				
	respective research goals				
PLO 5 :	Critical Thinking Skills				
1	I am able to engage in the				
	scientific process to form				
	hypotheses,				
2	I am able to synthesize				
	scientific information, gather				
	and analyze data.				
3	I am capable of applying				
	statistical techniques and				
	draw conclusions.	 			
4	I am able to use protocols to	 			
	devise data collection				
	procedures and analyze				
	results.				
PLO 6:	Interpersonal Skills				
1	I have ability to present my				
	scientific data confidently.				
2	I am competent to interact				
	professionally in cross-				
	cultural teams.				
3	I can communicate with my				
	co-workers clearly and				
	effectively.				
4	I am a socially aware person				
	with skills of problem solving				

PLO 7:	Communication skills				
1	I am able to use the				
1	terminology, concepts and				
	examples of biotechnology in				
	presentations				
2	I am able to write scientific				
_	information and data using				
	facts and knowledge of				
	biotechnology				
3	I am able to formulate and				
	evaluate scientific research				
	pertaining to biotechnology in				
	related fields.				
4	I am good making				
	presentation in global /cross				
	cultural environment.				
PLO 8:	Team work and Leadership ski	lls	 	.	
1	I am able to work in scientific				
	team and also take leadership				
	roles.				
2	I am able to engage in				
	effective scientific				
	communication as individuals				
	and as team members by				
	listening, speaking, writing				
	and presenting in oral and				
	poster format				
3	I can stay calm and is				
	confident to initiate in a crisis				
	situations and motivate/ lead				
	my team.				
4	I have learnt skills to				
1	complete assignments and				
DI O O	projects on time.				
	Global Outlook			<u> </u>	
1	I am able to correlate global				
	issues with scientific information from different				
	perspectives.				
2	I find myself capable of				
	applying my knowledge in				
	local, national and				
	international contexts				
3	I learn from and respect				
	different cultures in terms of				
	research practices.				
4	I know to communicate in				
	multi-cultural context.				
PLO 10:	Ethical and Professional Cond	uct	•	•	,
1	I am able to apply ethical				
	practices and behavior in all				
	aspects of biotechnological				
	scientific endeavors				
2	I am ethically responsible		 		
I	<u>-</u>		<u>I</u>]	I

	towards colleagues, research				
	subjects, the wider				
	community, and the				
	environment;				
3	I strive for justice, equality,				
3	honesty, and integrity in all				
	my personal and professional				
	pursuits.				
4	I strive for honesty and				
•	responsibility towards the				
	environment and the				
	knowledge we gain so as to				
	put it to best use.				
PLO 11:	Environment sensitivity		l		l
1	I understand the need for				
	conservation of environment				
2	I recognize the relationship				
	between Environmental,				
	Social and economic				
	sustainability and my role				
	towards it.				
3	I apply my knowledge in a				
	diverse range of contexts				
	pertaining to Environmental,				
	Social and economic				
	sustainability.				
4	I strive to develop				
	environmentally sustainable				
	technologies				
	Lifelong Learning		T	T	T
1	I have curiosity to learn new				
2	things.				
2	I am competent to acquire				
	knowledge on my own through various sources such				
	as journals, research papers				
	etc.				
3	I feel I am a self-directed				
3	learner.				
4	I use my prior learning to				
	approach a new problem.				
Experie	ence at AMITY	<u> </u>	1		1
1	I am overall satisfied with the				
	methodologies and				
	pedagogical tools used by my				
	faculty.				
2	I find the curriculum				
	contemporary and relevant to				
	the industry.				
3	I got ample opportunities for				
	Industry Interaction.				
4	I am satisfied with the				
	Internship facility provided to				
	me.				
5	I am satisfied with the				
	University Infrastructure.				
6	I am overall satisfied with the				

	Faculties who taught me.			
7	I am overall satisfied with the			
	Programme.			

Student Exit Survey

Programme Group : M. Tech. (Biotechnology)

Dear Student, the objective of this Survey is to seek your candid assessment regarding the various learning aspects of the **M. Tech. (Biotechnology)** programme. The information from this survey will be analysed and used to identify the areas of improvement.

Sl. No.	Statements	Strongly agree	Agree	Neither agree nor disagree	Somewhat Agree	t at all igree
PLO :	1 : Knowledge of Biosciences ar	nd Biotechnology	•			
1	I am able to explain the concepts in Biosciences & Biotechnology					
2	I am able to design concepts of Biosciences and Biotechnology in multi-disciplinary context.					
3	I appraise academic learning to practical issues.					
4	I am able to plan and design R&D protocols in Biosciences & Biotechnology					
PLO 2	2: Holistic approach and probl	em solving		•		
1	I am able to achieve holistic development by acquiring knowledge and skills.					
2	I am able to describe and critically analyse problems in Bioscienes & Biotechnology in a research or industrial environment.					
3	I have ability to appraise, implement and test solutions.					
4	I have ability to compare the best problem solving approach					
	3: Applications in Industry/Ro	esearch	T			1
1	I am able to describe problems in Bioscienes & Biotechnology in a research or industrial environment.					
2	I am able to critical analyse data/information.					
3	I critically analyse problems in Bioscienes & Biotechnology in a research or industrial environment.					

4	I am able to critically		
	interpret results for driving		
	optimum solutions.		
PLO 4	4 : Critical approach to generat	e new ideas	
1	I can critically appraise ideas		
2	I am able to design		
	informative data and critically		
	analyse the same to provide		
	meaningful definitive		
	conclusions.		
3	I can plan innovative		
	methods.		
4	I can devise and create		
	practical solution.		
	5 : Communication skills		
1	I have ability to speak		
2	proficiently.		
	I am competent to convey information in writing.		
3	I can design effective methods		
3	of communication.		
4	I can communicate clearly.		
	6 : Interpersonal skills		
1	I am a good listener in		
1	professional business setting.		
2	I am able to organize good		
2	presentation in global		
	environment.		
3	I can create good cross		
	cultural environment.		
4	I possess good set of		
_	interpersonal skills required		
	for self and organization		
	welfare.		
PLO 7	7 : Development of lab to mark	et technologies	<u> </u>
1	I can develop novel solutions		
	through the use of biological		
	processes.		
2	I have ability to develop		
	creative solution.		
3	I can develop novel solutions		
	through processes derived		
	from plants, bacteria, algae		
	and fungi as sources of		
	renewable energy, materials		
4	and chemicals. I have ability to develop		
7	innovative and practical		
	solution.		
PLO	3 : Ethical, environmental and s	social issues	1
1	I understand the need for		
	conservation of environment		
2	I strive to develop		
	environmentally sustainable		
	technologies		
3	I am Respectful & Empathetic		
	towards others views		

_	T				T	
	irrespective of caste, race,					
	class, gender, religion etc.					
4	I understand and practice the					
	highest standards of ethical					
	behaviour associated with					
DI O	management profession.					
	9 : Strategic planning				1	
1	I am able to effectively plan					
	strategies to offer solutions					
	through Biotechnology					
-	related processes.					
2	I am able to explain the					
	critical needs and					
	opportunities for					
-	organisational growth.					
3	I am able to implement					
	strategies to offer solutions					
	through Biotechnology					
4	related processes.					
4	I am able to explain the					
	opportunities for					
DY O	organisational growth.					
	10: Lifelong learning				1	
1	I have curiosity to learn new					
2	things.					
2	I am competent to acquire					
	knowledge on my own					
3	through various sources. I feel I am a self-directed					
3						
4	learner.					
4	I can apply my knowledge					
5	and skill set in my profession.					
5	I use my prior learning to approach a new problem.					
DI O1	11: Leadership skills and Socie	tal and Environmer	atal impact			
1	I am able to work effectively	tai anu Environmei	itai iiipatt	•		
1	as an individual and as a					
	member or leader of team in					
	diverse disciplines and					
	cultures.					
2	I am confident to initiate and					
-	lead my peer group in any					
	situation.					
3	I can stay calm in a crisis					
	situations.					
4	I plan to motivate my team in					
-	adverse situations.					
PLO ₁	12: Global outlook					
1	I am able to understand					
	global issues from different					
	perspectives.					
2	I appraise and learn from and					
1	respect different cultures.					
3	I know to communicate in					
	multi-cultural context.					
4	I plan to implement my					
	learning for global exposure					
L	1 rear ming for grobar exposure				ı	

Expe	rience at AMITY	
1	I find the curriculum contemporary and relevant to the industry.	
2	I got ample opportunities for Industry Interaction.	
3	I am satisfied with the Internship facility provided to me.	
4	I am satisfied with the University Infrastructure.	
5	I am overall satisfied with the Faculties who taught me.	
6	I am overall satisfied with the Programme.	
7	I am overall satisfied with the methodologies and pedagogical tools used by my faculty.	

Student Exit Survey

Programme - B. Tech. +M. Tech. Biotechnology

Batch				

Dear Student, the objective of this Survey is to seek your candid assessment regarding the various learning aspects of the programme. The information from this survey will be analysed and used to identify the areas of improvement.

Sl. No.	Statements	Strongly agree	Agree	Neither agree nor disagree	Somewh at Agree	Not at all agree
PLO 1:	Knowledge of					
	nces, Biotechnology					
and Eng	gineering					
1	I have ablility to apply concepts of Biosciences in multi-disciplinary context.					
2	I have ability to apply knowledge of mathematics, science, engineering and Biotechnology in practice					
3	I have ablility to apply concepts of Biotechnology in multi-disciplinary context.					
4	I have ability to apply knowledge of research and innovation in practice.					
PLO 2:P	roblem solving			·		
1	I have ablility to describe and critically analyse problems in Bioscienes & Biotechnology in a					

	1 1 1 1 1 1 1 1				
	research or industrial environment.				
2	I have ability to identify, critically				
	analyze, formulate and solve				
	engineering problems with				
	comprehensive knowledge in the				
	area of specialization.				
3	I have ability to develop creative,				
3	innovative and practical solution.				
4					
4	I have ability to implement and test				
DY 0 0	solutions.				
	Modern tools and techniques	T	1	T	
1	I am aware of modern tools in				
	Biotechnology and can use them with				
	dexterity.				
2	I have ability to select modern				
	engineering use them efficiently.				
3	I have ability to select biological				
	techniques and use them skillfully.				
4	I am aware of advancement in				
-	research related to biotechnology and				
	Biosciences.				
DI O 4 ·	Research acumen	<u> </u>	<u> </u>	<u> </u>	<u> </u>
1			1		1
1	I have ability to devise and conduct				
	experiments, interpret data and				
	provide well informed conclusions.				
2	I have ability to formulate research				
	questions and set research goals.				
3	I have ability to critical analyse				
	data/information and interpret				
	results for driving optimum solutions.				
4	I have ability to review and				
	systematically interpret research				
	goals				
5	I have ability to contribute by				
	research and innovation to solve				
	engineering problems				
DIOE.	Communication Skills				
-		T .	1	I	
1	I have ability to speak proficiently.				
2	I am competent to convey				
	information in writing.				
3	I can Communicate clearly and				
	effectively.				
4	I think, I am quite a good listener in				
	professional business setting.				
5	I am good making presentation in				
	global /cross cultural environment.				
PLO 6 ·	Team work Leadership and	1	1	I	<u>. </u>
	oural Skills				
1	I am reliable and dependable.				
2	I am Respectful & Empathetic				
	<u> </u>				
	towards others views irrespective of				
	caste, race, class, gender, religion etc.				
3	I am a collaborative team worker.				
4	I can stay calm in a crisis situations				
	and motivate my team.				
5	I am confident to initiate and lead my	 			
	peer group in any situation.				
L	1 1 1 7	l	1	I	1

PLO 7: I	Ethical and Professional Conduct				
1	I have ability to function				
	professionally with ethical				
	responsibility as an individual as well				
	as in multidisciplinary and cross				
	cultural teams with positive attitude				
2	I understand and practice the highest				
	standards of ethical behaviour				
	associated with management				
	profession.				
3	I am ethical responsible towards				
	colleagues, research subjects, the				
	wider community, and the				
	environment;				
4	I strive for justice, equality, honesty,				
	and integrity in all my personal and				
	professional pursuits				
	Employability Entrepreneurship			 	<u></u>
Skill				1	T
1	I have basic business acumen &				
	business skills to be employable.				
2	I can create visibility for myself to				
	draw attention of a recruiter.				
3	I possess entrepreneur skill.				
4	I always find opportunities to				
	improve the business value chain.				
	Environment sensitivity		, ,	1	
1	I understand the need for conservation	of			
environ					
2	I strive to develop environmentally sust	ainable			
technolo	9				
3	I have learned to study the effects of res	earch			
	ogies on environment				
4	I have learned to conserve the associati	on existing in			
	ronment				
	Lifelong Learning		T	 1	
1	I have ability to appreciate the				
	importance of goal setting and to				
	recognize the need for life-long				
	reflective learning				
2	I have curiosity to learn new things.				
3	I am competent to acquire knowledge				
	on my own through various sources.				
4	I feel I am a self-directed learner.				
5	I can apply my knowledge and skill				
	set in my profession.				
6	I use my prior learning to approach a				
F	new problem.				
	ence at AMITY		 		
1	I am overall satisfied with the				
	methodologies and pedagogical tools				
2	used by my faculty.				
2	I find the curriculum contemporary				
	and relevant to the industry.				
3	I got ample opportunities for Industry				
ĺ	Interaction.				

4	I am satisfied with the Internship			
	facility provided to me.			
5	I am satisfied with the University			
	Infrastructure.			
6	I am overall satisfied with the			
	Faculties who taught me.			
7	I am overall satisfied with the			
	Programme.			

Student Exit Survey

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Programme -	В.	Sc.	+	М.	Sc.	(dual) B10	otech	mo	logv

Batch		
Batcn		

Dear Student, the objective of this Survey is to seek your candid assessment regarding the various learning aspects of the programme. The information from this survey will be analysed and used to identify the areas of improvement.

Sl. No.	Statements	Strongly agree	Agree	Neither agree nor disagre e	Somew hat Agree	Not at all agree
PLO 1	Knowledge of Biosciences and Bio	technology				•
1	I am able to devise, summarize the concepts in Biosciences & Biotechnology					
2	I am able to practically design concepts of Biosciences and Biotechnology in inter- disciplinary context.					
3	I have ability to decribe knowledge of mathematics, science, engineering and Biotechnology in practice					
4	I have ability to describe the knowledge of research and innovation in practice.					
PLO 2:	Problem solving					
1	I demonstrate the skills to solve the problems in biotechnology					
2	I am able to categorize the skills to plan a diverse range of biotechnology divisions.					
3	I am able to describe practical solutions within biotechnology area.					
4	I can apply various decision making methods to scientifically solve any biotechnology problem.					
PL03:	Research and development acum	en				
1	I have the ability to design research proposals and set research goals.					
2	I am able to use appropriate tools in solving problems related to					

	nagaanah and darralamii airt				
	research and development.				
3	I am able to analyse and interpret				
	research goals				
4	I am able to use knowledge and				
	scientifically proven				
	methodologies to demonstrate				
	basic medical biotechnology				
	experiments				
PLO 4:	Cognitive and analytical skills				
1	I am able to identify and create				
	specialized concepts of				
	biotechnology.				
2	I am able to describe and outline				
	the problems in Biosciences and				
	biotechnology in a research				
	environment.				
3	I am able to systematically				
	explain and critically evaluate				
	these specialized concepts in				
	biotechnology.				
4	I can translate academic learning				
1	to practical issues and I am able				
	to identify problems and prepare				
	small projects for the analysis of				
	the same.				
PLO 5 :			J		
1	I have ability to speak proficiently				
1	and explain my ideas clearly.				
2	I am good at creating				
	presentation to effectively				
	propagate research and technical				
	information.				
2					
3	I have ability to write clearly. I have ability to speak proficiently				
	Leadership Skills		1	T	
1	I am able to perform given				
	assignments, experiments and				
	activities, individually as well as				
	in a group.				
2	I am able to also lead my team				
	and guide them in the given				
_	activities				
3	I am reliable and dependable.				
4	I am respectful and empathetic				
	towards others views irrespective				
	of caste, race, class, gender,				
	religion etc.				
	Biotechnological skills	1	1	T	1
1	I am able to demonstrate				
	theoretical knowledge, technical				
	information, and research				
	methods to solve applied				
	1 1				
	biotechnological practices.				
2	I am able to analyse and interpret				
	outcomes of these applied				
	biotechnological skills.				
<u> </u>	U	<u> </u>	1	ı	<u> </u>

_	7 1 11 1 1 1 1					
3	I can apply all the basic tools and					
4	techniques in biotechnology. I can identify resources and tools					
4	to be used in understanding the					
	basics of biotechnology research					
	and capable to their efficient use.					
PLO 8	:Ethical and Professional Conduct		<u> </u>			Į.
1	I understand and practice highest					
	standards of ethics while					
	applying biotechnological					
	principles in environmental and					
	other socially sensitive issues.					
2	I am ethically responsible					
	towards colleagues, research					
	subjects, wider community and					
	environment.					
3	I am able to demonstrate the					
	defined limits of bioethical					
	principles					
4	I am able to apply principles in					
	the biotechnology research and academia.					
DI O O	: Technical and Managerial skills					
1	I can design the technical and					
1	managerial skills to achieve self					
	and organizational goals					
2	I am able to describe the technical					
	and managerial skills to					
	proficiently organise and achieve					
	my set goals					
3	I have developed in the program					
	to be reliable and dependable and					
	manage the team to complete the					
	assigned tasks					
4	I have the technical skill to					
DI 010	perform experiments					
1	D:Lifelong learning I can demonstrate lifelong					
1	learning in the field of health and					
	allied sciences.					
2.	I am able to name and recognize					
	skills as per requirements in the					
	field of biotechnology					
3	I am curious to learn new things.					
4	I am competent to acquire					
	knowledge on my own through					
	various sources.					
PLO11	1:Environmental awareness and su	stainability		T	1	1
1	I am able to recognize the					
	significance of societal and					
	environmental contexts					
2	I am able to define and emphasize					
	special stress in gaining					
2	sustainable development.					
3	I can demonstrate the need to preserve and conserve the					
L	preserve and conserve the			1	1	

I have skills to distinguish the					
pros and cons of biotechnological					
advancement on environment					
	ety				
1					
· · ·					
· ·					
· ·					
V 1					
,					
I am overall satisfied with the					
	pros and cons of biotechnological advancement on environment and surroundings. 2: Advancement of science and society I can explain the need for development of biotechnological applications for the betterment of science and society I am capable of planing research ideas for society. I am capable comparing research principles to be applied for the betterment of science and society. I am able analyse and investigate environmental and economic responsibility with respect to biotechnology. ience at AMITY I am overall satisfied with the methodologies and pedagogical tools used by my faculty. I find the curriculum contemporary and relevant to the industry. I got ample opportunities for Industry Interaction. I am satisfied with the Internship facility provided to me. I am satisfied with the University Infrastructure. I am overall satisfied with the Faculties who taught me.	pros and cons of biotechnological advancement on environment and surroundings. E: Advancement of science and society I can explain the need for development of biotechnological applications for the betterment of science and society I am capable of planing research ideas for society. I am capable comparing research principles to be applied for the betterment of science and society. I am able analyse and investigate environmental and economic responsibility with respect to biotechnology. I am overall satisfied with the methodologies and pedagogical tools used by my faculty. I find the curriculum contemporary and relevant to the industry. I got ample opportunities for Industry Interaction. I am satisfied with the Internship facility provided to me. I am satisfied with the University Infrastructure. I am overall satisfied with the Faculties who taught me. I am overall satisfied with the	pros and cons of biotechnological advancement on environment and surroundings. 2: Advancement of science and society I can explain the need for development of biotechnological applications for the betterment of science and society I am capable of planing research ideas for society. I am capable comparing research principles to be applied for the betterment of science and society. I am able analyse and investigate environmental and economic responsibility with respect to biotechnology. I am overall satisfied with the methodologies and pedagogical tools used by my faculty. I find the curriculum contemporary and relevant to the industry. I got ample opportunities for Industry Interaction. I am satisfied with the Internship facility provided to me. I am satisfied with the University Infrastructure. I am overall satisfied with the Faculties who taught me. I am overall satisfied with the	pros and cons of biotechnological advancement on environment and surroundings. :: Advancement of science and society I can explain the need for development of biotechnological applications for the betterment of science and society I am capable of planing research ideas for society. I am capable comparing research principles to be applied for the betterment of science and society. I am able analyse and investigate environmental and economic responsibility with respect to biotechnology. ience at AMITY I am overall satisfied with the methodologies and pedagogical tools used by my faculty. I find the curriculum contemporary and relevant to the industry. I got ample opportunities for Industry Interaction. I am satisfied with the Internship facility provided to me. I am satisfied with the University Infrastructure. I am overall satisfied with the Faculties who taught me. I am overall satisfied with the	pros and cons of biotechnological advancement on environment and surroundings. 2: Advancement of science and society I can explain the need for development of biotechnological applications for the betterment of science and society I am capable of planing research ideas for society. I am capable comparing research principles to be applied for the betterment of science and society. I am able analyse and investigate environmental and economic responsibility with respect to biotechnology. I am overall satisfied with the methodologies and pedagogical tools used by my faculty. I find the curriculum contemporary and relevant to the industry. I got ample opportunities for Industry Interaction. I am satisfied with the Internship facility provided to me. I am satisfied with the University Infrastructure. I am overall satisfied with the Faculties who taught me. I am overall satisfied with the Faculties who taught me. I am overall satisfied with the

COMPREHENSIVE EXAMINATION

Comprehensive Examination Guidelines for B. Tech. Programmes for intended **Programme Learning Outcomes**

Purpose	To assess attainment of programme goals in the core and specialization areas of all the programmes in domain of Biosciences and Biotechnology.
Goal(s)	 To assess professional ethics leadership and consensus building skills, relevant to scientific aspects of the field of life sciences. To assess the knowledge and proficiency in mathematical, statistical and computational skills. To assess students technical skills and hands-on training in biotechnology and the application of computers in bio-technology To assess the ability to conduct research and use various tools and the holistic knowledge acquired for problem-solving and decision-

	1
	making in biotechnology.
	5. To assess the communication, leadership and team skills
	and ability to make ethical choices.
	6. To assess the understanding of industry scenario and ability to
	convert opportunities into research propositions through innovation,
	creativity and risk-taking for sustainable competitive advantage.
Process:	The comprehensive examination would be conducted at the end of
Trocess.	each academic year.
Format	1. The examination will be based on multiple choice questions. The
	question paper will consist of eight sections.
	Section A: - General 30 Questions
	1. Biotechnology- / 60 Marks
	20 Questions
	2. Section B: - Application Based- / 50 Marks
	Section C: - Specialisation/Area Specific- 15
	3. Questions / 30 Marks
	4. Section D: - General Education, General Awareness & Life-long
	Learning- 15 Questions / 15
	Marks
	5. Section E: - Ethics, Social & Environmental Impact- 10 Questions / 15
	Marks
	6. Section F: Information and Digital Literacy – 10 Questions / 10 Marks
	Section G: Global Outlook – 10 Questions / 10
	7. Marks
	8. Section H: - Employability and Entrepreneurship-10 Questions / 10 Marks
	 Section A: General Biotechnology -30 Questions/60 Marks: This section shall comprise of theory based/conceptual questions from core areas of Biotechnology-Basics of Biotechnology, Industrial Biotechnology, Cell Biology, Biochemistry, Microbiology Molecular Biology, Biochemical engineering, Bioinformatics, Computational Biology, and integration of all above. Section B: Application based -20 Questions/50 Marks: This section shall comprise of questions on general biotechnology which will have focus on applications of various concepts, principles and theories.
	7. Section C: - Specialisation/Area Specific- 15 Questions each/30 Marks:
	his section shall comprise of theory and application based questions from specialised/sectoral areas of Biotechnology viz. i. Industrial and pharmaceutical biotechnology management ii. Recombinant DNA Technology iii. Bioprocess Technology iv. Cell Biology
	v. Biosensors
	vi. Stem cell and tissue engineering
	vii. Enzyme Technology
	viii. Molecular biology
	ix. Computational Biology
	x. Computer programming
	(This section will have an option of choosing their specialization area(s) opted by the student. More specialization areas may be added).

5.	Section D:- General Education, General Awareness & Life-long Learning- 15 Questions/15 Marks.
	This section shall comprise of questions based on general awareness in various areas, and knowledge acquired through various sources viz. seminars, conferences, news (electronic and print media), journals, magazines, reports and books related to various subjects such as sports, spirituality, religion, literature, Humanities and Social Sciences etc which may be of life-long importance.
6	
	Marks.
	This section shall comprise of questions based on issues having ethical, social,
	cultural and environmental implications.
7	3 77
	Questions/10 Marks.
	This section shall comprise of questions based on awareness and usage level of
	Information Technology software/tools.
8	Section G: Global Outlook on Research/Industry in Biosciences and
	Biotechnology- 10 Questions/10 Marks: -
	This section shall comprise of questions based on global, social, technological, environmental developments and issues impacting research /industry.
9	Section H: - Employability - 10 Questions/10 Marks.
	This section shall comprise of questions based on latest research development and trends, Planning and designing experimental research, Experimental and Theoretical Data Analysis, Investigating skills, Decision Making, Leadership & Team spirit through case-lets.

Faculty of Biosciences and Biotechnology

Comprehensive Examination Guidelines for B. Sc Programmes for intended **Programme Learning Outcomes**

Purpose	:	To assess attainment of programme goals in the core and specialisation areas of all the programmes in domain of Biosciences and Biotechnology.
Goal(s)	3	 To assess the knowledge and understanding of fundamental relevant questions in life science and biotechnology in a synergistic framework. To assess the analysing capabilities of theoretical and applied aspects of Biosciences and Biotechnology To assess the ability to conduct research and use various tools and the holistic knowledge acquired for problem-solving and decision-making in biotechnology. To assess the understanding of industry scenario and skills required for 4. employability.

	5. To assess the research communication, leadership and team skills and ability to make ethical choices.
Process:	: The comprehensive examination would be conducted at the end of each academic year.
Format	: 1. The examination will be based on multiple choice questions. The question paper will consist of eight sections. Section A: - General 30 1. Biotechnology- Questions / 60 Marks 2. Section B: - Application Based- 20 Questions / 50 Marks Section C: - Specialisation/Area Specific- 15 3. Questions / 30 Marks 4. Section D: - General Education, General Awareness & Life-long Learning- 15 Questions / 15 Marks Section E: - Ethics, Social & Environmental Impact- 10 Questions / 5. 15 Marks Section F: Information and Digital Literacy – 10 Questions / 10 6. Marks Section G: Global Outlook – 10 Questions / 10 7. Marks Section H: - Employability and Entrepreneurship-10 Questions / 10 8. Marks

2. Section A: General Biosciences and Biotechnology -30 Questions / 60 Marks This section shall comprise of theory / asked/conceptual questions from core area of Biotechnology – Plant sciences, Animal Sciences, Environmental studies, Chemistry, Biophysics, Biostatistics, Microbiology, Cell Biology, Biochemistry, Molecular Biology, Bioinformatics, and integration of all above.
3 Section B: - Application Based- 20 Questions/50 Marks: -
Thissection shall comprise of questions on general biotechnology which
will have focus on applications of various concepts, principles and theories.
4. Section C: - Specialisation/Area Specific- 15 Questions each/30Marks:
This section shall comprise of theory and application based questions from
specialised/sectoral areas of Biotechnology viz.
a. Plant Biotechnology
b. Animal Biotechnology
c. Environmental Biotechnology
d. Clinical Biochemistry
e. Microbial Technology
f. Genetics
g. Hematology/serology
h. Infectious Disease
i. Cancer Biology
j. Developmental Biology
k. Marine Sciences

	(This section will have an option of choosing their specialization area(s) opted by
	the student. More specialization areas may be added.)
	5 Section D:- General Education, General Awareness & Life-long Learning-
	15 Questions/15 Marks.
	This section shall comprise of questions based on general awareness in
	various areas, and knowledge acquired through various sources viz. seminars, conferences, news (electronic and print media), journals, magazines, reports and books related to various subjects such as sports, spirituality, religion, literature, humanities and social sciences etc which
	may be of life-long importance.
	6 Section E:- Ethics, Social and Environmental Impact of Bioscience and
	Biotechnological Research- 10 Questions/15 Marks.
	Diotection of Questions, 15 Maries
	This section shall comprise of questions based on issues having ethical,
	social, cultural and environmental implications.
	7. Section F: Information and Digital Literacy/Modern tools usage - 10
	Questions/10 Marks
	This section shall comprise of questions based on awareness and usage
	level of Information Technology software/tools.
Г	
	8. Section G: Global Outlook on Research/Industry in Biosciences and
	Biotechnology- 10 Questions/10 Marks: -
	This section shall comprise of questions based on global, social,
	technological, environmental developments and issues impacting
	research/industry.
	9. Section H: - Employability - 10 Questions/10 Marks.
	This section shall comprise of questions based on latest research
	development and trends, planning and designing experimental research,
	experimental and theoretical data analysis, investigating skills, decision
	making, leadership & team spirit through case-lets.