

Outcome Assessment Plan

Name of the Institution: Amity Institute of Aerospace Engineering Domain: Engineering & Technology Date: June 2022

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SECTION I

INTRODUCTION TO DOMAIN

The Science and engineering education system in India has witnessed rapid progress in recent years to become one of largest in the world. Considering the wide diversities in the system and the need to enhance its *quality, standard and relevance* so that the *Science, Engineering* & *Technology* graduates passing out from the system can meet the global challenges of 21st century ahead of them.

There are several challenges being faced by science and engineering professionals in the on-going 21st century, recognized as the *Knowledge*

Age, like:

1) Rapidly changing technological scene worldwide, with a shrinking time scale for new developments and for obsolescence of old practices, leading to:

- □ Increase in investment on R&D in industry and other sectors;
- Demand for innovative products and services, based on contemporary technologies; and,
- Growing need for enhancement of abilities to manage change, so frequent, now a days;

2) Globalization and liberalization of Indian industry, leading to:

- □ Comprehensive restructuring of industry sector for enhancing efficiency;
- □ Increase in world-wide mobility of *Science*, *Engineering* & *Technology* professionals; and,
- \Box Growth of competitive environment globally and also in the country;
- 3) Emergence of new career opportunities for Science, Engineering & Technology professionals, leading to:
- Demand for broad-based, flexible education in multi/inter- disciplinary subjects.
- □ Emphasis on PG courses, research training and institute-industry interaction.
- □ Advances in learner-centric programmes and life-long learning opportunities.
- Penetration of IT in all sectors of the Science, Engineering & Technology profession, leading to:
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- □ Increased demand for IT-based solutions to industrial and societal problems.
- □ Expertise in emerging IT developments to solve complex, *Science, Engineering & Technology* problems; and,
- □ Improved access to worldwide information/data bases and *knowledge* centers.

5) Increased social/environmental concerns in the Science, Engineering & Technology context, leading to:

- Effective means for protection of endangered environment and depleting energy sources.
- □ Seeking environment- and energy- friendly solutions to *Science*, *Engineering & Technology* problems.
- □ Wealth generation using environmentally benign and energy efficient techniques.

These challenges require appropriate orientation of *Science, Engineering & Technology* education and research in the country at all levels, particularly at PG. Further the industrial needs are changing while the global environment of Science & Engineering education around the world is witnessing huge changes in education. In the era of globalization, national boundaries are vanishing. The Science & Engineering institutions need to benchmark their curriculum with the best institutions in the world and seek accreditation from National and International accreditations for recognition and mobility of students. Consequently, the All-India Council of Technical Education (AICTE), University Grants Commission (UGC), NAAC, NBA and Knowledge Commission have been continuously rethinking on the modifications / improvements in the curriculum structure of various programmes of higher education at large. UGC has formulated Choice Based Credit System (CBCS) for higher education in 2009, which has been adopted by many of the Universities /institution in the country.

Amity University is continuously striving for excellence in education. It is therefore, important to review and upgrade the curriculum of Bachelors Programmes in Science Engineering & Technology in line with the norms of UGC, National and International Accreditation bodies such as NAAC, ABET, IET, WASC, Global Benchmarking, industry and other stakeholders' feedback. After a series of discussions and deliberations with concerned groups, model framework/Programme structure and implementation guidelines for Bachelor's programme in Science, Engineering and Technology domain have been evolved in line with the requirements of UGC / AICTE, National & international Accreditation bodies and industry requirements. *Model Framework /Programme Structure and Scheme of Instructions* would be of help to the

institutions offering Bachelor's programme in Science, Engineering & Technology domain *to* finalize the detailed programme structure, syllabus and CBCS of various programmes of study.

Approach to Curriculum:

As a major objective of Bachelor's programme in Science, Engineering and Technology domain is to lay special emphasis on educating/preparing the students well for being able to demonstrate the following abilities to meet the requirement of 4.0:

- (a) Effective application of *knowledge* of mathematics, science and technical subjects;
- (b) Planning and design to conduct scientific and technical experiments;
- (c) Analysis and interpretation of scientific, technical and economic data collected;
- (d) Design of parts, subsystems, systems and/or processes to meet specific needs;
- (e) Identification, formulation and solving of problems using simulation or otherwise;
- (f) Use of techniques/tools including software in all disciplines, as may be required;
- (g) Effective communication skills and leadership/participation in team work;
- (h) Fulfillment of professional, social and ethical responsibilities;
- (i) Sensitivity to environmental and energy issues and concerns;
- (j) Planning, development and implementation of strategies for life-long learning.

These requirements call for the following objectives to the *Approach to Curriculum* relating to *Bachelor'sprogramme in Science, Engineering and Technology Degree* in the country:

1) *Preparation:* To prepare the students to excel in various educational programmes or to succeed in industry / technical profession through further education/training;

2) *Core Competence:* To provide the students with a solid foundation in mathematical, Science, Engineering & Technology fundamentals required to solve Science, Engineering and Technology related problems;

3) *Breadth:* To train the students with a breadth of Science, Engineering and Technology knowledge to comprehend, analyze, design & create novel products and solutions for real life problems;

4) *Professionalism:* To inculcate in the students professional/ethical attitude, effective team work skills, multidisciplinary approach and to relate Science, Engineering and Technology issues to a broader context;

5) *Learning Environment:* To provide the students with academic environment of excellence, leadership, ethical guidelines and life-long learning needed for a long/productive career.

Amity University is continuously striving for excellence in education. It is therefore, important to review and upgrade the curriculum of Programmes in line with the ever changing requirements of industry /profession based on stakeholders' feedbacks. Amity University Offers Outcome Based Education (OBE) with Flexi Choice Based Credit System (CBCS) by benchmarking its programmes with best universities globally. UGC has formulated Choice Based Credit System (CBCS) for higher education in 2009, which have been further modified in 2014 to be adopted by the Universities /institution in the country.

SECTION II:

INTRODUCTION OF OUTCOME ASSESMENT PLAN

Outcomes Assessment

Outcomes 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:

1. 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 institutionand programme level is aligned with the domain mission.

2. Graduate Attributes (GAs) :Graduate Attributes is a set of individually assessable outcomes that are indicative of the graduate's potential to acquire competencies in that programme.

3. Educational Objectives: The Educational Objectives are defined at Domain, Institution and Programme level. The Educational Objectives at the institution\and programme level are aligned with the domain mission. Educational Objectives are the broad statements that described what graduates are expected to attend within few years of graduation.

4. Operational Objectives:The Operational Objectives are defined at Domain, Institution and Programme level. The Operational Objectives at the institution programme level are aligned with the domain mission.

5. Outcomes: The Outcomes are defined under the following categories:

• **Operational Outcomes:** The operational outcomes are defined for the domain and assessed at the domain level.

- **Programme Learning Outcomes (PLOs)** Programme Learning Outcomes represent the knowledge, skills and attitudes a student attain at the end of the year/programme. ThePLOs are defined for each programme and each PLO is assessed to identify that the established EducationalObjectives are achieved.
- 6. 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.
- 7. 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.
- 8. Programme Review: Through the review of programmes, 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 objectives** are derived from and support the institute mission
 - The **curriculum** is coherent, current and consistent and meet the requirement of Industry 4.0.
 - 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 EDUCATIONALOBJECTIVES Engineering and Technology

3.1 Mission Statement:

Mission Statement

To provide education at all levels in all disciplines of Engineering and 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 Engineering professionals and technocrats 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.

3.2 Educational Objectives at Domain /Faculty level:

S.No	Educational Objectives
1	The students shall have the ability to apply knowledge of mathematics, science, computing and civil engineering for research, design and development of novel products and solutions as an individual/ member of a team/ leader in diverse teams and as an entrepreneur
2	The students shall have the ability to examine the impact of engineering solutions in societal, health, safety, legal, cultural, and environmental contexts
3	The students will be able to practice professional ethics and academic integrity and demonstrate these as an individual/ team member/ leader in diverse teams
4	Students will be able to demonstrate professional attitudes, effective communication and behavioural skills and sustain effective performance in the professional / entrepreneurial careers
5	The student will have the ability to support and practice independent and life-long learning for professional development

3.3 Graduate Attributes and its Indicators at Domain/Faculty Level:

#	AUUP	Domain Graduate	AUUP Indicators	Domain Indicators
	Graduate Attribute	Attributes		
1.	Discipline Knowledge & Expertise	Engineering Knowledge	 Graduates of the University will have the ability To apply Discipline Specific Knowledge and expertise in the core areas. To Demonstrate the ability to produce indented outcomes. To convert theory into practical functioning. To apply content Knowledge to real life situation. 	Graduates of the Domain of Engineering & Technology will have the ability -To apply the knowledge of mathematics, science, engineering fundamentals, computational techniques, and engineering specialization to solve the problems.
2.	Self-Directed and Active Learning	Self-Directed and Active Learning	 Graduates of the University will have the ability To maximize their potential by utilizing their abilities, & academic excellence. To take personal responsibility and grasp opportunities for self-development. To demonstrate perseverance and willingness to learn. To Think independently, analytically and creatively through self-directed learning 	Graduates of the Domain of Engineering & Technology will have the ability -To choose self-directed and active learning through strong intellectual engagement in independent work relevant to Engineering & Technology Domain maximizing their potential by utilizing abilities and academic excellence. -To think independently, analytically and creatively through self-directed learning
3	Research and Enquiry	Research enquiry & Design Thinking	Graduates of the University will have the ability	Graduates of the Domain of Engineering & Technology will have the ability

			 To create new knowledge and opportunities for learning through the process of research and enquiry. To formulate research designs through qualitative, quantitative and mixed methods To formulate research designs through qualitative, quantitative and mixed methods. To exercise critical judgment and critical thinking to create new modes of understanding 	-To use research-based knowledge and methods including design of experiments, analysis and interpretation of data, and synthesis of the information to arrive at valid conclusions. -To exercise critical judgment and thinking to create new systems / products / services etc.
4	Information & Communication Technology Skills	ICT and Modern Engineering Tools Usage	Graduates of the University will have the ability - To develop self-paced learning through various tools and techniques of ICT - To locate, analyse, evaluate, and synthesise information from a wide variety of sources in a planned and timely manner - To Use and apply appropriate media, tools and methodologies to locate, access and use information for critical and creative thinking - To critically evaluate the sources, values, validity and currency of information, through ICT	Graduates of the Domain of Engineering & Technology will have the ability -To create, select, and apply modern engineering techniques, resources, and IT tools for modelling and simulation of engineering problems. -To develop self-paced learning through various tools and techniques of ICT
5	Critical Thinking & Problem-Solving Abilities	Critical Thinking & Problem-Solving Abilities	Graduates of the University will have the ability - To identify & conceptualize problems - To demonstrate research skills for effective problems-solving - To apply critical, creative and evidence-based thinking to conceive innovative responses to future challenges.	Graduates of the Domain of Engineering & Technology will have the ability -To apply critical, creative and evidence-based thinking for creating solutions of engineering problems and to design system components or processes that meet the specified needs with appropriate consideration for the

				public health, safety, cultural, societal, and environmental considerations
6	Communication Skills	Communication Skills	Graduates of the University will have the ability - To possess a high standard of verbal, visual and written communication skills relevant to their fields of study. - To effectively use appropriate communication technologies. - To present information precisely and accurately by utilizing various information technology skills.	Graduates of the Domain of Engineering & Technology will have the ability -To communicate effectively on engineering activities with the engineering professionals and society at large, such as, being able to comprehend and write effective reports, make effective presentations, give & receive clear instructions by utilizing various Information Technology tools and skills.
7	Creativity, Innovation & Reflective Thinking	Creativity, Innovation & Reflective Thinking	Graduates of the University will have the ability - To demonstrate the capacity for independent, conceptual and creative thinking - To develop creative and effective responses to intellectual, professional and social challenges	Graduates of the Domain of Engineering & Technology will have the ability -To demonstrate scientific creativity and reflective thinking to critically evaluate ideas for developing innovative processes and products relevant to industry/societal needs.
8	Analytical & Decision- Making Ability	Analytical & Decision- Making Ability	Graduates of the University will have the ability	Graduates of the Domain of Engineering & Technology will have the ability

			 To determine relevant data and evaluate information in order to understand complex situations and make effective decisions To demonstrate independent thinking and openness to new ideas in decision making To exhibit proficiency in choosing between two or more alternatives for problem solving To demonstrate analytical skills in making best choices among alternatives to make effective decisions 	-To demonstrate analytical and decision-making skills to identify, formulate, and analyze complex engineering problems reaching substantiated conclusions using concepts of mathematics, science& engineering.
9	Leadership & Teamwork	Leadership & Teamwork	Graduates of the University will have the ability - To Demonstrate initiativeness and leadership skills working in VUCA world - To display team working skills by engaging with trust, encouraging autonomy & participation and building collaborative culture - To influence the people in networks for making the organization resourceful - To deliver organizational goals and team goals over personal gains	Graduates of the Domain of Engineering & Technology will have the ability -To function effectively as an individual, and as a member or leader in diverse teams, VUCA world and multidisciplinary settings for making the organization resourceful and achieving organisation goals.
10	Multicultural Understanding & Global Outlook	Multicultural Understanding & Global Outlook	Graduates of the University will have the ability -To appreciate diversity (caste, ethnicity, gender and marginalization), values and beliefs of multiple cultures in a global perspective - To demonstrate sensibility, adaptability, valuing human diversity in resolving complex management situations - To explore organizational issues from different cultural perspectives and recognising the opportunities in decision making process	Graduates of the Domain of Engineering & Technology will have the ability -To apply contextual knowledge to assess societal, health, safety, legal, cultural issues and the consequent responsibilities relevant to the professional engineering practice

				-To appreciate diversity (caste, ethnicity, gender and marginalization), values and beliefs of multiple cultures in a global perspective
11	Integrity and Ethics	Integrity and Ethics	Graduates of the University will have the ability - To display integrity at work and be responsible global citizens with moral values - To demonstrate ethical practices consistent with the job roles as members of society - To practice the highest standards of ethical behaviour associated with their discipline or profession - To appreciate concerns on environment sustainability	Graduates of the Domain of Engineering & Technology will have the ability -To demonstrate ethical practices in professional field, display integrity at workplace and be responsible global citizens -To appreciate concerns on
12	Social & Emotional Skills	Social & Emotional Skills	Graduates of the University will have the ability - To demonstrate adaptability and resilience skills in during uncertain situations - To be self-aware and have the capacity to accept and give constructive feedback - To establish support to others with empathy and build interpersonal relationships	 environment sustainability Graduates of the Domain of Engineering & Technology will have the ability -To acquire social and emotional skills to work effectively with diverse group of people in multi- cultural environment and situations. -To demonstrate adaptability and resilience during uncertain situations

13	Employability, Enterprise & Entrepreneurship	Employability, Enterprise & Entrepreneurship	Graduates of the University will have the ability – - To develop knowledge and skills to gain employment opportunities - To improve on functional, technological and behavioural competencies to develop professionalism - To possess enterprising skills to bring new business ideas and start a new venture - To think creatively and innovate new products and services with a social impact -To generate new ideas, design products, adopt disruptive technologies and gain patents & commercialization	Graduates of the Domain of Engineering & Technology will have the ability -To demonstrate knowledge and understanding of the engineering & management principles and use these enterprising skills to bring new business ideas and product of innovative designs with a social impact to start a new venture.
14	Lifelong Learning	Lifelong Learning	Graduates of the University will have the ability- - To demonstrate an attitude for continuous learning and reflection furthering their understanding of the world - To appreciate change and be responsive to the scenarios - To maintain intellectual curiosity and inquiring mind throughout life for gaining knowledge - To explore new ideas and learning opportunities for self-directed learning.	Graduates of the Domain of Engineering & Technology will have the ability -To develop independent thinking and life-long learning in broader context of technological changes. -To explore new ideas and learning opportunities for self-directed learning.
	Environment and Sustainability	Environment and Sustainability	The Graduates of the University will have the ability – - To analyse and implement the initiative to conserve natural resources and develop sustainable technologies by using knowledge and experience of their discipline.	Graduates of the Domain of Engineering & Technology will have the ability -To understand the impact of the professional engineering solutions in societal and environmental contexts and develop sustainable

	technologies using engineering
	knowledge.

3.4 Domain Operational Objectives (Resources Required) at Domain/Faculty level:

S.	Domain Graduate Attributes	Domain Operational Objectives
No.		
1.	GA1: Engineering Knowledge,	
	GA2: Self-Directed and Active Learning,	DET intends to facilitate academically conducive environment and infrastructure to
	GA4: ICT and Modern Engineering Tools Usage	achieve excellence in teaching, learning and research.
	GA6: Communication Skills	
2.	GA1: Engineering Knowledge	
	GA2: Self-Directed and Active Learning	DET will provide ample opportunities to its students to participate in curricular, co-
	GA8: Analytical & Decision-	curricular and extra-curricular activities for their holistic development.
	Making Ability	
3	GA3; Research enquiry & Design Thinking GA5: Critical Thinking & Problem-Solving Abilities	DET will facilitate environment for innovation and research excellence for the intellectual growth of all.

4	GA11: Integrity and Ethics	DET will inculcate core values and ethical conduct amongst students, faculty, and staff members.
5	GA12: Social & Emotional Skills GA15: Environment and Sustainability	DET will encourage cultural diversity and a sense of social and environmental responsibility.
6	GA10: Multicultural Understanding & Global Outlook	DET will provide ample opportunities for international exposure to faculty members, and students.
7	GA9: Leadership & Teamwork	DET will be involved in continual improvement of processes and systems and aim to attain national and international accreditations and university rankings.
8	GA9: Leadership & Teamwork GA13: Employability, Enterprise & Entrepreneurship	DET will build a strong industry interaction by way of alumni networks and empanelment of expertise from industry.
9	 GA7: Creativity, Innovation & Reflective Thinking GA13: Employability, Enterprise & Entrepreneurship 	DET will facilitate employment opportunities, and also support students to start their own ventures.
10	GA14: Lifelong Learning	DET will facilitate good governance in discharge of responsibilities and execution of policies and programmes.

SECTION IV

INSTITUTION MISSION AND EDUCATIONALOBJECTIVES

Name of the Institution: Amity Institute of Aerospace Engineering

4.1 Mission Statement:

Mission of Institution

To provide education at all levels in the field of Aerospace Engineering 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 Engineering professionals and technocrats 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 Educational Objectives at Institution Level:

S. No	Educational Objectives
1	The students shall have the ability to apply knowledge of basic science, latest soft computing and aerospace engineering for research, design, analysis and development of novel products and solving complex problem as an individual/ member of a team/ leader in multi-functional teams and as an entrepreneur as per industry .
2	The students shall have the ability of creating new value as per industry through innovation and to examine the impact of engineering solutions in societal, health, safety, legal, cultural and environmental contexts.
3	The students will be able to practice and demonstrate professional ethics, academic integrity and will be able to support and practice independent and life-long learning for professional development.
4	Students will be able to demonstrate professional attitudes, effective communication & behavioral skills, critical thinking, creativity and sustain effective performance in the professional/entrepreneurial careers.
5	The students will be able to undertake challenging work as per industry in the design industry, armed forces, airlines, manufacturing industry, academics, software industry, defence and research organizations.

#	Domain Graduate	Domain Indicators	Graduate Attributes	Indicators
	Attributes			
1.	Engineering	Graduates of the Domain of	Engineering Knowledge	The student will apply
	Knowledge	Engineering & Technology will		knowledge of mathematics,
		have the ability		science, latest soft computing and engineering to solve
		-To apply the knowledge of		complex problems of
		mathematics, science,		aerospace engineering.
		engineering fundamentals,		
		computational techniques, and		
		engineering specialization to		
		solve the problems.		
2	Self-Directed and	Graduates of the Domain of	Self-Directed and Active	The student will choose
	Active Learning	Engineering & Technology will	Learning	self-directed and active
		have the ability		learning through strong
				intellectual engagement in
		-To choose self-directed and		independent work relevant to
		active learning through strong		aerospace engineering,
		intellectual engagement in		maximizing potential by
		independent work relevant to		utilizing abilities and
		Engineering & Technology		academic excellence and will
		Domain maximizing their		think independently,
		potential by utilizing abilities		analytically & creatively
		and academic excellence.		through self-directed
		-To think independently,		learning.
		analytically and creatively		
		through self-directed learning		

4.3 Graduate Attributes and its Indicators at Institute Level:

3	Research enquiry &	Graduates of the Domain of	Investigation	The student will identify and
	Design Thinking	Engineering & Technology will		solve research/industry
		have the ability		problems related to
				aerospace engineering
		-To use research-based		problems using latest soft
		knowledge and methods		computing techniques, skills
		including design of experiments,		and tools.
		analysis and interpretation of		
		data, and synthesis of the		
		information to arrive at valid		
		conclusions.		
		-To exercise critical judgment		
		and thinking to create new		
		systems / products / services etc.		
4	ICT and Modern	Graduates of the Domain of	ICT usage and	The student will develop
	Engineering Tools	Engineering & Technology will	communication technology	self-paced learning through
	Usage	have the ability	skills	various modern tools and
				techniques of ICT and will
		-To create, select, and apply		use information for critical &
		modern engineering techniques,		creative thinking for
		resources, and IT tools for		aerospace engineering
		modelling and simulation of		practices.
		engineering problems.		
		-To develop self-paced learning		
		through various tools and		
		techniques of ICT		
5	Critical Thinking &	Graduates of the Domain of	Critical Thinking &	The student will identify,
	Problem-Solving	Engineering & Technology will	Problem-Solving	conceptualize and solve
	Abilities	have the ability	Abilities	aerospace engineering
				problems by applying

		-To apply critical, creative and evidence-based thinking for creating solutions of engineering problems and to design system components or processes that meet the specified needs with appropriate consideration for the public health, safety, cultural, societal, and environmental considerations		critical, creative and evidence-based thinking.
6	Communication Skills	Graduates of the Domain of Engineering & Technology will have the ability -To communicate effectively on engineering activities with the engineering professionals and society at large, such as, being able to comprehend and write effective reports, make effective presentations, give & receive clear instructions by utilizing various Information Technology tools and skills.	Communication Skills	The student will communicate effectively on engineering activities with the aerospace engineering professionals and society at large, such as, being able to comprehend and write effective reports, make effective presentations, give & receive clear instructions by utilizing various information technology tools and skills.
7	Creativity, Innovation	Graduates of the Domain of	Creativity, Innovation	The student will demonstrate
	& Reflective	Engineering & Technology will	& Reflective	scientific creativity and
	Thinking	have the ability	Thinking	reflective thinking to

		-To demonstrate scientific creativity and reflective thinking to critically evaluate ideas for developing innovative processes and products relevant to industry/societal needs.		critically evaluate ideas for developing innovative processes and products of aerospace engineering relevant to industry/societal needs.
8	Analytical &	Graduates of the Domain of	Analytical & Decision-	The student will demonstrate
	Decision-	Engineering & Technology will	Making Ability	analytical and decision-
	Making Ability	have the ability		making skills to identify,
		To demonstrate analytical and		formulate, and analyze
		decision-making skills to		reaching substantiated
		identify, formulate, and analyze		conclusions using concepts
		complex engineering problems		of mathematics, science &
		reaching substantiated		aerospace engineering.
		conclusions using concepts of		
		mathematics, science&		
		engmeering.		
9	Leadership &	Graduates of the Domain of	Leadership and Team Work	The student will demonstrate
	Teamwork	Engineering & Technology will	_	leadership skills working in
		have the ability		VUCA world and will
				function effectively as an
		-To function effectively as an		individual, and member or
		individual, and as a member or		leader in a diverse team and
		world and multidisciplinary		making the organization
		settings for making the		resourceful and achieving
		organization resourceful and		organisation goals
		achieving organisation goals.		Sumburion Source

10	Multicultural	Graduates of the Domain of	The Engineer and Society	
	Understanding	Engineering & Technology will		The student will apply
	& Global Outlook	have the ability		contextual knowledge to
				assess societal, health, safety,
		-To apply contextual knowledge		legal and cultural issues and
		to assess societal, health, safety,		consequent responsibilities
		legal, cultural issues and the		relevant to the professional
		consequent responsibilities		engineering practice.
		relevant to the professional		
		engineering practice		
		-To appreciate diversity (caste,		
		ethnicity, gender and		
		marginalization), values and		
		beliefs of multiple cultures in a		
		global perspective		
11	Integrity and Ethics	Graduates of the Domain of	Integrity and Ethics	The student will apply
		Engineering & Technology will		ethical principles and
		have the ability		practice professional ethics
				and responsibilities and
		-To demonstrate ethical		norms of the engineering
		practices in professional field,		practice.
		display integrity at workplace		
		and be responsible global		
		citizens		
		-To appreciate concerns on		
		environment sustainability		

12	Social & Emotional Skills	Graduates of the Domain of Engineering & Technology will have the ability -To acquire social and emotional skills to work effectively with diverse group of people in multi- cultural environment and situations. -To demonstrate adaptability and resilience during uncertain situations	Social & Emotional Skills	The student will acquire social and emotional skills to provide support to others with empathy and build interpersonal relationship and will demonstrate adaptability & resilience during uncertain situations.
13	Employability, Enterprise & Entrepreneurship	Graduates of the Domain of Engineering & Technology will have the ability -To demonstrate knowledge and understanding of the engineering & management principles and use these enterprising skills to bring new business ideas and product of innovative designs with a social impact to start a new venture.	Employability, Enterprise & Entrepreneurship	The student will demonstrate knowledge, advanced computing and technical skills to gain employment opportunities and will use enterprising skills to gain new business, ideas and start a new venture.
14	Lifelong Learning	Graduates of the Domain of Engineering & Technology will have the ability	Lifelong Learning	The student will develop and apply independent thinking and life-long learning in broader context of

		-To develop independent thinking and life-long learning in broader context of technological changes. -To explore new ideas and learning opportunities for self- directed learning.		technological changes and will explore new ideas and learning opportunities for self-directed learning.
15	Environment and	Graduates of the Domain of	Environment and	The student will understand
	Sustainability	Engineering & Technology will	Sustainability	the impact of the
		have the ability		professional engineering
		-To understand the impact of the		solutions in societal and
		professional engineering		environmental contexts and
		solutions in societal and		develop sustainable
		environmental contexts and		technologies using
		develop sustainable technologies		knowledge of aerospace
		using engineering knowledge.		engineering.

4.4 Operational Objectives (Resources Required) at Institution level

S. No.	Graduate Attributes	Operational Objectives
1.	GA1:Engineering Knowledge GA2: Self-Directed and Active Learning	AIAE will create appropriate teaching learning resources, infrastructure and conducive environment for excellence in teaching, learning, research and professional development of students as per the requirement of industry 4.0.
2.	GA4: ICT usage and communication technology skills	AIAE 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 to meet the requirement of industry 4.0

	GA8: Analytical & Decision- Making Ability	
3.	GA4: ICT usage and communication technology skills	AIAE will demonstrate sensitivity to the diverse needs of students and accordingly develop facilities and services.
4	GA3:Investigation GA13: Employability, Enterprise & Entrepreneurship	AIAE will continuously strive to build strong industry interaction, alumni networks and empanelment of expertise from industry.
5	GA5: Critical Thinking & Problem-Solving Abilities GA14: Lifelong Learning	AIAE will continually improve the quality of facilities, services, resources and processes with an aim to attain national and international accreditations and institutional ranking.
6	GA6: Communication Skills GA9: Leadership and Team Work	AIAE will arrange all necessary support system for the students to facilitate campus recruitment, higher education or starting their own ventures.
7	GA11: Integrity and Ethics GA15: Environment and Sustainability	AIAE will act ethically to ensure transparency and good governance while discharging various responsibilities to its stakeholders and execution of policies and programs
8	GA7: Creativity, Innovation & Reflective Thinking	AIAE will create opportunities for international exposure for its students and faculty.

SECTION V:

PROGRAMME MISSION, PEO's, PLO's and ASSESMENT PLAN FOR EACH PROGRAMME

5.1 BACHELOR'S-Level Programme – B.Tech. (Aerospace Engineering)

5.1.1Mission Statement

Programme Mission

The mission of the B.Tech (Aerospace Engineerng) Programme is to provide quality education with the best possible educational facilities to the students for the careers in Aerospace Engineering by continuously updating the programme structure and curriculum as per the current requirement of industry 4.0, government, academia and research.

5.1.2 Programme Educational Objectives (PEOs)

S.No	Programme Educational Objectives
1	The students shall have the ability to apply knowledge of basic science, latest soft computing and aerospace engineering for research, design, analysis and development of novel products and solving complex problem as an individual/member of a team/leader in multi-functional teams and as an entrepreneur as per industry.
2	The students shall have the ability of creating new value as per industry through innovation and to examine the impact of engineering solutions in societal, health, safety, legal, cultural and environmental contexts.
3	The students will be able to practice and demonstrate professional ethics, academic integrity and will be able to support and practice independent and life-long learning for professional development.
4	Students will be able to demonstrate professional attitudes, effective communication & behavioral skills, critical thinking, creativity and sustain effective performance in the professional/entrepreneurial careers.
5	The students will be able to undertake challenging work as per industry in the design industry, armed forces, airlines, manufacturing industry, academics, software industry, defence and research organizations.

5.1.3. Programme Operational Objectives (OGs)

S.No	Programme Operational Objectives			
1	The Programme of B.Tech AE will create latest teaching learning resources, infrastructure and conducive environment for			
	excellence in teaching, learning, research and professional development of students per the requirement of industry 4.0			
2	The Programme will provide professional development programmes/opportunities to the faculty and staff to regularly upgrade			
	their knowledge and skills as per the latest industry requirements and bring excellence in teaching, learning, research and			
	development to meet the requirement of industry 4.0			
3	The Programme will demonstrate sensitivity to the diverse needs of students and accordingly develop/upgrade facilities and			
	services.			
4	The Programme will continuously strive to build strong industry interaction, alumni networks and empanelment of expertise from			
	industry.			
5	The Programme 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 Programme will arrange all necessary support system for the students 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.			

5.1.4 Programme Learning Outcomes (PLOs):

S. No.	Graduate	Programme Learning Outcomes				
	Attributes					
1.	Engineering	The student will apply knowledge of mathematics, science, latest soft computing and				
	Knowledge	engineering to solve complex problems of aerospace engineering.				
2.	Self-Directed and	The student will choose self-directed and active learning through strong intellectual				
	Active Learning	engagement in independent work relevant to aerospace engineering, maximizing				
		potential by utilizing abilities and academic excellence and will think independently,				
		analytically & creatively through self-directed learning.				

3.	Investigation	The student will identify and solve research/industry problems related to aerospace engineering problems using latest soft computing techniques, skills and tools.
4	ICT usage and	The student will develop self-paced learning through various modern tools and
	communication technology skills	techniques of ICT and will use information for critical & creative thinking for aerospace engineering practices.
5	Critical Thinking	The student will identify, conceptualize and solve aerospace engineering problems by
	&	applying critical, creative and evidence-based thinking.
	Problem-Solving	
	Abilities	
6	Communication	The student will communicate effectively on engineering activities with the aerospace
	Skills	engineering professionals and society at large, such as, being able to comprehend and
		write effective reports, make effective presentations, give & receive clear instructions by
_		utilizing various information technology tools and skills.
7	Creativity,	The student will demonstrate scientific creativity and reflective thinking to critically
	Innovation	evaluate ideas for developing innovative processes and products of aerospace
	& Reflective	engineering relevant to industry/societal needs.
0	Thinking	
8	Analytical &	The student will demonstrate analytical and decision-making skills to identify, formulate,
	Decision-	and analyze engineering problems reaching substantiated conclusions using concepts of
0	Making Ability	mathematics, science & aerospace engineering.
9	Leadership and	The student will demonstrate leadership skills working in VUCA world and will function
	Team Work	effectively as an individual, and member or leader in a diverse team and
		multidisciplinary settings for making the organization resourceful and achieving
10	T 1. F . 1	organisation goals.
10	The Engineer and	The student will apply contextual knowledge to assess societal, health, safety, legal and
	Society	practice.
11	Integrity and	The student will apply ethical principles and practice professional ethics and
	Ethics	responsibilities and norms of the engineering practice.

12	Social &	The student will acquire social and emotional skills to provide support to others with					
	Emotional Skills	empathy and build interpersonal relationship and will demonstrate adaptability &					
		resilience during uncertain situations.					
13	Employability,	The student will demonstrate knowledge, advanced computing and technical skills to					
	Enterprise	gain employment opportunities and will use enterprising skills to gain new business,					
	&	ideas and start a new venture.					
	Entrepreneurship						
14	Lifelong Learning	The student will develop and apply independent thinking and life-long learning in					
		broader context of technological changes and will explore new ideas and learning					
		opportunities for self-directed learning.					
15	Environment and	The student will understand the impact of the professional engineering solutions in					
	Sustainability	societal and environmental contexts and develop sustainable technologies using					
		knowledge of aerospace engineering.					

5.1.5 Programme Operational Outcomes (POOs) :

S. No.	Graduate Attributes	Programme Operational Outcomes
1.	GA1: Engineering Knowledge GA3: Investigation	The Faculty of Aerospace Engineering will use appropriate methodology and pedagogical tools for teaching, learning and development.
	GA4: ICT usage and communication technology skills	
2.	GA5: Critical Thinking &	The curriculum will be contemporary and relevant to meet industry 4.0
	Problem-Solving	requirements and benchmarked on global standards by incorporating feedback from all the stakeholders.
	Abilities	
	GA2: Self-Directed and Active Learning	

GA13: Employabili	ty, Enterprise	
& Entrepreneurship		
GA6: Communicati	on Skills	
GA7: Creativity, Ini	novation	
& Reflective		
Thinking		
3 GA14: Lifelong Lea	arning	The student of B.Tech (AE) will graduate in timely manner.
GA10: The Enginee	er and Society	
4 GA4: ICT usage and	d communication	The student and Faculty shall have Academic facilities, Technological
technology skills		Resources for teaching and learning.
GA8: Analytical &	Decision-	
Making Ability		
5 GA9: Leadership an	nd Team Work	The student of B.Tech (AE) will earn achievements in inter-university Extra
		Curricular activities.
6 GA3: Investigation		Faculty will be engaged in scholarly and professional activities in order to
		enhance their competencies and to contribute to the existing Body of
		Knowledge.
7 GA11; Integrity and	I Ethics	The Faculty and students of Aerospace Engineering will integrate ethics and
		values in teaching and Learning, in theory and practice.
8 GA12; Social & Em	notional Skills	Faculty of Aerospace Engineering will facilitate cultivation of cross cultural humanitarian values
9 GA7: Creativity In	novation	Faculty of Aerospace Engineering will facilitate joint research collaborations:
		invite international delegates and speakers for seminars and conferences and
& Reflective		various other opportunities for global exposure.

	Thinking				
10	GA8: Analytical & Decision- Making Ability	Faculty of Aerospace Engineering will be continuously engaged in developing/ reviewing processes, policies and systems to achieve prestigious accreditations from various national, international bodies and ranking bodies.			
	GA10: The Engineer and Society				
11	GA13: Employability, Enterprise	Faculty of Aerospace Engineering shall develop and maintain strong			
	& Entrepreneurship	curriculum responsive to industry needs.			
	GA15: Environment and				
	Sustainability				
	GA14: Lifelong Learning				
	GA6: Communication Skills				
12	GA13: Employability, Enterprise	Faculty of Aerospace Engineering will support all the students for quality			
	& Entrepreneurship	placements or join family business or start their own venture.			
	GA9: Leadership and Team Work				

5.1.6 Mapping of Programme Learning Outcomes to Programme Educational Objectives (PEOs):

Note:

✓ in a given cell of the table indicates the intended learning outcome in that row is associated with the learning goal in that column):

Programme Educational Objectives (PEOs) Programme Learning Outcome (PLOs)	PEO 1	PEO 2	PEO 3	PEO 4	PEO5	
Programme :B.Tech(AE)		-				
PLO1:	✓				~	
PLO2	✓					
PLO3	✓					
PLO4				✓		
PLO5		✓				
PLO6				✓		
PLO7				✓		
PLO8					~	
PLO9	~					
PLO10		✓				
PLO11			\checkmark			
PLO12			\checkmark			
PLO13	✓					
PLO14			\checkmark			
Programme Learning Outcome (PLOs)	Programme Educational Objectives (PEOs)	PEO 1	PEO 2	PEO 3	PEO 4	PEO5
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PLO 15			\checkmark		\checkmark	

5.1.7 Programme Learning Assessment for B.Tech.(Aerospace Engineering)

S.N o	Graduate Attributes	PLOs	Competency (CT)	Indicators (ID)	Direct Measures /Tools (DM)	Target Performan ce	Indirec t Measur es /Tools (IM)	Target Performan ce
1.	Engineering Knowledge	The student will apply knowledge of mathematics, science, latest soft computing and engineering to solve complex problems of aerospace engineering.	CT1:Demonstr ate competency in mathematical modeling CT2: Demonstrate competency of soft computing skills	ID1:Apply ,mathematic al techniques such as calculus, linear algebra and statics to solve engineering problems ID2: Apply soft computing	DM1- Comprehensi ve Examination DM2- Major Project rubrics	Fully Attained (Grade A): For students secure marks in the range of 75% -100% Partly Attained (Grade B): For students secure marks in	Student Exit Survey	Fully Attained (Grade A): Students give feedback in the range of 80-100%. 2. Partly Attained (Grade B): Students give feedback in

				and engineering		the range of 60%- 74.99%. Needs Improvem ent (Grade C): For students secure marks in the range of 40-59.99%. Not Attained (Grade D): For students secure marks less than 40%.		the range of 70-79.99%. 3. Needs Improvem ent (Grade C): Students give feedback in the range of 50-69.99%. 4. Not Attained (Grade D): Students give feedback less than 50%.
2	Self-Directed and Active Learning	The student will choose self-directed and active learning through strong intellectual engagement	CT1 :Self directed and active learning	ID1: Apply self- directed and active learning relevant to aerospace engineering	DM1- Comprehensi ve Examination	Fully Attained (Grade A): For students secure marks in the range of 75% -100%	Student Exit Survey	Fully Attained (Grade A): Students give feedback in the range of 80-100%.

	in independent work relevat to aerospace engineering maximizing potential by utilizing abilities and academic excellence and will this independent , analyticall & creatively through self directed learning.	nt Ik Iy /	ID2: Utilize abilities and academic excellence and will think independent ly, analytically & creatively through self- directed learning	DM2- Major Project rubrics	Partly Attained (Grade B): For students secure marks in the range of 60%- 74.99%. Needs Improvem ent (Grade C): For students secure marks in the range of 40-59.99%. Not Attained (Grade D): For students secure marks less than 40%.		2. Partly Attained (Grade B): Students give feedback in the range of 70-79.99%. 3. Needs Improvem ent (Grade C): Students give feedback in the range of 50-69.99%. 4. Not Attained (Grade D): Students give feedback less than 50%.
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3	Investigation	The student	CT1:Demonst	ID1: Student	DM1-	Fully	Student	Fully
	C C	will identify	rate soft and	will apply	Comprehensi	Attained	Exit	Attained
		and solve	technical skills	soft and	ve	(Grade A):	Survey	(Grade A):
		research/indu		technical	Examination	For		Students
		stry problems		skills to		students		give
		related to		solve		secure		feedback in
		aerospace		research and		marks in		the range of
		anginaaring		industry		the range of		80-100%.
		nrohlama		problems		75% -100%		2. Partly
		problems				Partly		Attained
		using latest			DM2- Major	Attained		(Grade B):
		son			Project	(Grade B):		Students
		computing			rubrics	For		give
		techniques,				students		feedback in
		skills and				secure		the range of
		tools.				marks in		70-79.99%.
						the range of		3. Needs
						60%-		Improvem
						74.99%.		ent (Grade
						Ineeds		C):
						Improvem		Students
						ent (Grade		give
						C): FOr		feedback in
						students		the range of
						secure morks in		50-69.99%.
						the range of		4. Not
						10_50 90%		Attained
						40-39.9970. Not		(Grade D):
						Attained		Students
						(Grade D).		give
						For		teedback
						students		less than
						Students		50%.

						secure marks less than 40%.		
4	ICT usage and communicatio n technology skills	The student will develop self-paced learning through various modern tools and techniques of ICT and will use information for critical & creative thinking for aerospace engineering practices.	CT1: demonstrate applications of modern tools and techniques of ICT	ID1: Apply modern tools and techniques for solving problems related to aerospace and allied engineering	DM1- Comprehensi ve Examination DM2- Major Project rubrics	Fully Attained (Grade A): For students secure marks in the range of 75% -100% Partly Attained (Grade B): For students secure marks in the range of 60%- 74.99%. Needs Improvem ent (Grade C): For students secure marks in the range of 40-59.99%.	Student Exit Survey	Fully Attained (Grade A): Students give feedback in the range of 80-100%. 2. Partly Attained (Grade B): Students give feedback in the range of 70-79.99%. 3. Needs Improvem ent (Grade C): Students give feedback in the range of 50-69.99%. 4. Not Attained (Grade D): Students

						Not Attained (Grade D): For students secure marks less than 40%.		give feedback less than 50%.
5	Critical Thinking & Problem- Solving Abilities	The student will identify, conceptualize and solve aerospace engineering problems by applying critical, creative and evidence- based thinking.	CT1 :Demonstr ate critical thinking	ID1: Apply critical, creative and evidence- based thinking to solve aerospace engineering problems	DM1- Comprehensi ve Examination DM2- Major Project rubrics	Fully Attained (Grade A): For students secure marks in the range of 75% -100% Partly Attained (Grade B): For students secure marks in the range of 60%- 74.99%. Needs Improvem ent (Grade C): For students	Student Exit Survey	Fully Attained (Grade A): Students give feedback in the range of 80-100%. 2. Partly Attained (Grade B): Students give feedback in the range of 70-79.99%. 3. Needs Improvem ent (Grade C): Students give feedback in

						secure marks in the range of 40-59.99%. Not Attained (Grade D): For students secure marks less than 40%.		the range of 50-69.99%. 4. Not Attained (Grade D): Students give feedback less than 50%.
6	Communicatio n Skills	The student will communicate effectively on engineering activities with the aerospace engineering professionals and society at large, such as, being able to comprehend and write effective reports, make effective presentations, give &	CT1 : Demonstrate communicatio n skills	ID1: Ability to communica te effectively on engineering activities with the engineering professional s and society.	DM1- Comprehensi ve Examination DM2- Business Communicat ion Rubrics	Fully Attained (Grade A): For students secure marks in the range of 75% -100% Partly Attained (Grade B): For students secure marks in the range of 60%- 74.99%.	Student Exit Survey	Fully Attained (Grade A): Students give feedback in the range of 80-100%. 2. Partly Attained (Grade B): Students give feedback in the range of 70-79.99%. 3. Needs Improvem ent (Grade C):

		receive clear instructions b y utilizing various information technology tools and skills.				Needs Improvem ent (Grade C): For students secure marks in the range of 40-59.99%. Not Attained (Grade D): For students secure marks less than 40%.		Students give feedback in the range of 50-69.99%. 4. Not Attained (Grade D): Students give feedback less than 50%.
7	Creativity, Innovation & Reflective Thinking	The student will demonstrate scientific creativity and reflective thinking to critically evaluate ideas for developing innovative processes and products of	CT1: Demonstrate scientific and reflective thinking	ID1: Apply scientific skills to evaluate and implement ideas for developing innovative products	DM1- Comprehensi ve Examination DM2- Major Project rubrics	Fully Attained (Grade A): For students secure marks in the range of 75% -100% Partly Attained (Grade B): For students secure	Student Exit Survey	Fully Attained (Grade A): Students give feedback in the range of 80-100%. 2. Partly Attained (Grade B): Students give feedback in

		aerospace engineering relevant to industry/socie tal needs.				marks in the range of 60%- 74.99%. Needs Improvem ent (Grade C): For students secure marks in the range of 40-59.99%. Not Attained (Grade D): For students secure marks less than 40%.		the range of 70-79.99%. 3. Needs Improvem ent (Grade C): Students give feedback in the range of 50-69.99%. 4. Not Attained (Grade D): Students give feedback less than 50%.
8	Analytical & Decision- Making Ability	The student will demonstrate analytical and decision- making skills to identify, formulate, and analyze	CT1: Demonstrate analytical and decision making skills	ID1: Apply analytical skills to solve engineering problems	DM1- Comprehensi ve Examination	Fully Attained (Grade A): For students secure marks in the range of 75% -100%	Student Exit Survey	Fully Attained (Grade A): Students give feedback in the range of 80-100%.

9	Leadership and	The student	CT1:Demosntr	ID1: the	DM1-	Fully	Student	Fully
	Team Work	will	ate leadership	Ability to	Comprehensi	Attained	Exit	Attained
		demonstrate	skills	function	ve	(Grade A):	Survey	(Grade A):
		leadership		effectively	Examination	For		Students
		skills working		as an		students		give
		in VUCA		individual,		secure		teedback in
		world and		and as a		marks in		the range of
		will function		member or		the range of		80-100%.
		effectively as		leader in		75% -100%		2. Partly
		an individual.		diverse		Faruy Attained		Attained
		and member		teams.		(Grade B)		(Grade B):
		or leader in a		VUCA		For		students
		diverse team		world		students		feedback in
		and				secure		the range of
		multidisciplin			DM2-	marks in		70-79.99%.
		ary settings			Behavioral	the range of		3 Needs
		for making			rubrics	60%-		Improvem
		the			ruones.	74.99%.		ent (Grade
		organization				Needs		C):
		resourceful				Improvem		Students
		and achieving				ent (Grade		give
		organisation				C): For		feedback in
		goals				students		the range of
		5001 5.				secure mortes in		50-69.99%.
						the range of		4. Not
						10-50 90%		Attained
						Not		(Grade D):
						Attained		Students
						(Grade D):		give
						For		leedback
						students		50%

						secure marks less than 40%.		
10	The Engineer and Society	The student will apply contextual knowledge to assess societal, health, safety, legal and cultural issues and consequent responsibilitie s relevant to the professional engineering practice.	CT1: Demonstrate contextual knowledge	ID1: Apply contextual knowledge to assess societal, health, safety, legal and cultural issues.	DM1- Comprehensi ve Examination DM2- Major Project rubrics	Fully Attained (Grade A): For students secure marks in the range of 75% -100% Partly Attained (Grade B): For students secure marks in the range of 60%- 74.99%. Needs Improvem ent (Grade C): For students secure marks in the range of 40-59.99%.	Student Exit Survey	Fully Attained (Grade A): Students give feedback in the range of 80-100%. 2. Partly Attained (Grade B): Students give feedback in the range of 70-79.99%. 3. Needs Improvem ent (Grade C): Students give feedback in the range of 50-69.99%. 4. Not Attained (Grade D): Students

						Not Attained (Grade D): For students secure marks less than 40%.		give feedback less than 50%.
11	Integrity and Ethics	The student will apply ethical principles and practice professional ethics and responsibilitie s and norms of the engineering practice	CT1: Demonstrate ethical, moral behavior and professional responsibility.	ID1: Apply ethical principles and norms of engineering practice.	DM1- Comprehensi ve Examination DM2- Plagiarism Checking of NTCC Report	Fully Attained (Grade A): For students secure marks in the range of 75% -100% Partly Attained (Grade B): For students secure marks in the range of 60%- 74.99%. Needs Improvem ent (Grade C): For students	Student Exit Survey	Fully Attained (Grade A): Students give feedback in the range of 80-100%. 2. Partly Attained (Grade B): Students give feedback in the range of 70-79.99%. 3. Needs Improvem ent (Grade C): Students give feedback in

						secure marks in the range of 40-59.99%. Not Attained (Grade D): For students secure marks less than 40%. -		the range of 50-69.99%. 4. Not Attained (Grade D): Students give feedback less than 50%.
12	Social & Emotional Skills	The student will acquire social and emotional skills to provide support to others with empathy and build interpersonal relationship and will demonstrate adaptability & resilience during uncertain situations.	CT1: Demonstrate Social & Emotional Skills	ID1: Ability to work on diverse / inclusive teams and to interact across cultures/ societies and communitie s.	DM1- Comprehensi ve Examination DM2- Major Project rubrics	Fully Attained (Grade A): For students secure marks in the range of 75% -100% Partly Attained (Grade B): For students secure marks in the range of 60%- 74.99%.	Student Exit Survey	Fully Attained (Grade A): Students give feedback in the range of 80-100%. 2. Partly Attained (Grade B): Students give feedback in the range of 70-79.99%. 3. Needs Improvem ent (Grade C):

						Needs Improvem ent (Grade C): For		Students give feedback in the range of
						students secure marks in the range of 40-59.99%. Not Attained (Grade D): For students secure marks less than 40%.		50-69.99%. 4. Not Attained (Grade D): Students give feedback less than 50%.
13	Employability, Enterprise & Entrepreneursh ip	The student will demonstrate knowledge, advanced computing and technical skills to gain employment opportunities and will use enterprising skills to gain new business,	CT1 : Demonstrate technical and enterprising skills.	ID1: Apply advanced knowledge of computing, enterprising skills. and technical skills	DM1- Comprehensi ve Examination DM2- Major Project rubrics	- Fully Attained (Grade A): For students secure marks in the range of 75% -100% Partly Attained (Grade B): For students secure	Student Exit Survey	Fully Attained (Grade A): Students give feedback in the range of 80-100%. 2. Partly Attained (Grade B): Students give feedback in

		ideas and start				marks in		the range of
		a new				the range of		70-79.99%.
		venture.				60%-		3. Needs
						74.99%.		Improvem
						Needs		ent (Grade
						Improvem		C):
						ent (Grade		Students
						C): For		give
						students		feedback in
						secure		the range of
						marks in		50-69.99%.
						the range of		4. Not
						40-59.99%.		Attained
						Not		(Grade D):
						Attained		Students
						(Grade D):		give
						For		feedback
						students		less than
						secure		50%.
						marks less		
						than 40%.		
1.4	T • 0 1	T 1 1 1	0751		DM1	-	Q. 1 .	F 11
14	Lifelong	The student	CII:	ID1: Apply	DMI-	Fully	Student	Fully
	Learning	will develop	Demonstrate	independent	Comprehensi	Attained	Exit	Attained
		and apply	lifelong	thinking	ve	(Grade A):	Survey	(Grade A):
		independent	learning	and life-	Examination	For		Students
		thinking and		long		students		give
		life-long		learning in		secure		feedback in
		learning in		broader		marks in		the range of
		broader		context of		the range of		80-100%.
		context of				/5% -100%		

technological changes and will explore new ideas and learning opportunities for self- directed learning.	technologic al changes.	DM2- Major Project rubrics	Partly Attained (Grade B): For students secure marks in the range of 60%- 74.99%. Needs Improvem ent (Grade C): For students secure marks in the range of 40-59.99%. Not Attained (Grade D): For students secure marks less than 40%.	2. Partly Attained (Grade B): Students give feedback in the range of 70-79.99%. 3. Needs Improvem ent (Grade C): Students give feedback in the range of 50-69.99%. 4. Not Attained (Grade D): Students give feedback less than 50%.
			- ulali 40%.	

15	Environment	The student	CT1:Demonst	ID1:	DM1-	Fully	Student	Fully
	and	will	rate	Manage	Comprehensi	Attained	Exit	Attained
	Sustainability	understand	environmental	environment	ve	(Grade A):	Survey	(Grade A):
	5	the impact of	engineering	al	Examination	For		Students
		the	skills	compliance		students		give
		professional		and provide		secure		feedback in
		engineering		guidance and		marks in		the range of
		solutions in		actions		the range of		80-100%.
		societal and		consistence		75% -100%		2. Partly
		sociciai allu		with		Partly		Attained
		l contexte and		applicable	DM2- Major	Attained		(Grade B):
		I contexts and		environment	Project	(Grade B):		Students
		develop		al laws	rubrics	For		give
		sustainable		regulations		students		feedback in
		technologies		and policies.		secure		the range of
		using				marks in		70-79.99%.
		knowledge of				the range of		3. Needs
		aerospace				74 00%		Improvem
		engineering.				74.99%. Needs		ent (Grade
						Improvem		C):
						ent (Grade		Students
						C). For		give
						students		feedback in
						secure		the range of
						marks in		50-69.99%.
						the range of		4. Not
						40-59.99%.		Attained
						Not		(Grade D):
						Attained		Students
						(Grade D):		foodbook
						For		less then
						students		50%

			secure marks less than 40%.	
			-	

5.1.8 Semester Wise Course Curriculum Coherence Matrix:

	Cou	Cours	Indic	Assessment	G	G	G	G	G	G	G	G	G	GA	GA	G	GA	GA	GA
	rse	e	ators	Based on Bloom	A1	A2	A3	A4	A5	A6	A7	A8	A9	10	11	A1	13	14	15
Semes	Lea	Comp		Taxonomy	/	/	/	/	/	/	/	/	/	/	/	2 /	/	/	/
ter-I-	rnin	etenc			Р	Р	Р	Р	Р	Р	Р	Р	Р	PL	PL	Р	PL	PL	PL
8	g	У			L	L	L	L	L	L	L	L	L	01	01	L1	01	01	01
	outc	-			0	0	0	0	0	0	0	0	0	0	1	2	3	4	5
	ome				1	2	3	4	5	6	7	8	9						
Cours	S			rin g g															
e				<u>be</u> tan ing ing															
Title				em ply lua eat															
				<u>Pana</u> Cre															

Cours e Title - 1 : Introd uction to progra mmin g in C	CL O1:	Demo nstrat e comp uting skills	Apply comp uting skill to solve engine ering proble ms	Y	Y	Y				Y								
	CL O2	Desig n skills	Apply design imple ment and evalua te comp uter based syste ms to meet desire needs.						Y	Y								
	CL O3	Analy ze	Abilit y to analyz e result s				Y				Y						Y	
	CL O4	Proble m	Apply knowl edge	Y	Y			Y				Y						

~		solvin g	of soft comp uting and ICT tools to solve aerosp ace and allied engine ering													
Cours e Title - 2: Appli ed Mathe matics - I	CL O1	Demo nstrat e mathe matic al model ing	Apply knowl edge of mathe matic s for solvin g engin eering probl ems	Y	Y			Y					Y			
	CL O2	Identi fy partial deriva tives	Apply knowl edge of mathe matics to identif y and	Y	Y							Y				

		analyz e partial deriva tives.													
CL O3	Analy zing skills	Apply knowl edge to evalua te the result of engine ering proble ms			Y		Y	Y				Y	Y		
CL O4	Demo nstrat e knowl edge to find area and calcul ate integr als	Apply knowl edge to unders tand and calcul ate single and doubl e integr als	Y	Y			Y		Y			Y		Y	
CL O5	Demo nstrat	Apply engine	Y	Y							Y				
	e engin	ering knowl													

eering	edge									
knowl	to									
edge	analyz									
	e to									
	find									
	the									
	soluti									
	on of									
	proble									
	ms									

5.2 MASTER'S-Level Programme:

5.2.1Mission Statement

Programme Mission

The mission of the M.Tech (Aerospace Engineering) Programme is to impart quality higher education with the best possible educational and research facilities to the students for the careers in various sectors of Aerospace Engineering by continuously updating the programme structure and curriculum as per the current requirement of industry 4.0, government, academia and research.

5.2.2 Programme Educational Objectives (PEOs)

S.No	Educational Objectives
1	Students will acquire and demonstrate knowledge of theory, concepts of Engineering & Technology and will be able to comprehend, analyse, formulate, design & develop novel products, solutions for real life problems as an individual / team member in a diverse professional work settings

2	Students will be able to create, select and extract information on unsolved problems through literature survey and apply appropriate research methodologies, techniques, design and conduct experiments for the development of scientific/technical knowledge in the
	field of Aerospace Engineering.
3	Students will be able to apply modern engineering and IT tools to complex engineering activities with a clear understanding of
	appropriate selection techniques and limitations associated with it.
4	Students will be able to assess societal, health, safety, legal, cultural and environmental issues and relevant engineering
	responsibilities by applying reasoned contextual knowledge and understand its impact towards sustainable development and will be
	able to inculcate awareness about professional ethics and norms of engineering practices.
5	Students will be able to communicate effectively and demonstrate knowledge and sound understanding of Aerospace Engineering
	and apply these as an individual or as a team member or a leader in diverse teams and in managing projects in multi-disciplinary
	settings.

5.2.3. Programme Operational Objectives (OG)

S.No	Operational Objectives
1	Programme of M.Tech (AE) will be conducted in academically conducive environment and appropriate infrastructure to achieve excellence in teaching, learning and student experience.
2	Programme of M.Tech (AE) will provide ample opportunities to its students to participate in curricular, co-curricular and extra- curricular activities for their holistic development.
3	Programme of M.Tech (AE) will facilitate environment for innovation and research excellence for the intellectual growth of faculty.
4	Programme of M.Tech (AE) will inculcate core values and ethical conduct amongst students, faculty and staff.
5	Programme of M.Tech (AE) will have cultural diversity and a sense of social and environmental responsibility.
6	Programme of M.Tech (AE) will provide opportunities for international exposure to faculty and students.
7	Programme of M.Tech(AE) will continual improves processes and systems and aim to attain national and international accreditations and university rankings.
8	Programme of M.Tech(AE) will build a strong industry interaction by way of alumni networks and empanelment of expertise from industry
9	Programme of M.Tech(AE) will provide employment opportunities and also support students to start their own ventures.
10	Programme of M.Tech (AE) will provide good governance in discharge of responsibilities and execution of policies and programs.

5.2.4 Programme Learning Outcomes (PEOs):

S.No	Learning Outcomes
1	
	Student will apply the knowledge of mathematics, science, latest soft computing, engineering, and aerospace specializations to solve complex engineering problems.
2	The student will choose self-directed and active learning through strong intellectual engagement in independent
	work relevant to aerospace specialisations, maximizing potential by utilizing abilities and academic excellence
	and will think independently, analytically & creatively through self-directed learning.
3	Students will use research-based knowledge, soft computing skills and research methods including design of
	experiments, analysis and interpretation of data, and synthesis of the information to arrive at valid conclusions
	and will exercise critical judgment and thinking to create new systems / products / services.
4	Student will create, select, and apply modern engineering techniques and IT tools for modeling and simulation of
	aerospace engineering problems.
5	The student will identify, conceptualize and solve problems of aerospace specialisations by applying critical,
	creative and evidence-based thinking.
6	Students will communicate effectively on engineering activities with the engineering community and with society at large, such as,
	being able to comprehend and write effective reports, make effective presentations, and give and receive clear instructions by utilizing various information technology tools and skills
7	The student will demonstrate scientific creativity and reflective thinking to critically evaluate ideas for
	developing innovative processes and products of aerospace engineering relevant to industry/societal needs.
8	The student will demonstrate analytical and decision-making skills to identify, formulate, and analyze complex
	engineering problems reaching substantiated conclusions using concepts of science, engineering & aerospace
	specialisations.
9	The student will demonstrate leadership skills working in VUCA world and will function effectively as an
	individual, and member or leader in a diverse team and multidisciplinary settings for making the organization
	resourceful and achieving organisation goals.
10	Student will apply contextual knowledge to assess societal, health, safety, legal, cultural issues and the
	consequent responsibilities relevant to the professional engineering practice and will appreciate diversity (caste,
	ethnicity, gender and marginalization), values and beliefs of multiple cultures in a global perspective
11	The student will apply ethical principles and practice professional ethics and responsibilities and norms of the
	engineering practice.

12	The student will acquire social and emotional skills to provide support to others with empathy and build
	interpersonal relationship and will demonstrate adaptability & resilience during uncertain situations.
13	The student will demonstrate knowledge, research aptitude, advanced computing and technical skills to gain
	employment opportunities and will use enterprising skills to gain new business, ideas and start a new venture.
14	The student will develop and apply independent thinking and life-long learning in broader context of
	technological changes and will explore new ideas and learning opportunities for self-directed learning.
15	The student will understand the impact of the professional engineering solutions in societal and environmental
	contexts and develop sustainable technologies using knowledge of aerospace engineering.

5.2.5 Programme Operational Outcomes (POOs) :

S.No	Operational Outcomes
1	The Faculty of Aerospace Engineering will use appropriate methodology and pedagogical tools for teaching, learning and
	development.
2	The curriculum will be contemporary and relevant to meet industry 4.0 requirements and benchmarked on global standards by
	incorporating feedback from all the stakeholders.
3	The student of M.Tech (AE) will graduate in timely manner.
4	Institute shall provide Academic facilities, Technological Resources for teaching and learning.
5	The student of M.Tech (AE) will earn achievements in inter-university Extra Curricular activities.
6	Faculty will be engaged in scholarly and professional activities in order to enhance their competencies and to contribute to the
	existing Body of Knowledge.
7	The Faculty of Aerospace Engineering will integrate ethics and values in teaching, theory and practice, develop and retain excellent
	students, faculty and staff.
8	Faculty of Aerospace Engineering will facilitate cultivation of cross cultural humanitarian values.
9	Faculty of Aerospace Engineering will facilitate joint research collaborations, invite international delegates and speakers for
	seminars and conferences and various other opportunities for global exposure.
10	Faculty of Aerospace Engineering will be continuously engaged in developing/ reviewing processes, policies and systems to achieve
	prestigious accreditations from various national, international bodies and ranking bodies.
11	Faculty of Aerospace Engineering shall develop and maintain strong relationship with corporate and maintain lifelong alumni
	network and keep the curriculum responsive to industry needs.
12	Faculty of Aerospace Engineering will support all the students for quality placements or join family business or start their own
	venture.

5.2.6 Mapping of Programme Learning Outcomes to Programme Educational Objectives (PEOs):

Note:

✓ in a given cell of the table indicates the intended learning outcome in that row is associated with the learning goal in that column):

Programme Educational Objectives (PEOs) Programme Learning Outcome (PLOs)	PEO 1	PEO 2	PEO 3	PEO 4	PEO5
Programme :M.Tech(AE)	-	-	-		
PLO 1	✓	✓	\checkmark	✓	
PLO 2	✓	✓			
PLO 3	✓	✓	\checkmark		
PLO 4	✓		\checkmark		
PLO 5	✓				
PLO 6					\checkmark
PLO 7		✓			
PLO 8		✓			
PLO 9	✓				✓
PLO 10				✓	
PLO 11				✓	
PLO 12				✓	
PLO 13	~	~	✓		
PLO 14	~	~			
PLO 15		~		\checkmark	

S.N	Graduate	PLOs	Competency	Indicators	Direct	Target	Indirec	Target
0	Attributes		(CT)	(ID)	Measures	Performanc	t	Performanc
					/Tools (DM)	e	Measur	e
							es	
							/Tools	
							(IM)	
1.		Student will	CT1:Demonst	ID1: Apply	DM1-	Fully	Student	Fully
	Engineering	apply the	rate	,mathematic	Comprehensiv	Attained	Exit	Attained
	Knowledge	knowledge of	competency in	al	e exam	(Grade A):	Survey	(Grade A):
	C	mathematics,	mathematical	techniques		For students		Students
		science, latest	modeling	such as		secure		give
		soft		calculus,		marks in the		feedback in
		computing,	CT2:	linear		range of		the range of
		engineering,	Demonstrate	algebra and		75% -100%		80-100%.
		and aerospace	competency of	statics to		PartlyAttai		2.
		specialization	soft	solve		ned (Grade		PartlvAttai
		s to solve	computing	engineering		B): For		ned (Grade
		complex	skills	problems		students		B): Students
		engineering				secure		give
		problems.				marks in the		feedback in

5.2.7 Programme Learning Assessment for M. Tech. (Aerospace Engineering)

		ID2: Apply soft computing and engineering	Dissertation rubrics	range of 60%- 74.99%. Needs Improveme nt (Grade C): For students secure marks in the range of 40- 59.99%. NotAttaine d (Grade D): For students secure marks less than 40%.	the range of 70-79.99%. 3. Needs Improveme nt (Grade C): Students give feedback in the range of 50-69.99%. 4. NotAttaine d (Grade D): Students give feedback less than 50%.

2.	Self-Directed	The student	CT1:Self	ID1: Apply	DM1-	Fully	Student	Fully
	and Active	will choose	directed and	self-	Comprehensiv	Attained	Exit	Attained
	Learning	self-directed	active learning	directed	e Examination	(Grade A):	Survey	(Grade A):
		and active		and active		For students		Students
		learning		learning		secure		give
		through		relevant to		marks in the		feedback in
		strong				range of		the range of
		intellectual		aerospace		75% -100%		80-100%.
		engagement		engmeering		Partly		2. Partly
		in		•		Attained		Attained
		independent				(Grade B):		(Grade B):
		work relevant		ID2:		For students		Students
		to aerospace		Utilize		secure		give
		specialisation		abilities		marks in the		feedback in
		s, maximizing		and		range of		the range of
		potential by		academic		60%-		70-79.99%.
		utilizing		excellence		74.99%.		3 Needs
		abilities and		and will		Needs		Improveme
		academic		think		Improveme		nt (Grade
		excellence		independen		nt (Grade		C): Students
		and will think		tly		C): For		oive
		independently		uy,		students		feedback in
		, analytically				secure		the range of
		& creatively		X 1		marks in the		50-69 99%
				creatively				50-07.7770.

	through self-	through	DM2:Disserta	range of 40-	4. Not
	directed	self-	tion rubrics	59.99%.	Attained
	learning.	directed		Not	(Grade D):
		learning		Attained	Students
		8		(Grade D):	give
				For students	feedback
				secure	less than
				marks less	50%.
				than 40%.	

3	Research	Students will	CT1:Demonst	ID1:	DM1-	Fully	Student	Fully
	enquiry &	use research-	rate soft and	Student will	Comprehensiv	Attained	Exit	Attained
	Design	based	technical skills	apply soft	e Examination	(Grade A):	Survey	(Grade A):
	Thinking	knowledge,		and		For students		Students
	1	soft		technical		secure		give
		computing		skills to		marks in the		feedback in
		skills and		solve		range of		the range of
		research		research and		75% -100%		80-100%.
		methods		industry		PartlyAttai		2.
		including		problems		ned (Grade		PartlyAttai
		design of				B): For		ned (Grade
		experiments,				students		B): Students
		analysis and				secure		give
		interpretation				marks in the		feedback in
		of data, and				range of		the range of
		synthesis of				60%-		70-79.99%.
		the				74.99%.		3 Needs
		information to				Needs		Improveme
		arrive at valid				Improveme		nt (Grade
		conclusions				nt (Grade		C): Students
		and will				C): For		give
		exercise				students		feedback in
		critical				secure		the range of
		judgment and				marks in the		50-69.99%
		thinking						

	to create new		DM2-	range of 40-	4. Not
	systems /		Dissertation	59.99%.	Attained
	products /		rubrics	Not	(Grade D):
	services.			Attained	Students
				(Grade D):	give
				For students	feedback
				secure	less than
				marks less	50%.
				than 40%.	

4	ICT and	Student will	CT1:	ID1: Apply	DM1-	Fully	Student	Fully
	Modern	create, select,	demonstrate	modern	Comprehensiv	Attained	Exit	Attained
	Engineering	and apply	applications of	tools and	e Examination	(Grade A):	Survey	(Grade A):
	Tools	modern	modern tools	techniques		For students		Students
	Usage	engineering	and techniques	for solving		secure		give
		techniques	of ICT	problems		marks in the		feedback in
		and IT tools		related to		range of		the range of
		for modeling		aerospace		75% -100%		80-100%.
		and		and allied		PartlyAttai		2.
		simulation of		and amed		ned (Grade		PartlyAttai
		aerospace		engineering		B): For		ned (Grade
		engineering		•		students		B): Students
		problems.				secure		give
						marks in the		feedback in
						range of		the range of
						60%-		70-79.99%.
						74.99%.		3. Needs
						Needs		Improveme
						Improveme		nt (Grade
						nt (Grade		C): Students
						C): For		give
						students		feedback in
						secure		the range of
						marks in the		50-69.99%.
		1		1	1			1

		DM2: Disserta	range of 40-	4. Not				
		tion rubrics	59.99%.	Attained				
			Not	(Grade D):				
			Attained	Students				
			(Grade D).	give				
			For students	feedback				
			secure	less than				
			marks less	50%				
			then 400/	50%.				
			ulali 40%.					
5	Critical Thinking & Problem- Solving Abilities	The student will identify, conceptualize and solve problems of aerospace specialisation s by applying critical, creative and evidence- based thinking.	CT1 :Demonst rate critical thinking	ID1: Apply critical, creative and evidence- based thinking to solve aerospace engineering problems	DM1- Comprehensiv e Examination	Fully Attained (Grade A): For students secure marks in the range of 75% -100% PartlyAttai ned (Grade B): For students secure marks in the range of 60%- 74.99%. Needs Improveme nt (Grade C): For students secure marks in the	Student Exit Survey	Fully Attained (Grade A): Students give feedback in the range of 80-100%. 2. PartlyAttai ned (Grade B): Students give feedback in the range of 70-79.99%. 3. Needs Improveme nt (Grade C): Students give feedback in the range of 50-69.99%
---	--	--	--	---	--	---	---------------------------	--
						secure marks in the		the range of 50-69.99%.

					DM2: Disserta tion rubrics	range of 40- 59.99%. Not Attained (Grade D): For students secure marks less than 40%.		4. Not Attained (Grade D): Students give feedback less than 50%.
6	Communicati on Skills	Students will communicate effectively on engineering activities with	CT1: Demonstrate communicatio n skills	ID1: Ability to communica te	DM1- Comprehensiv e Examination	Fully Attained (Grade A): For students secure	Student Exit Survey	Fully Attained (Grade A): Students give

	the	effectivelv	DM2-	marks in the	feedback in
	engineering	on	Business	range of	the range of
	community	engineering	Communicatio	75% -100%	80-100%.
	and with	activities	n	PartlyAttai	2.
	engineering community and with society at large, such as, being able to comprehend and write effective reports, make effective presentations, and give and receive clear instructions by utilizing various information technology tools and skills.	on engineering activities with the engineering professiona ls and society.	Business Communicatio n Rubrics	range of 75% -100% PartlyAttai ned (Grade B): For students secure marks in the range of 60%- 74.99%. Needs Improveme nt (Grade C): For students secure marks in the range of 40- 59.99%. NotAttaine d (Grade	the range of 80-100%. 2. PartlyAttai ned (Grade B): Students give feedback in the range of 70-79.99%. 3. Needs Improveme nt (Grade C): Students give feedback in the range of 50-69.99%. 4. NotAttaine d (Grade D): Students
				D): For	D): Students
				students	give
				secure	leedback
				marks less	ress than
				than 40%.	30%.

7	Creativity,	The student	CT1:	ID1: Apply	DM1-	Fully	Student	Fully
	Innovation	will	Demonstrate	scientific	Comprehensiv	Attained	Exit	Attained
	& Reflective	demonstrate	scientific and	skills to	e Examination	(Grade A):	Survey	(Grade A):
	Thinking	scientific	reflective	evaluate and		For students		Students
		creativity	thinking	implement		secure		give
		and		ideas for		marks in the		feedback in
		raflective		developing		range of		the range of
		thinking to		innovative		75% -100%		80-100%.
				products		PartlyAttai		2.
		critically				ned (Grade		PartlyAttai
		evaluate				B): For		ned (Grade
		ideas for				students		B): Students
		developing				secure		give
		innovative				marks in the		feedback in
		processes				range of		the range of
		and products				60%-		70-79.99%.
		of aerospace				74.99%.		3 Needs
		engineering				Needs		Improveme
		relevant to				Improveme		nt (Grade
		industry/soci				nt (Grade		C): Students
		etal needs				C): For		give
		ctal ficcus.				students		feedback in
						secure		the range of
						marks in the		50-69 99%
						range of 40-		
						59.99%.		

		DM2: Disserta tion rubrics	NotAttaine d (Grade D): For students secure marks less	4. NotAttaine d (Grade D): Students give feedback
			uiaii 40%.	50%.

8	Analytical &	The student	CT1:	ID1:	DM1-	Fully	Student	Fully
	Decision-	will	Demonstrate	Apply	Comprehensiv	Attained	Exit	Attained
	Making	demonstrate	analytical and	analytical	e Examination	(Grade A):	Survey	(Grade A):
	Ability	analytical and	decision	skills to		For students		Students
		decision-	making skills	solve		secure		give
		making skills		engineering		marks in the		feedback in
		to identify,		problems		range of		the range of
		formulate,				75% -100%		80-100%.
		and analyze				PartlyAttai		2.
		complex				ned (Grade		PartlyAttai
		engineering				B): For		ned (Grade
		problems				students		B): Students
		reaching				secure		give
		substantiated				marks in the		feedback in
		conclusions				range of		the range of
		using				60%-		70-79.99%.
		concepts of				74.99%.		3. Needs
		science,				Needs		Improveme
		engineering &				Improveme		nt (Grade
		aerospace				nt (Grade		C): Students
		specialisation				C): For		give
		S.				students		feedback in
						secure		the range of
						marks in the		50-69.99%
						range of 40-		
						59.99%.		

		DM2:Disserta	Not	4. Not
		tion rubrics	Attained	Attained
			(Grade D):	(Grade D):
			For students	Students
			secure	give
			marks less	feedback
			than 40%.	less than
				50%.

9	Leadership	The student	CT1:Demosnt	ID1: the	DM1-	Fully	Student	Fully
	and Team	will	rate leadership	Ability to	Comprehensiv	Attained	Exit	Attained
	Work	demonstrate	skills	function	e Examination	(Grade A):	Survey	(Grade A):
		leadership		effectively		For students		Students
		skills working		as an		secure		give
		in VUCA		individual		marks in the		feedback in
		world and		and as a		range of		the range of
		will function		and as a		75% -100%		80-100%.
		effectively as				Partly		2. Partly
		an individual,		leader in		Attained		Attained
		and member		diverse		(Grade B):		(Grade B):
		or leader in a		teams,		For students		Students
		diverse team		VUCA		secure		give
		and		world		marks in the		feedback in
		multidisciplin				range of		the range of
		ary settings				60%-		70-79.99%.
		for making				74.99%.		3. Needs
		the				Needs		Improveme
		organization				Improveme		nt (Grade
		resourceful				nt (Grade		C): Students
		and achieving				C): For		give
		organisation				students		feedback in
		goals.				secure		the range of
						marks in the		50-69.99%
						range of 40-		
						59.99%.		

		DM2- Behavioral science rubrics.	NotAttaine d (Grade D): For students secure marks less than 40%.	4. NotAttaine d (Grade D): Students give feedback less than 50%.

10	Multicultural	Student will	CT1 :	ID1: Apply	DM1-	Fully	Student	Fully
	Understandin	apply	Demonstrate	contextual	Comprehensiv	Attained	Exit	Attained
	g	contextual	contextual	knowledge	e Examination	(Grade A):	Survey	(Grade A):
	& Global	knowledge to	knowledge	to assess		For students		Students
	Outlook	assess	C	societal		secure		give
	Outrook	societal,		health		marks in the		feedback in
		health, safety,		safaty lagal		range of		the range of
		legal, cultural		safety, legal		75% -100%		80-100%.
		issues and the		and cultural		PartlyAttai		2.
		consequent		issues.		ned (Grade		PartlyAttai
		responsibilitie				B): For		ned (Grade
		s relevant to				students		B): Students
		the				secure		give
		professional				marks in the		feedback in
		engineering				range of		the range of
		practice and				60%-		70-79.99%.
		will				74.99%.		3. Needs
		appreciate				Needs		Improveme
		diversity				Improveme		nt (Grade
		(caste,				nt (Grade		C): Students
		ethnicity,				C): For		give
		gender and				students		feedback in
		marginalizatio				secure		the range of
		n), values and				marks in the		50-69.99%
		beliefs of				range of 40-		
		multiple				59.99%.		

	cultures in a		DM2:Disserta	Not	4. Not
	global		tion rubrics	Attained	Attained
	perspective			(Grade D):	(Grade D):
				For students	Students
				secure	give
				marks less	feedback
				than 40%.	less than
					50%.

11	Integrity and	The student	CT1:	ID1: Apply	DM1-	Fully	Student	Fully
	Ethics	will apply	Demonstrate	ethical	Comprehensiv	Attained	Exit	Attained
		ethical	ethical, moral	principles	e Examination	(Grade A):	Survey	(Grade A):
		principles and	behavior and	and norms		For students		Students
		practice	professional	of		secure		give
		professional	responsibility.	engineering		marks in the		feedback in
		ethics and		practice		range of		the range of
		responsibilitie		practice.		75% -100%		80-100%.
		s and norms				PartlyAttai		2.
		of the				ned (Grade		PartlyAttai
		engineering				B): For		ned (Grade
		practice.				students		B): Students
						secure		give
						marks in the		feedback in
						range of		the range of
						60%-		70-79.99%.
						74.99%.		3. Needs
						Needs		Improveme
						Improveme		nt (Grade
						nt (Grade		C): Students
						C): For		give
						students		feedback in
						secure		the range of
						marks in the		50-69.99%.
						range of 40-		
						59.99%.		

		DM2- Plagiarism Checking of NTCCs report	NotAttaine d (Grade D): For students secure marks less than 40%.	4. Not Attained (Grade D): Students give feedback less than 50%.

12	Social &	The student	CT1:	ID1:	DM1-	Fully	Student	Fully
	Emotional	will acquire	Demonstrate	Ability to	Comprehensiv	Attained	Exit	Attained
	Skills	social and	Social &	work on	e Examination	(Grade A):	Survey	(Grade A):
		emotional	Emotional	diverse /		For students		Students
		skills to	Skills	inclusive		secure		give
		provide		teams and		marks in the		feedback in
		support to		to interact		range of		the range of
		others with		across		75% -100%		80-100%.
		oments with		cultures/		PartlyAttai		2.
		build		societies		ned (Grade		PartlyAttai
				societies		B): For		ned (Grade
		interpersonal				students		B): Students
		relationship		communitie		secure		give
		and will		S.		marks in the		feedback in
		demonstrate				range of		the range of
		adaptability				60%-		70-79.99%.
		& resilience				74.99%.		3. Needs
		during				Needs		Improveme
		uncertain				Improveme		nt (Grade
		situations.				nt (Grade		C): Students
						C): For		give
						students		feedback in
						secure		the range of
						marks in the		50-69.99%.
						range of 40-		
						59.99%.		

		DM2:Disserta	Not	4. Not
		tion rubrics	Attained	Attained
			(Grade D):	(Grade D):
			For students	Students
			secure	give
			marks less	feedback
			than 40%	less than
			unun 1070.	50%
				5070.

13	Employability,	The student	CT1 :	ID1: Apply	DM1-	Fully	Student	Fully
	Enterprise	will	Demonstrate	advanced	Comprehensiv	Attained	Exit	Attained
	&	demonstrate	technical and	knowledge	e Examination	(Grade A):	Survey	(Grade A):
	Entrepreneurs	knowledge.	enterprising	of		For students		Students
	hip	research	skills.	computing,		secure		give
		aptitude.		enterprising		marks in the		feedback in
		advanced		skills. and		range of		the range of
		computing		technical		75% -100%		80-100%.
		and technical		skills		Partly		2. Partly
		alcilla to goin				Attained		Attained
						(Grade B):		(Grade B):
		employment				For students		Students
		opportunities				secure		give
		and will use				marks in the		feedback in
		enterprising				range of		the range of
		skills to gain				60%-		70-79.99%.
		new				74.99%.		3. Needs
		business,				Needs		Improveme
		ideas and				Improveme		nt (Grade
		start a new				nt (Grade		C): Students
		venture				C): For		give
		v onten o.				students		feedback in
						secure		the range of
						marks in the		50-69.99%.
						range of 40-		
						59.99%.		

		DM2: Disserta tion rubrics	NotAttaine d (Grade D): For students secure marks less than 40%.	4. Not Attained (Grade D): Students give feedback less than 50%.

14	Lifelong	The student	CT1 :	ID1: Apply	DM1-	Fully	Student	Fully
	Learning	will develop	Demonstrate	independen	Comprehensiv	Attained	Exit	Attained
		and apply	lifelong	t thinking	e Examination	(Grade A):	Survey	(Grade A):
		independent	learning	and life-		For students		Students
		thinking and		long		secure		give
		life-long		learning in		marks in the		feedback in
		learning in		broader		range of		the range of
		broader		context of		75% -100%		80-100%.
		context of		toohnologia		PartlyAttai		2.
		technological				ned (Grade		PartlyAttai
		changes and		al changes.		B): For		ned (Grade
		will explore				students		B): Students
		new ideas and				secure		give
		learning				marks in the		feedback in
		opportunities				range of		the range of
		for self-				60%-		70-79.99%.
		directed				74.99%.		3. Needs
		learning.				Needs		Improveme
						Improveme		nt (Grade
						nt (Grade		C): Students
						C): For		give
						students		feedback in
						secure		the range of
						marks in the		50-69.99%.
						range of 40-		
						59.99%.		

		DM2:Disserta	NotAttaine	4.
		tion rubrics	d (Grade	NotAttaine
			D): For	d (Grade
			students	D): Students
			secure	give
			marks less	feedback
			than 40%	loss then
			ulali 40%.	1055 than 500/
				50%.

15	Environment	The student	CT1:Demonst	ID1:	DM1-	Fully	Student	Fully
	and	will	rate	Manage	Comprehensiv	Attained	Exit	Attained
	Sustainability	understand	environmental	environment	e Examination	(Grade A):	Survey	(Grade A):
		the impact of	engineering	al		For students		Students
		the	skills	compliance		secure		give
		professional		and provide		marks in the		feedback in
		engineering		guidance		range of		the range of
		solutions in		and actions		75% -100%		80-100%.
		societal and		consistence		PartlyAttai		2.
		environmental		with		ned (Grade		PartlvAttai
		contexts and		applicable		B): For		ned (Grade
		develop		environment		students		B): Students
		sustainable		al laws		secure		give
		technologies		regulations		marks in the		feedback in
		using		and policies.		range of		the range of
		knowledge of				60%-		70-79.99%.
		aerospace				74.99%.		3. Needs
		engineering.				Needs		Improveme
						Improveme		nt (Grade
						nt (Grade		C): Students
						C): For		give
						students		feedback in
						secure		the range of
						marks in the		50-69.99%
						range of 40-		20 07.7770.
						59.99%.		

		DM2:Disserta	Not	4. Not
		tion rubrics	Attained	Attained
			(Grade D):	(Grade D):
			For students	Students
			secure	give
			marks less	feedback
			than 40%.	less than
				50%.

Sem ester -I-3	Cou rse Lea rnin g outc ome	Course Compe tency	Indic ators	F	As Base Ta	ssess d oi axoi	sme n Bl nom	nt oon iy	1	G A1 / P L O 1	G A2 / P L O 2	G A3 / P L O 3	G A4 / P L O 4	G A5 / P L O 5	G A6 / P L O 6	G A7 / P L O 7	G A8 / P L O 8	G A9 / P L O 9	GA 10 / PL 01 0	GA 11 / PL 01 1	GA 12 / PL 01 2	GA 13 / PL 01 3	GA 14 / PL 01 4	GA 15 / PL 01 5
Sem ester Cou rse Title	S			Rememberin	Understandir	Applying	Analyzing	Evaluating	Creating															
Cou rse Title -1 : Aircr aft Prop ulsio n	CL O1:	Demon strate knowle dge of aircraft propuls ion	Apply knowl edge to identif y variou s types of engin es	Y	Y					Y														
	CL O2	Evaluat e the propert ies of one dimens ional flow	Analy ze one dimen sional flow					Y		Y		Y												

5.2.8 Assessment of Program Learning Outcomes through Comprehensive Examination

	CL	Demon	Exami	Y	Y		Ŋ	[
	O3	strate	ne the													
		knowle	perfor													
		dge of	mance													
		thermo	of													
		dynami	engin													
		с	es													
		cycles														
	CL	Demon	Defin	Y	Y		Ŋ	7	Y							
	O4	strate	e gas													
		engine	turbin													
		ering	e													
		knowle	cycle													
		dge of	and its													
		aircraft	comp													
		propuls	onents													
		ion														
	CL	Demon	Desig	Y	Y		Ŋ	2	Y							
	05	strate	n													
		engine	comp													
		ering	onents													
		knowle	of													
		dge	aircraf													
		related	t													
		to	propul													
		turbo-	sion													
		machin														
~	~~	ery									 	 			 	
Cou	CL	Engine	Apply	Y	Y		Y	(Y							
rse	01	ering	knowl													
Title		knowle	edge													
-2-		dge	to													
Aircr			solve													
aft			mathe													
Stabi			matic													
lity			al													

and contr ol			model of flight vehicl e dyna mics.																
	CL O2	Soft comput ing skill	Solve non liner differ ential equati ons			Y					Y	Y							
	CL O3	Demon strate aerody namic model	Asses aircraf t stabili ty	Y	Y				Y	Y			Y						
	CL O4	Analyz e engine ering data	Analy ze flight vehicl e respo nse				Y	Y			Y		Y		Y				

SECTION VI: DOMAIN OPERATIONAL OUTCOMES & OPERATIONAL ASSESSMENT PLAN

6. Operational Assessment

6.1 Operational Outcomes

S. No.	Operational Outcomes
1.	DET will encourage faculty to use appropriate methodology and pedagogical tools for teaching, learning and development of students.
2.	The curriculum is contemporary, developed in collaborative consultation with all the stakeholders, benchmarked with global standards and relevant to the industry requirements.
3.	The students of DET will graduate in timely manner.
4.	DET shall maintain appropriate academic facilities and technological Resources for teaching and learning.
5.	The students of DET will participate in Co Curricular and Extra Curricular activities.
6.	Faculty will be engaged in scholarly and professional activities in order to enhance their competencies and to contribute to the existing Body of Knowledge.
7.	The DET will integrate ethics and values in teaching, theory and practice, develop and retain excellent students, faculty and staff.
8.	DET will facilitate joint research collaborations; invite international delegates and speakers for seminars and conferences and various other opportunities for global exposure.
9.	DET will be continuously engaged in developing/ reviewing processes, policies and systems to achieve prestigious accreditations from various national, international bodies and ranking bodies.
10.	DET will develop and maintain strong relationship with corporate and support all the students for quality placements or join family business or start their own venture.

6.2 Operational Outcome Assessment Plan

S. No.	Operational Objectives	Operational Outcomes	Assessment Measures/Methods for	Performance Objectives (Targets/Criteria)
1	DET intends to facilitate academically conducive environment and infrastructure to achieve excellence in teaching, learning and research.	 DET will encourage faculty to use appropriate methodology and pedagogical tools for teaching, learning and development of students. The students of DET will graduate in timely manner. 	 Student feedback of course faculty. Faculty qualification and experience files. Graduation rate in convocation report. on completion of Registration period (N) during extended period (N+1+1 for PG and N+2+1 for UG) 	 All faculty shall have a minimum criteria of greater than 70% overall score in student feedback. All faculty to be either M.Tech/PhD or shall have industry experience. At least 80% students shall graduate on completion of Registration period (N) 80% of remaining students shall pass during extended period (N+1+1 for PG and N+2+1 for UG)
2	DET will provide ample opportunities to its students to participate in curricular, co-	• The students of DET will participate in Co-Curricular and Extra Curricular activities	• Functional and area specific club, Committees, Sports Events, co-curricular and extracurricular activities and	• Every student shall be a part of at least one Club or Committee or

curricular and extracurricular activities for their holistic development.		 student's participation in inter institutional competition. List of Award winners 	inter institutional competition.
3 DET will facilitate environment for innovation and research excellence for the intellectual growth of faculty.	 DET shall maintain appropriate academic facilities and technological Resources for teaching and learning. 	 Faculty 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, manuscripts, papers presented, dissertations/ thesis, conference and workshops attended. Scholarship of application: published articles, manuscripts, papers presented, dissertations/ thesis, conference and workshops attended. Scholarship of application: published articles, manuscripts, papers presented, consultations, policy analysis, programme evaluation. Professional activities: Routine consulting, conference, workshop, professional meeting attendance, professional meeting attendance, professional membership. 	Student Skill and knowledge in the chosen field

4	DET will inculcate core values and ethical conduct amongst students, faculty and staff.	• The DET 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 Behavioral Science Courses, Human Values and Community Outreach, etc. Plagiarism check. Feedback system. 	 Attrition rate shall be below 10% annually Faculty Feedback shall be taken for each course. Studentfeedback about teaching faculty member should be greater than 70%.
5	DET will encourage cultural diversity and a sense of social and environmental responsibility.	• DET will facilitate joint research collaborations; invite international delegates and speakers for seminars and conferences and various other opportunities for global exposure.	 List of community/ social sector projects/ activities/ engagements. Organizing Cultural programmes. Day of Belongingness. Celebration of festivals for culturally diverse group of students. 	• Atleast 80% faculty and students should be engaged in organizing/ participating the various events and activities
6	DET will provide ample opportunities for international exposure to faculty and students.		 Study Abroad Programme Exchange Programs for students. Conferences/ Seminars organized by national and international speakers and delegates. Collaborative Research. 	• 100% students and faculty of DET shall be offered an opportunity for international exposure through various programs designed for the purpose.

7	DET will be involved in continual improvement of processes and systems and aim to attain national and international accreditations and university rankings.	 The curriculum is contemporary, developed in collaborative consultation with all the stakeholders, benchmarked with global standards and relevant to the industry requirements DET will be continuously engaged in developing/reviewing processes, policies and systems to achieve prestigious accreditations from various national international 	 Ranking in national and international ranking agencies. Accreditation at institutions and programme levels. 	• Continuous review and enhancement of all the required systems and processes to upgrade/ maintain high standards
8	DET will build a strong industry interaction by way of alumni networks and empanelment of expertise from industry.	 DET will develop and maintain strong relationship with corporate and support all the students for quality placements or join family business or start their own venture. 	 Organizing Guest lectures by industry experts. Organizing Industry- Academia seminars. Attending seminars on subjects/topics relevant to our curriculum conducted by other organizations 	 Conduct minimum fourguest lectures annually. Conduct minimum four Industry- Academia seminars. Attending at least 5 seminars on relevant subjects.
9	DET will facilitate employment opportunities and also support students to start their own ventures.		 Organizing Industry Mentor-Mentee meet Inviting Industry for campus placement. 	• 100% students of DET shall be offered an opportunity for placement.

				One in a year Industry Mentor- Mentee meet will be conducted and students will be assigned a mentor for guidance.
10	DET will facilitate good governance in discharge of responsibilities and execution of policies and programs.	• DET will be continuously engaged in developing/ reviewing processes, policies and systems to achieve prestigious accreditations from various national, international bodies and ranking bodies.	Involvement of all stake holders Students, faculty, alumni, Industry, academia and research organization to reviewprocesses, policies and systems.	Yearly review of processes, policies and systems to be conducted.

SECTION VII:

7.1Linkage of Outcomes Assessment with Strategic Planning

Provide a narrative that describes the ways in which the results from implementing your outcomes assessment plan (i.e., changes and improvements needed) are linked to the strategic planning processes of the academic business unit and the institution.

As per the university strategic planning, the placement is 100%, the institute should publish research paper regularly, the pass percentage should be 90% and above, the institute should be equipped with state of the art lab facilities. The library should have sufficient number of books and qualified experienced faculties are available in the institute. All these objective set by the university have been mapped with the outcome assessment of the institute.

Faculty of Aerospace Engineering-

- Goals set by University Planning Committee
- Objectives with high priority in strategic planning for desired outcomes

STRATEGIC PROCESS OF CONTINUOUS IMPROVEMENTS

Student Feedback

Action Plan



8. Appendices : Formats of Assessment Tools

Rubrics of Foreign Business Language for Graduate Attributes No. 10 (Multicultural Understanding and Global Outlook) FOR 4 YEAR PROGRAMMES

Assessment Parameters:

- □ Language
- \Box Culture
- □ Vocabulary
- □ Use of Technology in learning of foreign language
- □ Impact of Technology in learning of foreign language

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:

- \Box Role play
- □ Exercises
- □ Class performance
- □ 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 (0)	Needs improvement (1)	Satisfactory (2)	Proficient (3)	Distinguished (4)
1	Introduction to	Student does not	Sometimes takes initiative	Is able to comprehend	Student eagerly	Student shows great
	language & Culture	understand the	& asks questions.	and utilize appropriate	participates in class.	interest in class activities
		concepts.		study material.	Asks questions and	& instantly responds with
	Greetings & Basic				speaks spontaneously.	the right answer.
	Vocabulary					
2	Description of people	Uses limited	Relies on basic vocabulary.	Utilizes old and new	Speaks clearly and	Uses variety of vocabulary
	and locations	vocabulary and	Speech is comprehensible	vocabulary. Attempts	uses idiomatic	as per the context. Has
		mispronunciations	in spite of	to use idiomatic	expressions fluently as	good command over
		impede	mispronunciation.	expressions according	per the topic.	expressions.
		comprehensibility.		to the topic.		
3	Regular & Irregular	Makes sentences which	Makes errors which may	Makes a few errors	Uses correct word	Makes error free sentences
	verbs' usage	are so brief that there is	interfere with	which do not affect the	order and article	using correct sentence
		little evidence of	comprehensibility.	overall comprehension.	adjectives. Errors do	formations.
		structure &			not hinder	
		comprehension.			comprehensibility.	
4	Describing self,	Uses very few	Uses some strategies and	Uses some strategies	Clarifies and	Is able to speak on any
	Possessions & places	approaches to initiate a	needs frequent prompting	yet requires occasional	continues	given topic using
		conversation.	to further the	prompting.	conversation using	expressions. Is also able to
			conversation.		good strategies like	comprehend other person
					intonation, self-	clearly.
					correction, and verbal	
					cues.	
5	Likes & Dislikes	Rarely uses/interprets	Sometimes uses/interprets	Frequently	Almost always uses	Has in-depth knowledge
		cultural manifestations.	cultural manifestations	uses/interprets cultural	/interprets cultural	about other countries
			when appropriate to the	manifestations when	manifestations when	culture & other
			task.	appropriate to the task.	appropriate to the	perspectives.
					task.	
6	On-going actions &	Student does not	Sometimes takes initiative	Is able to comprehend	Student eagerly	Student shows great
	plans	understand the	& asks questions.	and utilize appropriate	participates in class.	interest in class activities
		concepts.		study material.	Asks questions and	& instantly responds with
					speaks spontaneously.	the right answer.

7	Past situations	Makes sentences which	Makes errors which may	Makes a few errors	Uses correct word	Makes error free sentences
		are so brief that there is	interfere with	which do not affect the	order and article	using correct sentence
		little evidence of	comprehensibility.	overall comprehension.	adjectives. Errors do	formations.
		structure &			not hinder	
		comprehension.			comprehensibility.	
8	Expressing emotions,	Student does not	Sometimes takes initiative	Is able to comprehend	Student eagerly	Student shows great
	dialogues used at	understand the	& asks questions.	and utilize appropriate	participates in class.	interest in class activities
	public places	concepts.		study material.	Asks questions and	& instantly responds with
					speaks spontaneously.	the right answer.
9	Conversation in	Makes sentences which	Makes errors which may	Makes a few errors	Uses correct word	Makes error free sentences
	future tense	are so brief that there is	interfere with	which do not affect the	order and article	using correct sentence
		little evidence of	comprehensibility.	overall comprehension.	adjectives. Errors do	formations.
		structure &			not hinder	
		comprehension.			comprehensibility.	
10	Informal letters &	Student does not	Sometimes takes initiative	Is able to comprehend	Student eagerly	Student shows great
	emails	understand the	& asks questions.	and utilize appropriate	participates in class.	interest in class activities
		concepts.		study material.	Asks questions and	& instantly responds with
11					speaks spontaneously.	the right answer.
11	Orders and	Makes sentences which	Makes errors which may	Makes a few errors	Uses correct word	Makes error free sentences
	Instructions	are so brief that there is	interfere with	which do not affect the	order and article	using correct sentence
		little evidence of	comprehensibility.	overall comprehension.	adjectives. Errors do	formations.
		structure &			not ninder	
10	Dogwoot and Enguing	Comprehension.	Comptimes tales initiative	Is able to communicate d	Comprehensibility.	Student cherus great
12	Request and Enquiry	understand the	sometimes takes mitiative	and utilize appropriate	participates in class	interest in class activities
		concepts	& asks questions.	study material	Asks questions and	fr instantly responds with
		concepts.		study material.	speaks spontaneously	the right answer
13	Telephonic	Makes sentences which	Makes errors which may	Makes a few errors	Uses correct word	Makes error free sentences
	Conversations	are so brief that there is	interfere with	which do not affect the	order and article	using correct sentence
		little evidence of	comprehensibility.	overall comprehension.	adjectives. Errors do	formations.
		structure &	I I I I I I I I I I I I I I I I I I I	r i r i r i i i i i i i i i i i i i i i	not hinder	
		comprehension.			comprehensibility.	
14	Conversation &	Student does not	Sometimes takes initiative	Is able to comprehend	Student eagerly	Student shows great
	describing past	understand the	& asks questions.	and utilize appropriate	participates in class.	interest in class activities
	events.	concepts.	_	study material.	Asks questions and	& instantly responds with
		_		-	speaks spontaneously.	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.
17	Use of Technology in learning of foreign language	Able to define use of technology in foreign language	Able to describe use of technology in foreign language	Able to apply use of technology in foreign language	Able to examine use of technology in foreign language	Able to measure technology in foreign language
18	Impact of Technology in learning of foreign language	Able to define impact of technology in foreign language	Able to describe impact of technology in foreign language	Able to apply impact of technology in foreign language	Able to examine impact of technology in foreign language	Able to create impact of technology in foreign language

Rubrics of Foreign Business Language for Graduate Attributes No. 10 (Multicultural Understanding and Global Outlook)
For 2 YEARS PG PROGRAMMES

Assessment Parameters:

- □ Language
- □ *Culture*
- □ Vocabulary
- □ Use of Technology in learning of foreign language
- □ Impact of Technology in learning of foreign language

SCORING:

- □ If the student's performance is **basic** on a criterion, then he scores 1
- □ If the student's performance is **needs improvement** on a criterion, then he scores 2
- □ If the student's performance is **satisfactory** on a criterion, then he scores 3
- □ If the student's performance is **proficient** on a criterion, then he scores 4
- □ If the student's performance is **distinguished** on a criterion, then he scores 5

TOOLS USED FOR ASSESSMENT:

- □ Role play
- \Box 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

S. No	Assessment Parameters/ Criteria/descript or	Basic (1)	Needs improvement (2)	Satisfactory (3)	Proficient (4)	Distinguished (5)	Score
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 mispronunciation s impede comprehensibilit y.	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 comprehensibil ity.	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 comprehensibil ity.	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	Use of Technology in learning of foreign language	Able to define use of technology in foreign language	Able to describe use of technology in foreign language	Able to apply use of technology in foreign language	Able to examine use of technology in foreign language	Able to measure technology in foreign language	

10	Impact of	Able to define	Able to	Able to apply	Able to	Able to create	
	Technology in	impact of	describe	impact of	examine	impact of	
	learning of	technology in	impact of	technology in	impact of	technology in	
	foreign	foreign	technology in	foreign	technology	foreign	
	language	language	foreign	language	in foreign	language	
	lunguage		language		language		

Outcome Attainment Rubric (OAR) :GA 12

<u>Rubric for assessment of Graduate attribute Social and emotional Skills</u></u> <u>Courses/Activities Mapped for Assessment of Graduate Attribute</u>

S.NO	Course Code	Course Title
1	BS 105	Individual Excellence & Social Dynamics
2	BS207	Self-Reliance & Socialization

ASSESSMENT PARAMETERS:

- **1.** Emotional Competence
 - a. self-reflection
 - b. emotional intelligence
 - c. empathy
- 2. Social Competence
 - a. social initiative
 - b. Social Skills/Relationship Skills

TOOLS USED FOR ASSESSMENT:

a. Learning Articulation Portfolio (LAP) b.Psychometric assessment

COMPOSITION OF ASSESSMENT BOARD

- Behavioral Science Faculty
- Program Leader/ Program Co-coordinator
- Member of Corporate Resource Centre

SCORE SHEET: INDIVIDUAL

If the studer	Outcome Attainment Levels	
Score	Percentage	
<=19	50 and below	Not Attained
20-27	51-70	Partially Attained
28-31	71-85	Fairly Attained
34-40	86 and above	Fully Attained

SCORE SHEET: PROGRAMME/ BATCH

Outcome Attainment Levels	Percentage of Students
Not Attained	
Partially Attained	
Fairly Attained	
Fully Attained	

	UG programmes								
NAME			Enrollment Nu	umber		_ Program			
S.NO	Components	Broad Parameter	Assessment parameter/ Criteria	Unsatisfactory (0)	Needs Improvement (1)	Satisfactory (2)	Proficient (3)	Distinguished (4)	Score
1	Emotional Component	Self- Awareness	Able to Understand Self with reference to strength and Weakness	The individual does not reflect the conceptual understanding of self with reference to strength and Weakness	The individual expresses the conceptual understanding of self with reference to strength and Weakness	The individual need to display the conceptual understanding of self with reference to strength and Weakness	The individual need to explain the conceptual understanding of self with reference to strength and Weakness	The individual reflects the conceptual understanding of self with reference to strength and Weakness	
2			right attitude in challenging situations	did not reflect right attitude in challenging situations	need to highlight the right attitude in challenging situations	describe implement the right attitude in challenging situations	integrates and explain the right attitude in challenging situations	reflects right attitude in challenging situations	
3		Functional	Able to regulate their own behaviour in adverse situations	The individual is not able to regulate their own behaviour in adverse situations	The individual memorizes/relates their own behaviour in adverse situations	The individual articulates their own behaviour in adverse situations	The individual organises their own behaviour in adverse situations	The individual assess their own behaviour in adverse situations	
4		Emotional Intelligence	Able to analyse and apply their feelings in an appropriate manner to facilitate learning and achieving goals	The individual did not analyse and apply their feelings in an appropriate manner to facilitate learning and achieving goals.	The individual need to express their feelings in an appropriate manner to facilitate learning and achieving goals	The individual judge and display their feelings in an appropriate manner to facilitate learning and achieving goals	The individual explain and categories their feelings in an appropriate manner to facilitate learning and achieving goals.	The individual validates their feelings in an appropriate manner to facilitate learning and achieving goals	
5		Empathy	Able to understand	The individual did not	The individual need to define	The individual determines	The individual correlates	The individual adapt the	

			emotional	understand	emotional cues	emotional	emotional cues	emotional	
			cues from	emotional cues	from others and	cues from	from others and	cues from	
			others and	from others	acknowledges	others and	acknowledges	others and	
			acknowledges	and	them	acknowledges	them	acknowledges	
			them	acknowledges		them		them	
				them					
6			Able to	The individual	The individual	The individual	The individual	The individual	
			demonstrate	did not	need to annotate	articulate	correlate to	adapt to	
			respect and	demonstrate	respect and relate	respect and	respect and	respect and	
			relate well to	respect and	well to people	relate well to	relate well to	relate well to	
			people from	relate well to	from various	people from	people from	people from	
			various	people from	background	various	various	various	
			background	various		background	background	background	
			-	background			-	-	
7			Able to	The individual	The individual	The individual	The individual	The individual	
			Understand	does not	need to relate	display social	illustrate social	reflecting	
			social and	understand	social and ethical	and ethical	and ethical	social and	
			ethical norms	social and	norms for	norms for	norms for	ethical norms	
			for effective	ethical norms	effective	effective	effective	for effective	
	Social		impression	for effective	impression	impression	impression	impression	
	Component		management	impression	management	management	management	management	
	-			management					
8			Able to	The individual	The individual	The individual	The individual	The individual	
			connect with	could not	need to relates	display and	correlates and	collaborates	
			others and	connect with	and connect with	connect with	connect with	and connect	
			exert social	others and	others and exert	others and	others and exert	with others	
			influence	exert social	social influence	exert social	social influence	and exert	
		Social		influence		influence		social	
		initiative						influence	
9			Able to	The individual	The individual	The individual	The individual	The individual	
			recognize	does not	identify	determine	structure the	adapt to the	
			environmental	recognize	environmental	environmental	environmental	environmental	
			nuances and	environmental	nuances and	nuances and	nuances and	nuances and	
			adapt himself	nuances and	adapt himself	adapt himself	adapt himself	manage	
			accordingly	adapt	accordingly	accordingly	accordingly	himself	
				themselves				accordingly	
				accordingly					
10		Social Skills/	Able to	The individual	The individual	The individual	The individual	The individual	
		Relationship	demonstrate	is not able to	need to	displays	structure	role play	
		Skills	appropriate	demonstrate	memorize	appropriate	appropriate	appropriate	

	social skills for	appropriate	appropriate social	social skills for	social skills for	social skills for	
	managing	social skills for	skills for managing	managing	managing	managing	
	healthy	managing	healthy	healthy	healthy	healthy	
	relationship	healthy	relationship	relationship	relationship	relationship	
		relationship					

Outcome Attainment Rubric (OAR):GA 9 (PG)

Rubric for Assessment of Graduate attribute Leadership & Teamwork Course /Activities Mapped for Assessment of Graduate Attribute

S.NO	Course Code	Course Title
1	BS 605	Cognitive Analytics & Social Skills for Professional Development

ASSESSMENT PARAMETERS:

- i. Leadership Style
- ii. Conflict handling.
- iii. Problem Solving & Decision making
- iv. Stress and Resilience
- v. Team skills

TOOLS USED FOR ASSESSMENT:

- i. Learning Articulation Portfolio (LAP)
- ii. Psychometric assessment

COMPOSITION OF ASSESSMENT BOARD

- i. Behavioral Science Faculty
- ii. Program Leader/ Program Co-coordinator
- iii. Member of Corporate Resource Centre

SCORE SHEET: INDIVIDUAL

If the student	Outcome Attainment Levels	
Score	Percentage	
<=19	50% and below	Not Attained
20-27	51-70%	Partially Attained
28-31	71-85%	Fairly Attained
34-40	86% and above	Fully Attained

SCORE SHEET: PROGRAMME/ BATCH

Outcome Attainment Levels	Percentage of Students
Not Attained	
Partially Attained	
Fairly Attained	
Fully Attained	

S.NO	Component	Broad Parameters	Assessment parameter/Criteria	Unsatisfactory (0)	Needs Improvement (1)	Satisfactory (2)	Proficient (3)	Distinguished (4)	Score
1		Leadership	Able to apply the learning of leadership concept in diverse situations	The individual could not apply the learning of leadership concept in diverse situations	The individual need to relate the learning of leadership concept in diverse situations	The individual apply the learning of leadership concept in diverse situations	The individual adapts to the learning of leadership concept in diverse situations	The individual reflect the learning of leadership concept in diverse situations	
2		Style	Able to demonstrate his own style of leadership matching the requirement of Industry 4.0	The individual could not demonstrate his own style of leadership matching the requirement of Industry 4.0	The individual need to interpret his own style of leadership matching the requirement of Industry 4.0	The individual display his own style of leadership matching the requirement of Industry 4.0	The individual corelate his own style of leadership matching the requirement of Industry 4.0	The individual adapt his own style of leadership matching the requirement of Industry 4.0	
3	Leadership and Team Skills	Conflict	Able to demonstrate effective communication skills in handling conflicts	The individual does not demonstrate effective communication skills in handling conflicts	The individual articulates effective communication skills in handling conflicts	The individual evaluates effective communication skills in handling conflicts	The individual chooses effective communication skills in handling conflicts	The individual adapt effective communication skills in handling conflicts	
4		Handling	Able to apply negotiation tactics for personal and professional achievements	The individual is not able to apply negotiation tactics for personal and professional achievements	The individual illustrates negotiation tactics for personal and professional achievements	The individual display right negotiation tactics for personal and professional achievements	The individual integrate right negotiation tactics for personal and professional achievements	The individual reflect right negotiation tactics for personal and professional achievements	
5		Problem solving and Decision making	Able to demonstrate critical thinking skills in problem solving	The individual does not demonstrate critical thinking skills in	The individual articulates critical thinking skills in problem solving	The individual display critical thinking skills in problem solving	The individual categorise critical skills thinking required in	The individual adapt to critical thinking skills required	

									I
				problem			problem	in problem	
				solving			solving	solving	
			Able to analyse	The individual	The individual	The individual	The individual	The individual	
			effective solution	does not	need to identify	examine effective	organise	review	
6			to various	analyse	effective	solution to various	effective	effective	
6			problems	effective	solution to	problems	solution to	solution to	
				solution to	various		various	various	
				various	problems		problems	problems	
				problems					
			Understanding	The individual	The individual	The individual	The individual	The individual	
			resilience for	does not	need to define	display the	integrate the	reflect the	
_			overall well-being	exhibit the	Resilience	understanding of	understanding	understanding	
7			0	understanding		Resilience	of Resilience	of Resilience	
				of Resilience					
		Stress and							
		Resilience	Able to	The individual	The individual	The individual	The individual	The individual	
			demonstrate	was not able to	need to define	display effective	explain	manage stress	
8			effective stress	demonstrate	the concept of	stress management	effective stress	effectively	
			management	effective stress	effective stress		management	0000	
			management	management	management		management		
	-		Able to relate with	The individual	The individual	The individual	The individual	The individual	
			team members for	does not relate	need to relates	integrate with	annraise team	collaborate	
		Toom Skills	identifying higher	with team	with team	team members for	members for	with team	
٩		Team Skins	order skills	members for	members for	identifying higher	identifying	members for	
5			order skins	identifying	identifying	order skills	higher order	identifying	
				higher order	higher order	order skins	ckille	higher order	
				ckille	ckille		56115	ckille	
			Able to integrate		The individual	The individual	The individual		
			team members in	doos not	ne inuiviuudi	integrate team		facilitate team	
			ways that facilitate	integrate team		mombors in wave	toom mombors	mombars for	
10			their contribution	mombors in	associate team	that facilitate their	in ways that	maximize	
10				members in	members in	that facilitate their	in ways that	maximize	
				ways that	ways that	contribution	racilitate their	contribution	
				facilitate their	facilitate their		contribution		
				contribution	contribution				1

RUBRICS FOR ASSESSMENT OF COMMUNICATION SKILLS AND LEADERSHIP & TEAMWORK

COURSES/ACTIVITIES MAPPED FOR ASSESSMENT OF GRADUATE ATTRIBUTE

BC109: Communication Skills-I, BC206: Communication Skills-II BC105: Technical Communication-I BC106: Technical Communication-II

ASSESSMENT PARAMETERS:

- i. **Oral Communication**: Thematic Unity in ideas, Logic and dialogue, Research/ Information/ Investigation/Evidence, Frame of Reference & Audience Analysis, Effectiveness in Verbal and Nonverbal Delivery, Persuasion, Multicultural Competence
- ii. Written Communication: Coherence, Genre and Disciplinary Conventions, Research/ Information/ Investigation/Evidence, Frame of Reference & Audience Analysis, Syntax & Mechanics
- iii. Interpersonal Communication: Leadership Communication, Teamwork and Positive Relationships, Conflict Resolution for Team Effectiveness

TOOLS USED FOR ASSESSMENT:

- i. Major Project Report/Dissertation
- ii. Case Study Analysis
- iii. Presentations
- iv. Viva-voce

COMPOSITION OF ASSESSMENT BOARD

- i. Program Leader/ Program Coordinator
- ii. Communication Skills Faculty
- iii. Core Course Faculty

SCORE SHEET: INDIVIDUAL

If the student sco	ores between	Outcome Attainment Levels
Scores Percentage		
0-24	0-40%	Not Achieved/Attained
25-37	41-60%	Partly Achieved/Attained
25 - 48	61-80%	Fairly Achieved/Attained

49 - 60	$\geq 80\%$	Fully Achieved/Attained

TARGET: PROGRAMME/ BATCH

Outcome Attainment Levels	Percentage of Students
Not Achieved/Attained	<u>≤5%</u>
Partly Achieved/Attained	15%
Fairly Achieved/Attained	30%
Fully Achieved/Attained	50%

SCORE SHEET: PROGRAMME/ BATCH

Outcome Attainment Levels	Percentage of Students
Not Achieved/Attained	
Partly Achieved/Attained	
Fairly Achieved/Attained	
Fully Achieved/Attained	

	S	Assessment Parameter	Student Learning Outcomes						
	ent							e	
GA	compon		Unsatisfactory (0)	Needs Improvement (1)	Satisfactory (2)	Proficient (3)	Distinguished (4)		
tion		Thematic Unity in	Unable to	Explains the	Correlates the	The ideas support	Composes the		
	•	ideas	express the	ideas, but the	idea in a manner	the theme, and	oral message		
Communica	Oral		ideas in an order that suits the purpose of communication	thematic coherence is missing.	that express the meaning.	the content is produced keeping the purpose in focus.	with thematic idea and content is captivating.		

Logic and dialogue	Unable to develop the arguments in a logical manner.	Develops the arguments in a logical manner.	Explains the arguments in a logical manner with clarity.	Chooses an order of ideas that suits the purpose and provides necessary explanations.	Constructs the dialogue in an order that provides explanations and facilitates	
Research/ Information/ Investigation/Evidenc e	Exhibits major gaps in information or analysis of facts and evidence.	Research the topic and provides the evidence with visible gaps.	Develops the ideas with relevant fact and information from readily available sources.	Selects sufficient and relevant content from credible and incredible sources.	Proposes apt and latest relevant content from credible sources in presentation.	
Frame of Reference & Audience Analysis	Unable to understand frame of reference and needs of the audience.	Construct the content that shows an awareness of audience's needs and interest.	Correlates the content with the audience's needs and interest with visible gaps.	Chooses the content keeping the audience's needs and interest in mind.	Integrates the audience's need and interests in content selection. Projects the ideas from audience's frame of reference.	
Effectiveness in Verbal and Nonverbal Delivery	Exhibits no harmony between verbal and nonverbal communication	Expresses ideas with limited vocabulary and displays minimal nonverbal communication.	Chooses appropriate language and there are visible contradictions between verbal and nonverbal communication.	Focusses on making the presentation interesting and there is visible harmony between verbal and nonverbal communication.	Uses the language to make ideas compelling and nonverbal communication facilitates the verbal communication.	
Persuasion	Unable to express ideas in a persuasive manner.	Express ideas using powerless language and minimal use of evidence to persuade others.	Explain ideas using a mix of powerful and powerless language and	Persuades audience by using powerful language and uses various	Facilitates audience's persuasion by using powerful language and uses appropriate	

				uses evidence to persuade others.	persuasive techniques.	persuasive techniques.	
	Multicultural Competence	Unable to understand the nuances of cultural adjustment and the sensitivity attached to it.	Demonstrates a little understanding in the basic nuances of cultural adjustment.	Adept in cultural sensitivity and understands biases related to gender, language, ethnicity, and culture.	Displays proficiency in cultural sensitivity and understanding of biases related to gender, language, ethnicity, and culture.	Composes oral messages and presentations with bias free language and reflect thorough cultural sensitivity.	
itten Communication	Coherence	Clarity and organization of ideas and purpose is not visible.	Expresses ideas with Clarity but ideas are not organized to emphasize the topic. Supporting details and evidence are missing.	Explains ideas clearly and organizes the ideas according to topic and purpose. Visible gaps in supporting details and evidence.	Organizes the ideas and supporting details according to the topic and purpose. Emphasizes the arguments with supporting details and evidence.	Creates reports stating the purpose clearly, organizes the ideas according to the topic, purpose, and audience's needs. Reinforces the arguments with supporting details and evidence.	
Wri	Genre and Disciplinary Conventions	Unable to follow the genre and discipline conventions in reports.	Exhibits some knowledge of different genre and discipline conventions in reports.	Follows the conventions of genre and discipline in report writing.	Considers the content organization, genre and discipline and plan accordingly to write reports.	Creates reports with organized content, which is clear, consistent, and according to the conventions of genre and discipline.	

		Research/	Exhibits major	Research the	Develops the	Selects sufficient	Creates reports	
		Information//Evidenc	gaps in	topic and	ideas with	and relevant	Proposes apt and	
		e	information or	provides the	relevant fact and	content from	latest relevant	
			analysis of	evidence with	information from	credible and	content from	
			facts and	visible gaps in	readily available	incredible sources	credible sources	
			evidence in	reports.	sources while	for writing	in presentation.	
			reports.		writing reports.	reports.		
		Audience Analysis &	Unable to	Construct the	Correlates the	Chooses the	Creates reports	
		Frame of Reference	understand	structure of	content with the	content of report	that integrates	
			frame of	report that	audience's needs	keeping the	the audience's	
			reference and	shows an	and interest with	audience's needs	need and	
			needs of the	awareness of	visible gaps in	and interest in	interests in	
			audience in	purpose,	reports.	mind.	content selection.	
			writing reports.	audience's			Projects the ideas	
				needs and			from audience's	
				interest.			frame of	
							reference.	
		Syntax & Mechanics	Unable to	Reports contain	Exhibits errors in	Selects syntax	Creates reports	
			follow the	major syntax	syntax and	and mechanics	that are clear and	
			wring	errors and gaps	mechanics	for report writing	fluid. Skillful	
			mechanics and	in writing	which, at times,	that conveys clear	control of syntax	
			correct syntax	mechanics.	impedes the	meaning to the	and mechanics	
			in reports.		clarity of idea	readers. There are	that	
					and meaning in	few language	communicates	
					reports	errors.	clear meaning to	
							the readers.	
		Leadership	Expresses idea	Supports a	Supports a	Creates a	Creates a	
		Communication	without	constructive	constructive	constructive	constructive	
s,	nal		creating a	climate by doing	climate by doing	climate by doing	climate by doing	
hij	rso.		constructive	any one of the	any two of the	any three of the	all the follow	
lers	lad.		climate	following:	following:	following:	tollowing:	
ead	nter			• Treats others	• Treats others	• Treats others	• Treats others	
J,	In (respectfully by	respectfully by	respectfully by	respectfully by	
				being polite	being polite	being polite	being polite	
				and	and	and	and	

		constructive in communication	constructive in communication	constructive in communication	constructive in communication	
		 Uses positive vocal or written tone, facial expressions, and/or body language to convey a positive attitude. Motivates others by expressions confidence about the importance of the task and the ability of others to accomplish it. Aids and/or encouragement to others 	 Uses positive vocal or written tone, facial expressions, and/or body language to convey a positive attitude. Motives others by expressing confidence of the task and the ability of others to accomplish it. Aids and/or encouragement to others. 	 Uses positive vocal or written tone, facial expressions, and/or body language to convey a positive attitude. Motives others by expressing confidence of the task and the ability of others to accomplish it. Aids and/or encouragement to others. 	 Uses positive vocal or written tone, facial expressions, and/or body language to convey a positive attitude. Motives others by expressing confidence of the task and the ability of others to accomplish it. Aids and/or encouragement to others. 	
Teamwork and	Avoids	Engages in	Engages in	Engages in	Expresses ideas	
Positive Relationships	conversations	conversation by	conversation in	conversation in	in a way that	
	and unable to	taking wrong	ways that	ways that	contributes to	
	interrupts	listening to	contributions by	contributions by	building upon	
	others while	others without	restating the	constructively	ideas or	
	communicating	interrupting.	views of other	building upon or	synthesizing the	
			and/or asking	synthesizing the	contributions of	
			question for	contributions of	others as well as	
			clarification.	others.	noticing when	

					some is not participating and inviting them to engage.	
Conflict Resolution for Team Effectiveness	Avoids initiate communication to resolve conflicts.	Passively accepts alternate viewpoints/ ideas/opinions.	Redirects the focus of conversations toward common ground, toward task at hand (away from conflict).	Engages in conversations that identifies and acknowledges conflict and stays engaged with it to resolve conflicts.	Contributes to creating team cohesiveness and effectiveness by addressing destructive conflict directly and constructively helping to manage/resolve	

RUBRICS FOR ASSESSMENT OF COMMUNICATION SKILLS AND LEADERSHIP & TEAMWORK

COURSES/ACTIVITIES MAPPED FOR ASSESSMENT OF GRADUATE ATTRIBUTE

BC613: Professional & Business Communication Skills

ASSESSMENT PARAMETERS:

- iv. **Oral Communication**: Thematic Unity in ideas, Logic and dialogue, Research/ Information/ Investigation/Evidence, Frame of Reference & Audience Analysis, Effectiveness in Verbal and Nonverbal Delivery, Persuasion, Multicultural Competence
- v. Written Communication: Coherence, Genre and Disciplinary Conventions, Research/ Information/ Investigation/Evidence, Frame of Reference & Audience Analysis, Syntax & Mechanics
- vi. **Interpersonal Communication**: Leadership Communication, Teamwork and Positive Relationships, Conflict Resolution for Team Effectiveness

TOOLS USED FOR ASSESSMENT:

- v. Major Project Report/Dissertation
- vi. Case Study Analysis
- vii. Presentations
- viii. Viva-voce

COMPOSITION OF ASSESSMENT BOARD

- iv. Program Leader/ Program Coordinator
- v. Communication Skills Faculty
- vi. Core Course Faculty

SCORE SHEET: INDIVIDUAL

If the student scores between		Outcome Attainment Levels	
Scores Percentage			
0 – 24	0-40%	Not Achieved	
25–37	41-60%	Partly Achieved	
25 - 48	61-80%	Fairly Achieved	
49 - 60	$\geq 80\%$	Fully Achieved	

TARGET: PROGRAMME/ BATCH

Outcome Attainment Levels	Percentage of Students		
Not Achieved	≤5%		
Partly Achieved	15%		
Fairly Achieved	30%		
Not Achieved	50%		

SCORE SHEET: PROGRAMME/ BATCH

Outcome Attainment Levels	Percentage of Students
Not Achieved	
Partly Achieved	
Fairly Achieved	
Not Achieved	

		Assessment Parameter	Level of Student Learning Outcomes					
			Unsatisfactory (0)	Needs Improvement (1)	Satisfactory (2)	Proficient (3)	Distinguished (4)	
mmunication Communication	n	Thematic Unity in ideas	Unable to express the ideas in an order that suits the purpose of communication.	Explains the ideas, but the thematic unity is missing.	Correlates the idea to express the meaning.	Chooses the ideas support the theme, and the content is audience focused.	Composes the oral message with thematic ideas and content is captivating.	
	Communicatio	Logic and dialogue	Unable to develop the arguments in a logical manner.	Develops the arguments in a logical order.	Organizes the arguments in a logical manner to gain clarity.	Chooses an order of ideas that suits the purpose and provides explanations to emphasize.	Constructs the arguments with supporting information that facilitates understanding.	
C	Oral	Research/ Information/ Investigation/ Evidence	Content developed lacks relevant information or analysis of facts and evidence.	Content has visible gaps in relevant information and analysis of facts and evidence.	Illustrates the ideas with relevant fact and information from readily available sources.	Supports the purpose with sufficient and relevant information from credible and incredible sources.	Creates the content using apt and latest relevant information from the credible sources for presentation.	

		Unable to	Develops the content	Correlates the	Chooses the content	Integrates the audience's	
	Frame of	understand frame of	keeping the	content with the	focused on audience's	need and interests in	
	Reference &	reference and needs	audience's needs and	audience's needs and	needs and interest.	content selection.	
	Audience	of the audience.	interest in mind but	interest with few		Projects the ideas from	
	Analysis		content has visible	minor gaps.		audience's frame of	
			gaps.			reference.	
		Selection of words is	Explains ideas with	Chooses appropriate	Selection of words are	Uses the language to	
	T 66	inappropriate for the	limited vocabulary	language and tone;	apt to the topic and	make ideas compelling	
	Effectiveness	audience and topic.	and displays	uses nonverbal	audience. Nonverbal	and nonverbal	
	in verbal and	Verbal and	minimal nonverbal	communication to	communication	communication	
	Nonverbal	nonverbal	communication.	emphasize the ideas.	supports the verbal	facilitates the verbal	
	Denvery	communication		1	communication.	communication.	
		contradicts.					
	Persuasion	Unable to express	Explain ideas using	Chooses powerful	Selects appropriate	Facilitates audience's	
		ideas in a persuasive	powerless language	and powerless	powerful language	persuasion by using	
		manner.	and minimal use of	language to express	and persuasive	powerful language and	
			evidence to persuade	ideas and uses	techniques to present	uses appropriate	
			others.	evidence to persuade	the ideas.	persuasive techniques.	
				others.			
	Multicultural	Unable to grasp the	Shows a	Recognizes and	Shows cultural	Presents oral messages	
	Competence	subtleties of cultural	fundamental	address biases based	sensitivity and	and presentations free of	
		adjustment and the	awareness of cultural	on gender, ethnicity,	understanding of	bias and cultural	
		sensitivity that	differences and how	language, and	racial, gender, and	sensitivities that are	
		comes with it.	to adapt to them.	culture while	ethnic biases, using	thoroughly researched.	
				communicating.	language free of these		
					preconceptions.		
п		Lack of clarity and	Thoughts are	Clearly explains	Organizes the ideas	Produces reports in	
tio		order when it comes	expressed clearly,	ideas and organizes	and supporting details	which the purpose is	
iica		to concepts and	but they are not	them according to	in accordance with the	stated in detail, and the	
un	Thematic	goals.	arranged in a way	the topic and the	subject matter and	concepts are arranged in	
um	Unity and		that emphasizes the	objective of the	goal of the document.	accordance with the	
Co	Clarity of		main point. There	presentation. There	The arguments are	subject matter and the	
en	Purpose		are no supporting	are obvious	bolstered by	audience's requirements.	
ritt			tacts or evidence.	omissions and	supporting evidence	Supports the claims with	
Ň				inconsistencies in	and specifics.	facts and examples.	
-			1	the decourse and stice	1		

		Genre and Disciplinary Conventions	Inability to adhere to the conventions of a particular genre or discipline in a report.	Shows some understanding of the conventions of different genres and disciplines in reports.	In report writing, adheres to the conventions of the genre and the field.	Consider the structure of the report, the genre, and the discipline when preparing to write it.	Creates reports in a way that conforms to the traditions of their respective fields of study and genres.	
		Research/ Information/ Investigation/ Evidence	Doesn't provide a complete picture or analysis of the facts and evidence.	Researches the topic and present the information in a way that makes it clear that there are still holes in the story.	Includes essential facts and information from sources that are easily accessible in reports.	Writes reports by gathering information from a variety of reliable and credible sources and then synthesizing it.	Produces reports by gathering information from reliable sources and presenting it in a clear and concise manner.	
		Frame of Reference & Audience Analysis	Unable to keep in mind the intended audience's needs and context.	Create a report that exhibits a thorough knowledge of the reader's objectives, target audience, and areas of interest.	Chooses the report's content, keeping the audience's demands and interests in mind.	The selection of material is based on the demands and interests of a certain audience. From the standpoint of the audience, the thoughts are given here.	The content is tailored to the needs and interests of the target audience, and any inconsistencies in the data are readily apparent.	
		Syntax & Mechanics	Failure to understand the mechanics and proper syntax of reports.	Inaccuracies in writing mechanics and syntax can be found in the reports.	Errors in grammar and mechanics can obscure the meaning of reports at times.	Selects a style of writing that transmits the intended message to the reader in a clear manner. There aren't many grammatical mistakes.	Creates reports that are crystal-clear and flowing in their presentation. The ability to express one's thoughts in a clear and concise manner.	
Leadership &	Interpersonal	Leadership Communicati on	Expresses idea without creating a constructive climate	Creates a constructive climate by doing any one of the following: • Respects people by being polite and productive in their conversation.	Creates a constructive climate by doing any two of the following: • Respects people by being polite and productive in their conversation.	 Creates a constructive climate by doing any three of the following: Respects people by being polite and productive in their conversation. Uses a positive voice or body 	 Creates a constructive climate by doing all the follow following: Respects people by being polite and productive in their conversation. 	

		 Uses a positive voice or body language to show an optimistic outlook. Show confidence in other's abilities and in the importance of the work to inspire and motivate others. Assists and/or encourages others. 	 Uses a positive voice or body language to show an optimistic outlook. Show confidence in other's abilities and in the importance of the work to inspire and motivate others. Assists and/or encourages others. 	 language to show an optimistic outlook. Show confidence in other's abilities and in the importance of the work to inspire and motivate others. Assists and/or encourages others. 	 Uses a positive voice or body language to show an optimistic outlook. Show confidence in other's abilities and in the importance of the work to inspire and motivate others. Assists and/or encourages others.
Teamwork and Positive Relationships	Avoids conversations and unable to take turns and interrupts others while communicating.	Engages in discussion by taking the incorrect turns and listening to others without interrupting them.	Facilitate others' contributions by reiterating their points of view and/or asking questions for clarity throughout a conversation.	Contributes by building on or synthesizing the ideas and contributions of others during a discourse.	Builds on others' contributions, synthesizing their views, and inviting those who aren't participating are all ways in which this person expresses their ideas.
Conflict Resolution for Team Effectiveness	Avoids initiate communication to resolve conflicts.	Passively accepts others' viewpoints/ ideas/opinions.	Involves shifting the conversation's focus to the common ground or the work at hand (away from conflict).	Engages in discussions that identify and address conflict and remain involved in conflict resolution.	Directly and constructively addresses damaging conflict to help manage and resolve problems, which contributes to the unity and effectiveness of the team

9. Domain Leadership & Assessment Team

Faculty/Domian Name								
Leadership Team								
Dean/Domain								
Head:		1	1	1		I		
S. No.	Institution Name	Head of the Institution	Programme Title	Programme Leaders	PROAC (3-5 Members)	Role		
1	Amity	Dr. Sanjay	B.Tech(AE)	Dr. B K	Mr. Md	Chair		
	Institute of	Singh	M.Tech(AE)	Agarwal	Saquib Reza			
	Aerospace				Dr. R K	Member		
	Engineering				Saluja			
					Mr. Vivek	Member		
					Kumar			