

AMITY UNIVERSITY

— UTTAR PRADESH —

Outcome Assessment Plan

Domain: Faculty of Agriculture Sciences

Date: 26-06-22

Table of Contents

#	TITLE	PAGE NO.
1.	Introduction to Faculty/Domain	4
2	Introduction of Outcome Assessment Plan	6-7
3	Domain Mission and Broad-Based Goals	8-9
	3.1 Mission Statement	
	3.2 Broad-Based Educational Goals	
	3.3 Broad-Based Operational Goals	
4	Institution Mission and Broad-Based Goals	10-13
	4.1 Mission Statement	
	4.2 Broad-Based Educational Goals	
	4.3 Broad-Based Operational Goals	
5	Programme Mission, PEO's, PLO's and Assessment Plan for each Programme	
	5.1 Programme B.Sc.(H) Agriculture/ Masters Program	
	5.1.1 Programme Mission	
	5.1.2 Programme Educational Objectives	
	5.1.3 Programme Operational Objectives	
	5.1.4 Programme Learning Outcomes	
	5.1.5 Programme Operational Outcomes	
	5.1.6 PEOs – PLOs Mapping	
6	Domain Operational Outcomes & Operational Outcome Assessment Plan	
7	Linkage of Outcomes Assessment with Strategic Planning	

SECTION I:

Introduction to Faculty/Domain

With the globalization of trade and economy, Indian agriculture is facing a number of challenges. According to CIA Facebook sector wise Indian GDP composition in 2018 are as follows: Agriculture (17.9%), Industry (24.2%) and Services (57.9%). Total production of agriculture sector is \$366.92 billion. India is 2nd larger producer of agriculture product. India accounts for 7.68 percent of total global agricultural output. The agriculture in many areas is becoming non-remunerative and farmers are losing interest in agriculture. With the opening of world economy, our farmers have to be globally competitive in terms of quality and cost of agriculture produce. The sustainability and profitability of agriculture continues to be our major concern. This puts enormous responsibility on Agriculture graduates passing out from the system can meet the global challenges of 21st century ahead of them.

Agricultural based education system not only improve of Technical skills but also enable students to develop skills that help them to turn out as excellent future managers. Agricultural Education is the teaching of agriculture, natural resources, and land management through hands on experience and guidance to prepare students for entry level jobs or to further education to prepare them for advanced agricultural jobs. The Agriculture Industry is taking an exciting leap forward and its technological transformations have brought India to the cusp of a big digital revolution: 'Industry 4.0.' The fast-paced innovation is changing business today. The various stages like identifying problems and opportunities, feasibility analysis, running pilot projects, scaling, need to be expedited within Industry 4.0 expectations.

The Domain of Agriculture Science has adopted the Agriculture 4.0 as it is transforming the business ecosystems and opening up new room in the value chain and development of new revenue modes.

Domain has also adopted the course to inculcate the disruptive skills and understand how the technologies are being adopted by the organization or industry. Disruptive technology significantly alters the way businesses or entire industries operate. It often forces companies to change the way they approach their business for fear of losing market share or becoming irrelevant. Disruptive Technologies are the ultimate challenge in current business environment. The applied course will review in detail the basis of Disruptive Technologies ie. Disruptive Innovation and how these technologies are impacting the Business.

The **Domain of Agricultural Sciences** ensures to provide ample opportunities to its students' to excel in their careers and strives to fulfill its mission

Domain of Agricultural Sciences comprises of academic and research oriented Institutions. The two academic Institutes are:

1. Amity Institute of Organic Agriculture and
2. Amity Institute of Horticulture Studies & Research

In addition, the domain also has seven research based institutes, the main ones being:

1. Amity International Centre for Post Harvest Technology & Cold Chain Management,
2. Amity Centre for Biocontrol & Plant Disease Management and
3. Amity Institute of Herbal Research & Studies.

SECTION II:

Introduction of Outcome Assessment 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 institution and programme level is aligned with the domain mission
2. **Broad Based Goals:** - The broad based are defined under the following categories:
 - 2.1 **Educational Goals:** The Educational Goals are defined at Domain, Institution and Programme level. The Educational Goals at the institution and programme level are aligned with the domain mission.
 - 2.2 **Operational Goals:** The Operational Goals are defined at Domain, Institution and Programme level. The Operational Goals at the institution and programme level are aligned with the domain mission.
3. **Outcomes:** The Outcomes are defined under the following categories:
 - 3.1 **Operational Outcomes:** The operational outcomes are defined for the domain and assessed at the domain level
 - 3.2 **Educational Goals - The** Learning outcomes are defined for each programme and each learning outcome is assessed to identify that the established learning objectives are achieved.

4. **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

5. **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.

6. **Programme Review:** Through the review of our 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 goals** are derived from and support the college mission
 - The **curriculum** is coherent, current and consistent
 - The **instruction** is effective in enabling student
 - The **resources** are adequate for the production of student learning.
 - The academic **support services** are adequate to facilitate student learning.

DETAILS OF OUTCOMES ASSESSMENT PLAN

2022-23

SECTION I:

STRATEGIC ASSESSMENT – MISSION AND BROAD-BASED GOALS /OBJECTIVES

1. STRATEGIC ASSESSMENT – MISSION AND BROAD-BASED GOALS /OBJECTIVES

1.1 Mission Statement

Mission of Domain of Agriculture Science

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

1.2 Broad-Based Goals / Objectives (PEOs)at Domain / Faculty Level

1.2.1 Bachelors Level B.Sc. (H) Programs

PEO 1	The student shall be able to acquire basic knowledge of concepts of agriculture and horticulture sector at local, national and international levels. Utilization of these acquired skills for the betterment of the farmers and community at large.
PEO 2	The student shall demonstrate ability for self-directed learning, time management and dedication to serve the community by working effectively individually as well as in teams.
PEO 3	The student shall be able to evaluate critical and intricate agricultural/horticulture related issues by using quantitative/qualitative research techniques to develop effective sustainable solutions
PEO 4	The student shall be develop and Design effective extension methods and materials targeted predominantly for easy comprehension and applicability by the farming community.
PEO 5	The student shall be able to critically think, identify, plan, develop & execute opportunities within the disciplines of Agricultural Science Domain.

PEO 6	The student shall be able to design effective ICT solutions for farming community and also able to diffuse knowledge of advancements to farmers and researchers.
PEO 7	The student shall be having a capacity for creativity and innovation, through the application of skills and knowledge in Agriculture Sector
PEO 8	The student shall be able to formulate solutions to field and scientific problems in crop production and cropping systems
PEO 9	The student shall be able to display initiative, honesty, integrity and diligence by empathizing with farmers and associated stakeholders.
PEO 10	The student shall be able to evaluate impact of globalization and liberalization on the agriculture/Horticulture sector and farmers in particular. Ability to understand technological advancements and implications and applying them for developing adaptability and managing diversity in global complex situations.
PEO 11	The student shall be able to analyze the role and impact of agriculture on society and display ethical professional behaviors in all situations
PEO 12	The student shall be able to learn to appreciate diversity and equality, and emulate social and emotional connect with other stakeholders and Agri and Horticulture Sector
PEO 13	The student shall be able to be entrepreneurial, industrious and be able to recognize opportunities; turn them into ideas for enterprises. One shall have business acumen and display basic business skills
PEO 14	The student shall be able to relate the value of linkages and networks with their importance in self-reliance and research. Linking learning to real world problems to stimulate professionalism in research.
PEO 15	The student shall be able to analyze and implement the initiative to conserve natural resources and use sustainable technologies by using knowledge and experience of their discipline

1.3 BROAD-BASED OPERATIONAL GOALS (Resources required) AT FACULTY / DOMAIN LEVEL

1.3.1 Bachelors Level	
1	AIOA intends to facilitate academically conducive environment and infrastructure to achieve excellence in teaching, learning and research.
2	AIOA will provide ample opportunities to its students to participate in curricular, co-curricular and extracurricular activities for their holistic development.
3	AIOA will facilitate environment for innovation and research excellence for the intellectual growth of faculty.

4	AIOA will inculcate core values and ethical conduct amongst students, faculty and staff.
5	AIOA will encourage cultural diversity and a sense of social and environmental responsibility.
6	AIOA will provide ample opportunities for international exposure to faculty and students.
7	AIOA will be involved in continual improvement of processes and systems and aim to attain national and international accreditations and university rankings.
8	AIOA will build a strong industry interaction by way of alumni networks and empanelment of expertise from industry.
9	AIOA will facilitate employment opportunities and also support students to start their own ventures.
10	AIOA will facilitate good governance in discharge of responsibilities and execution of policies and programs.

Section II:
Student Learning Assessment

2. STUDENT LEARNING ASSESSMENT

2.1 Bachelor's-Level Programs

Student Learning Assessment for B.Sc.(H) Agriculture

2.1.1.1 Intended Program Learning Outcomes	
PLOs	Description
PLO 1	The student shall be able to acquire basic knowledge of concepts of agriculture and horticulture sector at local, national and international levels. Utilization of these acquired skills for the betterment of the farmers and community at large.
PLO 2	The student shall demonstrate ability for self-directed learning, time management and dedication to serve the community by working effectively individually as well as in teams.
PLO 3	The student shall be able to evaluate critical and intricate agricultural/horticulture related issues by using quantitative/qualitative research techniques to develop effective sustainable solutions
PLO 4	The student shall be develop and Design effective extension methods and materials targeted predominantly for easy comprehension and applicability by the farming community.
PLO 5	The student shall be able to critically think, identify, plan, develop & execute opportunities within the disciplines of Agricultural Science Domain.
PLO 6	The student shall be able to design effective ICT solutions for farming community and also able to diffuse knowledge of advancements to farmers and researchers.
PLO 7	The student shall be having a capacity for creativity and innovation, through the application of skills and knowledge in Agriculture Sector
PLO 8	The student shall be able to formulate solutions to field and scientific problems in crop production and cropping systems
PLO 9	The student shall be able to display initiative, honesty, integrity and diligence by empathizing with farmers and associated stakeholders.
PLO 10	The student shall be able to evaluate impact of globalization and liberalization on the agriculture/Horticulture sector and farmers in particular. Ability to understand technological advancements and implications and applying them for developing adaptability and managing diversity in global complex situations.
PLO11	The student shall be able to analyze the role and impact of agriculture on society and display ethical professional behaviors in all situations
PLO 12	The student shall be able to learn to appreciate diversity and equality, and emulate social and emotional connect with other stakeholders and Agri and Horticulture Sector
PLO 13	The student shall be able to be entrepreneurial, industrious and be able to recognize opportunities; turn them into ideas for enterprises. One shall have business acumen and display basic business skills
PLO 14	The student shall be able to relate the value of linkages and networks with their importance in self-reliance and research. Linking learning to real world problems to stimulate professionalism in research.
PLO 15	The student shall be able to analyze and implement the initiative to conserve natural resources and use sustainable technologies by using knowledge and experience of their discipline

2.1.1.2. Assessment Tools for Intended Student Learning Outcomes— Direct Measures of Student Learning:	Criteria for Direct Measures:
End Semester Examinations	Performance in Examinations
Course-embedded assignments	Depth of knowledge
Comprehensive examinations	Performance and depth of knowledge
Scoring Rubrics	Grading on the basis of performance
Plagiarism check	<15% Similarity Index
Viva Voce	Performance and depth of knowledge
2.1.1.3. Assessment Tools for Intended Student Learning Outcomes— Indirect Measures of Student Learning:	Criteria for Indirect Measures:
Alumni surveys	Feedback analysis
Curriculum and Syllabus Analysis	Analysis of feedback from stakeholders

Student Learning Assessment for B.Sc.(H) Nutrition & Dietetics

2.1.2.1 Intended Program Learning Outcomes	
PLOs	Description
PLO 1	The student shall be able to acquire basic knowledge of concepts of agriculture and horticulture sector at local, national and international levels. Utilization of these acquired skills for the betterment of the farmers and community at large.
PLO 2	The student shall demonstrate ability for self-directed learning, time management and dedication to serve the community by working effectively individually as well as in teams.
PLO 3	The student shall be able to evaluate critical and intricate agricultural/horticulture related issues by using quantitative/qualitative research techniques to develop effective sustainable solutions
PLO 4	The student shall be develop and Design effective extension methods and materials targeted predominantly for easy comprehension and applicability by the farming community.
PLO 5	The student shall be able to critically think, identify, plan, develop & execute opportunities within the disciplines of Agricultural Science Domain.

PLO 6	The student shall be able to design effective ICT solutions for farming community and also able to diffuse knowledge of advancements to farmers and researchers.
PLO 7	The student shall be having a capacity for creativity and innovation, through the application of skills and knowledge in Agriculture Sector
PLO 8	The student shall be able to formulate solutions to field and scientific problems in crop production and cropping systems
PLO 9	The student shall be able to display initiative, honesty, integrity and diligence by empathizing with farmers and associated stakeholders.
PLO 10	The student shall be able to evaluate impact of globalization and liberalization on the agriculture/Horticulture sector and farmers in particular. Ability to understand technological advancements and implications and applying them for developing adaptability and managing diversity in global complex situations.
PLO11	The student shall be able to analyze the role and impact of agriculture on society and display ethical professional behaviors in all situations
PLO 12	The student shall be able to learn to appreciate diversity and equality, and emulate social and emotional connect with other stakeholders and Agri and Horticulture Sector
PLO 13	The student shall be able to be entrepreneurial, industrious and be able to recognize opportunities; turn them into ideas for enterprises. One shall have business acumen and display basic business skills
PLO 14	The student shall be able to relate the value of linkages and networks with their importance in self-reliance and research. Linking learning to real world problems to stimulate professionalism in research.
PLO 15	The student shall be able to analyze and implement the initiative to conserve natural resources and use sustainable technologies by using knowledge and experience of their discipline

2.1.2.2. Assessment Tools for Intended Student Learning Outcomes— Direct Measures of Student Learning:	Criteria for Direct Measures:
End Semester Examinations	Performance in Examinations
Course-embedded assignments	Depth of knowledge
Comprehensive examinations	Performance and depth of knowledge
Scoring Rubrics	Grading on the basis of performance
Plagiarism check	<15% Similarity Index
Viva Voce	Performance and depth of knowledge
2.1.2.3. Assessment Tools for Intended Student Learning Outcomes— Indirect Measures of Student Learning:	Criteria for Indirect Measures:
Alumni surveys	Feedback analysis
Curriculum and Syllabus Analysis	Analysis of feedback from stakeholders

2.4 Mapping of Intended Student Learning Outcomes to Broad-Based Student Learning Goal

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

Broad-Based Student Learning Goals (PEOs)	PEO 1	PEO 2	PEO 3	PEO 4	PEO 5	PEO 6	PEO 7	PEO 8	PEO 9	PEO 10	PEO 11	PEO 12	PEO 13	PEO 14	PEO 15
Intended Program Learning Outcomes (PLOs)															
BACHELOR’S/ MASTER’S LEVEL PROGRAMS															
<i>Bachelor of Science (Honors) in Agriculture</i>															
Learning Outcome 1	X		X		X		X	X		X			X		X
Learning Outcome 2		X												X	
Learning Outcome 3	X	X	X		X		X			X			X	X	X
Learning Outcome 4				X		X		X	X			X			
Learning Outcome 5	X	X	X		X		X	X		X			X	X	X
Learning Outcome 6				X		X		X	X			X			
Learning Outcome 7	X	X	X		X		X			X			X	X	X
Learning Outcome 8	X	X	X		X		X	X		X			X	X	X
Learning Outcome 9		X		X		X			X			X		X	
Learning Outcome 10		X						X				X	X	X	

Broad-Based Student Learning Goals (PEOs) Intended Program Learning Outcomes (PLOs)	PEO 1	PEO 2	PEO 3	PEO 4	PEO 5	PEO 6	PEO 7	PEO 8	PEO 9	PEO 10	PEO 11	PEO 12	PEO 13	PEO 14	PEO 15
Learning Outcome 11				X		X			X		X	X			
Learning Outcome 12				X		X			X			X			
Learning Outcome 13		X											X	X	
Learning Outcome 14	X	X	X		X		X			X			X	X	X
Learning Outcome 15	X		X		X		X			X			X		X
<i>Master of Science (Agriculture) Agronomy</i>															
Learning Outcome 1	X		X		X		X	X		X			X		X
Learning Outcome 2		X												X	
Learning Outcome 3	X	X	X		X		X			X			X	X	X
Learning Outcome 4				X		X		X	X			X			
Learning Outcome 5	X	X	X		X		X	X		X			X	X	X
Learning Outcome 6				X		X		X	X			X			
Learning Outcome 7	X	X	X		X		X			X			X	X	X
Learning Outcome 8	X	X	X		X		X	X		X			X	X	X
Learning Outcome 9		X		X		X			X			X		X	

Broad-Based Student Learning Goals (PEOs) Intended Program Learning Outcomes (PLOs)	PEO 1	PEO 2	PEO 3	PEO 4	PEO 5	PEO 6	PEO 7	PEO 8	PEO 9	PEO 10	PEO 11	PEO 12	PEO 13	PEO 14	PEO 15
Learning Outcome 10		X						X				X	X	X	
Learning Outcome 11				X		X			X		X	X			
Learning Outcome 12				X		X			X			X			
Learning Outcome 13		X											X	X	
Learning Outcome 14	X	X	X		X		X			X			X	X	X
Learning Outcome 15	X		X		X		X			X			X		X

2.5 Mapping of Direct Assessment Measures to Key Learning Outcomes:

For each bachelor's-level program identified above, the direct measures of student learning provide for the assessment of the "Key Learning Outcomes for Programs". These relationships are summarized in the measures-to-key outcomes mapping below (**Note: Put an "x" in a given cell of the table if the assessment instrument in that column measures the key learning outcome in that row.**):

2.5.1 Bachelor's/ Masters Level Programs			
Key Learning Outcomes	Direct Measures of Student Learning		
<i>Programme Name</i>	<i>End –Term Examination</i>	<i>Continuous Assessment through Class Tests / presentations etc</i>	Summer projects, summer internship and Dissertation
Bachelor of Science (Honors) Agriculture	X	X	X
Master of Science (Agri) Agronomy	X	X	X
Master of Business Administration (Agri & Food Business)	X	X	X
Master of Science (Horticulture) Post Harvest Management	X	X	X

Section III:
OPERATIONAL ASSESSMENT

3. Operational Assessment

3.1 Intended Operational Outcomes of Amity Institute of Organic Agriculture at (Bachelor's Level)	
POO 1	The programme of B.Sc.(H) Agri will facilitate academically conducive environment and infrastructure to achieve excellence in teaching & learning.
POO 2	The programme of BSc (H) Agri will provide ample opportunities to its students to participate in curricular, co-curricular and extracurricular activities for their holistic development
POO 3	The programme of BSc (H) Agri will facilitate environment for innovation and research excellence for the intellectual growth of faculty.
POO 4	The programme of BSc (H) Agri will inculcate core values and ethical conduct amongst students, faculty and staff
POO 5	The programme of BSc (H) Agri will encourage cultural diversity and a sense of social and environmental responsibility
POO 6	The programme of BSc (H) Agri will provide ample opportunities for international exposure to faculty and students
POO 7	The programme of BSc (H) Agri will be involved in continual improvement of processes and systems and aim to attain national and international accreditations and university rankings.
POO 8	The programme of BSc (H) Agri will build a strong industry interaction by way of alumni networks and empanelment of expertise from industry
POO 9	The programme of BSc (H) Agri will facilitate employment opportunities and also support students to start their own ventures
POO 10	The programme of BSc (H) Agri will facilitate good governance in discharge of responsibilities and execution of policies and programs
3.1.1 Assessment Measures for Intended Operational Outcomes:	Criteria for Operational Assessment Measures:
Curriculum/Program Reviews	Feedback Analysis
Placement records of graduates	No. of Students placed, Salary, Organization
Exit Surveys	Feedback Analysis
Student Satisfaction Surveys	Feedback Analysis
Course Evaluations	Performance

3.4 Mapping of Intended Operational Outcomes to Broad-Based Operational Goals

The broad-based operational goals identified in Section I above encompass the intended operational outcomes as articulated in this section, and are general composites or summaries of these outcomes. These relationships are summarized in the outcomes-to-goals mapping below (**Note: Put an “x” in a given cell of the table if the intended operational outcome in that row is associated with the operational goal in that column.**):

3.4.1 Amity Institute of Food Technology Bachelors Level (B. Sc. (H) Programs)

Broad Based Operational Goals \ Intended Operational Outcomes	Goal 1	Goal 2	Goal 3	Goal 4	Goal 5	Goal 6	Goal 7	Goal 8	Goal 9	Goal 10
POO 1	X								X	X
POO 2	X	X	X						X	
POO 3	X					X				
POO 4	X		X						X	
POO 5	X			X	X	X	X			X
POO 6	X	X	X				X			
POO 7	X			X				X		
POO 8	X		X					X		
POO 9	X								X	X
POO 10	X	X	X						X	X

3.5 Mapping of Operational Assessment Measures to Intended Operational Outcomes

The operational assessment measures identified above provide for the assessment of all of the intended operational outcomes. These relationships are summarized in the measures-to-outcomes mapping below (Note: Put an “x” in a given cell of the table if the assessment instrument in that column measures the intended operational outcome in that row.):

Amity Institute of Organic Agriculture

3.5.1 Bachelors Level (B.Sc. (H) Programs)

Intended Operational Outcomes	Operational Assessment Measure	Minimum attendance criteria	Trend analysis of result	Student willingness for placements are identified through their future plan	Alumni Database	Annual Performance Evaluation and Review
1	PLO 1	X	X	X		X
2	PLO 2		X			X
3	PLO 3		X	X		X
4	PLO 4			X		X
5	PLO 5	X		X	X	
6	PLO 6		X		X	X
7	PLO 7			X	X	
8	PLO 8		X			
9	PLO 9		X	X		
10	PLO 10			X	X	
11	PLO 11			X	X	
12	PLO 12				X	
13	PLO 13			X		
14	PLO 14				X	
15	PLO 15		X			

Section IV:

LINKAGE OF OUTCOMES ASSESSMENT WITH STRATEGIC PLANNING

4. Linkage of Outcomes Assessment with Strategic Planning

Amity Institute of Organic Agriculture

The results from the implementation of Outcome Assessment Plan are very well linked to the Strategic Planning of the Domain. The various tools of Assessment and Outcome Assessment Plans are verified by PROAC and then by AAB. Any changes are put up for the recommendations of BOS and approval of Academic Council.

STRATEGIC PROCESS OF CONTINUOUS IMPROVEMENTS

Student Feedback

Action Plan

