Programme Specifications

Academic Year	(2019-2020) Academic Year
Programme Title	Biotechnology
Award	Bachelor of Applied Science (B.S)
Programme Code	BioT
Degree Awarding Institution	Technological University (Kyaukse)
Associateship, Membership Accreditation status and Accreditors	N/A
Qualification Level (Myanmar National Qualification Framework)	Level 6
Degree Awarding Requirements	Student must pass a minimum of 135 SLT credits over a period of four years and obtain passing score in every subject
Department	Department of Biotechnology
Head of Programme	Prof. Weine Nway Nway Oo, Ph.D
Contact	+959765432641, weinenno@gmail.com
Admission Criteria	As described in admission section
Requirements for sitting exam	see in each course specification
Subject Benchmark	N/A
Mode of Attendance	Full Time
Total Credits	135 SLT credits
Minimum Period of Study	4 years
Maximum period of study	12 years
Teaching/Learning Methods	Combination of lectures, tutorials, practical, coursework, individual and group work, projects, industrial training, computer laboratory, software application
Assessment	course work, written examinations, projects, reports, oral presentation

Programme Overview	Biotechnology is technology based on biology. It combines biological disciplines like genetics, molecular biology, microbiology, biochemistry and cell biology with the advanced technology.Organizations are using biotechnology in drug development, medical treatments, agriculture and food processing, biosecurity and biofuels, with new techniques and applications for biotechnology continuously being discovered.Increasingly, biotechnology is also being applied to problems in the environment and in energy. This program provides students with strong core science concepts and an application-oriented undergraduate education. Combined with core courses our students benefit from broad exposure to biotechnology through lecture, practical and hands-on biotechnology training. Biotechnology programme offers research work in the field of Microbiology, Environmental Biotechnology, Food Biotechnology, Plant Biotechnology, and Medical Biotechnology. Post graduate study programme extends Biosafety, Biosecurity and Bio Risk Management. www.uh.edu>cot>bio
Graduate Competencies	1. Ability to apply Engineering Knowledge 2. Problem Analysis Skill 3. Design/Development Skill 4. Research Skill 5. Ability to apply Modern Tool 6. Ability to apply informed reasoning and Professional Engineering practice in society 7. Ability to understand and evaluate Environment and Sustainability 8. Ability to apply ethical principles 9. Ability to function effectively as Individual and a Team member or leader 10. Communication Skill

11. Ability to apply Project Management and Finance
12. Life Long Learning Skill

Program Educational Objectives

1. To understand and apply the concepts of Biotechnology and allied field and other related aspects of science and technology
2. To identify, analyze and solve the problems with novelty and updated knowledge in product/process/techniques development to meet the societal demands
3. To apply the acquired professional and communication skills and ethical attitude (with awareness of current issues in relation to safety, health and environment) in industry, consulting, teaching, research and development

Graduate Attributes

1. To acquire and apply knowledge relevant to biotechnology (Apply knowledge of Mathematics, Science and Engineering concepts to solve problems pertinent to Biotechnology)
2. To identify and analyze complex societal and environmental problems using basic principles of natural sciences and engineering sciences
3. To show originality and innovation in designing experiments, ability to think critically to analyze results and discussions of the experimental outcomes in detail.
4. To analyze, synthesize, integrate knowledge and information to provide solutions in addressing challenges and concerns, appropriate to Biotechnology.
5. To select and apply appropriate tools and techniques in Biotechnology
6. To access societal, health, safety and legal issues and understand the responsibilities in Biotechnological Practices.
7. To solve the environmental impact of professional solution and societal and environmental contexts and demonstrate knowledge of and need for sustainable development.
8. To apply ethical principles and commit to professional ethics and responsibilities of Biotechnological Practices.
9. To adopt, grasp, and absorb knowledge across disciplines and ability to integrate within research areas of Biotechnology.
10. To deliver responsibilities and demonstrate good interpersonal skills in a team.
11. To realize the significance of life–long learning by evincing interest in specialized areas of Biotechnology.
12. To explore business opportunity pertaining to the field of biotechnology.

Curriculum

Year I

Semester I

Code		Title	Credits
M	11011	Myanmar I	2
E	11011	English I	2.5
EM	11001	Engineering Mathematics I	4.5
Eph	11011	Engineering Physics I	3.5
ECh	11011	Engineering Chemistry I	3.5
ME	11011	Basic Engineering Drawing I	2
H.SS	11011	Humanity and Social Science	2.5

Semester II

Code		Title	Credits
M	12011	Myanmar II	2
E	12011	English II	2.5
EM	12002	EngineeringMathematics II	4.5
EPh	12011	Engineering Physics II	3.5
ECh	12011	Engineering Chemistry II	3.5
ME	12011	Basic Engineering Drawing II	2
H.SS	12011	Humanity and Social Science	2.5

Year II

Semester I

Code		Title	Credits
E	21011	English I	2.5
EM	21003	Engineering Mathematics III	4.5
BioT	21011	Cell Biology I	3.5
BioT	21021	Microbiology I	3.5
BioT	21031	Organic Chemistry I	3.5
BioT	21041	Molecular Genetics I	3.5
BioT	21051	Bioprocess Engineering I	3.5

Semester II

Code		Title	Credits
E	22011	English II	2.5
EM	22004	Engineering Mathematics IV	4.5
BioT	22011	Cell Biology II	3.5
BioT	22021	Microbiology II	3.5
BioT	22031	Organic Chemistry II	3.5
BioT	22041	Molecular Genetics II	3.5
BioT	22051	Bioprocess Engineering II	3.5

Year III

Semester I

Code		Title	Credits
E	31011	English I	2.5
EM	31005	Engineering Mathematics V	4.5
BioT	31022	Microbiology III	3.5
BioT	31032	Biochemistry III	3.5
BioT	31042	Molecular Biology III	3.5
BioT	31052	Immunology III	3.5
BioT	31071	Biostatistics	3.5

Semester II

Code		Title	Credits
E	32011	English II	2.5
EM	32006	Engineering Mathematics VI	4.5
BioT	32022	Microbiology IV	3.5
BioT	32032	Biochemistry IV	3.5
BioT	32042	Molecular Biology IV	3.5
BioT	32052	Immunology IV	3.5
BioT	32071	Biostatistics	3.5

Year IV

Semester I

Code		Title	Credits
E	41011	English	2.5
BioT	41023	Environmental Biotechnology	3.5
BioT	41024	Industrial Biotechnology	3.5
BioT	41053	Medical Biotechnology	3.5
BioT	41062	Plant Biotechnology	3.5
BioT	41063	Aquaculture Biotechnology	3.5
BioT	41064	Animal Biotechnology	3.5

Semester II

Code		Title	Credits
E	42011	English	2.5
BioT	42023	Environmental Biotechnology	3.5
BioT	42024	Industrial Biotechnology	3.5
BioT	42053	Medical Biotechnology	3.5
BioT	42062	Plant Biotechnology	3.5
BioT	42063	Aquaculture Biotechnology	3.5
BioT	42064	Animal Biotechnology	3.5