

## Programme Specifications

Academic Year	(2019-2020) Academic Year
Programme Title	Mechanical Engineering
Award	Bachelor of Engineering (BE)
Programme Code	ME
Degree Awarding Institution	Technological University (Kyaukse)
Associateship, Membership	N/A
Accreditation status and Accreditors	Provisional, Engineering Education Accreditation Committee (EEAC, Myanmar)
Qualification Level (Myanmar National Qualification Framework)	Level 6
Degree Awarding Requirements	Student must pass 225.5 credits and obtain passing score in every subject
Department	Department of Mechanical Engineering
Head of Programme	Dr.Khin Khin Khaing
Contact	09765432826 and khin2khaing12@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	225.5
Minimum Period of Study	6 years
Maximum period of study	18 years
Teaching/Learning Methods	Combination of lecturers, tutorials, practical, class work, individual and group work, projects, industrial training
Assessment	Class work, written examinations, projects, reports, oral presentation
Programme Overview	The mechanical engineering field requires an understanding of core areas including thermal engineering, solid mechanics, fluid mechanics and manufacturing engineering. The undergraduate program includes a foundation in mathematics, sciences and engineering sciences. The two elements of the mechanical

engineering undergraduate program are laboratory experience and design experience. Most mechanical engineering programs also require varying amounts of research or community projects to gain practical problem solving experience. The mechanical engineering curriculum affects students the flexibility to propose specific professional goals within the discipline. Such an opportunity needs to be carefully considered by each student, so that courses are chosen with these goals in mind.

#### 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

#### **Programme Educational Objectives**

1. To improve lives and livelihoods through a successful careers as mechanical engineering.
2. To become effective collaborators and innovators, leading or participating in efforts to address social, technical and business challenges.
3. To engage in life-long learning and professional development through self-study, continuing education or graduate and professional studies in engineering, business, law or medicine.

## **Graduate Attributes**

1. An ability to apply knowledge of Mathematics, Science, Engineering fundamentals and an engineering specialization to the solution of complex engineering problems.
2. An ability to identify, formulate and solve mechanical engineering problems reaching substantiated conclusions.
3. An ability to design solutions for complex engineering problems and design systems, components or processes that meet the specified needs with consideration for public health and safety, cultural, societal, economical and environmental issues.
4. An ability to investigate complex engineering problems in a methodical way including literature survey, design and conduct of experiments, as well as to analyze and interpret data.
5. An ability to create, select and apply appropriate techniques, skills and modern engineering tools necessary for engineering practice.
6. An ability to assess societal, health, safety, legal and cultural issues and understand the consequent responsibilities relevant to professional engineering practice.
7. An ability to understand the impact of professional engineering solutions in societal and environmental contexts and demonstrate knowledge of and need for sustainable development.
8. Apply ethical principles and commit to professional ethics and responsibilities and norms of engineering practice.
9. An ability to communicate effectively as well as in writing, on complex engineering activities with the engineering community and with society at large.
10. An ability to work effectively as an individual or in a team and in multidisciplinary settings.
11. An ability to recognize the need for and ability to engage in life-long learning in the broader context of technological change.
12. Ability to apply engineering and management principles as a member or leader in a team, to manage projects and multidisciplinary environments.

## Curriculum

### Year I

Semester I			Semester II		
Code	Title	Credits	Code	Title	Credits
M 11011	Myanmar I	2	M 12011	Myanmar II	2
E 11011	English I	2.5	E 12011	English II	2.5
EM 11011	Engineering Mathematics I	4.5	EM 12011	Engineering Mathematics II	4.5
E.Ph 11011	Engineering Physics I	3.5	E.Ph 12011	Engineering Physics II	3.5
E.Ch 11011	Engineering Chemistry	4.5	E.Ch 12011	Engineering Chemistry II	4.5
ME 11011	Basic Engineering Drawing I	2	ME 12011	Basic Engineering Drawing I	2
ME 11012	Workshop Practice	1	ME 12012	Workshop Practice	1

### Year II

Semester I			Semester II		
Code	Title	Credits	Code	Title	Credits
E 21011	English	2.5	E 22011	English	2.5
EM 21003	Engineering Mathematics III	4.5	EM 22013	Engineering Mathematics IV	4.5
ME 21011	Machine Drawing	2	ME 22011	Machine Drawing	2
ME 21012	Workshop Technology	2	ME 22012	Workshop Technology	2
ME 21015	Engineering Mechanics	2.5	ME 22015	Engineering Mechanics	2.5
Met 21071	Engineering Materials	2.5	Met 22071	Engineering Materials	2.5
EP 21013	Applied Electrical Engineering	2.5	EP 22013	Applied Electrical Engineering	2.5

### Year III

Semester I			Semester II		
Code	Title	Credits	Code	Title	Credits
E 31011	English	2.5	E 32011	English	2.5
EM 31055	Engineering Mathematics V	4.5	EM 32006	Engineering Mathematics VI	4.5
ME 31013	Engineering Thermodynamics	3	ME 32013	Engineering Thermodynamics	3
ME 31014	Strength of Materials	3	ME 32014	Strength of Materials	3
ME 31015	Theory of Machines I	3	ME 32015	Theory of Machines I	3
ME 31022	Production Technology	3	ME 32022	Production Technology	3
EcE 31025	Analogue and Digital Electronics	2.5	EcE 32025	Analogue and Digital Electronics	2.5

**Year IV**

<b>Semester I</b>			<b>Semester II</b>				
Code	Title	Credits	Code	Title	Credits		
E	41011	English	2.5	E	42011	English	2.5
EM	41007	Engineering Mathematics VII	4.5	EM	42008	Engineering Mathematics VIII	4.5
ME	41032	Manufacturing System and Automations	2.5	ME	42042	Manufacturing System and Automations	2.5
ME	41031	Design of Machine Elements	2.5	ME	42031	Design of Machine Elements	2.5
ME	41033	Heat Transfer	3	ME	42033	Heat Transfer	3
ME	41019	Computer Application in Mechanical Engg	2	ME	42019	Computer Application in Mechanical Engg	2
ME	41016	Fluid Mechanics I	3	ME	42016	Fluid Mechanics I	3
ME	41015	Theory of Machines II	3	ME	42015	Theory of Machines II	3

**Year V**

<b>Semester I</b>			<b>Semester II</b>				
Code	Title	Credits	Code	Title	Credits		
ME	51043	Gas Turbine Theory	3	ME	52043	Gas Turbine Theory	3
ME	51015	Vibration and Control	3	ME	52015	Vibration and Control	3
ME	51017	Refrigeration and Air-condition	3	ME	52017	Refrigeration and Air-condition	3
ME	51028	Engineering and Management	2.5	ME	52028	Engineering and Management	3
ME	51023	Internal Combustion Engines	3	ME	52023	Internal Combustion Engines	2.5
ME	51016	Fluid Mechanics II	3	ME	52016	Fluid Mechanics II	3
ME	51031	Integrated Design Project (Capstone)	1.5	ME	52031	Machine Design and Project (Capstone)	1.5

**Year VI**

<b>Semester I</b>			<b>Semester II</b>			
Code	Title	Credits	Code	Title	Credits	
ME	61020/	Renewable Energy	ME	62031	Internship ( 8 weeks)	4
ME	61022/	Flexible Manufacturing System	ME	62032	Graduation Thesis	8
ME	61026	Hydraulic Machines				
ME	61019	Computer Application in Mechanical Engg				
HSS	61012	Huminities and Social Science				