Programme Specifications

Academic Year	(2019-2020) Academic Year
Programme Title	Mechatronics Engineering
Award	Bachelor of Engineering (BE)
Programme Code	MC
Degree Awarding Institution	Technological University (Kyaukse)
Associateship, Membership Accreditation status and Accreditors	
Qualification Level (Myanmar National Qualification Framework)	Level 6
Degree Awarding Requirements	Student must pass 214.5 credits and obtain passing score in every subject
Department	Department of Mechatronics
Head of Programme	Dr. Hla Soe
Contact	09-798599683, hs2006@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	214.5
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	With technology advanced, Mechatronic technologies become essential to the people's life. Generally, Mechatronics engineering is the design of computer-controlled electromechaical systems. It can be viewed as 'modern mechanical engineering design'. The design of the mechanical system can be performed together with the electronic and computer control aspects that will comprise the complete system. So this program prepared to get the good results for the graduated students in Mechatronics field. The graduated students can calculate the robot design considering the Mechanical field such as Engineering Mechanics, theory of Machine, Design of Machine elements and so on. This designed robot can be controlled by using the Electronic subjects (electronics devices, modern control system, power electronics, programming subjects and so on). This program enables the subjects to focus on a particular Mechatronics area of interest.
Graduate Competencies	1. Ability to apply Engineering Knowledge 2. Problem Analysis Skill 3. Design/Development Skill 4. Research Skill 5. Abiliby 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 become multi-skilled engineer who is competent in practicing fundamental scientific and engineering to solve complex engineering problems systematically
2. To become successful and productive engineers with skill and good understanding in communication, management, teamwork and leadership; and with of moral values, professional ethics and responsibility toward society and environment
3. To be engineers who engage in life-long learning and recognize the importance of natural resources, environment and cost effectiveness for the getterment of the professional and society

Graduate Attributes

1. An ability to apply knowledge of methematics, science, computers and engineering fundamentals for the solution of problems related to mechatronics
2. An ability to identify, analyze and solve mechatronic engineering problems
3. An ability to design and develop Mechatronics systems by selecting and integrating, sensors, actuators, controllers, appropriate meatrials and methods
4. An ability to discover problems in electronics and mechatronic systems using previous experiments as well as analyze and interpret data and synthesis information
5. An ability to function effectively as an individual or as a part of team and in a multidisciplinary enviroment
6. Ability to execute responsibility professionally and ethically
7. An ability to communicate effectively thorugh verbal, written and visual communication
8. An ability to find solutions for complex system or process that meet specified needs under appropriate consideration for safety of the society
9. An ability to possess knowledge of contemporary issues
10. An ability to recognize the need for lifelong learning and to pursue independent learning for professional development
11. An ability to understand the impact of engineering solutions in a global and societal contexts through broad-based education
12. An ability to use the techniques, skills, and modern engineering tools necessary for engineering practice

Curriculum

Year I

Semester I

Code		Title	Credits
M	11011	Myanmar	2
E	11011	English	2.5
EM	11011	Engineering Mathematics I	4.5
Ph	11011	Engineering Physics I	3.5
Ch	11011	Engineering Chemistry I	4.5
ME	11011	Basic Engineering Drawing	2
McE	11011	Introduction to Mechatronics I	2.5

Semester II

Code		Title	Credits
M	12011	Myanmar	2
E	12011	English	2.5
EM	12012	Engineering Mathematics II	4.5
Ph	12011	Engineering Physics II	3.5
Ch	12011	Engineering Chemistry II	4.5
ME	12011	Basic Technical Drawing	2
McE	12011	Introduction to Mechatronics II	2.5

Year II

Semester I

Code		Title	Credits
E	21011	English	2.5
EM	21013	Engineering Mathematics III	4.5
McE	21016	Engineering Circuit Analysis I	3
McE	21012	Factory Control Engineering I	3
McE	21015	Engineering Mechanic I	2.5
McE	21019	Computer Science and Programming I	2.5
ME	21012	Workshop Technology I	2

Semester II

Code		Title	Credits
E	22011	English	2.5
EM	22013	Engineering Mathematics IV	4.5
McE	22016	Engineering Circuit Analysis II	3
McE	22012	Factory Control Engineering II	3
McE	22015	Engineering Mechanic II	2.5
McE	22019	Computer Science and Programming II	2.5
ME	22012	Workshop Technology II	2

YearIII

Semester I

Code		Title	Credits
E	31011	English	2.5
EM	31015	Engineering Mathematics V	4.5
McE	31026	Electronic Devices I	2.5
McE	31036	Digital Electronics I	2.5
McE	31032	Electrical Machine and Control I	2.5
McE	31022	Programmable Logic Controller I	3

Semester II

Code		Title	Credits
E	32011	English	2.5
EM	32016	Engineering Mathematics VI	4.5
McE	32026	Electronic Devices II	2.5
McE	32036	Digital Electronics II	2.5
McE	32032	Electrical Machine and Control II	2.5
McE	32022	Programmable Logic Controller II	3

McE	31034	Basic Thermodynamic and Strength of Material I	2.5	McE	32034	Basic Thermodynamic and Strength of Material II	2.5

Year IV

Semester I

Code		Title	Credits
E	41011	English	2.5
EM	41017	Engineering Mathematics VII	4.5
McE	41025	Theory of Machines I	2.5
McE	41035	Design of Machine Elements I	2.5
McE	41017	Modeling and Control I	2.5
McE	41026	Power Electronics I	2.5

Semester II

Code		Title	Credits
E	42011	English	2.5
EM	42018	Engineering Mathematics VIII	4.5
McE	42025	Theory of Machines II	2.5
McE	42035	Design of Machine Elements II	2.5
McE	42017	Modeling and Control II	2.5
McE	42026	Power Electronics II	2.5

Year V

Semester I

Code		Title	Credits
McE	51018	Industrial Management I	2.5
McE	51017	Modern Control System I	2.5
McE	51021	Robotic Analysis I	2.5
McE	51051	Machine Vision I	2.5
McE	51027	Fuzzy Logic I	2.5
McE	51039	Computer Integrated Manufacturing I	2.5
McE	51029	Microprocessor and Microcontroller I	2.5

Semester II

Code		Title	Credits
McE	52018	Industrial Management II	2.5
McE	52017	Modern Control System II	2.5
McE	52021	Robotic Analysis II	2.5
McE	52051	Machine Vision II	2.5
McE	52027	Fuzzy Logic II	2.5
McE	52039	Computer Integrated Manufacturing II	2.5
McE	52029	Microprocessor and Microcontroller II	2.5

YearVI

Semester I

Code		Title	Credits
McE	61042	Flexible Manufacturing System and Automatic Control	2.5
McE	61031	Mechatronic System Design	2.5
McE	61028	Quality Control	2.5
McE	61021	Robotic Analysis III	3
HSS	61011	Humanities and Social Science I	3

Semester II

Code		Title	Credits
		Graduation Thesis	9