

ASSAM DON BOSCO UNIVERSITY
Modified Course Structure/Syllabus in SPRING 2019

SCHOOL OF TECHNOLOGY
DEPARTMENT OF ELECTRONICS AND COMMUNICATION ENGINEERING
MASTER OF TECHNOLOGY (MTECH)- ELECTRONICS AND COMMUNICATION ENGINEERING

Type	Course Code	Course Name	Credits	Category
Semester 2				
Theory	ECWC0008	Wireless Communication System	4	DC
	ECNE0009	Nanotechnology and Nanoelectronics	3	DC
	ECRM0042	Research Methodology and Intellectual Property Rights	2	SC
	Specialization Courses			
	Specialization 1: Optical Electronics			
	ECOC0010	Optical Fiber Communication and Networks	4	DE
	ECOI0011	Optoelectronic Instrumentation	3	DE
	Specialization 2: Embedded Systems			
	ECES0012	Embedded systems and Applications II	4	DE
	ECDP0013	Digital Signal Processor	3	DE
	Specialization 3: Digital Signal Processing			
	ECIS0014	Digital Image and Speech Processing	4	DE
	ECDP0013	Digital Signal Processor	3	DE
	Lab	ECNE6004	Nanotechnology Lab	2
Specialization Lab II				
ECCM6017		Optical Communication Lab	2	DE
ECSA6018		Embedded Systems and Applications Lab		DE
ECDS6019	Digital Image and Speech Processing Lab	DE		
Total Credits			20	

ECRM0042: RESEARCH METHODOLOGY AND INTELLECTUAL PROPERTY RIGHTS

(2 credits-30 hours)

Objective: *This course is designed to help students to identify research problems in various fields. It aims at giving potential researchers the knowledge of effectively analysing and interpreting results and presenting the findings to the scientific and technological community of the world. This course also aims at motivating students to bring about their creative ideas for innovation and establishing research impact in the global fora through intellectual ownership.*

Module I Research problem formulation and solution (12 Hours)

Meaning, sources, scope and objective of a research problem; Good research problem criteria and characteristics, errors in selecting a research problem; Research problem solutions– approaches for investigation; Approaches to effective literature studies; Data collection, analysis, interpretation and instrumentation; Plagiarism and ethical practices.

Module II Technical writing (10 Hours)

Effective writing; Research proposal development and its format; Different report types.

Module III Intellectual Property Rights (8 Hours)

- a) Nature of intellectual property: Patent, design, trade and copyright; Patenting and development process; Patent grant under PCT and procedure; Geographical indications.
- b) Patent rights: Administration of patent systems, scope, information and databases, technology licensing.
- c) New developments and case studies.

COURSE / LEARNING OUTCOMES

At the end of this course students will be able to:

CO1: To be able to identify research problems in various fields

CO2: To be able to approach investigations scientifically in order to find solutions for research problems of interest

CO3: To know how to undertake literature review for knowing the state of the art in the areas of interest

CO4: To know how to put forward the research problems, findings, analyses and interpretations effectively

CO5: To know how to take ownership of new findings through intellectual property right laws

Suggested Readings

1. Goddard Wayne, Melville Stuart, Research Methodology: An Introduction For Science And Technology Students, Juta & Co. Ltd.
2. Kumar Ranjit, Research Methodology A Step By Step Guide For Beginners, SAGE publications Inc.
3. Halbert J. Debra, Resisting Intellectual Property, CRC press.
4. Menell S. Peter, Lemley A. Mark, Merges P. Robert, Intellectual Property In New Technological Age, Clause 8 Publishing.
5. C.R. Kothari, Research Methodology Methods and Techniques, New Age International