

**COURSE STRUCTURE**  
*For*  
**M.TECH. DEGREE**  
*In*  
**ELECTRONICS AND COMMUNICATION ENGINEERING**  
  
*(Applicable from the Academic Session 2024-25)*



**Dr. B. C. Roy Engineering College, Durgapur**  
*(An Autonomous Institute)*

*Approved by: All India Council for Technical Education*

*Affiliated to: Maulana Abul Kalam Azad University of Technology, West Bengal*  
*(Formerly Known as: WBUT)*

**Jemua Road, Durgapur, West Bengal, India, 713206**

The BOS of Electronics and Communication Engineering in its second meeting (held on 08-04-, 2025) has unanimously accepted and approved the two-year course curriculum for M. Tech (ECE).

*Dr. Mrinmoy Chakraborty*

Dr. Mrinmoy Chakraborty  
Chairman, BOS (ECE)

**Program Code: 105**

**Program: M. Tech in Electronics and Communication Engineering**

**Semester-wise Breakup**

<b>Category</b>	<b>1<sup>st</sup> Sem</b>	<b>2<sup>nd</sup> Sem</b>	<b>3<sup>rd</sup> Sem</b>	<b>4<sup>th</sup> Sem</b>	<b>Total Credit (Category Wise)</b>
Major	6	6	2	0	<b>34</b>
Minor	0	0	0	0	<b>0</b>
Multidisciplinary	0	0	0	0	<b>0</b>
AEC	1	0	0	0	<b>3</b>
SEC	1	1	0	0	<b>2</b>
VAC	0	0	0	0	<b>0</b>
Project/Internship	0	1	1	1	<b>28</b>
<b>Total Credit (Semester Wise)</b>	<b>18</b>	<b>17</b>	<b>16</b>	<b>16</b>	<b>67</b>

**AEC:** Ability Enhancement Courses

**SEC:** Skill Enhancement Courses

**VAC:** Value Added Courses

**Program Code:105**

**Program:** M. Tech in Electronics and Communication Engineering

**Year (Semester):** 1<sup>st</sup> Year (1<sup>st</sup> Semester)

Sl. No.	Broad Category	Course Category	Course Code	Course Name	Contact Hours / Week				Credits
					L	T	P	Total	
<b>A. Theory</b>									
1	PC	Major	ECM- 101	ADVANCED COMMUNICATION NETWORKS	3	0	0	3	3
2	PC	Major	ECM- 102	ADVANCED DIGITAL SIGNAL PROCESSING	3	0	0	3	3
3	PE	Major	ECM- 103 to ECM- 106	PROGRAM ELECTIVE-I	3	0	0	3	3
4	PE	Major	ECM- 107 to ECM- 110	PROGRAM ELECTIVE-II	3	0	0	3	3
5	ML	Ability Enhancement	ECM-111	RESEARCH METHODOLOGY AND IPR	3	0	0	3	3
<b>TOTAL Theory</b>								15	<b>15</b>
<b>B. Practical / Sessional</b>									
1	PC	Major	ECM- 191	ADVANCED COMMUNICATION NETWORKS LAB	0	0	2	2	1
2	PC	Major	ECM- 192	ADVANCED DIGITAL SIGNAL PROCESSING LAB	0	0	2	2	1
3	HM	Skill Enhancement	ECM- 181	AUDIT COURSE-1	0	0	2	2	1
<b>TOTAL Practical / Sessional</b>								3	<b>3</b>
<b>Total of Semester</b>								21	<b>18</b>

**Program Code:105**

**Program:** M. Tech in Electronics and Communication Engineering

**Year (Semester):** 1<sup>st</sup> Year (2<sup>nd</sup> Semester)

Sl. No.	Broad Category	Course Category	Course Code	Course Name	Contact Hours / Week				Credits
					L	T	P	Total	
<b>A. Theory</b>									
1	PC	Major	ECM- 201	ANTENNAS AND RADIATING SYSTEMS	3	0	0	3	3
2	PC	Major	ECM- 202	ADAPTIVE SIGNAL PROCESSING	3	0	0	3	3
3	PE	Major	ECM- 203 to ECM- 207	PROGRAM ELECTIVE-III	3	0	0	3	3
4	PE	Major	ECM- 208 to ECM-212	PROGRAM ELECTIVE-IV	3	0	0	3	3
<b>TOTAL Theory</b>								12	<b>12</b>
<b>B. Practical</b>									
1	PC	Major	ECM- 291	ANTENNA AND RADIATING SYSTEM LAB	0	0	2	2	1
2	PC	Major	ECM- 292	ADAPTIVE SIGNAL PROCESSING LAB	0	0	2	2	1
3	HM	Skill Enhancement	ECM- 281	AUDIT COURSE 2	0	0	2	2	1
4	PC	Major	ECM-282	DISSERTATION – I	0	0	4	4	2
<b>TOTAL Practical / Sessional</b>								10	<b>5</b>
<b>Total of Semester</b>								22	<b>17</b>

**Program Code:105**

**Program:** M. Tech in Electronics and Communication Engineering

**Year (Semester):** 2<sup>nd</sup> Year (3<sup>rd</sup> Semester)

Sl. No.	Broad Category	Course Category	Course Code	Course Name	Contact Hours / Week				Credits
					L	T	P	Total	
<b>A. Theory</b>									
1	PE	Major	ECM- 301 to ECM- 304	PROGRAM ELECTIVE-V	3	0	0	3	3
2	OE	Major	ECM- 305 to ECM- 308	OPEN ELECTIVE	3	0	0	3	3
<b>TOTAL Theory</b>								<b>6</b>	<b>6</b>
<b>B. Practical / Sessional</b>									
1	PC	Major	ECM- 381	DISSERTATION –II	10	0	0	20	10
<b>TOTAL Practical / Sessional</b>									
<b>Total of Semester</b>								<b>26</b>	<b>16</b>

**Program Code: 105**

**Program: M. Tech in Electronics and Communication Engineering**

**Year (Semester): 2<sup>nd</sup> Year (4<sup>th</sup> Semester)**

Sl. No.	Broad Category	Course Category	Course Code	Course Name	Contact Hours / Week				Credits
					L	T	P	Total	
<b>B. Practical /Sessional</b>									
1	PC	Major	ECM- 481	DISSERTATION -III	0	0	0	32	16
<b>TOTAL Practical / Sessional</b>									
<b>Total of Semester</b>								<b>32</b>	<b>16</b>

**List of Program Electives**

- ❖ **Program Elective – I**
  - A. ECM-103 Wireless and mobile communication
  - B. ECM-104 Optical Fiber Communication
  - C. ECM-105 Statistical information Processing
- ❖ **Program Elective – II**
  - A. ECM-107 Cognitive radio
  - B. ECM-108 RF and Microwave Circuit Design
  - C. ECM-109 DSP Architecture
- ❖ **Program Elective – III**
  - A. ECM- 203 GIS & Satellite Communication
  - B. ECM-204 Internet of Things
  - C. ECM-205 Voice and data networks
- ❖ **Program Elective – IV**
  - D. ECM-208 MIMO System
  - E. ECM-209 Markov Chain and Queuing System
  - F. ECM-210 Remote Sensing & Radar Technology
  - G. ECM-211 VLSI DSP
- ❖ **Program Elective – V**
  - A. ECM-301 Computational Electromagnetic
  - B. ECM-302 Pattern Recognition and Machine Learning
  - C. ECM-303 VLSI for Secure Communication

**List of Open Electives**

- A. ECM-305 Business Analytics
- B. ECM-306 Operations Research
- C. ECM-307 Cost Management of Engineering Projects
- D. ECM-308 Industrial Safety

**Audit Course 1 & 2**

**ECM-181 AUDIT COURSE**

- A. ECM-181 English for Research Paper Writing
- B. ECM -281 Personality Development through Life Enlightenment Skills