Proceedings of 5th Board of Post Graduate studies (BPGS) meeting of the Department of Electronics and Communication Engineering, held on 01/05/2019, in the Chamber of Dean Science at 1:00 PM (Due to General Election, the proposed date of the meeting has been deferred from 10/04/2019 to 01/05/2019)

Members present:

Signature:

1. Prof. Anjan Mukherjee (Special Invitee) 1/5/19
2. Dr. Bishanka Brata Bhowmik (Member) Porshanka 1/5/19
3. Dr. Anirban Karmakar (Member) A-Karmakar 1/5/19
4. Prof. Sukanta Banik (Dean, Science T.U.), Chairman 01/05/2019

Agenda 1: Confirmation of the proceedings of 4th BPGS meeting held on 30/01/19

Resolution: Proceedings of 4th BPGS meeting has been confirmed

Agenda 2: To change in Elective list under EC903E, EC904E, EC1003E, EC1004E which will effected from academic session 2018-2019. The syllabus of the newly introduced subjects will be as per NPTEL PG level courses of the same subjects.

Resolution: It is resolved that elective list under EC903E, EC904E, EC1003E have been changed and the change will be effected from academic session 2018-2019. The syllabus of the newly introduced subjects will be as per NPTEL PG level courses of the same subjects.

Agenda 3 To change the credit of the subject EC1004E from 3 to 4 in accordance with Tripura University MOOCs/NPTEL structure. This will be effected from academic session 2018-2019.

Resolution: It is resolved that the credit of the subject EC1004E has been changed from 3 to 4 in accordance with Tripura University MOOCs/NPTEL structure. This will be effected from academic session 2018-2019. (As per Tripura University norms MOOCs/NPTEL courses with 100 Marks will be for 4 credits and MOOCs/NPTEL courses with 50 Marks will be for 2 credits)

Agenda 4 To approve the syllabus the subjects Advanced Digital Electronic Circuit(EC903E), Analog Electronic Circuits (EC904E), Electrical Measurement & Instrumentation (EC1003E), Introduction to Photonics (EC1004E), Advanced Control Theory (EC1004E).

Resolution: It is resolved that the syllabus of the subjects Advanced Digital Electronic Circuit(EC903E), Analog Electronic Circuits (EC904E), Electrical Measurement & Instrumentation (EC1003E), Introduction to Photonics (EC1004E), Advanced Control Theory (EC1004E) have been approved.

Agenda 5 To change the chairperson of DRC as Prof. S. N. Karmakar (HOD, ECE Dept.) has been retired on superannuation w.e.f 31/01/19.

Resolution: It has been resolved that Prof. Sukanta Banik (Dean Science, T.U) will act as a chairperson of DRC w.e.f 01/02/2019.

Agenda 6: Passing of Ph.D Course Work and Progress Report of Semester-I for Ph.D students Mr. Utsab Banerjee & Mr. Abhirup Bhawal admitted to the dept. during 2017-18.

Resolution: It is resolved that as both the Ph.D students passed 'Course Work', they obtained credit 16. As the 1st Progress Report is satisfactory (S) for both the students, they have earned credit 8 for Semester-I.

Meeting ended with a vote of thanks to the chair.

Tripura University (A Central University)
Suryamaninagar, Tripura 799022, India

M.Tech. (Electronics and Communication Engineering)

Curriculum Structure

Semester I

Course Type	Course Code	Course Name	Marks	L	T	P	Credits
Core 1	EC 901 C	Advanced Optical Fiber Communication System	100	04	0	0	04
Core 2	EC 907 C	RF and Microwave Circuit Design	100	04	0	0	04
Elective	EC 903 E	**Elective I** 1. Advanced Communication Techniques 2. Quantum Mechanics 3. Statistical Information Processing 4. Cognitive Radio 5. Laser & Optoelectronics 6. Principles of Signals and Systems 7. Advanced Digital Electronic Circuits 8. MOOCs/NPTEL	100	04	0	0	04
Elective	EC 904 E	**Elective II** 1. Wireless & Mobile Communication 2. Advanced RF & Antenna Engineering 3. DSP & Architecture 4. Digital Communication Networks & Protocol 5. Digital Image Processing 6. Principles of Modern CDMA/ MIMO/ OFDM Wireless Communications 7. Advanced Analog Electronic Circuits	100	03	0	0	03
Compulsory Foundation Course	Computer Skill III	JAVA Software	100	03	0	0	04
Lab 1	EC 905P	Optical communication Lab	100	0	0	04	02
Lab 2	EC 906P	Microwave & Antenna Engineering lab	100	0	0	04	02
Total			**700**	15	0	08	**23**

1/5/19 1/5/19 1/5/19

Semester II

Course Type	Course Code	Course Name	Marks	L	T	P	Credits
Core 1	EC 1001 C	Optical Networks	100	04	0	0	04
Core 2	EC 1002 C	Antennas & Radiating Systems	100	04	0	0	04
Elective	EC 1003 E	**Elective I** 1. Nanoscale Physics & Microelectronic Circuits 2. Satellite Communication 3. Internet of Things 4. Modern Data Transmission Technology 5. Software defined networking 6. Modern Digital Communication Techniques 7. Introduction to Coding Theory 8. Mathematical Methods and Techniques in Signal Processing 9. Electrical Measurement & Instrumentation 10. MOOCs/NPTEL	100	04	0	0	04
Elective	EC 1004 E	**Elective II** 1. EMI/EMC 2. MIMO Communication Systems 3. Network Security and Cryptography 4. Real Time Embedded System 5. VLSI design 6. Broadband Network and Network Management 7. Principles of Digital Communications 8. Introduction to Photonics 9. Advanced Control Theory 10. MOOCs/NPTEL	100	04	0	0	04
Sessional 1	EC 1005 P	Term Paper Leading to Thesis	100	0	0	04	02
Sessional 2	EC 1006 P	Project Design	100	0	0	04	02
			600	16		8	**20**

Semester III

Course Type	Course Code	Course Name	Marks	L	T	P	Credits
Dissertation	EC 1106 C	Dissertation Phase-I	200	0	0	12	6
Dissertation	EC 1107 C	Thesis Seminar Interim & Viva-Voce	200	0	0	8	4
	EC 1108 C	Research Methodology	100	4	0	8	4
Audit Course		**Audit Course I:** 1. Fundamental of Business managements 2. Lasers and Optoelectronics 3. Photonics and Optical Switching 4. Fundamentals of Image Processing		5			00
Total			500	02	0	28	**14**

Semester IV

Course Type	Course Code	Course Name	Marks	L	T	P	Credits
Dissertation	EC -1206C	Dissertation Phase - II	200	0	0	12	6
Dissertation	EC 1207 C	Thesis Seminar Final & Viva-Voce	200	0	0	12	6
Audit Course		**Audit Course II:** 1. Information Theory and Coding 2. Bioinformatics 3. Remote Sensing 4. Artificial Intelligence 5. Biomedical Engineering 6. Advanced Optoelectronics 7. Satellite Communication 8. Advanced Microwave Engineering		4	0	0	00
Elective Foundation	EC 1205 EF	**Elective V** 1. Communicative English 2. Yoga 3. NSS and Social Services	50	0	0	0	02
Total			400	04		24	**14**

*70 (Theory) + 30 (Internal Assessment). Total credit Range: 68-72.

1/5/19 18/19 1/5/19

2nd BPGS meeting 12/4/17

Proceedings of 2nd Board of Post-Graduate studies (BPGS) of Electronics & Communication Engineering on 12/04/2017 in Electronics & Communication Engineering Department at 2:00PM.

Members presents

1. Prof. Ranjan Gangopadhyay
2. Prof. Sachindra Nath Karmakar S. N. Karmakar 12/04/17
3. Dr. Bishanka Brata Bhowmik 12/4/17
4. Dr. Arindam Karmakar → A. Karmakar 12/4/17
5. Prof. Anjan Mukherjee.. → 12/4/17

Proceedings of the meeting of **2nd Board of Post Graduate studies (BPGS)** of the Department of Electronics and Communication Engineering, held on 12/04/17 at 2pm in the chamber of HOD of Electronics and Communication Engineering, Tripura University:

Agenda 1: Confirmation of the proceedings of 1st BPGS meeting held on 23/11/16	Proceedings of 1st BPGS meeting has been confirmed
Agenda 2: Finalization of the course structure & syllabus of M.Tech in Electronics and Communication Engineering	**Resolution:** Finalized Course structure of M. Tech in Electronics and Communication Engineering has been approved (See Annexure-I)
Agenda 3: Finalization of paper setter, moderator and examiner of M. Tech 2nd semester examination	**Resolution:** Paper setter, moderator and examiner have been finalized (See Annexure-II)
Agenda 4: Miscellaneous	Nil

R Gangopadhyay 12/04/17

S. N. Karmakar 12.04.17

Meeting ended with a vote of thanks to the chair.

(Annexure – I)

Course Structure (M.Tech in Electronics and Communication Engineering)

(1st Semester: 700)

Core/Optiona Elective	C	P	T	L	Marks	Subject Name	Subject Code	Theoretical Courses
C	04	0	0	04	100 *(70+30)	Advanced optical fiber communication system	ECE -901 C	Paper-I
C	04	0	0	04	100 *(70+30)	Electromagnetic Theory & Advanced Antenna Engineering	ECE -902 C	Paper-II
C	04	0	0	04	100 *(70+30)	Quantum Mechanics	ECE - 903C	Paper-III
E	03	0	0	03	100 *(70+30)	**Elective Papers:**	ECE -904 E	Paper-IV
E(Offered by Department of EE)						DSP and Communication Networking	ECE -904 E1	
E						Bio-Photonics	ECE -904 E2	
E (Offered by Department of CSE)						Wireless Communication & Mobile Computing	ECE -904 E3	
E(Offered by Department of EE)						Digital Control systems	ECE -904 E4	
E						Robotics and Computer vision	ECE -904 E5	
E						Advanced Digital Signal Processing	ECE -904 E6	
CFC (offered by IT or CSE)	**04**	0	0	04	100 *(70+30)	JAVA Software	Computer Skill III	**Compulsory Foundation Course**
					Marks	**Subject Name**	**Subject Code**	**Sessional Courses**
C	02	04	0	0	100	Optical fiber communication Lab	ECE 905P	Sessional 1
C	02	04	0	0	100	Microwave & Antenna Engineering lab	ECE 906P	Sessional 2
	23	08	0	19	700	**Total**		

R Sangrpadhyay
12/04/17

(2nd Semester: 600)

Core/ Elective	C	P	T	L	Marks	Subject Name	Subject Code	Theoretical Courses
C	04	0	0	04	100 *(70+30)	Optical Networks	ECE- 1001 C	Paper-V
C	04	0	0	04	100 *(70+30)	Advanced Wireless Communication Systems	ECE- 1002 C	Paper-VI
E	04	0	0	04	100 *(70+30)	**Elective Papers**	ECE- 1003 E	Paper-VII
E						Nanoscale Physics & Microelectronic Circuits	ECE- 1003 E 1	
E						Optical Information Processing	ECE- 1003 E 2	
E						Fuzzy Logic and Application	ECE -1003 E3	
E						Spread Spectrum Technique	ECE -1003 E4	
E	03			03	100 *(70+30)	**Elective Papers**	ECE 1004 E	Paper-VIII
E						EMI/EMC	ECE -1004 E 1	
E						Network Security and Cryptography	ECE- 1004 E 2	
E						VLSI design	ECE- 1004 E 3	
E						Broadband Network and Network Management	ECE- 1004 E4	
E						Advanced Data Communications	ECE- 1004 E5	
E						Advanced Computer Architecture	ECE- 1004 E6	
E						Sensor and System	ECE-1004 E7	
					Marks	**Subject Name**	**Subject Code**	**Sessional Courses**
C	02	04	0	0	100	Term Paper Leading to Thesis	ECE -1005- P	Sessional 1
C	02	04	0	0	100	Project Design	ECE -1006 -P	Sessional 2
	19	08	0	14	600	**Total**		

(3rd Semester: 500 Marks)

Thesis Identification, Literature Survey and Plan of Work (Thesis: Phase-I)

Core/ Elective	C	P	T	L	Marks	Subject name	Subject Code
C	04	08	0	0	100	Thesis Report Interim	ECE -1101 C
C	04	08	0	0	200	Thesis Seminar Interim (Presentation & VIVA-VOCE)	ECE -1102 C
C	02	04	0	0	100	Technical Communication	ECE -1103 C
C	01	02	0	0	Pass/Fail	Workshop and Seminars	ECE -1104 C
E	04	0	0	04	100 *(70+30)	**Elective Papers**	ECE -1105 E
E						Embedded system	ECE -1105 E1
E (offered by MBA Department)						Fundamental of Business managements	ECE -1105 E2
E						Optical and electro-optical sensors	ECE -1105 E3
E						Lasers and Optoelectronics	ECE -1105 E4
E						Photonics and Optical Switching	ECE -1105 E5
E (Offered by CSE)						Fundamentals of Image Processing	ECE -1105 E6
	15	10	0	04	500		**Total**

(4th Semester: 400 Marks)

Thesis Implementation (Thesis: Phase-II)

Core/ Elective	C	P	T	L	Marks	Subject name	Subject Code
C	04	08	0	0	200	Thesis Report Final	ECE - 1201
C	04	08	0	0	200	Thesis Seminar Final (Presentation & VIVA-VOCE)	ECE - 1202
C	01	02	0	0	Pass/Fail	Workshop and Seminars	ECE - 1203
E	04	0	0	03	100 *(70+30)	**Elective Papers**	ECE -1204 E
E						Information Theory and Coding	ECE -1204 E1
E (offered by Molecular Biology & Bioinformatics Department)						Bioinformatics Sequence Analysis	ECE - 1204 E2
E						Advanced Optoelectronics	ECE-1204 E3
E						Satellite Communication	ECE-1204 E4
E (offered by Physics Department)						Advance Electronics	ECE-1204 E4
E						Entrepreneurship Development & Industrial Economics	ECE-1204 E5
EF	02					Elective Foundation	ECE 1204 EF
Department of English						Communicative English	ECE 1204 EF1
Department of Physical Education						Yoga	ECE 1204 EF2
						NSS and Social Services	ECE 1204 EF3
	15	18	0	03	400	**Total**	

*70 (Theory) + 30 (Internal Assessment)

Total credits: 72

Elective offered to other Departments in even semesters:

Sensor and System Credit: 3 Marks: 10

3rd BPGS meeting 12/04/18

Proceedings of 3rd Board of Post-Graduate Studies (BPGS) of Electronics & Communication Engineering on 12/04/2018 in Electronics & Communication Dept. at 2:00 p.m.

Members present

1. Prof. Ranjan Gangopadhyay → Ranjan Gangopadhyay
2. Prof. Sachindra Nath Karmakar → S. N. Karmakar 12/4/18
3. Dr. Champa Nandi → Champa Nandi 12.4.18
4. Dr. Bishanka Brata Bhowmik → Bishanka 12/4/18
5. Dr. Amirban Karmakar → A. Karmakar 12/4/18

Proceedings of **3rd Board of Post Graduate studies (BPGS)** meeting of the Department of Electronics and Communication Engineering, held on 12/04/18 at 2pm in the chamber of HOD of Electronics and Communication Engineering Department, Tripura University:

Agenda 1: Confirmation of the proceedings of 2nd BPGS meeting held on 12/04/17	Proceedings of 2nd BPGS meeting has been confirmed
Agenda 2: Revision of the course structure & syllabus of M. Tech in Electronics and Communication Engineering	**Resolution:** Revised Course structure & Syllabus of M. Tech in Electronics and Communication Engineering has been approved
Agenda 3: Approval of syllabus for Ph.D course work examination of Electronics & Communication Engineering Department	**Resolution:** New syllabus for Ph.D course work has been approved
Agenda 4: Approval for the formation of Research Advisory Committee (RAC) for newly admitted Ph.D scholars in the department	**Resolution:** Formation of Research Advisory Committee (RAC) for newly admitted Ph.D. scholars in the session 2017-18 has been approved
Agenda 5: Finalization of paper setter, moderator and examiner of M. Tech 2nd semester examination, 2018 in Electronics and Communication Engineering	**Resolution:** Paper setters, moderators and examiners have been approved.
Agenda 6: Miscellaneous	Nil

Meeting ended with a vote of thanks to the chair.

Tripura University (A Central University)
Suryamaninagar, Tripura 799022, India

M.Tech. (Electronics and Communication Engineering)

Curriculum Structure

Semester I

Course Type	Course Code	Course Name	Marks	L	T	P	Credits
Core 1	EC 901 C	Advanced Optical Fibre Communication System	100	04	0	0	04
Core 2	EC 907 C	RF and Microwave Circuit Design	100	04	0	0	04
Elective	EC 903 E	**Elective I** 1. Advanced Communication Techniques 2. Quantum Mechanics 3. Statistical Information Processing 4. Cognitive Radio 5. Laser & Optoelectronics 6. MOOCs/NPTEL	100	04	0	0	04
Elective	EC 904 E	**Elective II** 1. Wireless & Mobile Communication 2. Advanced RF & Antenna Engineering 7. DSP & Architecture 3. Digital Communication Networks & Protocol 8. MOOCs/NPTEL	100	03	0	0	03
Compulsory Foundation Course	Computer Skill III	JAVA Software	100	03	0	0	04
Lab 1	EC 905P	Optical communication Lab	100	0	0	04	02
Lab 2	EC 906P	Microwave & Antenna Engineering lab	100	0	0	04	02
Total			**700**	15	0	08	**23**

Ranjan Gangopadhyay
Sachindra Nath Karmakar 12/04/18
A-Karmakar
12/4/18

Semester II

Course Type	Course Code	Course Name	Marks	L	T	P	Credits
Core 1	EC 1001 C	Optical Networks	100	04	0	0	04
Core 2	EC 1002 C	Antennas & Radiating Systems	100	04	0	0	04
Elective	EC 1003 E	**Elective I** 1. Nanoscale Physics & Microelectronic Circuits 2. Satellite Communication 3. Internet of Things 4. Modern Data Transmission Technology 5. Software defined networking 9. MOOCs/NPTEL	100	04	0	0	04
Elective	EC 1004 E	**Elective II** 1. MOOCS/NPTEL Online Courses 2. EMI/EMC 3. MIMO Communication Systems 4. Network Security and Cryptography 5. Real Time Embedded System 6. VLSI design 7. Broadband Network and Network Management 10. MOOCs/NPTEL	100	03	0	0	03
Sessional 1	EC 1005 P	Term Paper Leading to Thesis	100	0	0	04	02
Sessional 2	EC 1006 P	Project Design	100	0	0	04	02
			600	14		8	**19**

Semester III

Course Type	Course Code	Course Name	Marks	L	T	P	Credits
Dissertation	EC 1106 C	Dissertation Phase-I	200	0	0	12	6
Dissertation	EC 1107 C	Thesis Seminar Interim & Viva-Voce	200	0	0	8	4
	EC 1108 C	Research Methodology	100	4	0	8	4
Audit Course		**Audit Course I:** 1. Fundamental of Business managements 2. Lasers and Optoelectronics 3. Photonics and Optical Switching		5			00

Ranjan Gangopadhyay
Sochindra Nath Karmakar 12/04/18

		4. Fundamentals of Image Processing					
Total			500	02	0	28	**14**

Semester IV

Course Type	Course Code	Course Name	Marks	L	T	P	Credits
Dissertation	EC -1206C	Dissertation Phase - II	200	0	0	12	6
Dissertation	EC 1207 C	Thesis Seminar Final & Viva-Voce	200	0	0	12	6
Audit Course		**Audit Course II:** 1. Information Theory and Coding 2. Bioinformatics 3. Remote Sensing 4. Artificial Intelligence 5. Biomedical Engineering 6. Advanced Optoelectronics 7. Satellite Communication 8. Advanced Microwave Engineering		4	0	0	00
Elective Foundation	EC 1205 EF	**Elective V** 1. Communicative English 2. Yoga **3.** NSS and Social Services	50	0	0	0	02
Total			400	04		24	**14**

*70 (Theory) + 30 (Internal Assessment).

Ranjan Gangopadhyay

Sachindra Nath Karmakar 12/04/18

A. Karmakar

Barshida 12/4/18

Tripura University (A Central University)
Suryamaninagar,Tripura 799022, India

M.Tech. (Electronics and Communication Engineering)

Curriculum Structure

Semester I

Course Type	Course Code	Course Name	Marks	L	T	P	Credits
Core 1	EC 901 C	Advanced Optical Fibre Communication System	100	04	0	0	04
Core 2	EC 907 C	RF and Microwave Circuit Design	100	04	0	0	04
Elective	EC 903 E	**Elective I** 1. Advanced Communication Techniques 2. Quantum Mechanics 3. Statistical Information Processing 4. Cognitive Radio 5. Laser & Optoelectronics 6. Principles of Signal and Systems 7. Advanced Digital Electronic Circuits 8. MOOCs/NPTEL	100	04	0	0	04
Elective	EC 904 E	**Elective II** 1. Wireless & Mobile Communication 2. Advanced RF & Antenna Engineering 3. DSP & Architecture 4. Digital Communication Networks & Protocol 5. Digital Image Processing 6. Principles of Modern CDMA/MIMO/OFDM Wireless Communication 7. Advanced Analog Electronic Circuits 9. MOOCs/NPTEL	100	03	0	0	03
Compulsory Foundation Course	Computer Skill III	JAVA Software	100	03	0	0	04
Lab 1	EC 905P	Optical communication Lab	100	0	0	04	02
Lab 2	EC 906P	Microwave & Antenna Engineering lab	100	0	0	04	02
Total			**700**	15	0	08	**23**

Semester II

Course Type	Course Code	Course Name	Marks	L	T	P	Credits
Core 1	EC 1001 C	Optical Networks	100	04	0	0	04
Core 2	EC 1002 C	Antennas & Radiating Systems	100	04	0	0	04
Elective	EC 1003 E	**Elective I** 1. Nano scale Physics & Microelectronic Circuits 2. Satellite Communication 3. Internet of Things 4. Modern Data Transmission Technology 5. Software defined networking 6. Modern Digital Communication Techniques 7. Introduction to Coding Theory 8. Mathematical Methods and Techniques in Signal Processing 9. Electrical Measurement & Instrumentation 10. MOOCs/NPTEL	100	04	0	0	04
Elective	EC 1004 E	**Elective II** 1. EMI/EMC 2. MIMO Communication Systems 3. Network Security and Cryptography 4. Real Time Embedded System 5. VLSI design 6. Broadband Network and Network Management 7. Principles of Digital Communications 8. Introduction to Photonics 9. Advanced Control Theory 10. MOOCs/NPTEL	100	03	0	0	03
Sessional 1	EC 1005 P	Term Paper Leading to Thesis	100	0	0	04	02
Sessional 2	EC 1006 P	Project Design	100	0	0	04	02
			600	12		8	**19**

Semester III

Course Type	Course Code	Course Name	Marks	L	T	P	Credits
Dissertation	EC 1106 C	Dissertation Phase-I	200	0	0	12	6
Dissertation	EC 1107 C	Thesis Seminar Interim & Viva-Voce	200	0	0	8	4
	EC 1108 C	Research Methodology	100	4	0	8	4
Audit Course		**Audit Course I:** 1. Fundamental of Business managements 2. Lasers and Optoelectronics 3. Photonics and Optical Switching 4. Fundamentals of Image Processing		5			00
Total			500	02	0	28	**17**

Semester IV

Course Type	Course Code	Course Name	Marks	L	T	P	Credits
Dissertation	EC -1206C	Dissertation Phase - II	200	0	0	12	6
Dissertation	EC 1207 C	Thesis Seminar Final & Viva-Voce	200	0	0	12	6
Audit Course		**Audit Course II:** 1. Information Theory and Coding 2. Bioinformatics 3. Remote Sensing 4. Artificial Intelligence 5. Biomedical Engineering 6. Advanced Optoelectronics 7. Satellite Communication 8. Advanced Microwave Engineering		4	0	0	00
Elective Foundation	EC 1205 EF	**Elective V** 1. Communicative English 2. Yoga **3.** NSS and Social Services	50	0	0	0	02
Total			400	04		24	**14**

*70 (Theory) + 30 (Internal Assessment). Total max. credit: 72 (Range: 68-72).
Elective offered to other Departments in even semesters: Sensor and System, Credit: 3 & Marks: 100