DEPARTMENT OF ELECTRICAL ENGINEERING
TRIPURA UNIVERSITY
(A Central University)
Suryamaninagar-799022, Tripura, India
Phone: 0381-2379224, 9436183551

PROCEEDINGS OF THE EIGHTH MEETING OF BOARD OF POST GRADUATE STUDIES IN THE CHAMBER OF DEAN OF SCIENCE, TRIPURA UNIVERSITY (A CENTRAL UNIVERSITY), SURYAMANINAGAR, WEST TRIPURA ON 01/05/2019 AT 1:30 P.M.

Members Present:

1. Prof. Sukanta Banik, Dean of Science, Tripura university (A Central University), Chairman of the Board
2. Prof. Anjan Mukherjee, Department of Mathematics, Tripura University (A Central University), a Special Invitee
3. Dr. Mrinal Kanti Bhoumik, Assistant Professor of Computer Science and Engineering, a Special Invitee
4. Mrs. Sangita Das Biswas, Coordinator, Department of Electrical Engg. T.U, Member
5. Dr. Champa Nandi, Assistant Professor of Department of Electrical Engg. T.U, Member.
6. Dr. Bishanka Brata Bhowmik, Assistant Professor of Department of Electrical Engg. T.U, Member.

At the outset, Prof. Sukanta Banik, Chairman of the Board of Post Graduate Studies (B.P.G.S), Dean of Science, convened the special meeting and extended a warm welcome to all the members for their active participation and co-operation. Thereafter, agenda wise discussion started.

Agenda 01: To confirm the proceedings of 7th meeting of BPGS held on 14/11/2018.

Resolution: Proceedings of 7th B.P.G.S meeting held on 14/11/2018 read and confirmed.

Agenda 02: (a) To confirm the 1st Annual Report Presentation of Mrs. Additi Datta, A Ph.D Scholar, Tripura University (A Central University) and (b) Extension of Registration of Aditi Datta, for one year in the Department of Electrical Engineering.

Resolution: (a) Confirmation of 1st Annual Report of Mrs. Aditi Datta, A Ph.D Schalor of Department of Electrical Engineering, Tripura University (A central University) is allowed to proceed further and (b) Extension of Registration of Mrs. Aditi Datta, A Ph.D Schalor of Department of Electrical Engineering, Tripura University (A central University) from September, 2019 in the Department of Electrical Engineering, Tripura University (A central University), has been approved.

Agenda 03: To propose the syllabus of Ph.D course work for Department of Electrical Engineering.

Resolution: Syllabus of Ph.D course work for Department of Electrical Engineering is approved

Agenda 04: Inclusion of NPTEL/MOOC courses in the M. Tech course of Electrical Engineering

Resolution: NPTEL/ MOOC courses are approved for the Department of Electrical Engineering, Tripura University (A Central University).

Agenda 05: Miscellaneous, if any

Resolution: All Existing Elective 3 Credit courses have been re-structured and it will be considered as 4-credit course.

The meeting ended with a vote of thanks to the Chair.

Signature of the Members:

01/05/19 1/5/19 1.5.19

Sangita Das Biswas (Member) | Prof. Anjan Mukherjee (Special Invitee Member) | Dr. Mrinal Kanti Bhoumik (Special Invitee Member) (Member)

01/05/19 1/5/19

Dr. Champa Nand (Member) | Dr. Bishanka Brata Bhowmik (Member)

1.5.2019

(Prof. Sukanta Banik)
Chairman, BPGS
Department of Electrical Engineering
Tripura University (A Central University)

Copy to:

1. Dean, Faculty of Science, Tripura University.
2. All the Members.....
3. Special Invitee .....

Syllabus for Course Work
(As prerequisite for Ph.D. registration)

ELECTRICAL ENGINEERING DEPARTMENT

2018-19

Sl. No.	Course Code	Course Name	Course Contents	Faculty	Credit
1	EE 1301 C	Research Methodology I	Shall be prepared / notified by TU authority	Decided by Tripura University	4
2	EE 1302 C	Research Methodology II	Review and critique of published research in the relevant field, training, field work, communication skill etc	CN/AKB/BB	4
3	EE 1303 C	Advanced area of research in the subject	Advanced area of research in the subject	CN/AKB/BB	4
4	EE 1304 C	Seminar / Practical / Project and Assignments	Seminar / Practical / Project and Assignments	CN	4

1/5/19 01/05/19 01/05/2019 01.05.2019

1.5.19

Course-I: Basic Computer Applications, Quantitative Methods , Statistics and application of Computer in statistics , Research Ethics and IPR, Documentation and scientific writing.

Unit-1: Basic Computer Applications

Basic computer knowledge. Features and applications related to presentation of text in suitable format and saving the data for future applications.
Use of word processing. Practical knowledge of MS Word to type the script, insert tables, figures and graphs, plotting of graphs in excel. Preparation of power point presentations based on the topic of research. Insertion of figures, graphs, charts in presentation, Use of spreadsheet and database software. Preparation of scientific posters for presentations. Internet and its application: Email, WWW, Web browsing, acquiring technical skills, dra wing inferences from data. Cloud computing.

Unit-2: Quantitative methods, Statistics and application of Computer in statistics

Measures of Central tendency and Dispersion. Probability distribution- Normal, Binomial and Poisson distribution. Parametric and Non-parametric statistics. Confidence interval, Errors.
Quantitative Techniques: Levels of significance, Regression and Correlation coefficient. Statistical analysis and fitting of data; Chi□Square Test, Association of Attributes t□Test Anova, Standard deviation, Co□efficient of variations. Open source software for quantitative and statistical analysis.

Unit-3: Research Ethics and IPR

Environmental impacts - Ethical issues - ethical committees - Commercialization – Copy right – royalty - Intellectual property rights and patent law – Trade Related aspects of Intellectual Property Rights – Reproduction of published material – Plagiarism - Citation and acknowledgement - Reproducibility and accountability.

Unit-4: Documentation and scientific writing:

Results and Conclusions, Preparation of manuscript for Publication of Research paper, Presenting a paper in scientific seminar, Thesis writing. Structure and Components of Research Report, Types of Report: research papers, thesis, Research proposal, Research Project Reports, Pictures and Graphs, citation styles, writing a review of paper, Bibliography.

1.5.19

Course-II: Review and critique of published research in the Relevant field, training, field work, communication Skill etc.

A research paper is based on original research. A review article or review paper will be based on other published articles. It will not support original research. Review articles will summarize the existing literature on a topic in an attempt to explain the current state of understanding on the topic. Training and field work will be based on different hand on experiments and measurement results on research topics. Communication skill will be improved for betterment of research paper and thesis writing.

Course-III: Advanced area of research in the subject

[Choose any one from (a), (b) & (c)]

a) Grid Integration of Renewable Energy:

Dispersed photovoltaic, solar, wind, fuel cell and conventional dispersed generation technologies, economic factors and technical factor on utility distribution systems, interfacing and optimal location of dispersed generation, protective relaying and system interconnection issues, islanding, voltage flicker effects, power quality effects, principle of wind energy extraction, electromechanical energy conversion, characteristic of wind turbines, wind interconnection requirements, low voltage ride through (LVRT), ramp rate limitations, and supply of ancillary services for frequency and voltage control, economic emission dispatch, integrating wind in the competitive electricity market, wind integration operational issues such as frequency control, load following, reserve requirements. Wind data analysis, Weibull distribution, Rayleigh distribution, Energy estimation of wind regimes, Weibull based approach, Rayleigh based approach, Power curve of the wind turbine, Capacity factor, matching the turbine with wind regime, economic dispatch model incorporating wind power, overestimation and to the cost of underestimation of available wind power, current practices and industry trends wind interconnection impact on steady-state and dynamic performance of the power system including modeling issue, photovoltaic and thermo-solar power generation profiles, Aerodynamics of wind turbines, aerodynamic power controls, pitch, stall, active stall, rotor power characteristics CP%, Power curves Wind energy conversion systems, induction generator, synchronous generator with full scale power electronic block, variable speed operations, doubly fed induction generation.

b) Sensor and System:

Sensor characteristics; R, L and C sensors: Hall Effect sensors; piezoelectric sensors; Micro-sensors. Sensors for displacement, pressure, temperature, flow etc Optical sensors, chemical and bio-sensors. Sensor applications in non-destructive testing, Interfacing sensors with microprocessors and micro controllers.

1.5.19

01/05/19

01/05/19

c) **Advanced Engineering Mathematics:**

Numerical Analysis: Introduction, Interpolation formulae, Difference equations, Roots of equations, Solutions of simultaneous linear and non-linear equations, Solution techniques for ODE and PDE. Optimization Technique: Calculus of several variables, Implicit function theorem, Nature of singular points, Necessary and sufficient conditions for optimization. Probability and Statistics: Definition and postulates of probability, Field of probability, Mutually exclusive events, Bayes' Theorem, Independence, Bernoulli trial, Discrete Distributions, Continuous distributions, Probable errors, Linear regression, Introduction to non-linear regression, Correlation, Analysis of variance.

Course - IV: Seminar / Practical / Project and Assignments

A. Practical_1
PSCAD/Matlab
Or

B. Seminar on the chosen area of proposed research.

Or

Project and Assignments related to proposed research

1.5.19

TRIPURA UNIVERSITY
(A Central University)
Suryamaninagar-799022

Rules & Regulations for Doctor of Philosophy (Ph.D.) -2016
Based on UGC-2016 Guidelines

[The Rules and Regulations have been drafted in connivance with the UGC (Minimum Standards and Procedure for Awards of M.Phil/Ph.D Degree) Regulations, 2016 on 5th May and as clarified on 25th July, 2016 (F.No 14-4/2016 (PS)].

1. Introduction:

I. These Regulations shall be called "The Tripura University Regulations for Doctor of Philosophy (Ph.D.) - 2016, in supersession of the earlier Rules & Regulations in this regard. And as and when any changes or amendment made by UGC or any such relevant authorities, such changes or amendment shall be the part of the Rules and Regulations after taking due approval from the Vice Chancellor, Tripura University.

II. These Regulations shall apply to every candidate applying for enrollment to the Programme, registration, conduct of research / study conferment of the Degree of Doctor of Philosophy (Ph.D.) of this University.

III. These Rules and Regulations shall come into effect fromAcademic year 2016- 17, and shall be applicable to the applicants,

a. Who have qualified in RET-2016 and intend to be enrolled in Ph.D. Programme in the Academic year 2016-17 and onwards.

b. And/or for the RET qualified candidates who qualified RET 2014/RET-2015 and were not allotted any supervisor and who have not gone through the Course Work.

2. Duration of the Programme:

I. Ph.D. Programmeshall be for a minimum duration of three years, including Course work and a maximum of six years from the date of admission to the Ph.D. Programme.

II. The women candidates and Persons with Disability (more than 40% disability) may be allowed a relaxation of two years for Ph.D. in the maximum duration.

III. Registration of a candidate of Ph.D. Program shall automatically be cancelled when maximum duration of the program is over. However, a candidate may be given chance to re-register to the program afresh on submission of fees. He/she has to pay the entire fees as stipulated to a fresh candidate in addition to re-registration fees. Such candidate shall get a period of three years time again to complete his remaining part of the Ph.D. Program

1/5/19 1.5.19 01/05/19 01/05/19

II. The Course Work shall be treated as prerequisite for Ph.D. program. Four Courses,each of 4 (Four) Credits have been assigned to Ph.D. Course Curriculum (as per Table B). Two Courses of Research Methodology (4 Credits each) shall cover areas such as, quantitative methods, computer applications, research ethics and review of published research in the relevant field, training, field work, etc. Other courses shall be advanced level courses preparing the students for Ph.D. degree.

III. The advance courses shall be developed by the concerned department and shall be taught by the departmental faculties.

TABLE - C

Course Code	Course Name	Course Contents	Credits
PHD-9001	Research Methodology I	Quantitative Methods, Computer Application and Research Ethics	4
PHD-9002	Research Methodology II	Review and Critique of Published Research in the relevant field, training, field work, Communication skill etc	4
PHD-9003	Advance area of research in the subject	To be decided according to need of the RAC.	4
PHD-9004	Seminar/Practical/ Project and Assignment etc	To be decided according to need of the RAC.	4

Notes:

1. The Dean of the concerned faculty on discussion with the groups of a departments shall decide the course content and working methodologies about the first two courses of Research Methodology, namely Research Methodology -I and Research Methodology-II.

2. The contents of the other two courses shall be decided by the offering departments. The DRC shall decide the content of the courses. It may be reported to the BPGS subsequently.

IV. A Ph.D. Scholar has to pass in all the above mentioned Courses to be successful in Ph.D. Course Work Examination to earn his/her required Credits. However, a Scholar can earn more than 16 Credits. He / she may earn extra Credits from other department/other institute/ MOOC approved by RAC in appropriate Semester. In that case he/she has to take written permission from the Convener of his/her RAC. The extra Credits will be reflected as well as in the final Grade Card ofPh.D Course Work.

V. All candidates admitted to the Ph.D. programs shall be required to complete the Course Work prescribed by the Department usually during the 1st semester of enrollment.

VI. A Ph.D. scholar has to obtain a minimum of 55% of marks or its equivalent Grade/CGPA in the Course Work in order to be eligible to continue in the program and submit the dissertation/thesis.

VII. To undertake the Ph.D. Course Work a candidate who is employed shall be required to submit the NOC by the employer allowing him/her to attend the Course Work classes.

VIII. To be eligible to appearto Ph.D. Course Work examination, each student shall have a minimum of 75% attendance in the classes. A student having attendance between 65% to 75% may be considered as eligible to appear as non-collegiate candidate and shall have to pay non-collegiate fee as per the rate of the post-graduate course. No student shall be allowed to appear in the examinations if attendance is less than 65%.

1.5.19

01/05/2019

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01/05/19

DEPARTMENT OF ELECTRICAL ENGINEERING
TRIPURA UNIVERSITY ***(A Central University)***
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NOTICE

Date: 28/03/2019

The 8th meeting of Board of Post Graduate Studies (BPGS) of Electrical Engineering Department, Tripura University (A Central University), will be held on **01/05/2019, in the Chamber of Dean of Science at 1.30 P.M.** to discuss the following agenda:

Agenda:

1. To confirm the proceedings of 7th meeting of BPGS held on 14/11/2018.
2. (a) To confirm the 1st Annual Report Presentation of Mrs. Aditi Datta, A Ph.D Scholar, Tripura University (A Central University).
   (b) Extension of Registration of Aditi Datta, for one year in the Department of Electrical Engineering.
3. To propose the syllabus of Ph.D course work for Department of Electrical Engineering.
4. Inclusion of NPTEL/MOOC courses in the M. Tech course of Electrical Engineering.
5. Miscellaneous, if any.

All members are cordially invited to attend the meeting. Professor Ajan Mukherjee, Department of Mathematics, Tripura University (A Central University) and Dr. Mrinal Kanti Bhoumik, Assistant Professor of Computer Science and Engineering will act as a Special Invitee for this meeting.

1.5.2019

(Prof. Sukanta Banik)
Chairman, BPGS
Department of Electrical Engineering

Copy to:

1. Dean, Faculty of Science, Tripura University.
2. All the Members.....
3. Special Invitee .....

Proceedings of the 7th Meeting of BPGS of Department of Electrical Engineering, T.U. held on 14th November 2018 at 3.00 pm. in the Office of Dean, Faculty of Sciences, T.U.

Members present:

Professor S Banik, Dean, faculty of Sciences	Chairman
Professor Anjan Mukherjee, Dept of Mathematics	Special Invittee
Dr Bishanka Brata Bhowmik, Dept of ECE	Member
Sangita Das Biswas, Dept of EE	Member

Resolved that

1. The agenda of Sixth meeting is confirmed.
2. Dr (Mrs) Champa Nandi, Assistant Professor, Department of Electrical Engineering be included in the RAC of the Candidate Mrs Aditi Datta, Part-time Research Scholar, Department of Electrical Engineering under the Supervision of Professor Anjan Mukherjee.
3. Dr Ramesh Kumar Sonkar, Assistant Professor, Department of Electrical Engineering, IIT, Guwahati, be included in the RAC of the Candidate Mrs Aditi Datta, Part-time Research Scholar, Department of Electrical Engineering under the Supervision of Professor Anjan Mukherjee, as Member-Other than External expert.
4. The Paper MEE-1007C (Design Project & Term Paper leading to thesis) is proposed to be introduced instead of MEE-1006C (Electrical Machine Lab & Design Project). It will be effected from 2017-2018 session for 2nd Sem students.
5. The Paper MEE-904 E7 (Digital Signal Processing) is proposed to be introduced for on-going 1st sem courses during 2018-2019 session.
6. Change of Name of paper is as follows:

From	To
Nonconventional Energy sources and Power generation Marks: 100) (Code: MEE -903C, Marks:100)	Renewable Energy sources and power generation (Code:MEE-907C,

The meeting ended with a vote of thanks to the Chair.

14/11/18
Sangita Das Biswas
Member

14/11/18
Dr Bishanka Brata Bhowmik
Member

14.11.18
Professor Anjan Mukherjee
Spl Invittee

14.11.2018
Professor S Banik
Chairman

DEPARTMENT OF ELECTRICAL ENGINEERING
TRIPURA UNIVERSITY
(A Central University)
Suryamaninagar-799022, Tripura, India
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PROCEEDINGS OF THE SIXTH MEETING OF BOARD OF POST GRAD STUDIES IN ELECTRICAL ENGINEERING HELD IN THE CHAMBER OF DEAN OF SCIENCE, TRIPURA UNIVERSITY (A CENTRAL UNIVERSITY), SURYAMANINAGAR, WEST TRIPURA ON 17/07/2018 AT 3: P.M.

Members Present:

1. Prof. Sukanta Banik, Dean of Science, Tripura university (A Central University)
2. Prof. Barin Kumar De, Physics Department, T.U B K De 17.07.2018
3. Mrs. Sangita Das Biswas, Coordinator, Department of Electrical Engg. T.U 17/07/18

At the outset, Prof. Sukanta Banik, Chairman of the Board of Post Graduate Studies (B.P.G.S), Dean of Science, convened the special meeting and extended a warm welcome to all the members for their active participation and co-operation. Thereafter, agenda wise discussion started.

Agenda 01: To confirm the proceedings of 5th meeting of BPGS held on 16/11/2016

Resolution: Proceedings of Fifth B.P.G.S meeting held on 16/11/2016 read and confirmed.

Agenda 02: Approval of Syllabus of new papers for 2nd semester, namely "SCADA System and Applications (MEE-1004E4)" & for 3rd semester, namely, "Power System Transients (MEE-1105E6)" for M.Tech. in Electrical Engineering.

Resolution: Members of the B.P.G.S meeting decided that these new papers will be considered w. e. f. 2019-2020 sessions. The department will finalize the syllabus in the next BPGS after getting suggestion and guidelines by an External Expert. The External Expert may be selected by Coordinator of the department of Electrical Engineering in consultation with other faculty members.

Agenda 03: Inclusion of Open Elective Courses, Audit-I courses and Audit-II courses in the course structure of M.Tech. in Electrical Engineering.

Resolution: Resolve that Department will include open elective courses, audit courses from second semester of 2019. The department will finalize the syllabus in the next BPGS after getting suggestion and guidelines by an External Expert. The External Expert may be selected by Coordinator of the department of Electrical Engineering in consultation with other faculty members.

Agenda 04: To consider the 1st and 3rd semester class routine of M.Tech. in Electrical Engineering.

Resolution: Class Routine submitted by Coordinator of department of Electrical Engineering has been approved.

Agenda 05: To consider and to recommend the list of paper setters, examiners and moderators of M.Tech 1st and 3rd Semester Examinations.

Resolution: The list of Paper Setters. Examiners and Moderators for M.Tech. 1st and 3rd semesters. 2018. has been placed to the table and approved.

Agenda 06: Guest Teachers with respect to Two Vacant posts and one in connection with one regular faculty who is now under maternity leave.

Resolution: Under discussion it is noted that one teacher out of two regular teachers and one contractual teacher, the department is not be able to run the classes smoothly. The B.P.G.S recommend that the department be provided with Three (3) Guest Teachers. The Coordinator of Electrical Engineering in consultation with other departmental faculty members will prepare a list of Guest Teachers. The list is to be submitted to dean of Science for approval by the authority.

Agenda 07: Miscellaneous, if any:

Resolution: The Department feels that a little change is required in the papers given below:

(i) Modern Control System (Code: MEE-901C. Marks-100. Credit: 4)

(ii) Power system Protection and Switchgear (Code: MEE-1002C, Marks-100, Credit: 4)

BPGS suggest that the faculty members shall finalize the modified finalized version. Thereafter, these may be submitted to authority for approval w.e.f. the existing session.

(iii) B.P.G.S. noted printing mistakes in the case of subject coding a presently coded as "MEE-904 E5" for "Advance Mathematics", and "MEE-1003 E4" for "Network Security and Cryptography".

B.P.G.S corrected the suggestion as "MEE-904 E6" for "Advance Mathematics", and "MEE-1003 E5" for "Network Security and Cryptography".

(iv) B.P.G.S. noted a subject, namely "Power Electronics Application in Power System" (Code: MEE- 1004 E2, Marks: 100, Credit: 3) is offered by Department of Computer Science and Engineering, Tripura University (A Central University).

B.P.G.S corrected the suggestion as "Power Electronics Application in Power System" (Code: MEE- 1004 E2, Marks- 100, Credit: 3) will be offered by Electrical Engineering w.e.f. the existing session.

The Coordinator of the department of Electrical Engineering will report all the corrections to the Controller of Examinations, Tripura University (A Central University), as early as possible.

One member of BPGS, Prof. Barin Kumar De, Department of Physics, Tripura University (A Central University) suggested that the faculty members shall make continuous interaction with guest faculties during their visit in respect of up-gradation of the syllabus.

The meeting ended with a vote of thanks to the Chair.

17.2.2018

(Prof. Sukanta Banik)
Chairman, BPGS
Department of Electrical Engineering
Tripura University (A Central University)

DEPARTMENT OF ELECTRICAL ENGINEERING
Tripura University (A Central University), Suryamaninagar 799022
Phone 0381 237 9244

PROCEEDINGS OF THE FIFTH MEETING OF BOARD OF POST GRADUATE STUDIES IN ELECTRICAL ENGINEERING HELD IN THE CHAMBER OF HEAD –IN –CHARGE OF THE DEPARTMENT OF ELECTRICAL ENGINEERING ,TRIPURA UNIVERSITY, SURYAMANINAGAR, WEST TRIPURA ON 16TH NOVEMBER,2016 AT 11:00AM.

Members Present:

1. Prof. M K. Singh, Dean of Science. Tripura University - Chairman
2. Prof. Barin Kumar De, Head of Physics Department, Tripura University - Member
3. Mrs. Sangita Das Biswas, Department of Electrical Engineering, Tripura University - Member
4. Dr. Champa Nandi, Department of Electrical Engineering, Tripura University - Member

At the outset, Prof. M.K. Singh, Chairman, Board of Post Graduate Studies (B.P.G.S.), Department of Electrical Engineering, extended a warm welcome to all the members for their active participation and co-operation. Thereafter, agenda wise discussion started.

Agenda 01/05/16: To Confirm the Proceedings of 4th meeting of B.P.G.S. held on 09/03/15

Confirmed

Agenda 02/05/16: Revision of M.Tech Syllabus in Electrical Engineering.

The proposed modification in 1st Semester course

i) ntroduction of Quentin Computing (MEE 14-09) &
ii) "Probability and Random Process "(MEE 14-10). Have already been approved in 3rd BPGS Meeting dated 9.9.2014. So the agenda was taken out.

Agenda 03/05/16:

From 3rd Semester Syllabus, the paper "Smart Grid "(MEE 11-05E) has already been shifted of 2nd Semester Paper (MEE-1003E). It is separated here and approved in the meeting.

Agenda 04/05/16:

The matter of modification of paper "DSP and Communication networking "of M Tech 1st Semester would be considered after thorough discussion. An external expert might be involved in this process before finalization of modification.

Agenda 05/05/16:

The list of examiners and paper setters for 1st and 3rd semesters were placed in the meeting and was approved.

Miscellaneous:

1) Modern Power System operation and Control (MEE 901C) 1st Semester M.Tech Course should be discussed in the light of suggestion of honorable V.C. As per his suggestion, this paper is generally not offered in Electrical Engineering Course of other institute now. He also suggested to go through the syllabus of IIT'S for final consideration.

   Members of BPGS fell the need that Coordinator of EE Deptt be requested is collect the information about the Subject matter from different IIT'S. The report would be placed in next BPGS meeting for final decision.

2) The meter regarding paper MEE-1006C (Electrical Machine Lab and Design Project) has been brought in notice that this subject is now being taught in B.Tech course and so it may be replaced by the course content " Design project and Term paper leading thesis " Under same paper code MEE -1006C (P). The BPGS approved this for necessary action.

3) Making pattern for 3rd Semester Paper MEE-1004C (Workshop and Seminar) and 4th Semester paper MEE-1203C (Workshop and Seminar).

   It was discussed and decided that at least two workshops / Seminars or both should be considered as qualified for getting the credit of that paper. A candidate may attend maximum four no. of Workshop/ seminar or both in a semester. For internal assessment (30 marks) should be decided by the internal Faculty members after considering the feedback report submitted by the candidate or evolution report of the workshop.

4) The marking Pattern for papers under CBCS.
   The matter was placed in meeting and it was decided that 70 marks would be from theoretical courses and 30 marks from internal assessment as per CBCS rule of the University. Modification CBCS Course Structure along with Syllabus is attached (Annexure –A).

Modified

The meeting ended with a vote of thanks to the Chair.

16/11/2016

(Prof. M.K. Singh)
Chairman, B. P.G.S.
Department of Electrical Engineering
Tripura University

EDINGS OF THE FIFTH MEETING OF BOARD OF POST GRADUATE STUDIE... RICAL EERING HELD IN THE CHAMBER OF HEAD – IN – CHARGE OF THE DEPARTMENT OF TRICAL ENGINEERING . TRIPURA UNIVERSITY, SURYAMANINAGAR, WEST TRIPURA ON 16TH MER, 2016 AT 11:00 AM.

ers present:

Prof. M.K.Singh, Dean of Science, Tripura University	- Chairman
Prof. Barin Kumar De, Head of Physics Department, Tripura University	- Member
Mrs. Sangita Das Biswas, Department of Electrical Engineering., Tripura University	- Member
Dr. Champa Nandi, Department of Electrical Engineering , Tripura University	- Member

At the outset, Prof. M.K.Singh, Chairman, Board of Post Graduate Studies (B. P. G. S.), Department of Electrical Engineering, extended a warm welcome to all the members for their active participation and co-operation. Thereafter, agenda wise discussion started.

Agenda 01/05/16: To confirm the proceedings of 4th meeting of B. P. G. S. held on 09/03/15

Confirmed

Agenda 02/05/16: Revision of M.Tech Syllabus in Electrical Engineering;

The proposed modification in 1st Semester ... (i) Introduction of Quantum Computing (MEE 11-09 ... (ii) Probability and Random process (MEE ... have already been approved in 3rd BPGS meeting dated 9.9.2014. So, the agendum was taken out.

... From 2nd Semester syllabus, the paper "Smart ... (MEE 11-05E) has already been shifted ... paper (MEE 1203E) It is reflected here and approved in this meeting.

Agenda ...

The matter of modification of paper ... and Communication network ... [illegible]

Department of Electrical Engineering
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Phone: 0381-2379224, email: hod_ee@tripurauniv.in

NOTICE

Date: 01/11/2016

The 5th meeting of Board of Post Graduate Studies (BPGS) in Electrical Engineering will be held on **16th November, 2016 in the Department of Electrical Engineering at 2.00 P.M.** to discuss the following agenda:

Agenda:

1. To confirm the proceedings of 4th meeting of BPGS held on 09/03/2015.
2. Approval of Syllabus of new papers in 1st semester course of M.Tech. in Electrical Engineering. The papers are:
   (i) "Introduction of Quantum Computing" (MEE 14-09), and
   (ii) "Probability and Random Processes" (MEE 14-10).
3. Reporting of shift of a paper "Smart Grid" from 3rd Semester to 2nd Semester of M.Tect. from January, 2016.
4. Modification of a paper "DSP and Communication Networking" of M.Tech. 1st semester.
5. To consider and to recommend the list of paper setters, examiners and moderators of M.Tech 1st and 3rd Semester Examinations. Also consider the proposal for examination schedule.
6. Miscellaneous, if any.

All members are cordially invited to attend the meeting. All external members will be provided Guest House facility and TA/DA will be paid as per University rules.

1/11/2016

(Prof. M. K. Singh)
Chairman, BPGS
Department of Electrical Engineering

Copy to:

1. Dean, Faculty of Science, Tripura University.
2. P.S to Hon'ble Vice-Chancellor for kind information, Tripura University.
3. The Hon'ble Registrar, Tripura University.
4. The Controller of Examination, Tripura University.
5. The Finance Officer, Tripura University.
6. All the Members.....

Department of Electrical Engineering
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Phone: 0381-2379224, email: hod_ee@tripurauniv.in

NOTICE

Date: 01/11/2016

The 5th meeting of Board of Post Graduate Studies (BPGS) in Electrical Engineering will be held on **16th November, 2016 in the Department of Electrical Engineering at 2.00 P.M.** to discuss the following agenda:

Agenda:

1. To confirm the proceedings of 4th meeting of BPGS held on 09/03/2015.
2. Approval of Syllabus of new papers in 1st semester course of M.Tech. in Electrical Engineering. The papers are:
   (i) "Introduction of Quantum Computing" (MEE 14-09), and
   (ii) "Probability and Random Processes" (MEE 14-10).
3. Reporting of shift of a paper "Smart Grid" from 3rd Semester to 2nd Semester of M.Tect. from January, 2016.
4. Modification of a paper "DSP and Communication Networking" of M.Tech. 1st semester.
5. To consider and to recommend the list of paper setters, examiners and moderators of M.Tech 1st and 3rd Semester Examinations. Also consider the proposal for examination schedule.
6. Miscellaneous, if any.

All members are cordially invited to attend the meeting. All external members will be provided Guest House facility and TA/DA will be paid as per University rules.

1/11/2016

(Prof. M. K. Singh)
Chairman, BPGS
Department of Electrical Engineering

Copy to:

1. Dean, Faculty of Science, Tripura University.
2. P.S to Hon'ble Vice-Chancellor for kind information, Tripura University.
3. The Hon'ble Registrar, Tripura University.
4. The Controller of Examination, Tripura University.
5. The Finance Officer, Tripura University.
6. All the Members.....

M.TECH. IN ELECTRICAL ENGINEERING

TRIPURA UNIVERSITY

(A CENTRAL UNIVERSITY)

TRIPURA, INDIA

SYLLABUS

(7TH BPGS, NOVEMBER-2018)

Course Structure (Electrical Engineering)

1st Semester: 700 Marks

Theoretical Courses	Subject Code	Subject Name	Marks	L	T	P	C	Core/Optional Elective
Paper-I	MEE -901 C	Modern Power System Operation and Control	100 *(70+30)	04	0	0	04	C
Paper-II	MEE -902 C	Modern Control Systems	100 *(70+30)	04	0	0	04	C
Paper-III	MEE - 903C	Nonconventional Energy Sources and Power Generation	100 *(70+30)	03	0	0	03	C
	MEE -907 C	Renewable Energy Sources and Power Generation						
Paper-IV	MEE -904 E	Elective Papers :	100 *(70+30)	03	0	0	03	E
	MEE -904 E1	DSP and Communication Networking						E
	MEE -904 E2	Image Processing						E (Offered by Department of CSE)
	MEE -904 E3	Probability and Random Processes						-
	MEE -904 E4	Introduction of Quantum Computing						E
	MEE -904 E5	Fuzzy Set Theory						E (Offered by Department of Mathematics)
	MEE -904 E6	Advance Mathematics						E
	MEE -904 E7	Digital Signal Processing						E
Compulsory Foundation Course	Computer Skill III	JAVA Software	100 *(70+30)	04	0	0	04	CFC (offered by IT or CSE)
Sessional Courses	**Subject Code**	**Subject Name**	**Marks**					
Sessional 1	MEE 905P	Power system Simulation Lab	100 *(70+30)	0	0	04	02	C
Sessional 2	MEE 906P	Control and Measurement Lab	100 *(70+30)	0	0	04	02	C
		Total	**700**	**18**	**0**	**08**	**22**	

*70 (Theory) + 30 (Internal Assessment)

2nd Semester: 600 Marks

Theoretical Courses	Subject Code	Subject Name	Marks	L	T	P	C
Paper-V	MEE- 1001 C	Power Electronics Converters	100 *(70+30)	04	0	0	04
Paper-VI	MEE- 1002 C	Power System Protection and Switchgear	100 *(70+30)	04	0	0	04
Paper-VII	MEE- 1003 E	Elective Papers :	100 *(70+30)	03	0	0	03
	MEE- 1003 E 1	Optical Information Processing					
	MEE- 1003 E 2	Advance Electrical Drives					
	MEE- 1003 E3	Smart Grid					
	MEE -1003 E4	Fuzzy Logic and Application					
	MEE -1003 E5	Network Security and Cryptography					
Paper-VIII	MEE 1004 E	Elective Papers	100 *(70+30)	03			03
	MEE -1004 E 1	EMI/EMC					
	MEE- 1004 E 2	Power Electronics Application in Power System					
	MEE- 1004 E 3	VLSI					
Sessional Courses	**Subject Code**	**Subject Name**	**Marks**				
Sessional 1	MEE -1005- C	Power Electronics Lab	100 *(70+30)	0	0	04	02
Sessional 2	MEE -1007 -C	Design Project & Term Paper Leading to Thesis	100 *(70+30)	0	0	04	02
Total			**600**	**14**	**0**	**08**	18

*70 (Theory) + 30 (Internal Assessment)

3rd Semester: 600 Marks

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

Subject Code	Subject name	Marks	L	T	P	C	Core/ Elective
MEE -1101 C	Thesis Report Interim	100	0	0	04	04	C
MEE -1102 C	Thesis Seminar Interim (Presentation & VIVA-VOCE)	200	0	0	04	04	C
MEE -1103 C	Technical Communication	100	0	0	04	02	C
MEE -1104 C	Workshop and Seminars	100 *(70+30)	0	0	02	02	C
MEE -1105 E	Elective Papers	100 *(70+30)	04	0	0	04	E
MEE -1105 E1	Artificial Neural Network						E
MEE -1105 E2	Fundamental of Business managements						E (offered by MBA Department)
MEE -1105 E3	Wireless Communication and Mobile Computing						E (offered by CSE Department)
MEE -1105 E4	Special Electrical Machine						E
MEE -1105 E5	Advance Electromagnetic & Antenna Theory						E (offered by ECE Department)
Total		**600**	**04**	**0**	**10**	**16**	

4th Semester: 600 Marks

Thesis Implementation (Thesis: Phase-II)

Subject Code	Subject name	Marks	L	T	P	C	Core/ Elective
MEE -1201C	Thesis Report Final	200	0	0	08	04	C
MEE -1202 C	Thesis Seminar Final (Presentation &VIVA-VOCE)	200	0	0	08	04	C
MEE -1203 C	Workshop and Seminars	100 *(70+30)	0	0	02	01	C
MEE -1204 E	Elective Papers	100 *(70+30)	03	0	0	03	E
MEE -1204 E1	Advance Electronics						E (offered by Physics Department)
MEE -1204 E2	Bioinformatics Sequence Analysis						E (offered by Molecular Biology & Bioinformatics Department)
MEE -1204 E3	Sensor and System						E
Total		**600**	**03**	**0**	**16**	**12**	13

Total Credits: 68, Total Marks: 2500