

MINUTES OF THE MEETING

Name of the meeting : Board of Studies Meeting (Online via Google meet), ECE Department
Date of the meeting : 18th December 2021
Time : 10.00 A.M
Duration : 2 Hour

The following points were discussed:

1. Curriculum and Syllabi for M.Tech (Defence Technology) for the students admitted from the Academic year 2022-23 onwards (subject to approval from Anna University Chennai).
2. Syllabus for elective course for M.E. (Communication Systems) Programme for the students admitted from the Academic year 2021-22 onwards.
3. B.E (ECE) Programme performance assessment.
4. Scheduling of courses (prepared based on various meetings with ALUMNI), based on CDIO framework, for B. E (ECE) Programme for the students to be admitted from the Academic year 2022-23 onwards.
5. Syllabus, based on CDIO framework, for the industry supported courses for B.E (ECE) programme for the students admitted from the Academic year 2018-19 onwards.
6. Categorization of courses in Choice Based Credit System (CBCS) for B. E (ECE) programme for the students admitted from the Academic year 2018-19 onwards and 2021-22 onwards.
7. Scheduling of courses, based on CDIO framework, for B. E (ECE) programme for the students admitted from the Academic year 2018-19 onwards and 2021-22 onwards.
8. Any other matter

Attended by:

Dr.S.Rajaram	Chairman, Board of Studies (ECE) / Professor and Head of ECE Department, TCE, Madurai
Dr. Balaji Srinivasan	Professor, Department of EE, Indian Institute of Technology Madras
Dr.T.Purusothaman	Professor, Department of ECE, Govt. College of Technology, Coimbatore
Dr.S.Manivannan	General Manager, Siemens Ltd., Bangalore
Dr.D.Sriram Kumar	Professor, Department of ECE, National Institute of Technology Trichy
Dr. T. Ganesan	Director and CTO, MMRFIC Technology Pvt. Ltd., Bengaluru
Dr. S. Deepak Ram Prasath	Project Manager, Thiagarajar Telekom Solutions Ltd., Madurai

THIAGARAJAR COLLEGE OF ENGINEERING, MADURAI 625 015
Department of Electronics and Communication Engineering

Faculty Members:

1. Dr.S.J.Thiruvengadam Professor, ECE and Dean (Academic Process)
2. Dr.B.Manimegalai Professor
3. Dr.S.Md. Mansoor Roomi Professor
4. Dr R A Alaguraja Associate Professor
5. Dr.K.Hariharan Associate Professor
6. Dr M.S.K. Manikandan Associate Professor
7. Dr B. Yogameena Associate Professor
8. Dr B. Sathyabama Associate Professor
9. Dr.M.N.Suresh Assistant Professor
10. Dr K. Rajeswari Assistant Professor
11. Dr N.B. Balamurugan Associate Professor
12. Dr.V.Vinoth Thyagarajan Assistant Professor
13. Dr G. Ananthi Assistant Professor
14. Dr E. Murugavalli Assistant Professor
15. Dr.K.Vasudevan Assistant Professor
16. Dr.D.Gracia Nirmala Rani Assistant Professor
17. Dr P.G.S. Velmurugan Assistant Professor
18. Dr V.R. Venkatasubramani Assistant Professor
19. Dr N. Ayyanar Assistant Professor
20. Dr G Prabhakar Assistant Professor
21. Dr M Senthilarasi Assistant Professor

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#	Points Discussed	Action Plan	Responsibility	Target date
1.	Agenda of the Meeting	Dr.S.Rajaram welcomed the members of the Board of Studies and presented the Agenda of the meeting. The statement of Vision, Mission, Programme Educational Objectives, Programme Outcomes, Programme Specific Outcomes of the B.E (ECE) Programme were displayed.	-	-
2.	Curriculum and Syllabi of M.Tech (Defence Technology)	<p>Dr S.J. Thiruvengadam presented the Curriculum, Syllabi and Guidelines, Programme Outcomes of M.Tech (Defence Technology) - Approval has been granted by AICTE, New Delhi. TCE is opting for two specializations – 'Communication Systems and Sensors' and 'High Energy Materials Technology'. The syllabus of this Programme is designed by DRDO in collaboration with AICTE. However, if required, up to 20% of topics can be added to the syllabus of each course. The curriculum has been passed for approval in the Academic council meeting. The following suggestions were made:</p> <ul style="list-style-type: none"> • For warfare, DLRI labs can be approached. • Along with under graduation in ECE discipline, eligibility for admission can also be considered for EEE and E&I disciplines. • For assessments, open-book exam can be given with typical use-cases and scenarios. Emphasis should be given to design problems. • Radar signal processing Lab can be handled here, at TCE. • Sustainability of the Programme has to be monitored, time-to-time. • Job opportunities has to be to envisaged. • After successful passing out of two batches, the credits for electives can be substantially increased and in lieu of this, credit for professional core can be decreased. • Can include a separate course on Control Systems in the first semester. • Teachers from TCE shall attend the classes handled by superannuated scientist from DRDO labs (Train-the-Trainers). This will enable TCE teachers to handle the courses independently after a due course of time. • Lab experiments shall be added in consultation with DRDO labs considering the available facilities. <p>Dr S.J. Thiruvengadam also presented the syllabus of the following courses and the same has been passed for approval in Academic council meeting.</p> <p>Semester-1 Compulsory Courses: 22DT110 Systems and Warfare Platforms 22DT120 Warfare Simulations & Strategies 22DT130 Advanced Engineering Mathematics 22DT140 Systems and Platforms Lab</p>	Dr S.J.Thiruvengadam	27.12.21

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		<p>22DT150 Warfare Simulations & Strategies Lab</p> <p>Semester-1 Elective Courses: 22DTPA0 Rockets & Missiles Fundamentals 22DTPB0 Advanced Thermal Engineering 22DTPC0 Numerical methods for science & engineering 22DTPD0 Communication Technology 22DTPE0 Advanced Mechanical Engineering 22DTPP0 Autonomy and Navigation Technology 22DTPQ0 Optimization theory & applications 22DTPR0 Military Electronics System Engineering 22DTPS0 System Engineering & Analysis 22DTSA0 Seminar 1</p> <p>Semester-2 Compulsory Courses - Communication Systems & Sensors: 22DTC210 Radar Technologies 22DTC220 Digital & satellite Communication and Navigation from Space 22DTC230 Tactical battlefield Communication & Electronic Warfare 22DTC240 Radar Technologies Lab 22DTC250 Digital & Satellite Communication and Navigation from Space Lab</p> <p>Semester-2 Compulsory Courses - High Energy Materials Technology: 22DTH210 High Energy Materials Modeling & Simulation 22DTH220 Munitions and Target Response 22DTH230 Manufacturing and Materials Properties of Explosives 22DTH240 High Energy Materials Modeling & Simulation Lab 22DTH250 Munitions and Target Response Lab</p> <p>Semester-2 Elective Courses (for all Specializations): 22DTRA0 Robotics (MSS, MCC) 22DTRB0 EMI/EMC in Military Systems 22DTRC0 Defence Electro-Optics and Imaging Systems 22DTRD0 Structural Dynamics and Aero-elasticity 22DTRE0 Safety, Health & Hazard Management 22DTRF0 Fundamental of Telemetry, Telecomm and Transponder 22DTRG0 Jamming and ECM/ECCM Technologies 22DTRH0 Software Defined Radios</p>		

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		22DTRJ0 Advanced Lightweight and Composite Structures 22DTRK0 Test Methodologies for DEW Systems (Lasers & Microwave) 22DTRL0 Advanced Analytical Techniques / Lab Testing 22DTRM0 Sonar System Engineering 22DTRP0 Unmanned Aerial Vehicle Design 22DTRQ0 Naval Ocean Analysis and Prediction 22DTRR0 Modeling & Simulation of Laser Matter Interaction 22DTRS0 Computational Aerodynamics 22DTRT0 Launch Vehicle Design & Analysis 22DTRU0 Acquisition, Tracking & Pointing Technology 22DTRV0 Data Acquisition, Tracking & Post Flight Analysis 22DTRW0 Air Independent Propulsion & Batteries 22DTRX0 Advanced Digital Modulation Technologies & Standards 22DTRY0 Trajectories Modeling & Simulation 22DTRZ0 Sensor Technology 22DTCA0 Seminar 2C 22DTHA0 Seminar 2H Semester-3 22DT310 Project Dissertation- Phase 1 22DT320 Seminar/ Industrial training Semester-4 22DT410 Project Dissertation Phase-2 The following suggestions were given:								
		<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th style="width: 35%; text-align: left;">Course Code & Name</th> <th style="width: 65%; text-align: left;">Suggestions</th> </tr> </thead> <tbody> <tr> <td>22DT110 Systems and warfare Platforms</td> <td>Drones (micro-drone) and imaging satellite topics can be included.</td> </tr> <tr> <td>22DT130 Advanced Engineering Mathematics</td> <td> <ul style="list-style-type: none"> • Concentrate on applied mathematics – numerical methods & computation and parallel processing. • Finite element analysis, fluid simulation (graphics parts), non-linear equations, linear algebra can be given due importance. </td> </tr> </tbody> </table>	Course Code & Name	Suggestions	22DT110 Systems and warfare Platforms	Drones (micro-drone) and imaging satellite topics can be included.	22DT130 Advanced Engineering Mathematics	<ul style="list-style-type: none"> • Concentrate on applied mathematics – numerical methods & computation and parallel processing. • Finite element analysis, fluid simulation (graphics parts), non-linear equations, linear algebra can be given due importance. 		
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		<ul style="list-style-type: none"> The teacher should relate the topics to Defence applications such as GPS - triangulation, optimization, gradient, tracking, etc. 		
	22DTPC0 Numerical Methods for Science & Engineering	Finite element analysis, fluid simulation (graphics parts), non-linear equations, linear algebra can be given due importance.		
	22DTPD0 Communication Technology	<ul style="list-style-type: none"> Topics on Fiber optics can be added to the syllabus. Redundant portions, as compared to that in under graduation, can be removed. Instead, we can add certain advanced topics in communication technology. 		
	22DTC210 Radar Technologies	<ul style="list-style-type: none"> Topics on over-the-horizon radar and passive radar can be included. Also, it is important to include radar link budget 		
	22DTC220 Digital & satellite Communication and Navigation from Space	<ul style="list-style-type: none"> Topics on antenna types can be included. Also, topics on using satellite for terrestrial communication, optical communication (LED, LASER detector), and satellite link budget can be included 		
	22DTC230 Tactical battlefield Communication & Electronic Warfare	<ul style="list-style-type: none"> Overlapping topics on radar and topics on decision theory can be removed. Instead, topics on electronic warfare can be included 		
	22DTRB0 EMI/EMC in Military Systems	<ul style="list-style-type: none"> The syllabus is too generic. Testing items can be included. At least, one sub-division on standards can be included. Topics on electro-optic imaging system can be included 		
3.	18CNRA0 Solid State Device Modeling and Simulation, 18CNRB0 Nano MOSFET Modeling	<p>Dr N B Balamurugan presented the syllabus of the courses and the same has been passed for approval in Academic council meeting. The following suggestions were given:</p> <ul style="list-style-type: none"> Syllabi can be combined in a different way – one on Analog transistors and other on digital transistors. 	Dr N B Balamurugan	27.12.21
4.	Revised Assessment Pattern for 18EC710 and 18EC490	Revised Assessment Pattern for '18EC710 Consumer Electronics' and '18EC490 Project Management' has been passed for approval in Academic council meeting.	-	-

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#	Points Discussed	Action Plan	Responsibility	Target date
5	Programme performance assessment	Dr P G S Velmurugan presented the Expected Proficiency Level (EPA) and Expected Attainment Level (EAL) fixed for 2018 syllabus course, Also, the methods of arrival for fixing the 'EPL and EAL' were presented. Dr K Rajeswari presented the analysis and outcome carried out from the 'EPL and EAL' for '18EC340 Signals and Systems' course.	Faculty Members	-
6	Scheduling of courses for students joining in 2022-23 (prepared based on various meetings with ALUMNI)	Dr V.R. Venkatasubramani presented the draft - Scheduling of courses for students joining in 2022-23, and details of the credit distribution and electives list appropriate to the Mapping between 'Column (2,2) of Technical Knowledge Vs Interpersonal graph' and 'the existing 2018 electives' were displayed. The same shall be reviewed along with the Alumni Syllabus Team (1999 batch) for refinement. Also, the drawback in the existing system shall be shown to emphasize how it is eliminated in the new system.	Faculty members	-

VR Venkatasubramani

Prepared by: Dr. V.R. Venkatasubramani
Date: 23.12.2021

SF

Approved by: HoD/ECE

This Board of Studies Meeting is conducted online and hence the member signatures are not present.