



# **AGENDA**

*OF*

## **77<sup>th</sup> MEETING (SPECIAL) OF THE ACADEMIC COUNCIL**

**HELD ON  
14<sup>th</sup> FEBRUARY 2017 AT 02.00 P.M.  
AT U. N. BRAHMA MEMORIAL HALL**

**ASSAM UNIVERSITY**  
(A CENTRAL UNIVERSITY ESTABLISHED BY AN  
ACT OF PARLIAMENT)  
**SILCHAR**





## Assam University, Silchar

**Agenda items relating to 77<sup>th</sup> Meeting (Special) of the  
Academic Council to be held on 14<sup>th</sup> February 2017 at 02.00 p.m. at  
Assam University, Silchar**

### ***(A) Agenda item for approval :***

#### **Item No. 1 : Convocation for the year 2015-16 :**

The Controller of Examinations has proposed to hold the 15<sup>th</sup> Convocation of the University for the years 2015 and 2016 on 15<sup>th</sup> March 2017.

The degrees that will be conferred in the 15<sup>th</sup> Convocation are as follows:

1. MPhil and PhD degrees awarded after 16.11.2014 and on or before 24.01.2017
2. Post Graduate, Integrated, Diploma, B Ed, LLB and Three Year Degree Courses (BA, BSc, BCom, BBA, BCA) completed in any of the four exams:
  - a. Odd Semester Examination 2014
  - b. Even Semester Examination 2015
  - c. Odd Semester Examination 2015
  - d. Even Semester Examination 2016
  - e. Annual Examination 2014 & 2015
3. MBBS Course completed (including Rotatory Internship Programme) in 2014 & 2015.

The proposal is accepted by the competent authority and the issue was placed before the Executive Council for ratification. However, the Executive Council further referred the same to Academic Council for consideration.



**Applications received for 15<sup>th</sup> Convocation :**

Bachelor of Arts	557
BBA	05
B. Com.	357
B. Sc.	282
BCA	02
B. Ed.	145
B. Pharma	26
Bachelor of Science {Computer Science (Integrated)}	38
Master of Science - Computer Science (Integrated)	43
Bachelor of Science - (Honours) - B. Ed.	03
Bachelor of Social Work (Integrated)	54
Master of Social Work (Integrated)	53
Bachelor of Technology	66
Master of Technology	16
Bachelor of Visual Arts (Integrated)	43
Master of Visual Arts (Integrated)	31
LL. B. (College)	33
Bachelor of Arts (Honours)- LLB	43
M. Phil	38
Master of Arts	533
Master of Business Administration	69
Master of Commerce	108
Master of Education	16
Master of Law	28
Master of Library & Info. Science	05
Master of Mass communication	32
Master of Science	310
MBBS	57
PGDBI ( Dept. of Life Sc. & Bio-informatics)	01
PGDMM (Dept. of Commerce)	08
PGDTM (Dept. of Ecology & Env. Sc)	04
PH. D	397
MEPM (Dept. of Education)	01
Bachelor of Arts (Honours)-LLB	43
<b>Total</b>	<b>3404</b>

**Item No. 2 : Adoption of University Grants Commission (minimum qualifications for appointment of teachers and other academic staff in universities and colleges and measures for the maintenance of standards in higher education) 4th amendment, Regulations, 2016.**

The Committee constituted by the Vice Chancellor vide notification No 104/19//2012-ESTT/Part-IV/1111-15 dated 2.11.2016 for examining UGC's



Regulations 2016 relating to "Minimum Qualification for Appointment of Teachers and Other Academic Staff in Universities and Colleges and Measures for the Maintenance of Standards in Higher Education (4<sup>th</sup> Amendment)" held on 7<sup>th</sup> December, 2016 has recommended the following :

1. The University to follow the provisions of the 4<sup>th</sup> amendment as per which the claims for promotion under the scheme may be considered from the date of promulgation of the 4<sup>th</sup> amendment of UGC Regulations, 2016 i.e., 11<sup>th</sup> July, 2016.
2. "Tables-I,II(A),II(B),III,IV,V(A),V(B),VI,VII,VIII(A), VIII(B) and IX of Appendix-III of the University Grants Commission (Minimum qualifications for appointment of Teachers and other academic staff in Universities and Colleges and other measures for the maintenance of standards in higher education) (3<sup>rd</sup> Amendment) Regulations, 2016 shall be substituted with Appendix-III : Tables-I,II(A),II(B),III,IV,V(A),V(B),VI,VII,VIII(A), VIII(B) and IX appended to the 4<sup>th</sup> Amendment Regulations 2016."
3. While considering the cases the University shall stick to the provision regarding publications in the journal notified by the UGC/identified by the university, subject wise through subject experts committee and approved by the UGC's standing committee on the matter.

The recommendations of the Committee has been accepted by the Vice Chancellor and referred to the Executive Council for ratification. However, the Executive Council discussed on the issue and advised the Chairman of the Council for placement before the Academic Council for consideration.

### **Item No. 3 : Revised format of application for employment & PBAS Proforma :**

The Committee constituted by the Vice Chancellor, vide notification No 104/01/2016-Rect dated 29/12/2016 has submitted its recommendation for changes in the Format of Application for Employment & PBAS Proforma in the light of 4<sup>th</sup> amendment of UGC Regulations, 2016, which has the approval of the competent authority. Further, the matter was placed before the 109<sup>th</sup> meeting of the Executive Council and the Council deferred the issue for time being and advised the University administration for placement before the Academic Council. A copy of the relevant papers is placed with the Chairman of the Academic Council for perusal.

Accordingly the matter is placed before the Academic Council for Consideration.

### **Item No. 4 : Minutes of BOG of School of Technology :**

The 109<sup>th</sup> meeting of the Executive Council constituted a Committee to submit a report relating to the contents of the 2<sup>nd</sup>, 3<sup>rd</sup>, 4<sup>th</sup> and 5<sup>th</sup> meeting of the BOG under TSSOT and the issues required to be discussed in the Academic Council as per the report are placed at Annexure - I for consideration. These are regarding :



Agenda - 1 : Academic Calendar and syllabus and examinations under new CBCS.

Agenda - 2 : Ph.D. related matters.

Agenda - 3 : Admission Criteria &

Agenda - 4 : Composition of Board of Research & Studies in TSSOT.

### **Item No. 5 : Re-constitution of BPGS :**

The Dean, D. C School of Legal Studies has submitted the panel of members for re-constitution of BPGS in Law.

1. Head, Dept. of Law : Chairman
2. Dr. Rashmi Rn. Mishra, Associate Professor, Dept. of Law : Member
3. Dr. Madhumita Dhar Sarkar, Associate Professor, of Law : Member
4. Mr. Partha Pratim Paul, Assistant Professor, Dept. of Law : Member
5. Mr. Priya Ranjan Kumar, Assistant Professor, Dept. of Law : Member
6. Prof. Joyeeta Bhattacharjee, Professor, Dept. Pol. Sc. : Member
7. Dr. R. Balakrishnan, Asso. Professor, Dept. of Education : Member
8. Prof. (Dr.) Sachi Chakraborti : Ext. Member  
Dept. of Law, Kolkata University, Kolkata - 19.
9. Dr. Jyoti J. Mozika : Ext. Member  
Associate Professor, Dept. of Law, NEHU,  
Shillong, Meghalaya - 793022.
10. Prof. Ali Mehdi : Ext. Member  
School of Law, Banaras Hindu University, Varanasi.

The matter is placed before the Council for approval.

### **Item No. 6 : Re-constitution of BUGS :**

The Head, Dept. of Pharmaceutical Sciences has submitted the panel of members for re-constitution of BUGS.

1. Head, Dept. of Pharmaceutical Science, AUS : Chairman
2. Prof. Sanjib Das, Dept. of Pharmaceutical Science, AUS : Member
3. Dr. Supratim Ray, Asso. Prof., Dept. of Pharmaceutical Science : Member
4. Dr. Nirupam Das, Asstt. Professor, Dept. of Pharmaceutical Science: Member
5. Dr. Jayanta Kr. Sarkar, Associate Professor : Member  
Dept. of Anatomy, Silchar Medical College & Hospital



6. Dr. Amal Kumar Baruah : Member  
Institute of Pharmacy, Silchar Medical College & Hospital
7. Prof. S. K. Panda, Dept. of Life Science & Bio-informatics, AUS : Member
8. Dr. Paritosh Mondal, Dept. of Chemistry, AUS : Member
9. Dr. Pijush Pandey, Dept. of Microbiology, AUS : Member
10. Dr. Bhaskar Mazumder, Professor, Dept. of Pharmaceutical Sc. : Ext. Member  
Dibrugarh University, Dibrugarh, Assam
11. Prof. Subhash Chandra Mandal, : Ext. Member  
Dept. of Pharmaceutical Technology,  
Jadavpur University, Kolkata - 700 032.

The matter is placed before the Council for approval.

#### **Item No. 7 : Re-constitution of School Board :**

The Dean, Sushrutu School of Medical & Paramedical Sciences has submitted the panel of members for re-constitution of School Board.

1. Dean, Sushrutu School of Medical & Paramedical Sciences, AUS : Chairman
2. Head, Dept. of Pharmaceutical Sciences, AUS : Member
3. Prof. Sanjib Das, Professor of Pharmaceutical Sciences, AUS : Member
4. Dr. Supratim Ray, Associate Prof. of Pharmaceutical Sciences : Member
5. Mr. Abhishek Bhattachajree, Asstt. Prof. of Pharmaceutical Sc. : Member
6. Prof. Jayashree Rout, Dept. of Ecology & Env. Sciences, AUS : Member
7. Prof. Supriya Chakraborty, Dept. of Biotechnology, AUS : Member
8. Prof. C. R. Bhattacharjee, Dept. of Chemistry, AUS : Member
9. Prof. Sudipta Roy, Dept. of Comp. Sc. & Engg, AUS : Member
10. Prof. Dipendu Das, Dept. of English, AUS : Member
11. Dr. Pinaki Chakraborty, Assoc. Prof., Dept. of Pharmacology : Member  
Silchar Medical College & Hospital, Silchar
12. Dr. Dwarika Prasad, Institute of Pharmacy : Member  
Silchar Medical College & Hospital, Silchar
13. Prof. Dipak Chetia : External Member  
Professor, Dept. of Pharmaceutical Sciences  
Dibrugarh University, Dibrugarh - 786004.



14. Prof. L. K. Ghosh : External Member  
Dept. of Pharmaceutical Technology,  
Jadavpur University, Kolkata - 700 032.
15. Prof. B. N. Sinha : External Member  
Dept. of Pharmaceutical Sciences, BIT Mesra, Ranchi.
16. Prof. S. K. Singh : External Member  
Dept. of Pharmaceutics, IIT, BHU, Varanasi - 221 005.
17. Prof. Sanjay Singh : External Member  
Dept. of Pharmaceutics, IIT, BHU, Varanasi - 221 005.

The matter is placed before the Council for approval.

**Item No. 37 : Item from the Chair :**

**Item No. 38 : Any other item with permission from the Chair :**

**Registrar**



**Agenda 1: Academic Calendar and Syllabus & Examination under New CBCS**

**1.1 : ACADEMIC CALENDAR for TSSOT**

1.1.1: The academic calendar for TSSOT for the academic year 2015-16 is attached.

1.1.2: The academic calendar for TSSOT for the academic year 2016-17 is attached.

**1.2: PROPOSED CHOICE BASED CREDIT SYSTEM (CBCS).**

The Course structure and the detailed syllabus of the courses under B.Tech and M.Tech programmes offered by TSSOT are framed following the new CBCS guidelines of UGC and AICTE. The proposed structure will be implemented from 2015-16 academic year.

**1.3: Examination Pattern under new CBCS for TSSOT**

- To follow the continuous evaluation process, the full mark of each paper will be distributed in three categories:
  - i) Internal assessment 20 marks (will be spread over the entire semester)
  - ii) Mid-semester examination 30 marks
  - iii) End-semester examination 50 marks
- To be promoted to 3rd year a student has to clear all the courses of 1st year and to be promoted to 4th year a student has to clear all the courses of 2nd year.
- The checking/evaluation of the answer scripts have to be completed before vacation and the evaluated answer scripts will be shown to the students during a fixed period of time. The result will be published within 6 weeks from the completion of examination.
- The summer internship will be of 8-10 weeks. The classes and the examinations have to be scheduled accordingly.
- TSSOT will remain open from 9:00 am to 5:30 pm with 30 minutes lunch break and 5 working days will be there in a week. Proper transportation facility should be there for the students and the faculties and staff for the new office hours.
- Tech fest will be organised every year starting from 5:00 pm in any Friday and will be completed by Sunday night. Monday will be the working day as usual.

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8/2/17  
10.2.17



## AGENDA NO. 2: PhD related matters

### 2.1 Panel of Examiners for Ph.D. Thesis

Sl. No.	Name of the Scholar	Topic	Name of the Supervisor	Name of the Co-Supervisor	Name of the Dept
01	Debasis Dhal	Pin Assignment Droplet Routing in Digital Microfluidic Biochip.	Dr. Sudipta Roy	Dr. Rajat Kumar Pal	CSE
01	Bishnulatapam Pushpa Devi	Study of Dual Image Watermarking Scheme based on Singular Value Decomposition and Visual Cryptography in Discrete Wavelet Transform	Dr. Sudipta Roy	Dr. Khumanthem Manglem Singh	CSE
02	Dalton Meitei Thounaojam	Video Retrieval System using Content-Based Video Objects	Dr. Sudipta Roy	Dr. Khumanthem Manglem Singh	CSE

### 2.2: Extension of Time for Submission for Ph.D. Thesis

Sl. No.	Name of the Scholar	Topic	Name of the Supervisor	Name of the Co-Supervisor	Name of the Dept	PhD Regn No. and date	Extension sought w.e.f	Extension allowed upto
01	Debasis Dhal	Pin Assignment Droplet Routing in Digital Microfluidic Biochip	Prof. Sudipta Roy	Dr. Rajat Kumar Pal	CSE	Ph.D/17 54/11 dt 20/09/20 11	19 Sep, 2016	19 Sep, 2016
02	Banani Das	Efficient Gateway-Level Load-balancing Techniques for Wireless Mesh Network	Prof. Sudipta Roy	_____	CSE	Ph.D/17 51/11 dt 20/09/20 11	19 Sep, 2016	19 Sep, 2016
03	PijushKantiBhattacharjee	Study on Mutual Authentication Techniques in Fourth Generation (4G) Mobile Communication.	Prof. Sudipta Roy	Dr. Rajat Kumar Pal	CSE	Ph.D/17 56/11 dt 20/09/20 11	19 Sep, 2016	19 Sep, 2016
04	TapodhiraAcharjee	Efficient Seamless Node Mobility Technique for Large Wireless Mesh Network.	Prof. Sudipta Roy	_____	CSE	Ph.D/17 60/11 dt 20/09/20 11	19 Sep, 2016	19 Sep, 2016
05	Biswajit Saha	Design of an Active Machine Learning Framework for the Improvement of Web Information Retrieval.	Dr. Sudipta Roy	Dr. Rajat Kumar Pal	CSE	20/09/20 11	19 Sep, 2016	19 Sep, 2016
06	Sourish Dhar	An Optimized Meta-Search Engine Framework For Web	Dr. Sudipta Roy	_____	CSE	PhD/176 1/2011; 20/09/20	19 Sep, 2016	19 Sep, 2016



		Information Retrieval.				11		
07	Anirban Chakraborty	A Framework for Text Mining in Document Classification	Dr. Sudipta Roy	_____	CSE	PhD/2189/2012; 21 Sep 2012	21 Sep 2016	20 Sep 2017
08	Rupanjali Deb Baruah	Developing a Decision Support System Framework Integrating Surface, Satellite and Climate Data with Simulation Models for a Climate Resilient Tea Production System in Assam	Dr. Sudipta Roy	1. Dr. L. N. Sethi 2. Dr. R. M. Bhagat	CSE	Ph.D/2183/12; 21 Sep 2012	21 Sep 2016	20 Sep 2017
09	Sapam Jitu Singh	Path Planning of a Mobile Robot in Dynamic Environment	Dr. Sudipta Roy	Dr. Kh. Manglem Singh	CSE	Ph.D/2187/2012; 21 Sep 2012	21 Sep 2016	20 Sep 2017
10	Rajeev Rajkumar	A Robust and Forensic Method of Copy Move Digital Image Forgery Detection based on Block Matching Technique	Dr. Sudipta Roy	Dr. Khumant hemManglem Singh	CSE	Ph.D/2181/2012; 21 Sep 2012	21 Sep 2016	20 Sep 2017
11	Thiyam Ibungomacha Singh	Application of Soft Computing Tools in Brain Magnetic Resonance Imaging (MRI) Images for Medical Diagnosis	Dr. Sudipta Roy	Dr. Khumant hemManglem Singh	CSE	PhD/2186/12; 21 Sep 2012	21 Sep 2016	20 Sep 2017
12	Usham Robin Chandra Singh	Efficient Key Management Schemes through Link Layer Encryption in a Wireless Sensor Networks	Dr. Sudipta Roy	_____	CSE	PhD/2185/2012; 21 Sep 2012	21 Sep 2016	20 Sep 2017
13	Arnab Paul	Web Service Discovery & Secured Selection based on Trust & Reputation	Prof. Sudipta Roy	_____	CSE	PhD/2188/12; 21/09/2012	21/09/16	20/09/17
14	Daizy Deb	Intelligent Computing Techniques on Medical Image Segmentation and Analysis	Prof. Sudipta Roy	_____	CSE	PhD/2191/12; 21/09/2012	21/09/16	20/09/17
15	Ranjit Biswas	Content Based Image Retrieval (CBIR) for Bio-Medical Images	Prof. Sudipta Roy	_____	CSE	PhD/2190/12; 21/09/2012	21/09/16	20/09/17

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**2.3: Ph.D. Re-Registration Cases:** The Board perused and considered the applications submitted by the following Ph.D. candidates for Re-registration with the modified title.

SL No	Name of the Candidate	PhD Reg. No. & Date	Date of Expiry of Ph.D Registration	Title of the Thesis	Proposed modified Title	Name of Supervisor
1.	Tapodhir Acharjee	PhD/176 0/11; 20/09/2011	20/09/2016	Efficient Seamless Node Mobility Technique for Large Wireless Mesh Network	Efficient Hierarchical Routing Technique for Large Wireless Mesh Network	Prof. Sudipta Roy
2.	Sourish Dhar	PhD/176 1/11; 20/09/2011	20/09/2016	An Optimized Meta Search Engine Framework for Web IR	An Optimized Search Engine Framework for Mathematical Information Retrieval for Textual Queries	Prof. Sudipta Roy

**2.4: Ph.D. Provisional Registration:**

Sl. No.	Name of the Scholar	Topic	Name of the		Date of Prov. Regn	Department
			Supervisor	Co-supervisor		
01	Bhaskar Das	Synthesis and Testing of Reversible Logic Circuits	Dr. Ajoy Kumar Khan	-	04/09/2015	CSE
02	Chingakham Neeta Devi	An Optical Character Recognition System for Manipuri MeeteiMayek Script	Prof. Debaprasad Das	-	04/09/2015	CSE
03	Sanjoy Mitra	Design and Analysis of Diagnostic Test Generation Algorithm using ATPG Model.	Prof. Debaprasad Das	-	04/09/2015	CSE
04	T. Sonamani Singh	Development of Energy Efficient Routing Protocols in Wireless Sensors Networks for Disaster Management	Dr. Ajoy Kumar Khan	-	04/09/2015	CSE
05	W. Mona Chanu	Modelling and Analysis of Carbon Nanotubes and GrapheneNanoribbon Interconnects.	Prof. Debaprasad Das	-	04/09/2015	CSE



06	Ashim Kumar Mahato	Design & Implementation of OFDM Architecture for the use in Wireless Communications.	Prof. Debaprasad Das	-	04/09/2015	CSE
07	Soram Ranbir Singh	Study and Development of Key Management Protocols Based on Elliptic Curves for Wireless Sensor Networks.	Dr. Ajoy Kumar Khan	-	13/04/2016	CSE
08	Hridoy Jyoti Mahanta	Design and Implementation of a Secured Cryptosystem against Power Analysis Attacks.	Dr. Ajoy Kumar Khan	-	13/04/2016	CSE
09	Anamika Yadav	Design and Development of a Venture Aeration System for Aquaculture.	Dr. Sudipto Sarkar	Dr. Avinash Kumar	13/04/2016	AE
10	Gajendra Prasad	Design and Development of Solar Biomass Hybrid Drying System for Fruits and Vegetables.	Dr. Sudipto Sarkar	Dr. L. N. Sethi	13/04/2016	AE
11	Thoudam Gitchandra Singh	Design and Development of Recirculating Aquaculture System.	Dr. Avinash Kumar	-	13/04/2016	AE
12	Kamakshi Prasad Padhy	Integrating Water Harvesting and Hydraulic ram fed Irrigation System for crop planning in hilly terrain.	Dr. L. N. Sethi	-	04/09/2015	AE
13	Smriti Rekha Chetia Handique	Techno-economic Feasibility of integrated rainwater harvesting with solar photovoltaic pump fed micro-irrigation system in a hilly terrain.	Dr. L. N. Sethi	-	04/09/2015	AE
14	Hillolmo y Chakraborty	Techno-economic feasibility of protected cultivation structures with automated micro irrigation system in a hilly terrain	Dr. L.N. Sethi	Dr. Sudipto Sarkar	06/09/2016	AE
15	Netramoni Baruah	Design and development of a novel solid desiccant dehumidification system for the commercial farm applications	Prof. Prasanna Kumar G.V.	-	06/09/2016	AE

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**Change of Title for Ph.D. Provisional Registration Cases:** The members present perused the application submitted by the following Ph.D. candidate seeking change of title on the proposed research proposal.

SL. NO.	Name of the Candidate	AU Reg. No.	Date of Ph.D. Provisional Registration	Old thesis Title	New Thesis Title	Name of Supervisor
1.	Hridoy JyotiMahanta	32-120046270 of 2012-13	13-04-2016	Design and Implementation of a Secured Cryptosystem against Power Analysis Attacks	Design and Implementation of Secured Cryptosystems against Power Analysis Attacks	Dr. Ajoy Kumar Khan

### 2.3: Ph.D. Final Registration Cases:

**2.3.1: Inclusion of Co-Supervisor:** Dean, TSSOT placed an application received from the following Ph.D. scholar of the Department of Computer Science & Engineering for **inclusion of Co-supervisor** for the research work carried out. He also informed that Mrinal Kanti Debbarma, Ph.D. Scholar has carried out his research work under the Co-supervision of **Dr. Santanu K. Sen**, but unfortunately during the entire course of research work of the scholar, the name of Dr. Santanu K. Sen was reflected as Co-supervisor with a remark "not empaneled". Initially, in this regard letters have been sent to the Academic Section on 4<sup>th</sup> September, 2012, 5<sup>th</sup> September, 2013, and 19<sup>th</sup> May, 2015 alongwith the agenda item of the School Board Meeting of TSSOT for placing the same in the BRS on 12<sup>th</sup> September, 2013. Considering all these aspects, it has been resolved that the proposal will be dealt with as per the existing norms of the University, so that a notification for award of Ph.D. Degree in respect of the scholar mentioned below can be issued afresh after incorporation of the name of Dr. Santanu K. Sen as Co-supervisor to recognise the hard work put forward by Dr. Sen.

Name of the Scholar	Title of the Research Proposal	Name of Supervisor/ Co-Supervisor	Ph.D. Registration No	Date of Award of Ph.D. Degree
Mrinal Kanti Debbarma	Design and Development of a DVR-Based Hybrid Routing Protocol for Mobile Ad-Hoc Networks	Dr. Sudipta Roy (Supervisor) Dr. Santanu K. Sen (Co-supervisor)	Ph.D/2180/12 Dated 21.09.12	18/07/2016





### **AGENDA NO. 3 : Admission Criteria**

#### **Revision of Criteria for Admission into M.Tech. in Agricultural Engineering:**

A proposal of revision of criteria for admission in the department of Agricultural Engineering is placed for consideration. Head, Department of Agricultural Engineering briefed the members regarding the necessity of addition of M.Sc. courses in the admission to M.Tech. programme in Food Process Engineering which was discussed and approved in the DPPC Meeting of the Department held on 03/09/2015 and BORS on 4th Sep, 2015. As per resolution, it has been proposed that in addition to the existing eligibility criteria for the admission to M.Tech. in Food Process Engineering the courses will be considered namely, M.Sc. in Food Processing Technology/Food Technology/Post Harvest Technology/Food Engineering and Technology from a recognised Institute or University with minimum of 60% marks (55% for SC/ST). The Board approved the proposal of revision of criteria for admission in the M.Tech programme of the department of Agricultural Engineering.

#### **AGENDA NO. 4: Composition of Board of Research and Studies in TSSOT**

The proposal regarding composition of Board of Research & Studies in TSSOT is attached. On the basis of the approval of the Vice Chancellor, AUS regarding composition of Board of Governors in TSSOT, the Board ratified the aforesaid constitution and authorized Dean, TSSOT to take necessary steps regarding notification of the aforesaid formation of BORS in TSSOT.





**Academic Calendar for TSSOT**

<b>For all Students admitted before Academic Session 2015-16 and B.Tech (Lateral) for the session 2015-16</b>	
<b>ODD SEMESTER : July – December, 2015</b>	
Registration of all continuing students for the session 2015-16	01-14 July, 2015
Paper Registration of students with backlogs	15 July, 2015
Last date of Registration with admissible late fees	31 July, 2015
First Day of Instruction	08 July, 2015
First Day of Instruction for B.Tech(Lateral)	15 July, 2015
1 <sup>st</sup> Internal	Last week of August, 2015
2 <sup>nd</sup> Internal	First Week of October, 2015
3 <sup>rd</sup> Internal	First Week of November, 2015
Submission of Internal Marks	15 November, 2015
Last Day of Instruction	20 November, 2015
Last date for End Semester Lab Examination	20 November, 2015
Preparatory leave	21-24 November, 2015
End Semester Examination	25 November – 10 December, 2015
Last date of showing the evaluated answer scripts to the students	18 December, 2015
Last date for submission of marks	19 December, 2015
Declaration of Results	25 December, 2015
Winter Break for students	19 – 31 December, 2015
<b>EVEN SEMESTER: January – June, 2016</b>	
Paper Registration of all continuing students for the semester	01-05 January, 2016
First Day of Instruction	4 January, 2016
Paper Registration of students with backlogs	5 January, 2016
Last date of Paper Registration with late fees	10 January, 2016
1 <sup>st</sup> Internal	Second week of February, 2016
2 <sup>nd</sup> Internal	First Week of March, 2016
3 <sup>rd</sup> Internal	First Week of April, 2016
Submission of Internal Marks	10 April, 2015
Last Day of Instruction	15 April, 2016
Last date for End Semester Lab Examination	15 April, 2016
Preparatory leave	16-19 April, 2016
End Semester Examination	20 April – 05 May, 2016
Last date of showing the evaluated answer scripts to the students	13 May, 2016
Last date for submission of marks	13 May, 2016
Declaration of Results	20 May, 2016
Summer Break for students for Internship/Industrial Training	13 May – 30 June 2016



<b>For the Students admitted in Academic Session 2015-16</b>	
<b>ODD SEMESTER : July – December, 2015</b>	
<b>First Day of Instruction for M.Tech</b>	<b>15 July, 2015</b>
<b>First Day of Instruction for B.Tech</b> (In case Counseling procedure is delayed by unforeseen reason, academic calendar for the First year students only will be suitably adjusted keeping the examination time schedule intact)	<b>20 July, 2015</b>
<b>Mid Term Examination</b>	<b>14-18 September, 2015</b>
Last date of showing the evaluated mid-term answer scripts to the students	<b>28 September, 2015</b>
<b>Last date for submission of mid-term marks</b>	<b>29 September, 2015</b>
Submission of Internal Marks	<b>15 November, 2015</b>
<b>Last Day of Instruction</b>	<b>20 November, 2015</b>
Last date for End Semester Lab Examination	<b>20 November, 2015</b>
Preparatory leave	<b>21-24 November, 2015</b>
<b>End Semester Examination</b>	<b>25 November – 10 December, 2015</b>
Last date of showing the evaluated end semester answer scripts to the students	<b>18 December, 2015</b>
Last date for submission of end semester marks	<b>19 December, 2015</b>
<b>Declaration of Results</b>	<b>25 December, 2015</b>
Winter Break for students	<b>19 – 31 December, 2015</b>
<b>EVEN SEMESTER: January – June, 2016</b>	
Paper Registration of all continuing students for the semester	<b>01-05 January, 2016</b>
<b>First Day of Instruction</b>	<b>4 January, 2016</b>
<b>Mid Term Examination</b>	<b>8-12 February, 2016</b>
Last date of showing the evaluated mid-term answer scripts to the students	<b>22 February, 2016</b>
<b>Last date for submission of mid-term marks</b>	<b>23 February, 2016</b>
Submission of Internal Marks	<b>10 April, 2016</b>
<b>Last Day of Instruction</b>	<b>15 April, 2016</b>
Last date for End Semester Lab Examination	<b>15 April, 2016</b>
Preparatory leave	<b>16-19 April, 2016</b>
<b>End Semester Examination</b>	<b>20 April – 05 May, 2016</b>
Last date of showing the evaluated end semester answer scripts to the students	<b>13 May, 2016</b>
Last date for submission of end semester marks	<b>13 May, 2016</b>
<b>Declaration of Results</b>	<b>20 May, 2016</b>
Summer Break for students	<b>13 May – 30 June 2016</b>

**TSSOT will follow the Holiday List as per Assam University notification.**

Approved

Dean  
Triguna Sen School of Technology  
Assam University, Silchar

Chairman  
Board of Governors  
Assam University, Silchar



**Annexure I**

**ASSAM UNIVERSITY: SILCHAR**  
**TRIGUNA SEN SCHOOL OF TECHNOLOGY**  
**Academic calendar 2016-17**

<b>ODD SEMESTER : July – December, 2016</b>	
Registration of all continuing students for the session 2016-17	01-14 July, 2016
Paper Registration of students with backlogs	15 July, 2016 (Fri)
<b>Last date of Registration with admissible late fees</b>	29 July, 2016 (Fri)
<b>First Day of Instruction for all continuing students and B.Tech(Lateral) newly admitted students</b>	15 July, 2016 (Fri)
<b>First Day of Instruction for B.Tech &amp; M.Tech First year students</b> (In case Counseling procedure is delayed by unforeseen reason, academic calendar for the B.Tech First year students only will be suitably adjusted keeping the examination time schedule intact)	18 July, 2016 (Mon)
<b>Supplementary Examination 2016</b>	2 Aug, 2016 onwards
1 <sup>st</sup> Internal for all continuing and B.Tech (Lateral) newly admitted students	2 <sup>nd</sup> week of August, 2016
1 <sup>st</sup> Internal for B.Tech & M.Tech First year students	Last week of August, 2016
2 <sup>nd</sup> Internal	2 <sup>nd</sup> Week of September, 2016
<b>Mid Term Examination</b>	26 Sep-6 Oct, 2016 (Mon-Thu)
Last date of showing the evaluated mid-term answer scripts to the students	14 November, 2016 (Mon)
<b>Last date for submission of mid-term marks</b>	16 November, 2016 (Wed)
3 <sup>rd</sup> Internal	First Week of November, 2016
Submission of Internal Marks	15 November, 2016 (Tue)
<b>Last Day of Instruction</b>	18 November, 2016 (Fri)
Last date for End Semester Lab Examination	18 November, 2016 (Fri)
Preparatory leave	19-24 November, 2016
<b>End Semester Examination</b>	25 November – 10 December, 2016 (Fri-Sat)
Last date of showing the evaluated answer scripts to the students	19 December, 2016 (Mon)
Last date for submission of marks	21 December, 2016 (Wed)
<b>Declaration of Results</b>	31 December, 2016 (Sat)
<b>EVEN SEMESTER: January – June, 2017</b>	
Paper Registration of all continuing students for the semester	02-06 January, 2017 (Mon-Fri)
First Day of Instruction	4 January, 2017 (Wed)
Paper Registration of students with backlogs	5 January, 2017 (Thu)
Last date of Paper Registration with late fees	10 January, 2017 (Tue)
TechFest	27-29 January, 2017 (Fri-Sun)
1 <sup>st</sup> Internal	First week of February, 2017
<b>Mid Term Examination</b>	13-24 February, 2017 (Mon-Fri)
Last date of showing the evaluated mid-term answer scripts to the students	6 March, 2017 (Mon)
<b>Last date for submission of mid-term marks</b>	8 March, 2017 (Wed)
2 <sup>nd</sup> Internal	Second Week of March, 2017
3 <sup>rd</sup> Internal	First Week of April, 2017
Submission of Internal Marks	10 April, 2017 (Mon)
<b>Last Day of Instruction</b>	14 April, 2017 (Fri)
Last date for End Semester Lab Examination	14 April, 2017 (Fri)
Preparatory leave	15-19 April, 2017 (Sat-Wed)
<b>End Semester Examination</b>	20 April – 05 May, 2017 (Thu-Fri)
Last date of showing the evaluated answer scripts to the students	15 May, 2017 (Mon)
Last date for submission of marks	17 May, 2017 (Wed)
<b>Declaration of Results</b>	31 May, 2017 (Wed)

(Prof. Sudipta Roy)  
 Member Secretary cum Dean  
 Board of Governors, TSSOT  
 Assam University, Silchar

(Prof. Ranju Rani Dhamala)  
 Vice Chancellor  
 Assam University, Silchar





**ASSAM UNIVERSITY: SILCHAR**  
**TRIGUNA SEN SCHOOL OF TECHNOLOGY**

**Table 1: Minimum credits to earn**

Sl No	Degree	No of years	Min Credits
1	Bachelor of Technology	4	240
2	Bachelor of Technology (Lateral)	3	180
3	Master of Technology	2	120

**Table 2: Types of courses**

Sl. No	Category	Code	Remarks
1	Compulsory Foundation	CF	Leads to knowledge enhancement Mandatory for all discipline
2	Elective Foundation	EF	Value-based and are aimed at man-making education
3	Core	CC	Compulsory for all students
4	Discipline Centric Electives	DE	Supportive to the discipline of study
5	Open Electives	OE	Enabling an exposure to some other discipline/domain
6	Project, Seminar, Group Discussion, Grand Viva, summer training, industrial training etc.	PT	Enabling students to get the industry exposure and engineering applications in real life problems

**Table 3: Class-hour**

Sl. No	Type of Classes (Lesson)	Credit	Class-hour
1	Theory lecture	1	1
2	Practical/ Lab session/tutorial/assignment/ home work	2	3

**Table 4(a): Evaluation Types and marks distribution**

Sl. No	Type of examination	Marks (100%)	Min pass mark (30%)	Total Pass mark (50%)
1	Internal assessment	20	06	50
2	Mid-term evaluation	30	09	
3	End Semester evaluation	50	15	



**Table 4(b): Guidelines at different situations**

Sl. No.	Internal 20 (6)	Mid sem 30 (9)	End Sem 50 (15)	Statements
1	0-5 or Ab	0-8 or Ab	NE	<ul style="list-style-type: none"> <li>Not eligible to sit for END SEM exam; Paper code will not appear in Admit Card</li> <li>Have to appear in all exams next time.</li> </ul>
2	0-5 or Ab	≥ 9	NE	<ul style="list-style-type: none"> <li>Not eligible to sit for END SEM exam; Paper code will not appear in Admit Card</li> <li>Have to appear in Internal, MID sem and END sem exams next time</li> </ul>
4	≥ 6	0-8	NE	<ul style="list-style-type: none"> <li>Not eligible to sit for END SEM exam;</li> <li>Will appear only in MID and END sem Exams next time</li> <li>No scope to sit for INTERNAL exam next time.</li> </ul>
5	≥ 6	≥ 9	0-14	<ul style="list-style-type: none"> <li>Have to appear in END SEM next time.</li> <li>May appear in MID sem next time.</li> <li>Better score in between past &amp; present exam will be considered as final.</li> <li>No scope for INTERNAL next time.</li> </ul>
6	≥ 6	≥ 9	≥ 15	If total is < 50 then <ul style="list-style-type: none"> <li>May appear in MID SEM &amp; END SEM next time.</li> <li>Better score in between past &amp; present exam will be considered as final.</li> <li>No scope for INTERNAL next time.</li> </ul>
7	≥ 6	≥ 9	≥ 15	If total is ≥ 50 then Grade will appear and PASSED.

**Table 5: Grades and Grade-points**

Letter Grade	Grade Point	Marks domain
O (Outstanding)	10	90-100
A (Excellent)	9	80-89
B ( Good)	8	70-79
C ( Average)	7	60-69
D (Pass)	6	50-59
F (Fail)	0	<50
Ab (Absent)	0	-

**Table 6: SGPA and CGPA calculation**

SGPA (Semester Grade Point Average)	CGPA (Cumulative Grade Point Average)
$SGPA = \frac{\sum C_i * G_i}{\sum C_i}$ <p>where <math>C_i</math> = no of credits of the <math>i</math>th course  <math>G_i</math> = grade point earned by the student in the <math>i</math>th course</p>	$CGPA = \frac{\sum C_j * S_j}{\sum C_j}$ <p>where <math>C_j</math> = total no of credits of the <math>j</math>th semester  <math>S_j</math> = SGPA of the <math>j</math>th semester</p>



**Table 7: Course category vs Credit distribution for B.Tech degree under TSSOT**

Sl. No	Category	Minimum Credit	Max credit	Total min
1	Compulsory Foundation	40	60	60
2	Elective Foundation	10	20	
3	Core	105	105	105
4	Discipline Centric/Open Electives	35	40	35
5	Minor Project, Seminar, Industrial training	15	15	40
6	Major Project, Seminar, Grand Viva	25	25	
<b>Total (minimum)</b>				<b>240</b>

**Table 8: Course category vs Credit distribution for B.Tech (Lateral) degree under TSSOT**

Sl. No	Category	Minimum Credit	Max credit	Total min
1	Core	105	105	105
2	Discipline Centric/Open Electives	35	40	35
3	Minor Project, Seminar, Industrial training	15	15	40
4	Major Project, Seminar, Grand Viva	25	25	
<b>Total (minimum)</b>				<b>180</b>

**Table 9: Course category vs Credit distribution for M.Tech degree under TSSOT**

Sl. No	Category	Minimum Credit	Max credit	Total min
1	Core	30	30	30
2	Foundation	10	20	40
3	Discipline Centric Electives	20	30	
4	Open Electives	5	15	
5	Project, Grand viva, Seminar	50 (in two semesters)	50	50
<b>Total (minimum)</b>				<b>120</b>

**Table 10: Semester wise types of Courses B.Tech degree under TSSOT**

Year	Semester	Min. Credits in a semester	Type of courses
Year I	Sem I	26	CF + EF
	Sem II	34	CF + EF
Year II	Sem III	35	CC + CF + EF
	Sem IV	35	CC + CF + EF
Year III	Sem V	35	CC + EL(DE + OE) + PT
	Sem VI	30	CC + EL(DE + OE) + PT
Year IV	Sem VII	25	CC + EL(DE + OE) + PT
	Sem VIII	20	CC + EL(DE + OE) + PT



**Table 11: Semester wise types of Courses M.Tech degree under TSSOT**

Year	Semester	Min. Credits in a semester	Type of courses	Remarks
Year I	Sem I	35	CF + CC + EL(DE + OE)	
	Sem II	35	CF + CC + EL(DE + OE)	
Year II	Sem III	25	PT	
	Sem IV	25	PT	

**Table 12: Promotion Rules for differentdegrees under TSSOT**

Sl No.	Promotion Rules
1	A student cannot be promoted to next semester without appearing the preceding semester examination.
2	To be promoted to 3 <sup>rd</sup> year a student has to clear all the courses of 1 <sup>st</sup> year.
3	To be promoted to 4 <sup>th</sup> year a student has to clearall the courses of 2 <sup>nd</sup> year.



**Table 13: Compulsory Foundation Courses for B.Tech (4 years) under TSSOT**

S. No.	Course Code	Course Title	Hrs/week L:T:P	Credits	Preferred semester
1	SOTCF 01	Engineering Mathematics	4:0:0	4	I
2	SOTCF 02	Engineering Physics	4:0:0	4	I
3	SOTCF 03	Environmental Science	3:0:0	3	I/II/III
4	SOTCF 04	Communication Skill in English	3:0:0	3	I/II
5	SOTCF 05	Engineering Chemistry	4:0:0	4	I/II
6	SOTCF 06	Advanced Engineering Mathematics	4:2:0	5	II
7	SOTCF 07	Engineering Mechanics	4:0:0	4	II
8	SOTCF 08	Computer Systems and Programming	4:2:0	5	II
9	SOTCF 09	Electrical Technology	4:0:0	4	I/II
10	SOTCF 10	Basic Electronics	4:0:0	4	II
11	SOTCF 11	Probability and Statistics	4:0:0	4	III/IV
12	SOTCF 12	Engineering Physics Lab	0:0:4	2	With SOT CF 02
13	SOTCF 13	Engineering Chemistry Lab	0:0:4	2	With SOT CF 05
14	SOTCF 14	Engineering Drawing	0:0:4	2	I/II
15	SOTCF 15	Computer Systems and Programming Lab	0:0:4	2	With SOT CF 08
16	SOTCF 16	Electrical & Electronics Lab	0:0:4	2	With SOT CF 09/10
17	SOTCF 17	Workshop Technology	0:0:4	2	I/II
18	SOTCF 18	Operation Research and Industrial Management	4:0:0	4	III/IV

**Table 14: Elective Foundation Courses for B.Tech (4 years) under TSSOT**

S. No.	Course Code	Course Title	Hrs/week L:T:P	Credits	Preferred semester
1	SOTEF 01	Economics and Human Development	3:0:0	3	I/II
2	SOTEF 02	Values and Ethics	3:0:0	3	I/II
3	SOTEF 03	Communication skill in French	3:0:0	3	I/II
4	SOTEF 04	International politics and relations	3:0:0	3	I/II
5	SOTEF 05	Human rights and duties	3:0:0	3	I/II
6	SOTEF 06	NCC	0:0:4	2	I/II
7	SOTEF 07	NSS	0:0:4	2	I/II
8	SOTEF 08	Materials Science	4:0:0	4	III/IV
9	SOTEF 09	Law for Engineers	3:0:0	3	I/II



**ASSAM UNIVERSITY: SILCHAR**  
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**Course Structure of B. Tech Programme under TSSOT**  
**FIRST YEAR**

Year	Semester	Min. Credits					
		Semester	Offered for CF	Earned from CF	Offered for EF	Earned from EF	To be earned to complete first year programme
I	Sem I	26	24	40	8	10	60
	Sem II	34	28		11		

**First Semester**

Sl. No.	Course Code	Course Title	Contact hours/week			Credits
			L	T	P	
1	SOT CF 01	Engineering Mathematics	4			4
2	SOT CF 02	Engineering Physics	4			4
3	SOTCF 03	Environmental Science	3			3
4	SOTCF 04	Communication Skill in English	3			3
5	SOTCF 05	Engineering Chemistry	4			4
6	SOTCF 12	Engineering Physics Lab			4	2
7	SOTCF 13	Engineering Chemistry Lab			4	2
8	SOTCF 14	Engineering Drawing			4	2
<b>Total Credits (Compulsory Foundation)</b>						<b>24</b>
9	SOT EF 01	Economics and Human Development	3			3
10	SOT EF 03	Communication skill in French	3			3
11	SOTEF 06	NCC			4	2
<b>Total Credits (Elective Foundation)</b>						<b>8</b>

**Second Semester**

Sl. No.	Course Code	Course Title	Contact hours/week			Credits
			L	T	P	
1	SOTCF 06	Advanced Engineering Mathematics	4	2		5
2	SOTCF 07	Engineering Mechanics	4			4
3	SOTCF 08	Computer Systems and Programming	4	2		5
4	SOTCF 09	Electrical Technology	4			4
5	SOTCF 10	Basic Electronics	4			4
6	SOTCF 15	Computer Systems and Programming Lab			4	2
7	SOTCF 16	Electrical & Electronics Lab			4	2
8	SOTCF 17	Workshop Technology			4	2
<b>Total Credits (Compulsory Foundation)</b>						<b>28</b>
9	SOT EF 02	Values and Ethics	3			3
10	SOTEF 05	Human rights and duties	3			3
11	SOTEF 07	NSS			4	2
12	SOTEF 09	Law for Engineers	3			3
<b>Total (Elective Foundation)</b>						<b>11</b>



## SECOND YEAR

### Third Semester

### Fourth Semester

Sl. No.	Course Code	Course Title	Contact hours/week			Credits
			L	T	P	
1	CSECC 08	Database Management Systems	4	2		5
2	CSECC 09	Computer Organization And Architecture	4	2		5
3	CSECC 10	Object Oriented Programming With C++	4	2		5
4	CSECC 11	Computer Networks – I	4	2		5
5	CSECC 12	DBMS Lab			4	2
6	CSECC 13	OOPS Lab			4	2
7	CSECC 14	Computer Networks – I Lab			4	2
	<b>Total Credits (CORE)</b>					<b>26</b>
8	SOT CF 11	Probability And Statistics	4			4
	<b>Total Credits (Compulsory Foundation)</b>					<b>4</b>



# Course Structure of B. Tech in Computer Science & Engineering Programme

## THIRD YEAR

YEAR	SEMESTER	CORE	ELECTIVE	PROJECT, TRAINING, VIVA, SEMINAR	TOTAL
II	V	23	5	2	30
	VI	22	5	2	29

### Fifth Semester

Sl. No.	Course Code	Course Title	Contact hours/week			Credits
			L	T	P	
1	CSECC 15	Operating Systems	4	2		5
2	CSECC 16	Microprocessor & Microcontroller	4			4
3	CSECC 17	Formal Languages And Automata Theory	4			4
4	CSECC 18	Computer Graphics & Multimedia	4			4
5	CSECC 19	OS Lab			4	2
6	CSECC 20	Microprocessor & Microcontroller Lab			4	2
7	CSECC 21	Computer Graphics & Multimedia Lab			4	2
<b>Total Credits (CORE)</b>						<b>23</b>
8	CSEELXX*	Elective – I	5			5
<b>Total Credits (Elective)</b>						<b>5</b>
9	CSE PT 01	Summer Training				2
<b>Total Credits (Project, Training, Viva...)</b>						<b>2</b>

### Sixth Semester

Sl. No.	Course Code	Course Title	Contact hours/week			Credits
			L	T	P	
1	CSECC 22	Design And Analysis Of Algorithms	4	2		5
2	CSECC 23	Computer Networks – II	4	2		5
3	CSECC 24	Web Technology	4			4
4	CSECC 25	Software Engineering	4			4
5	CSECC 26	Computer Networks - II Lab			4	2
6	CSECC 27	Web Technology Lab			4	2
<b>Total Credits (CORE)</b>						<b>22</b>
7	CSEELXX*	Elective – II	5			5
<b>Total (Elective)</b>						<b>5</b>
8	CSE PT 02	Group Discussion & Seminar			4	2
<b>Total Credits (Project, Training, Viva...)</b>						<b>2</b>

\* XX REPRESENTS PAPER CODE OF THE APPROPRIATE ELECTIVE GIVEN IN THE LIST OF ELECTIVE COURSES



#### FOURTH YEAR

YEAR	SEMESTER	CORE	ELECTIVE	PROJECT, TRAINING, VIVA, SEMINAR	TOTAL
II	VII	10	15	12	37
	VIII	0	10	18	28

#### Seventh Semester

Sl. No.	Course Code	Course Title	Contact hours/week			Credits
			L	T	P	
1	CSECC28	Compiler Design	5			5
2	CSECC29	Cryptography & Network Security	5			5
<b>Total Credits (CORE)</b>						<b>10</b>
3	CSEELXX*	Elective – III	5			5
4	CSEELXX*	Elective – IV	5			5
5	CSEELXX*	Elective – V	5			5
<b>Total (Elective)</b>						<b>15</b>
6	CSE PT 03	Project – I			14	7
7	CSE PT 04	Industrial Training			5	5
<b>Total Credits (Project, Training, Viva...)</b>						<b>12</b>

#### Eighth Semester

Sl. No.	Course Code	Course Title	Contact hours/week			Credits
			L	T	P	
1	CSEELXX*	Elective – VI	5			5
2	CSEELXX*	Elective – VII	5			5
<b>Total Credits (Elective)</b>						<b>10</b>
3	CSE PT 05	Project - II			30	15
4	CSE PT 06	Grand Viva				3
<b>Total (Project, Training, Viva)</b>						<b>18</b>

\* XX REPRESENTS PAPER CODE OF THE APPROPRIATE ELECTIVE GIVEN IN THE LIST OF ELECTIVE COURSES



**List of Elective (Discipline) courses:**

- |  |  |
|--|--|
| 01. Cryptography & Information Security              | 19. Advanced Operating Systems                   |
| 02. Distributed Database                             | 20. Quantum Computing                            |
| 03. Graph Theory                                     | 21. Data warehousing                             |
| 04. Artificial Intelligence                          | 22. Advanced Algorithm Design                    |
| 05. Computer Graphics & Multimedia                   | 23. Natural Language processing                  |
| 06. Data Mining                                      | 24. Theory of Computation                        |
| 07. Advanced Computer Architecture                   | 25. Advanced Java programming                    |
| 08. Mobile Computing                                 | 26. Enterprise Resource Planning                 |
| 09. Pattern Recognition                              | 27. Fuzzy Systems                                |
| 10. Information Retrieval                            | 28. Neural Networks                              |
| 11. VLSI Design & Algorithms                         | 29. Network On Chip                              |
| 12. Soft Computing                                   | 30. Formal System Verification                   |
| 13. Computer Vision                                  | 31. System Software                              |
| 14. Cloud Computing                                  | 32. Java Programming                             |
| 15. Web Service and Service Oriented<br>Architecture | 33. Engineering Statistics                       |
| 16. Script Programming                               | 34. Game Theory with Engineering<br>Applications |
| 17. Software Engineering                             | 35. Digital Signal Processing                    |
| 18. Image processing                                 |  |

*Box*



# Department of Agricultural Engineering

## SECOND YEAR

Year	Semester	Core	Foundation	Elective (discipline)	Elective (Open)	Project, Trg, Sem, viva	Total
<b>II</b>	Sem I	26	4	0	0	0	30
	Sem II	26	4	0	0	0	30

### First Semester

Sl. No.	Course Code	Course Title	Contact hours/week			Credits
			L	T	P	
1	AE-CC-01	Fluid Mechanics	3	0	0	3
2	AE-CC-02	Strength of Material	3	0	0	4
3	AE-CC-03	Thermodynamics and Heat Engines	3	0	0	3
4	AE-CC-04	Surveying and Leveling	4	0	0	3
5	AE-CC-05	Farm Machinery	3	0	0	3
6	SOT-CF- 18	Operation Research & Industrial Management	4	0	0	4
7	AE-CC-06	Fluid Mechanics Lab	0	0	4	2
8	AE-CC-07	Surveying and Leveling Lab	0	0	4	2
9	AE-CC-08	Farm Machinery Lab	0	0	4	2
10	AE-CC-09	Crop Production Technology Lab	0	0	4	2
11	AE-CC- 10	Advanced Workshop Technology	0	0	4	2
<b>Total (Core)</b>			16	0	20	<b>26</b>
<b>Total (Foundation)</b>			4	-	-	<b>4</b>

### Second Semester

Sl. No.	Course Code	Course Title	Contact hours/week			Credits
			L	T	P	
1	AE-CC 11	Soil Science	3	0	0	3
2	AE-CC-12	Kinetics and Dynamics of Machines	3	0	0	3
3	AE-CC-13	Farm Power	3	0	0	4
4	AE-CC-14	Watershed Hydrology	4	0	0	3
5	AE-CC-15	Post Harvest Operations	3	0	0	3
6	SOT-CF-19	Probability and Statistics	4	0	0	4
7	AE-CC-16	Soil Science Lab	0	0	4	2
8	AE-CC-17	Farm Power Lab	0	0	4	2
9	AE-CC-18	Watershed Hydrology Lab	0	0	4	2
10	AE-CC-19	Post Harvest Operations Lab	0	0	4	2
11	AE-CC-20	Food Chemistry and Microbiology Lab	0	0	4	2
<b>Total (Core)</b>			16	0	20	<b>26</b>
<b>Total (Foundation)</b>			4	-	-	<b>4</b>

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### THIRD YEAR

Year	Semester	Core	Elective (discipline)	Elective (Open)	Project, Trg, Sem, viva	Total
III	Sem I	21	6 (6 min)	5 (4 min)	5	37
	Sem II	18	7 (6 min)	5 (4 min)	2	32

#### First Semester

Sl. No.	Course Code	Course Title	Contact hours/week			Credits
			L	T	P	
1	AE-CC-21	Machine Design	4	0	0	4
2	AE-CC-22	Soil & Water Conservation Engg.	3	0	0	3
3	AE-CC-23	Mechanical Operation in Food Processing	3	0	0	3
4	AE-CC-24	Thermal Operation in Food Processing	3	0	0	3
5	AE-CC-25	Machine Design and Drawing	0	0	4	2
6	AE-CC-26	Soil & Water Conservation Engineering Lab	0	0	4	2
7	AE-CC-27	Mechanical Food Operations Lab	0	0	4	2
8	AE-CC-28	Thermal Food Operations Lab	0	0	4	2
	<b>Total (Core)</b>		13	0	16	<b>21</b>
9	AE-DE -01	Elective (discipline) – I: Instrumentation & Control				
	AE-DE-02	Elective (discipline) – II				
	<b>Total (Elective Discipline)</b>		6	0	0	<b>6</b>
10	AE-OE-01	Elective (Open) - I				
	AE-OE-02	Elective (Open) - II				
	<b>Total (Elective Open)</b>		5	0	0	<b>5</b>
11	AE-PT-01	Summer Training – I				5
	<b>Total (Project, Trg, Sem, viva)</b>					<b>5</b>

#### Second Semester

Sl. No.	Course Code	Course Title	Contact hours/week			Credits
			L	T	P	
1	AE-CC-29	Soil Mechanics	3	0	0	3
2	AE-CC-30	Irrigation & Drainage Engineering	3	0	0	3
3	AE-CC-31	Refrigeration & Air Conditioning	3	0	0	3
4	AE-CC-32	Testing & Evaluation of Tractors & Machines	3	0	0	3
5	AE-CC-33	Soil Mechanics Lab	0	0	4	2
6	AE-CC-34	Irrigation & Drainage Engineering Lab	0	0	4	2
7	AE-CC-35	Testing & Evaluation of Tractors & Machines	0	0	4	2
	<b>Total (Core)</b>		12	0	12	<b>18</b>
9	AE-DE-03	Elective (discipline) – III				
	AE-DE-04	Elective (discipline) - IV				
	<b>Total (Elective Discipline)</b>		7	0	0	<b>7</b>
10	AE-OE-03	Elective (Open) - III				
	AE-OE-04	Elective (Open) - IV				
	<b>Total (Elective Open)</b>		5	0	0	<b>5</b>
11	AE-PT-02	Seminar & Technical Report Writing	0	0	4	2
	<b>Total (Project, Trg, Sem, viva)</b>		0	0	4	<b>2</b>

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#### FOURTH YEAR

Year	Semester	Core	Elective (discipline)	Elective (Open)	Project, Trg, Sem, viva	Total
<b>IV</b>	Sem I	7	7 (6 min)	4 (2 min)	15	33
	Sem II	6	4 (2 min)	0	18	28

#### First Semester

Sl. No.	Course Code	Course Title	Contact hours/week			Credits
			L	T	P	
1	AE-CC-36	Building Materials & Structural Design	3	0	0	3
2	AE-CC-37	Renewable Energy Sources	3	0	0	3
3	AE-CC-38	Renewable Energy Sources Lab	0	0	2	1
	<b>Total (Core)</b>		6	0	2	7
4	AE-DE-05	Elective (discipline) - V: Tea Technology	3	0	0	3
5	AE-DE-06	Elective (discipline) - VI: Tea Technology Lab	0	0	2	1
6	AE-DE-07	Elective (discipline) - VII	3	0	0	3
	<b>Total (Elective Discipline)</b>		6	0	2	7
7	AE-OE-05	Elective (Open) - V				
	AE-OE-06	Elective (Open) - VI				
	<b>Total (Elective Open)</b>		4	0	0	4
8	AE-PT-03	Project - I	0	0	20	10
9	AE-PT-04	Summer Training - II				5
	<b>Total (Project, Trg, Sem, viva)</b>		0	0	20	15

#### Second Semester

Sl. No.	Course Code	Course Title	Contact hours/week			Credits
			L	T	P	
1	AE-CC-39	Fruits and Vegetable Processing	3	0	0	3
2	AE-CC-40	Land and Water Resource Management	3	0	0	3
	<b>Total (Core)</b>		6	0	0	6
3	AE-DE-08	Elective (discipline) - VIII: Agricultural Business Management				
	AE-DE-09	Elective (discipline) - IX				
	<b>Total (Elective Discipline)</b>		4	0	0	4
4	AE-OE-07	Elective (Open) - VII				
	AE-OE-08	Elective (Open) - VIII				
	<b>Total (Elective Open)</b>		0	0	0	0
5	AE-PT-05	Project - II	0	0	30	15
6	AE-PT-06	Comprehensive viva				3
	<b>Total (Project, Trg, Sem, viva)</b>		0	0	30	18

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**FIRST YEAR COURSE STRUCTURE FOR M. TECH. IN AQUACULTURAL ENGINEERING**

**FIRST YEAR**

Year	Semester	Core	Foundation	Elective (discipline)	Elective (Open)	Project, Trg, Sem, viva	Total
<b>I</b>	Sem I	15	10	5	5	0	35
	Sem II	15	0	20	0	0	35

**FIRST SEMESTER**

Sl. No	Paper Code	Name of Paper	Contact Periods/Week				Credits	
			L	T	P	Total		
1	MAE4-CC-01	Fishery Biology and Fish Culture Techniques-I	4	0	-	4	4	
2	MAE4-CC-02	Design of Aquaculture Facilities and Equipment-I	3	0	-	3	3	
3	MAE4-CC-03	Fishery Biology and Fish Culture Lab.	-	-	6	6	3	
4	MAE4-CC-04	Seminar – I	-	-	4	4	2	
5	MAE4-CC-05	Term paper-I	-	-	-	-	3	
	Total (Core)		7	0	10	17	15	
6	MAE4-CF-01	Open Channel Hydraulics & Coastal Engineering	7	0	-	7	7	
7	MAE4-CF-02	Water Quality and Hydraulics Lab	-	-	6	6	3	
	Total (Foundation)		7	0	6	13	10	
8	MAE-EL-01	Computational Methods	5	0	-	5	5	
	Total Elective (Discipline)		5	0	-	5	5	
9	MCSE-EL-31	Web Technology	5	0	-	5	5	
	Total Elective (Open)		5	0	-	5	5	
Total							40	35

**SECOND SEMESTER**

Sl. No	Paper Code	Name of Paper	Contact Periods/Week				Credits
			L	T	P	Total	
1	MAE4-CC-06	Design of Aquaculture Facilities and Equipment-II	4	0	-	4	4
2	MAE4-CC-07	Fishery Biology and Fish Culture Techniques-II	3	0	-	3	3
3	MAE4-CC-08	Aquaculture Facilities and Equipment Lab	-	-	6	6	3
4	MAE4-CC-09	Seminar - II	-	-	4	4	2
5	MAE4-CC-10	Term paper-II	-	-	-	-	3
	Total (Core)		7	0	10	17	15
6	MAE4-DE-0	Planning and Design of Aquaculture Project	5	0	-	5	5
7	MAE4-DE-0	Elective (Discipline) – III:	5	0	-	5	5
8	MAE4-DE-0	Elective (Discipline) – IV	5	0	-	5	5
	Total Elective (Discipline)		15	0	-	15	15
9	MAE4-DE-0	MATLAB Programming	5	0	-	5	5
	Total Elective (Open)		5	0	-	5	5
Total						40	35



**SECOND YEAR COURSE STRUCTURE FOR M. TECH. IN AQUACULTURAL  
ENGINEERING SECOND YEAR**

**THIRD SEMESTER**

Practical							
1	MAE4-PT-01	Thesis Part-I	-	-	-	-	15
2	MAE4-PT-02	Comprehensive Viva Voce	-	-	-	-	10
<b>Total Project and viva</b>							<b>25</b>
<b>Total of Semester:</b>							<b>25</b>

**FOURTH SEMESTER**

Practical							
1	MAE4-PT-01	Thesis Part-II	-	-	-	-	25
<b>Total Project and viva</b>							<b>25</b>
<b>Total of Semester:</b>							<b>25</b>

**List of Elective Papers**

Sl. No	Paper Code	Name of Paper	Contact Periods/Week				Credits
			L	T	P	Total	
1	MAE-EL-01	Computational Methods	5	0	-	5	5
2	MAE-EL-02	Land Husbandry and Watershed Management	7	0	-	7	7
3	MAE-EL-03	Water Quality Management	-	-	6	6	3
4	MAE-EL-04	Operations Research and Industrial Management	5	0	-	5	5
5	MAE-EL-05	Non-thermal Food Processing Technologies	5	0	-	5	5
6	MAE-EL-06	Food Chemistry and Microbiology	5	0	-	5	5
7	MAE-EL-07	Renewable Sources of Energy and Utilization	5	0	-	5	5
8	MAE-EL-08	Computer Graphics and Simulation	5	0	-	5	5
9	MAE-EL-09	Cereal, Pulses and Oil seed Processing	5	0	-	5	5

**List of Elective Papers (Elective I)**

Water Quality Management Practices  
Advanced Water and Wastewater Treatment  
Transfer Processes in Food Engineering  
Water Resources System Analysis  
GIS and GPS – principles and application in Agriculture  
Programming and Data Structure  
Statistical Methods  
Computer Programming and Data Structures

Computer Programming in C++ and MATLAB

**Elective IV and V**

Advanced Aquaculture Technology  
Computational Methods  
Recirculatory Aquaculture Systems  
Modelling of Aquaculture & Fisheries Systems  
Fish Handling, Packaging and Storage  
Water Resources Planning, Economics & Management  
Principles of Fishing Technology



**FIRST YEAR COURSE STRUCTURE FOR M. TECH. IN FARM  
MACHINERY AND POWER ENGINEERING**

**FIRST YEAR**

Year	Semester	Core	Foundation	Elective (discipline)	Elective (Open)	Project, Trg, Sem, viva	Total
<b>I</b>	Sem I	15	10	5	5	0	35
	Sem II	15	0	20	0	0	35

**FIRST SEMESTER**

Sl. No	Paper Code	Name of Paper	Contact Periods/Week				Credits
			L	T	P	Total	
1	MAE3-CC-01	Design and Testing of Farm Power Systems-I	4	0	-	4	4
2	MAE3-CC-02	Design and Testing of Farm Machinery Systems - I	3	0	-	3	3
3	MAE3-CC-03	Farm Power Design and Testing Lab	-	-	6	6	3
4	MAE3-CC-04	Seminar – I	-	-	4	4	2
5	MAE3-CC-05	Term paper-I	-	-	-	-	3
<b>Total (Core)</b>			<b>7</b>	<b>0</b>	<b>10</b>	<b>17</b>	<b>15</b>
6	MAE3-CF-01	Soil Dynamics in Tillage and Traction	7	0	-	7	7
7	MAE3-CF-02	Soil Dynamics Lab.	-	-	6	6	3
<b>Total (Foundation)</b>			<b>7</b>	<b>0</b>	<b>6</b>	<b>13</b>	<b>10</b>
8	MAE-EL-08	Computer Graphics and Simulation	5	0	-	5	5
<b>Total Elective (Discipline)</b>			<b>5</b>	<b>0</b>	<b>-</b>	<b>5</b>	<b>5</b>
9	MCSE-EL-05	MATLAB Programming	5	0	-	5	5
<b>Total Elective (Open)</b>			<b>5</b>	<b>0</b>	<b>-</b>	<b>5</b>	<b>5</b>
<b>Total</b>						<b>40</b>	<b>35</b>

**SECOND SEMESTER**

Sl. No	Paper Code	Name of Paper	Contact Periods/Week				Credits
			L	T	P	Total	
1	MAE3-CC-06	Design and Testing of Farm Machinery Systems-II	4	0	-	4	4
2	MAE3-CC-07	Design and Testing of Farm Power Systems-II	3	0	-	3	3
3	MAE3-CC-08	Farm Machinery Design and Testing Lab.	-	-	6	6	3
4	MAE3-CC-09	Seminar - II	-	-	4	4	2
5	MAE3-CC-10	Term paper-II	-	-	-	-	3
<b>Total (Core)</b>			<b>7</b>	<b>0</b>	<b>10</b>	<b>17</b>	<b>15</b>
6	MAE-EL-07	Renewable Sources of Energy and Utilization	5	0	-	5	5
7	MAE-EL-08	Computer Graphics and Simulation	5	0	-	5	5
8	MAE-EL-04	Operations Research and Industrial Management	5	0	-	5	5
<b>Total Elective (Discipline)</b>			<b>15</b>	<b>0</b>	<b>-</b>	<b>15</b>	<b>15</b>
9	MCSE-EL-01	MATLAB Programming	5	0	-	5	5
<b>Total Elective (Open)</b>			<b>5</b>	<b>0</b>	<b>-</b>	<b>5</b>	<b>5</b>
<b>Total</b>						<b>37</b>	<b>35</b>



**SECOND YEAR COURSE STRUCTURE FOR M. TECH. IN FARM  
MACHINERY AND POWER ENGINEERING  
SECOND YEAR**

**THIRD SEMESTER**

<b>Practical</b>							
1	FMP-PT-01	Thesis Part-I	-	-	-	-	15
2	FMP-PT-02	Comprehensive Viva Voce	-	-	-	-	10
<b>Total Project and viva</b>						-	<b>25</b>
<b>Total of Semester:</b>						-	<b>25</b>

**FOURTH SEMESTER**

<b>Practical</b>							
1	FMP-PT-01	Thesis Part-II	-	-	-	-	25
<b>Total Project and viva</b>						-	<b>25</b>
<b>Total of Semester:</b>						-	<b>25</b>

**List of Elective Papers**

Sl. No	Paper Code	Name of Paper	Contact Periods/Week				Credits
			L	T	P	Total	
1	MAE-EL-01	Computational Methods	5	0	-	5	5
2	MAE-EL-02	Land Husbandry and Watershed Management	7	0	-	7	7
3	MAE-EL-03	Water Quality Management	-	-	6	6	3
4	MAE-EL-04	Operations Research and Industrial Management	5	0	-	5	5
5	MAE-EL-05	Non-thermal Food Processing Technologies	5	0	-	5	5
6	MAE-EL-06	Food Chemistry and Microbiology	5	0	-	5	5
7	MAE-EL-07	Renewable Sources of Energy and Utilization	5	0	-	5	5
8	MAE-EL-08	Computer Graphics and Simulation	5	0	-	5	5
9	MAE-EL-09	Cereal, Pulses and Oil seed Processing	5	0	-	5	5

**List of Elective Papers (Elective I)**

Instrumentation and Control  
Remote Sensing for agricultural application  
Sensor Technology  
Farm Planning, Economics & Management  
Statistical Methods  
Computer Programming and Data Structures  
Computer Programming in C++ and MATLAB  
Finite Element Methods

**Computational Methods**

**Elective IV and V**

Agricultural Automation and Precision Agriculture  
Simulation and Modeling  
Soft Computing Applications  
Ergonomics and Safety  
Land Reclamation Machinery  
Computer Aided Design and Graphics  
Microprocessor Based Systems



**SECOND YEAR COURSE STRUCTURE FOR M. TECH. IN FOOD PROCESS  
ENGINEERING SECOND YEAR**

**THIRD SEMESTER**

Practical							
1	FPE-PT-01	Thesis Part-I	-	-	-	-	15
2	FPE-PT-02	Comprehensive Viva Voce	-	-	-	-	10
Total Project and viva							25
Total of Semester:							25

**FOURTH SEMESTER**

Practical							
1	FPE-PT-01	Thesis Part-II	-	-	-	-	25
Total Project and viva							25
Total of Semester:							25

**List of Elective Papers**

Sl. No	Paper Code	Name of Paper	Contact Periods/Week				Credits
			L	T	P	Total	
1	MAE-EL-01	Computational Methods	5	0	-	5	5
2	MAE-EL-02	Land Husbandry and Watershed Management	7	0	-	7	7
3	MAE-EL-03	Water Quality Management	-	-	6	6	3
4	MAE-EL-04	Operations Research and Industrial Management	5	0	-	5	5
5	MAE-EL-05	Non-thermal Food Processing Technologies	5	0	-	5	5
6	MAE-EL-06	Food Chemistry and Microbiology	5	0	-	5	5
7	MAE-EL-07	Renewable Sources of Energy and Utilization	5	0	-	5	5
8	MAE-EL-08	Computer Graphics and Simulation	5	0	-	5	5
9	MAE-EL-09	Cereal, Pulses and Oil seed Processing	5	0	-	5	5

**List of Elective Papers (Elective I)**

Food Plant and Equipment Design  
Novel Drying Technologies  
Research Methodology  
Computer Programming in C++ and MATLAB  
Computer Programming and Data Structures  
Computational Methods  
Statistical Methods  
Separation Technology  
Food Handling and Packaging

**Non-destructive Food Quality Analysis**

**List of Electives (VI & V)**

Food Processing Operations Analysis  
Food Safety and Quality Management  
Tea Processing Technology  
Food Extrusion Technology  
Food Process Instrumentation  
Fruit Juice Powder Technology  
Simulation and modeling  
Soft Computing Applications



**FIRST YEAR COURSE STRUCTURE FOR M. TECH. IN WATER RESOURCES  
DEVELOPMENT AND MANAGEMENT**

**FIRST YEAR**

Year	Semester	Core	Foundation	Elective (discipline)	Elective (Open)	Project, Trg, Sem, viva	Total
<b>I</b>	Sem I	15	10	5	5	0	35
	Sem II	15	0	20	0	0	35

**FIRST SEMESTER**

Sl. No	Paper Code	Name of Paper	Contact Periods/Week				Credits
			L	T	P	Total	
1	MAE1-CC-01	Hydrology & Water Resources Engineering-I	4	0	-	4	4
2	MAE1-CC-02	Water Well and Pump Engineering- I	3	0	-	3	3
3	MAE1-CC-03	Hydrology and Water Resources Engineering Lab	-	-	6	6	3
4	MAE1-CC-04	Seminar – I	-	-	4	4	2
5	MAE1-CC-05	Term paper-I	-	-	-	-	3
<b>Total (Core)</b>			<b>7</b>	<b>0</b>	<b>10</b>	<b>17</b>	<b>15</b>
6	MAE1-CF-01	On-Farm Irrigation and Drainage Engineering	7	0	-	7	7
7	MAE1-CF-02	On-Farm Irrigation and Drainage Engineering Lab	-	-	6	6	3
<b>Total (Foundation)</b>			<b>7</b>	<b>0</b>	<b>6</b>	<b>13</b>	<b>10</b>
8	MAE-EL-01	Computational Methods	5	0	-	5	5
<b>Total Elective (Discipline)</b>			<b>5</b>	<b>0</b>	<b>-</b>	<b>5</b>	<b>5</b>
9	MCSE-EL-05	MATLAB Programming	5	0	-	5	5
<b>Total Elective (Open)</b>			<b>5</b>	<b>0</b>	<b>-</b>	<b>5</b>	<b>5</b>
<b>Total</b>						<b>40</b>	<b>35</b>

**SECOND SEMESTER**

Sl. No	Paper Code	Name of Paper	Contact Periods/Week				Credits
			L	T	P	Total	
1	MAE1-CC-06	Water Well and Pump Engineering - II	4	0	-	4	4
2	MAE1-CC-07	Hydrology & Water Resources Engineering -II	3	0	-	3	3
3	MAE1-CC-08	Water Well and Pump Engineering Lab	-	-	6	6	3
4	MAE1-CC-09	Seminar - II	-	-	4	4	2
5	MAE1-CC-10	Term paper-II	-	-	-	-	3
<b>Total (Core)</b>			<b>7</b>	<b>0</b>	<b>10</b>	<b>17</b>	<b>15</b>
6	MAE-EL-02	Land Husbandry and Watershed Management	5	0	-	5	5
7	MAE-EL-03	Water Quality Management	5	0	-	5	5
8	MAE-EL-04	Operations Research and Industrial Management	5	0	-	5	5
<b>Total Elective (Discipline)</b>			<b>15</b>	<b>0</b>	<b>-</b>	<b>15</b>	<b>15</b>
9	MCSE-EL-01	MATLAB Programming	5	0	-	5	5
<b>Total Elective (Open)</b>			<b>5</b>	<b>0</b>	<b>-</b>	<b>5</b>	<b>5</b>
<b>Total</b>						<b>37</b>	<b>35</b>



**SECOND YEAR COURSE STRUCTURE FOR M. TECH. IN WATER RESOURCES**

**DEVELOPMENT AND MANAGEMENT**

**SECOND YEAR**

**THIRD SEMESTER**

Practical							
1	WRM -PT-01	Thesis Part-I	-	-	-	-	15
2	WRM -PT-02	Comprehensive Viva Voce	-	-	-	-	10
	Total Project and viva					-	25
Total of Semester:						-	25

**FOURTH SEMESTER**

Practical							
1	WRM -PT-01	Thesis Part-II	-	-	-	-	25
Total Project and viva						-	25
Total of Semester:						-	25

**List of Elective Papers**

Sl. No	Paper Code	Name of Paper	Contact Periods/Week				Credits
			L	T	P	Total	
1	MAE-EL-01	Computational Methods	5	0	-	5	5
2	MAE-EL-02	Land Husbandry and Watershed Management	7	0	-	7	7
3	MAE-EL-03	Water Quality Management	-	-	6	6	3
4	MAE-EL-04	Operations Research and Industrial Management	5	0	-	5	5
5	MAE-EL-05	Non-thermal Food Processing Technologies	5	0	-	5	5
6	MAE-EL-06	Food Chemistry and Microbiology	5	0	-	5	5
7	MAE-EL-07	Renewable Sources of Energy and Utilization	5	0	-	5	5
8	MAE-EL-08	Computer Graphics and Simulation	5	0	-	5	5
9	MAE-EL-09	Cereal, Pulses and Oil seed Processing	5	0	-	5	5

**List of Elective Papers (Elective I):**

Remote Sensing for Land and Water Resources  
GIS and GPS—principles and application in Agriculture  
Modelling and Simulation for Agricultural Water Management  
Mathematical Models in Hydrology  
Statistical Methods  
Computer Programming and Data Structures  
Computer Programming in C++ and MATLAB

**Elective – IV and V**

Advanced Groundwater Hydrology  
Water Resources System Analysis  
Soil Conservation Structure Design  
Water Resources Planning, Economics & Management  
Advanced Techniques for Ground Water Exploration and Development  
Minor Irrigation and Command Area Development  
Aqua cultural Engineering  
Computational Methods



**Course Structure of B.Tech, Dept. of Electronics and Communication Engineering, Assam University**

**Second Year**

Year	Semester	CC	CF	EF	DE	OE	PT	Total
II	III	7	22	-	-	4	-	29
	IV	23	8	-	-	4	-	31

CC – Compulsory Core, CF – Compulsory Foundation, EF – Elective Foundation,  
DE – Discipline Elective, OE – Open Elective, PT – Project/Training/Seminar/GD/Grand-Viva

**Third Semester**

Sl. No.	Course Code	Course Title	Contact Hrs/Week			Credit
			L	T	P	
1	EC-CF-01	Signals & Systems	4	-	-	4
2	EC-CF-02	Solid State Devices	3	2	-	4
3	EC-CF-03	Solid State Device Lab	-	-	6	3
4	EC-CF-04	Electromagnetic Theory	4	-	-	4
5	EC-CF-05	Circuit Theory and Network Analysis	3	2	-	4
6	EC-CF-06	Networks Analysis Lab	-	-	6	3
7	EC-CC-01/ EC-OE-01	Digital Electronic Circuits	4	-	-	4
8	EC-CC-02	Digital Electronics Lab	-	-	6	3
Total			18	4	18	29

**Fourth Semester**

Sl. No.	Course Code	Course Title	Contact Hrs/Week			Credit
			L	T	P	
1	EC-CC-03	Analog Communication	3	-	-	3
2	EC-CC-04	Analog Communication Lab	-	-	6	3
3	EC-CC-05	Analog Electronic Circuits	4	-	-	4
4	EC-CC-06	Analog Electronics Lab	-	-	6	3
5	EC-CC-07/ EC-OE-02	Instrumentation & Measurements	4	-	-	4
6	EC-CC-08	Instrumentation & Measurements Lab	-	-	6	3
7	EC-CC-09	Antenna & Radar Engineering	3	-	-	3
8	EC-CF-07	Computer Architecture and Organization	4	-	-	4
9	EC-CF-08	Random Processes, Probability Theory & Statistics	4	-	-	4
Total			22	-	18	31



**Third Year**

Year	Semester	CC	CF	EF	DE	OE	PT	Total
III	V	27	-	-	4	4	-	31
	VI	19	-	-	6	4	-	29

**Fifth Semester**

Sl. No.	Course Code	Course Title	Contact Hrs/Week			Credit
			L	T	P	
1	EC-CC-10	Digital Communication	3	-	-	3
2	EC-CC-11	Digital Communication Lab	-	-	4	2
3	EC-CC-12/ EC-OE-03	Microprocessor	4	-	-	4
4	EC-CC-13	Microprocessor Lab	-	-	4	2
5	EC-CC-14	Digital VLSI Design	4	-	-	4
6	EC-CC-15	Digital VLSI Design Lab	-	-	4	2
7	EC-CC-16	Microwave Engineering	4	-	-	4
8	EC-CC-17	Microwave Engineering Lab	-	-	6	3
9	EC-CC-18	Microelectronics Technology	3	-	-	3
10	EC-DE-01	Discipline Elective I	4	-	-	4
Total			22	-	18	31

List of Electives

- A. Control Systems (Credit: 4)
- B. Telecommunication Systems (Credit: 4)
- C. Electronic Sensors and MEMS (Credit: 4)

**Sixth Semester**

Sl. No.	Course Code	Course Title	Contact Hrs/Week			Credit
			L	T	P	
1	EC-CC-19	Computer Communication & Networking	3	-	-	3
2	EC-CC-20	Computer Networking Lab	-	-	4	2
3	EC-CC-21/ EC-OE-04	Digital Signal Processing	4	-	-	4
4	EC-CC-22	Digital Signal Processing Lab	-	-	6	3
5	EC-CC-23	Microcontroller	4	-	-	4
6	EC-CC-24	Microcontroller Lab	-	-	6	3
7	EC-DE-02	Discipline Elective II	4	-	-	4
8	EC-DE-03	Discipline Elective II Lab	-	-	4	2
9	-	Open Elective I	4	-	-	4
Total			19	-	20	29

List of Electives

- A. Advanced Digital System Design (Theory & Lab) (Credit: 4+2)
- B. Power Electronics (Theory & Lab) (Credit: 4+2)
- C. Image Processing (Theory & Lab) (Credit: 4+2)



**Fourth Year**

Year	Semester	CC	CF	EF	DE	OE	PT	Total
IV	VII	6	-	-	6	4	13	29
	VIII	-	3	-	3	4	21	31

**Seventh Semester**

Sl. No.	Course Code	Course Title	Contact Hrs/Week			Credit
			L	T	P	
1	EC-CC-25	Analog VLSI Design	4	-	-	4
2	EC-CC-26	Analog VLSI Design Lab	-	-	4	2
3	EC-DE-04	Discipline Elective III	3	-	-	3
4	EC-DE-05	Discipline Elective IV	3	-	-	3
5	-	Open Elective II	4	-	-	4
6	EC-PT-01	Seminar	-	-	2	1
7	EC-PT-02	Project I	-	-	20	10
8	EC-PT-03	Industrial Training	-	-	-	2
Total			14	-	26	29

List of Electives

- A. Optical Electronics & Optical Communication (Credit: 3)
- B. Advanced Communication (Credit: 3)
- C. Embedded Systems (Credit: 3)
  
- A. Microwave Integrated Circuits (Credit: 3)
- B. Principles of Electromagnetic and Electrostatic Compatibility (Credit: 3)
- C. Operating System (Credit: 3)

**Eighth Semester**

Sl. No.	Course Code	Course Title	Contact Hrs/Week			Credit
			L	T	P	
1	EC-CF-09	Industrial Management	3	-	-	3
2	EC-DE-06	Discipline Elective V	3	-	-	3
3	-	Open Elective III	4	-	-	4
4	EC-PT-04	Grand VIVA	-	-	-	6
5	EC-PT-05	Project II	-	-	30	15
Total			10	-	30	31

List of Electives

- A. Nanotechnology & Nanoelectronics (Credit: 3)
- B. Biomedical Instrumentation (Credit: 3)
- C. EDA for VLSI Design (Credit: 3)



## Annexure I

- |   |                   |
|---|-------------------|
| 1. Dean, TSSOT  | : Chairman        |
| 2. Head, Department of Computer Science & Engg, TSSOT   | : Member          |
| 3. Head, Department of Agricultural Engineering, TSSOT  | : Member          |
| 4. Head, Department of Electronics & Communication Engg, TSSOT  | : Member          |
| 5. All Professors of the Department of CSE, TSSOT   | : Member          |
| 6. All Professor of the Department of Agricultural Engg, TSSOT  | : Member          |
| 7. All Professor of the Department of ECE, TSSOT  | : Member          |
| 8. One Associate Prof. , Department of CSE, TSSOT   | : Member          |
| 9. One Associate Prof., Department of AE, TSSOT   | : Member          |
| 10. One Associate Prof., Department of ECE, TSSOT   | : Member          |
| 11. One Assistant Prof. , Department of CSE, TSSOT  | : Member          |
| 12. One Assistant Prof., Department of AE, TSSOT  | : Member          |
| 13. One Assistant Prof., Department of ECE, TSSOT   | : Member          |
| 14. Representative of School Board of other Schools of AUS having<br>Interdisciplinary work (V.C.'s Nominee - 1)              | : Member          |
| 15. Representative of School Board of other Schools of AUS having<br>Interdisciplinary work (V.C.'s Nominee - 2)              | : Member          |
| 16. One Expert to be proposed by the Department of<br>Computer Science & Engineering outside from Assam University            | : External Member |
| 17. One Expert to be proposed by the Department of<br>Electronics and Communication Engineering outside from Assam University | : External Member |
| 18. One Expert to be proposed by the Department of<br>Agricultural Engineering outside from Assam University                  | : External Member |

Dean  
Triguna Sen School of Technology  
Assam University, Silchar

Approved

Chairman  
Board of Governors,  
Assam University, Silchar