Dr. Ambedkar Institute of Technology

Electronics and communication Department

The enclosed documents are valid and verified.

HOD

ECE Department

HOD

Dept. of Electronics and Communication Engg.

Dr. Ambedkar Institute of Technol...

Bengaluru - 560056

Dr. AMBEDKAR INSTITUTE OF TECHNOLOGY
BANGALORE – 56

Date: 23.08.2010

Minutes of the 1st Academic Council meeting held on 21st August 2010 at 10.30 am in the Board room of Dr. AIT

Members Present

Sl No	Constitution	Nature	Name
1	The Principal of the College	Chairperson	Dr P.Martin Jebaraj
2	All the Heads of Department in the College	Members	Dr C.Nanjunda Swamy Dr B.M.Nandeeshaiah Dr B.V.Sumangala Dr Meenakshi Dr Shivakumar Prof Siddaraju Dr Rajendra Prof Prabha Prof Manjunath.A.P. Dr K.L.Savitramma Dr V.Bheemaraju Dr Sooryanarayana Rao
3	Four teachers of the college representing different levels of teaching staff by rotation on the basis of seniority of service in the college, to be nominated by the Principal	Members	1)Dr Manjunath Hegde 2)Dr T.Sreenivasulu Reddy 3)Prof G.Devaraju. 4)Smt.Leena Giri *Vijayalashmi Patil*
4	Not less than four experts from outside the college representing such areas as Industry, R and D labs, Technical Education,	Members	1) Dr S. Seetharamu Additional Director CPRI, Bangalore 2) Dr G.R.Nagabhushana Former Chairman HVE, IISc, Bangalore 3) Mr Rajendra Prasad Vice President Electro Systems Associates Pvt Ltd, Bangalore 4) Mr B.N.Satyesh Senior Vice-president Tejas Network Ltd Bangalore

5	Three nominees of the University,	Members	1.Dr T.V.Govindaraju Principal Shirdi Sai Engg College 2.Dr H.R.Yashavanth Principal, SEACE Bangalore 3.Dr V.R.Manjunath Principal Sapthagiri College of Engg Bangalore
6	A faculty member, nominated by the Principal	Member Secretary	Dean (Academic) Dr B.V.Sumangala

Members Absent

1. Dr. G.R. Nagabhushana
2. Dr. Yeshovanth

Principal welcomed all the members of the committee and they were introduced. He explained about the constitution of the committee, tenure of the committee and the duties and responsibilities. He also explained about the courses of the institution going for autonomy and briefed about the various procedures followed to make the institution prepare for the implementation of academic autonomy.

Principal explained the various issues related to academic structure of autonomy at Dr. AIT with reference to the guidelines by VTU. The details of the deliberation made by experts are as follows:-

Agenda 1 :

Recommendations of guidelines to all UG programmes – Autonomy structure, a) Credit system, b) Grading system, c) Eligibility criteria etc.

The following resolutions were made by the committee and the regulations are recommended and was proposed to place in GOVERNING BODY for approval.

a. Credit System

The committee recommended the following credits structure based on VTU guidelines

- BE Degree Programme – Entry in I year
  - 200 Credits
- BE Degree Programme – Entry in II year
  - Lateral Entry
  - 150 Credits (with bridge course – Mathematics)

b. Academic Calendar

The major events with the corresponding period for execution are:-

Main Semester (Odd)   : 19 Weeks
Recess   : 2 Weeks
Main Semester (Even)   : 19 Weeks
Recess   : 2 Weeks
Supplementary Semester   : 8 Weeks
Recess   : 2 Weeks
Total   : 52 Weeks.

Make-up examination after the Semester End Examinations (SEE) as per notification.

c. Evaluation Methodology

The evaluation consists of two components

1. Continuous Internal Evaluation – CIE for 50 Marks
2. End Semester Evaluation – SEE for 50 Marks – It is essential to obtain minimum requirement is 40 % in both CIE and SEE to qualify for appearing for examination and to get pass grade in a subject respectively.

d. Grading Methodology

The absolute grading system is adopted in our case. The various grades are generated based on the examination rules out of 100 and is shown in table. These grades are then converted to grade points and the SEPA is determined.

Level	Out-standing	Excellent	Very Good	Good	Average	Poor	Fail
Grade	S	A	B	C	D	E	F
Grade Points	10	09	08	07	05	04	00
Score (Marks) Range (%)	90-100	75-89	60-74	50-59	45-49	40-44	<40

Grades   - W – Withdrawal of any course
             - I – Not writing SEE for a genuine reason
             - X – Scoring >80% in CIE but getting F (fail) grade in SEE

e. Eligibility Criteria

A student can carry 4 subjects at the end of any even semester which includes
             - Failed subjects and
             - 'Not Eligible' subjects to write SEE due to shortage of marks in CIE(< 20 marks) or shortage of attendance (< 85%)

Agenda 2. Recommendation of BOS committees for various Departments

The Board of Studies for all the 13 Departments were formed and placed in GB for approval

Agenda 3 : Recommendations for common BOE for I year
It was proposed to have a common Board of Examiners for I year.
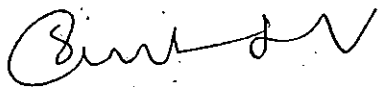
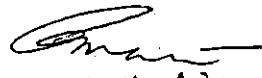**Agenda 4 : Recommendations for all rules and regulations pertaining to Examination**
After fully going through the document the examination rules and regulations are recommended by Academic Council

Agenda 5 : Any Other subject

Dr Govindaraju suggested to increase the minimum requirement for CIE for practicals.

DEAN (ACADEMIC)

Principal
Dr. Ambedkar Institute of Technology
Bangalore-560 056

Dr. Ambedkar Institute of Technology, Bengaluru-560 056
SCHEME OF TEACHING AND EXAMINATION from Academic Year 2021-22
B.E in Electronics and Communication Engineering
Outcome Based Education (OBE) and Choice Based Credit System (CBCS) (Applicable to 2018 Batch)

III Semester

Sl. No	Course and Course Code		Course Title	Teaching Dept.	Teaching Hours / Week			Examination				Credits
					Theory Lecture (L)	Tutorial (T)	Drawing/ Practical (P)	Duration in Hours	CIE Marks	SEE Marks	Total Marks	
1	BC	18MA31	Transforms & Applications	MAT	02	02	--	03	050	050	100	03
2	PC	18EC31	Electronics devices	EC	04	--	--	03	050	050	100	04
3	PC	18EC32	Digital System Design	EC	04	--	--	03	050	050	100	04
4	PC	18EC33	Network Theory	EC	04	--	--	03	050	050	100	04
5	PC	18EC34	Engineering Statistics	EC	03	--	--	03	050	050	100	03
6	PC	18EC35	Power Electronics & Instrumentation	EC	03	--	--	03	050	050	100	03
7	PC	18ECL36	Electronic Devices & Instrumentation Laboratory	EC	--	--	02	03	050	050	100	01
8	PC	18ECL37	Digital System Design Laboratory	EC	--	--	02	03	050	050	100	01
9	HS	18HS31/32	Constitution of India Professional Ethics and Cyber law /Environmental Studies	HS	01	--	--	02	050	050	100	01
10	MC	18HS33	Soft skills (MC)	HS	04	--	--	03	050	---	050	00
Total					**25**	**02**	**04**	**29**	**500**	**450**	**950**	**24**

Course prescribed to lateral entry Diploma holders admitted to III semester of Engineering programs

11.	MC	18MAD41	Advance Mathematics - I	MAT	02	02	--	03	50	--	--	00

a.) The mandatory non – credit courses Advance Mathematics I and II prescribed at III and IV semesters respectively, to lateral entry Diploma holders admitted to III semester of BE programs shall compulsorily be registered during respective semesters to complete all the formalities of the course and appear for SEE examination.

b.) The mandatory non – credit courses Basic Engineering Mathematics I and II, prescribed to lateral entrant Diploma holders admitted to III and IV semester of BE programs, are to be completed to secure eligibility to VII semester. However, they are not considered for vertical progression from II year to III year of the programme but considered as head of passing along with credit courses of the programme to eligibility to VII semester.

BOS Chairman   Dean(Academics)   Principal

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IV Semester

Sl. No	Course and Course Code		Course Title	Teaching Dept.	Teaching Hours / Week			Examination				Credits
					Theory Lecture (L)	Tutorial (T)	Drawing / Practical (P)	Duration in Hours	CIE Marks	SEE Marks	Total Marks	
1.	BC	18MA41	Probability, Numerical and Optimization Technique	MAT	02	02	--	03	050	050	100	03
2.	PC	18EC41	Analog Circuits	EC	04	--	--	03	050	050	100	04
3.	PC	18EC42	Principles of Communication Systems	EC	03	--	--	03	050	050	100	03
4.	PC	18EC43	Computer Organization and Architecture	EC	04	--	--	03	050	050	100	03
5.	PC	18EC44	Verilog HDL	EC	04	--	--	03	050	050	100	04
6.	PC	18EC45	Signals and Systems	EC	04	--	--	03	050	050	100	04
7.	PC	18ECL46	Analog Circuits and Communication Laboratory	EC	--	--	02	02	050	050	100	01
8.	PC	18ECL47	HDL Lab	EC	--	--	02	02	050	050	100	01
9.	CIV	18HS41/ 42	Constitution of India Professional Ethics and Cyber law/ Environmental Studies	HS/CIV	01	--	--	02	050	050	100	01
10.	MC	18HS43	Soft skills (NCMC)	HS	04	--	--	03	050	--	050	00
				Total	**26**	**02**	**04**	**27**	**500**	**450**	**950**	**24**

Course prescribed to lateral entry Diploma holders admitted to III semester of Engineering programs

| 11. | MC | 18MAD41 | Advance Mathematics - II | MAT | 02 | 02 | -- | 03 | 50 | -- | -- | 00 |

a.) The mandatory non – credit courses Advance Mathematics I and II prescribed at III and IV semesters respectively, to lateral entry Diploma holders admitted to III semester of BE programs shall compulsorily be registered during respective semesters to complete all the formalities of the course and appear for SEE examination.

b.) The mandatory non – credit courses Basic Engineering Mathematics I and II, prescribed to lateral entrant Diploma holders admitted to III and IV semester of BE programs, are to be completed to secure eligibility to VII semester. However, they are not considered for vertical progression from II year to III year of the programme but considered as head of passing along with credit courses of the programme to eligibility to VII semester.

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V Semester

Sl. No	Course and Course Code		Course Title	Teaching Dept.	Teaching Hours / Week				Examination				Credits
					Theory Lecture (L)	Tutorial (T)	Drawing / Practical (P)	Duration in Hours	CIE Marks	SEE Marks	Total Marks		
1	PC	18HS51	IPR	HS	03	--	--	03	050	050	100	03
2	PC	18EC51	Electromagnetic Waves	EC	04	--	--	04	050	050	100	03
3	PC	18EC52	Digital Signal Processing	EC	04	--	--	04	050	050	100	04
4	PC	18EC53	Digital Communication	EC	04	--	--	04	050	050	100	04
5	PC	18EC54	Microprocessor and Microcontroller	EC	03	--	--	04	050	050	100	03
6	PE	18EC55X	Professional Elective-1	EC	03	--	--	03	050	050	100	03
7	OE	18EC56X	Open-Elective A		03	--	--	03	050	050	100	03
8	PC	18ECL57	Microcontroller Laboratory	EC	--	--	02	02	050	050	100	01
9	PC	18ECL58	Digital Signal Processing Laboratory	EC	--	--	02	02	050	050	900	01
			Total		**24**	**00**	**04**	**29**	**400**	**450**	**800**	**25**

18EC55x_Professional Elective – 1		
Sl. No.	Course Code	Course Title
1	18EC551	Digital Switching System
2	18EC552	Programming with Python
3	18EC553	Artificial Neural Networks
4	18EC554	Object Oriented Programming with C++
5	18EC555	Control Systems

Open Elective-A(OE-A)		
Sl. No.	Course Code	Course Title
1	18EC561	Real Time Operating System(CS,IS, EI, ML)
2	18EC562	Mechatronics (CS,IS, EI, ML, ME, IEM, EEE)
3	18EC563	Television Engineering (TE, EI, ML)
4	18EC564	Sensors (CS, IS, ML, TC)

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VI Semester

Sl. No	Course and Course Code		Course Title	Teaching Dept.	Teaching Hours / Week			Examination				Credits
					Theory Lecture (L)	Tutorial (T)	Drawing/ Practical (P)	Duration in Hours	CIE Marks	SEE Marks	Total Marks	
1	PC	18HS61	Management and Entrepreneurship	EC	03	--	--	03	050	050	100	03
2	PC	18EC61	CMOS VLSI Design	EC	04	--	--	03	050	050	100	04
3	PC	18EC62	Embedded Systems	EC	03	--	--	03	050	050	100	03
4	PC	18EC63	Computer Communication Network	EC	04	--	--	03	050	050	100	04
5	PC	18EC64x	Professional Elective – 2	EC	03	--	--	03	050	050	100	03
6	OE	18EC65x	Open Elective –B	EC	03	--	--	03	050	050	100	03
7	PC	18ECL66	Embedded Systems Laboratory	EC	--	--	02	02	050	050	100	01
8	PC	18ECL67	VLSI Laboratory	EC	--	--	02	02	050	050	100	01
9	M	18ECM68	Mini Project					03	050	050	100	02
10	INT	18ECI69	Industry Internship	To be carried out during the intervening vacations of VI an VII semesters				--	--	--	--	--
			Total		**20**	**00**	**04**	**27**	**450**	**450**	**900**	**24**

18EC65x_Professional Elective – 2 (PECEL 2)		
Sl. No.	Course Code	Course Title
1	18EC641	Semiconductor Fabrication
2	18EC642	Cryptography
3	18EC643	Information Theory & Coding
4	18EC644	System Verilog for verification
5	18EC645	Internet of Things

Open Elective-B(OE-B)		
Sl. No.	Course Code	Course Title
1	18EC651	Automotive Safety Measurements(ME,IEM,EE)
2	18EC652	Nano Electronics (CS,IS,ML,TC)
3	18EC653	Wireless Sensor Networks(EE,ML,EI)
4	18EC654	Robotics and Machine vision systems(ME,EI,EE,ML)

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VII Semester

Sl. No	Course and Course Code		Course Title	Teaching Dept.	Teaching Hours / Week			Examination				Credits
					Theory Lecture (L)	Tutorial (T)	Drawing / Practical (P)	Duration in Hours	CIE Marks	SEE Marks	Total Marks	
1	MC	18HS71	Cost Management of Engg Projects	HS	03	--	--	03	050	050	100	02
2	PC	18EC71	Wireless Communication	EC	04	--	--	03	050	050	100	04
3	PC	18EC72	Microwave and Antenna	EC	04	--	--	03	050	050	100	04
4	PE	18EC73X	Professional Elective-3	EC	03	--	--	03	050	050	100	03
5	PE	18EC74X	Professional Elective-4	EC	03	--	--	03	050	050	100	03
6	OE	18EC75X	Open Elective-C	EC	03	--	--	03	050	050	100	03
7	PC	18ECL76	Advance Communication Lab	EC	--	--	02	02	050	050	100	01
8	PC	18ECL77	Computer Communication Network Lab	EC	--	--	02	02	050	050	100	01
9	Project	18ECP78	Project work phase-1	EC	--	--	02	02	050	050	100	02
10	INT	18ECI79	Internship	--	--	--	--	---	---	---	--	--
			Total		**20**	**--**	**06**	**24**	**400**	**400**	**800**	**23**

Internship: All the students admitted to III year of BE have to undergo mandatory internship of 4 weeks during the vacations of VI and VII semesters and /or VII and VIII semesters. A University examination will be conducted during VIII semester and prescribed credit are added to VIII semester. Internship is considered as a head of passing and is considered for the award of degree. Those, who do not take-up/complete the internship will be declared as failed and have to complete during subsequent University examination after satisfy the internship requirements

Note: : PC: Professional Core. PE: Professional Elective, OE: Open Elective. MC: Mandatory Course, PRJ: Project work, INT: Internship
Select **ANY ONE** of the Professional Elective. Open Elective-A: Students can select any one of the open electives (Please refer to consolidated list of Dr AIT for open electives) offered by any Department

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Professional Elective-3(PE-3)		
Sl. No.	Course Code	Course Title
1	18EC731	5G Technology
2	18EC732	Virtual Reality
3	18EC733	Real Time Operating systems
4	18EC734	DSP Algorithm and architecture
5	18EC735	Network and Cyber Security
6	18EC736	Optical Fibre Communication

Professional Elective-4(PE-4)		
Sl. No.	Course Code	Course Title
1	18EC741	Analog and Mixed Mode VLSI
2	18EC742	Operating systems
3	18EC743	Satellite Communication
4	18EC744	Real Time Embedded Systems
5	18EC745	Operations Research
6	18EC746	Adaptive Signal Processing

Open Elective-C (OE-C)		
Sl. No	Course Code	Course Title
1	18EC751	Internet of Things (CS, IS, EI, TE, ML, ME, IEM, EEE, CV)
2	18EC752	Cryptography (CS, IS, ML,TE, EI,EEE)
3	18EC753	Mobile Communication (EI, EE, ML)
4	18EC754	Bio Mechatronics (CS, IS, EI, TE, ML, ME, IEM, EEE, CV)
5	18EC755	Introduction to Unmanned Aerial Vehicle (UAV) (CS,IS, EI, TE,ML, ME, IEM, EEE,CV)

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VIII Semester

Sl. No	Course and Course Code		Course Title	Teaching Dept.	Teaching Hours / Week			Examination				Credits
					Theory Lecture (L)	Tutorial (T)	Drawing/ Practical (P)	Duration in Hours	CIE Marks	SEE Marks	Total Marks	
1	MC	18CV81	Occupational and Safety and Health administration	CV	03	--	--	03	050	050	100	02
2	Project	18ECP82	Project Work Phase-2	EC	--	--	03	03	050	050	100	10
3	Seminar	18ECS83	Technical Seminar	EC	--	--	03	03	050	050	100	01
4	INT	18ECI84	Internship	EC	--	--	03	03	050	050	100	02
			Total		**03**	**--**	**09**	**12**	**250**	**250**	**500**	**15**

Internship: Those, who have not pursued /completed the internship will be declared as failed and have to complete during subsequent SEE examination after they satisfy the internship requirements.

Note: : PC: Professional Core. PE: Professional Elective, OE: Open Elective. MC: Mandatory Course, PRJ: Project work, INT: Internship

Select **ANY ONE** of the Professional Elective and Open Elective subject

Students can select any one of the open electives (Please refer to consolidated list of Dr. AIT open electives) offered by any Department.

Selection of an open elective is not allowed provided,

• The candidate has studied the same course during the previous semesters of the programme.

• The syllabus content of open elective is similar to that of Departmental core courses or professional electives. Registration to electives shall be documented under the guidance of Programme Coordinator/ Mentor.

BOS Chairman   Dean(Academics)   Principal