

UG

First-Year-Engineering
UG - R-2012 Syllabus



AC 6/6/2012
Item No. 4.76

UNIVERSITY OF MUMBAI



Bachelor of Engineering

First Year Engineering (Semester I & II), Revised course
(REV- 2012) from Academic Year 2012 -13,
(Common for All Branches of Engineering)

(As per Credit Based Semester and Grading System with
effect from the academic year 2012-2013)



PRINCIPAL
St. Francis Institute
Of Technology (Engg-College)
Mount Poincur, S. V. P. Road,
Borivli (West), Mumbai - 400 103

**First Year Engineering (Semester I & II), Revised course from
Academic Year 2012 -13, (REV- 2012),**

Sub Code	Subject Name	Teaching Scheme			Credits Assigned			
		Theory	Pract.	Tut.	Theory	TW/Pract	Tut.	Total
FEC101	Applied Mathematics-I	04	-	01	04		01	05
FEC102	Applied Physics-I	03	01	-	03	0.5	-	3.5
FEC103	Applied Chemistry -I	03	01	-	03	0.5	-	3.5
FEC104	Engineering Mechanics	05	02	-	05	01	-	06
FEC105	Basic Electrical & Electronics Engineering	04	02	-	04	01	-	05
FEC106	Environmental studies	02	-	-	02	-	-	02
FEL101	Basic Workshop Practice-I	-	04	-	-	02	-	02
		21	10	01	21	05	01	27

(Common for all branches of Engineering)

Scheme for FE - Semester - I

Sub. Code	Subject Name	Examination Scheme							Total	
		Theory Marks				End sem. exam	Term Work	Pract.		Oral
		Internal Assessment								
		Test 1	Test 2	Average of Test 1 and Test 2						
FEC101	Applied Mathematics-I	20	20	20	80	25	-	-	125	
FEC102	Applied Physics-I	15	15	15	60	25	-	-	100	
FEC103	Applied Chemistry -I	15	15	15	60	25	-	-	100	
FEC104	Engineering Mechanics	20	20	20	80	25	-	25	150	
FEC105	Basic Electrical & Electronics Engineering	20	20	20	80	25	-	25	150	
FEC106	Environmental studies	15	15	15	60	-	-	-	75	
FEL101	Basic Workshop Practice-I	-	-	-	-	50	-	-	50	
				105	420	175		50	750	




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Academic Year 2012 -13, (REV- 2012), (Common for all branches)**

Subject Code	Subject Name	Teaching Scheme			Credits Assigned			
		Theory	Pract.	Tut.	Theory	TW/Pract	Tut.	Total
FEC201	Applied Mathematics-II	04	-	01	04		01	05
FEC202	Applied Physics-II	03	01	-	03	0.5	-	3.5
FEC203	Applied Chemistry -II	03	01	-	03	0.5	-	3.5
FEC204	Engineering Drawing	03	04	-	03	02	-	05
FEC205	Structured Programming Approach	04	02	-	04	01	-	05
FEC206	Communication Skills	02	02	-	02	01	-	03
FEL201	Basic Workshop Practice -II	-	04	-	-	02	-	02
		19	14	01	19	07	01	27

Scheme for Semester - II

Sub. Code	Subject Name	Examination Scheme							Total	
		Theory marks				End sem. exam	Term Work	Pract		Oral
		Internal Assessment								
		Test 1	Test 2	Av. of Test 1 & 2						
FEC201	Applied Mathematics-II	20	20	20	80	25	-	-	125	
FEC202	Applied Physics-II	15	15	15	60	25	-	-	100	
FEC203	Applied Chemistry -II	15	15	15	60	25	-	-	100	
FEC204	Engineering Drawing	15	15	15	60	25	50	-	150	
FEC205	Structured Programming Approach	20	20	20	80	25	25	-	150	
FEC206	Communication Skills	10	10	10	40	25	-	-	75	
FEL201	Basic Workshop Practice-II	-	-	-	-	50	-	-	50	
				95	380	200	75		750	




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Computer Engineering
R-2012 Syllabus (old)

Semesters III, IV, V, VI, VII & VIII



UNIVERSITY OF MUMBAI



Bachelor of Engineering

Computer Engineering (Second Year – Sem. III & IV)

Revised course

(REV- 2012) from

Academic Year 2012 -13

Under

FACULTY OF TECHNOLOGY

(As per Semester Based Credit and Grading System)

PRINCIPAL

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From Dean's Desk:

To meet the challenge of ensuring excellence in engineering education, the issue of quality needs to be addressed, debated and taken forward in a systematic manner. Accreditation is the principal means of quality assurance in higher education. The major emphasis of accreditation process is to measure the outcomes of the program that is being accredited. In line with this Faculty of Technology of University of Mumbai has taken a lead in incorporating philosophy of outcome based education in the process of curriculum development.

Faculty of Technology, University of Mumbai, in one of its meeting unanimously resolved that, each Board of Studies shall prepare some Program Educational Objectives (PEO's) and give freedom to affiliated Institutes to add few (PEO's) and course objectives and course outcomes to be clearly defined for each course, so that all faculty members in affiliated institutes understand the depth and approach of course to be taught, which will enhance learner's learning process. It was also resolved that, maximum senior faculty from colleges and experts from industry to be involved while revising the curriculum. I am happy to state that, each Board of studies has adhered to the resolutions passed by Faculty of Technology, and developed curriculum accordingly. In addition to outcome based education, semester based credit and grading system is also introduced to ensure quality of engineering education.

Semester based Credit and Grading system enables a much-required shift in focus from teacher-centric to learner-centric education since the workload estimated is based on the investment of time in learning and not in teaching. It also focuses on continuous evaluation which will enhance the quality of education. University of Mumbai has taken a lead in implementing the system through its affiliated Institutes and Faculty of Technology has devised a transparent credit assignment policy and adopted ten points scale to grade learner's performance. Credit assignment for courses is based on 15 weeks teaching learning process, however content of courses is to be taught in 12-13 weeks and remaining 3-2 weeks to be utilized for revision, guest lectures, coverage of content beyond syllabus etc.

Credit and grading based system was implemented for First Year of Engineering from the academic year 2012-2013. Subsequently this system will be carried forward for Second Year Engineering in the academic year 2013-2014, for Third Year and Final Year Engineering in the academic years 2014-2015 and 2015-2016 respectively.

Dr. S. K. Ukarande
Dean,
Faculty of Technology,
Member - Management Council, Senate, Academic Council
University of Mumbai, Mumbai




P. PAL
St. Francis Institute
Of Technology (Engg-College)
Mount Poincur, S. V. P. Road,
Borivli (West), Mumbai - 400 103.

Preamble:

The engineering education in India in general is expanding in manifolds. Now, the challenge is to ensure its quality to the stakeholders along with the expansion. To meet this challenge, the issue of quality needs to be addressed, debated and taken forward in a systematic manner. Accreditation is the principal means of quality assurance in higher education and reflects the fact that in achieving recognition, the institution or program of study is committed and open to external review to meet certain minimum specified standards. The major emphasis of this accreditation process is to measure the outcomes of the program that is being accredited. In line with this Faculty of Technology of University of Mumbai has taken a lead in incorporating philosophy of outcome based education in the process of curriculum development.

The Program Educational Objectives finalized for undergraduate program in Computer Engineering are listed below:

1. To prepare Learner's with a sound foundation in the mathematical, scientific and engineering fundamentals
2. To prepare Learner's to use effectively modern tools to solve real life problems
3. To equip Learner's with broad education necessary to understand the impact of computer Technology in a global and social context
4. To encourage , motivate and prepare Learner's for Lifelong-learning
5. To inculcate professional and ethical attitude, good leadership qualities and commitment to social responsibilities

In addition to above 2 to3 more program educational objectives of their own may be added by affiliated Institutes. The Program outcomes are the skills and ability that Learner will demonstrate upon completion of undergraduate degree program in Computer Engineering. Few may be listed as follows:

1. Ability to effectively apply knowledge of computing and mathematics to computer science problems.
2. Ability to design, implement and evaluate computer-based components, systems, processes or programs to meet desired needs and specifications.
3. Ability and skills to effectively use state-of-the-art techniques and computing tools for analysis, design, and implementation of computing systems.
4. Ability to function effectively as a member of a team assembled to undertake a common goal.
5. An understanding of professional, ethical, legal, security, and social issues and responsibilities.
6. Ability to communicate effectively to both technical and non-technical audiences.
7. The ability to successfully pursue professional development thru lifelong learning

In addition to Program Educational Objectives, for each course of undergraduate program, Course Objectives and expected outcomes from learner's point of view are also included in the curriculum to support the philosophy of outcome based education. In order to achieve outcome 1,2,and 3 a major emphasis is planned towards designing Laboratory courses third year onwards. I believe strongly that small step taken in right direction will definitely help in providing quality education to the stake holders.

Dr. Prachi Gharpure

Chairperson, Adhoc Board of Studies in Computer Engineering

University of Mumbai, Mumbai



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Program Structure for B.E. Computer Engineering
Second Year (Computer) (Semester III)
(REV 2012)

Course Code	Course Name	Teaching Scheme (Contact Hours)			Credits Assigned			
		Theory	Pract	Tut	Theory	TW/ Pract	Tut	Total
CSC301	Applied Mathematics III*	4	-	1#	4	-	1	5
CSC 302	Object Oriented Programming Methodology*	4	2	-	4	1	-	5
CSC303	Data Structures	4	2	-	4	1	-	5
CSC304	Digital Logic Design and Analysis	3	2	-	3	1	-	4
CSC305	Discrete Structures	4	-	-	4	-	-	4
CSC306	Electronic Circuits and Communication Fundamentals	4	2	-	4	1	-	5
	Total	23	8	1	23	4	1	28

Course Code	Course Name	Examination Scheme										
		Internal Assesment							TW	Pract / oral	Tot	
		Internal Assesment			End Sem Exam	Exam Duration (in Hrs)	TW	Pract / oral				Tot
		Test 1	Test 2	Avg								
CSC301	Applied Mathematics III*	20	20	20	80	03	25	-	125			
CSC302	Object Oriented Programming Methodology*	20	20	20	80	03	25	25	150			
CSC303	Data Structures	20	20	20	80	03	25	25	150			
CSC304	Digital Logic Design and Analysis	20	20	20	80	03	25	-	125			
CSC305	Discrete Structures	20	20	20	80	03	-	-	100			
CSC306	Electronic Circuits and Communication Fundamentals	20	20	20	80	03	25	25	150			
	Total	-	-	120	480	-	125	75	800			

* Common Subjects with IT # Tutorial to be taken class wise ! Tutorials will be evaluated as Term work



**Program Structure for B.E. Computer Engineering
Second Year (Computer) (Semester IV)**


(REV 2012)

Course Code	Course Name	Teaching Scheme (Contact Hours)			Credits Assigned			
		Theory	Pract	Tut	Theory	TW/ Pract	Tut	Total
CSC401	Applied Mathematics IV*	4	-	1	4	-	1#	5
CSC402	Analysis of Algorithms	4	2	-	4	1	-	5
CSC403	Computer Organization and Architecture*	4	2	-	4	1	-	5
CSC404	Data Base Management systems	4	2	-	4	1	-	5
CSC405	Theoretical Computer Science	4	-	-	4	-	-	4
CSC406	Computer Graphics	3	2	-	3	1	-	4
	Total	23	8	1	23	4	1	28

Course Code	Course Name	Examination Scheme								
		Internal Assesment						TW	Prac / oral	Tot
		Internal Assesment			End Sem Exam	Exam Duration (in Hrs)				
		Test 1	Test 2	Avg						
CSC401	Applied Mathematics IV*	20	20	20	80	03	25!	-	125	
CSC402	Analysis of Algorithms	20	20	20	80	03	25	25	150	
CSC 403	Computer Organization and Architecture*	20	20	20	80	03	25	25	150	
CSC404	Data Base Management systems	20	20	20	80	03	25	25	150	
CSC405	Theoretical Computer Science	20	20	20	80	03	-	-	100	
CSC406	Computer Graphics	20	20	20	80	03	25	25	150	
	Total	20	-	120	480	-	125	100	825	

* Common Subjects with IT # Tutorial to be taken class wise
! Tutorials will be evaluated as Term work




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UNIVERSITY OF MUMBAI



Bachelor of Engineering

Computer Engineering (Sem. V & VI), Revised course

(REV- 2012) from Academic Year 2014 -15,

Under

FACULTY OF TECHNOLOGY

(As per Semester Based Credit and Grading System)




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Program Structure for B.E. Computer Engineering

Third Year (Computer)

(Semester V)


(REV 2012)

Course Code	Course Name	Teaching Scheme (Contact Hours)			Credits Assigned			
		Theory	Pract	Tut	Theory	TW/ Pract	Tut	Total
CPC501	Microprocessor	4	2	-	4	1	-	5
CPC502	Operating Systems	4	2	-	4	1	-	5
CPC503	Structured and Object Oriented Analysis and Design	4	2	-	4	1	-	5
CPC504	Computer Networks	4	2	-	4	1	-	5
CPL501	Web Technologies Laboratory	-	4	-	-	2	-	2
CPL502	Business Communication and Ethics*	-	2	2	-	2	-	2
Total		18	12	2	16	8	-	24

* 2 hours shown as Practicals to be taken class wise and 2 hours for tutorials to be taken as batch wise

Course Code	Course Name	Examination Scheme									
		Internal Assesment					End Sem Exam	Exam Duration (in Hrs)	TW	Oral / Pract	Total
		Internal Assesment			Avg	Exam					
		Test 1	Test 2	Avg							
CPC501	Microprocessor	20	20	20	80	03	25	25 prac	125		
CPC502	Operating Systems	20	20	20	80	03	25	25 (prac	150		
CPC503	Structured and Object Oriented Analysis and Design	20	20	20	80	03	25	25 (oral)	150		
CPC504	Computer Networks	20	20	20	80	03	25	25 prac	150		
CPL501	Web Technologies Laboratory	-	-	-	-	-	25	50 (oral)	75		
CPL502	Business Communication and Ethics	-	-	-	-	-	50	-	50		
Total		-	-	80	320		175	150	725		




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Program Structure for B.E. Computer Engineering

Third Year (Computer) (Semester VI)

(REV 2012)

Course Code	Course Name	Teaching Scheme (Contact Hours)			Credits Assigned			
		Theory	Pract	Tut	Theory	TW/ Pract	Tut	Total
CPC601	System Programming and Compiler Construction	4	2	-	4	1	-	5
CPC602	Software Engineering	4	2	-	4	1	-	5
CPC603	Distributed Databases	4	2	-	4	1	-	5
CPC604	Mobile Communication and Computing	4	2	-	4	1	-	5
CPE6011	Elective-I	2+2*	-	-	-	2	-	2
CPL601	Network Programming Laboratory	-	4	-	-	2	-	2
	Total	19	12	-	16	8	-	24

*Hours shown as practicals to be taken class-wise

Course Code	Course Name	Examination Scheme							
		Internal Assesment					TW	oral / pract	Tot
		Internal Assesment			End Sem	Exam			
Test 1	Test 2	Avg	Exam	Duration (in Hrs)					
CPC601	System Programming and Compiler Construction	20	20	20	80	03	25	25 (pract)	150
CPC602	Software Engineering	20	20	20	80	03	25	25 (oral)	150
CPC603	Distributed Databases	20	20	20	80	03	25	25 (oral)	150
CPC604	Mobile Communication and Computing	20	20	20	80	03	25	25 (pract)	150
CPE601X	Elective-I	-	-	-	-	-	50	-	50
CPL601	Network Programming Laboratory	-	-	-	-	-	25	50 (oral)	75
	Total	-	-	80	320	-	175	150	725




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AC 7/6/2014
Item 4.27

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Bachelor of Engineering
Computer Engineering (Final Year – Sem. VII & VIII),
Revised course

(REV- 2012) from Academic Year 2015 - 16,
Under

FACULTY OF TECHNOLOGY

(As per Semester Based Credit and Grading System)




PRINCIPAL
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Preamble

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Dr. S. K. Ukarande

Dean,

Faculty of Technology,

Member - Management Council, Senate, Academic Council

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Program Structure B.E. Computer Engineering

Fourth Year (Computer) (Semester VII)

(REV 2012)

Course Code	Course Name	Teaching Scheme (Contact Hours)			Credits Assigned			
		Theory	Pract	Tut	Theory	TW/ Pract	Tut	Total
CPC701	Digital Signal Processing	4	2	-	4	1	-	5
CPC702	Cryptography and System Security	4	2	-	4	1	-	5
CPC703	Artificial Intelligence	4	2	-	4	1	-	5
CPE7042X	Elective-II	4	2	-	4	1	-	5
CPP701	Project I	-	6#	-	-	3	-	3
CPL701	Network Threats and Attacks Laboratory	-	4*	-	-	2	-	2
Total		16	18	-	16	9	-	25

Course Code	Course Name	Examination Scheme									
		Internal Assesment					End Sem Exam	Exam Duration (in Hrs)	TW	oral	Total
		Internal Assesment			Test 1	Test 2					
CPC701	Digital Signal Processing	20	20	20			80	03	25	-	125
CPC702	Cryptography and System Security	20	20	20	80	03	25	25	150		
CPC703	Artificial Intelligence	20	20	20	80	03	25	25	150		
CPE7042X	Elective-II	20	20	20	80	03	25	25	150		
CPP701	Project I	-	-	-	-	-	50	50	100		
CPL701	Network Threats and Attacks Laboratory	-	-	-	-	-	25	50	75		
Total		-	-	80	320	-	175	175	750		



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**Program Structure for B.E. Computer Engineering
Second Year (Computer) (Semester VIII)**

(REV 2012)

Course Code	Course Name	Teaching Scheme (Contact Hours)			Credits Assigned			
		Theory	Pract	Tu t	Theory	TW/ Pract	Tut	Total
CPC801	Data Warehouse and Mining	4	2	-	4	1	-	5
CPC802	Human Machine Interaction	4	2	-	4	1	-	5
CPC803	Parallel and distributed Systems	4	2	-	4	1	-	5
CPE803X	Elective-III	4	2	-	4	1	-	5
CPP802	Project II	-	12 #	-	-	6	-	6
CPL801	Cloud Computing Laboratory	-	2	-	-	1	-	1
	Total	16	22	-	16	11	-	27

Course Code	Course Name	Examination Scheme									
		Internal Assesment					End Sem Exam	Exam Duration (in Hrs)	TW	oral	Tot
		Internal Assesment									
Test 1	Test 2	Avg									
CPC801	Data Warehouse and Mining	20	20	20	80	03	25	25	150		
CPC802	Human Machine Interaction	20	20	20	80	03	25	25	150		
CPC803	Parallel and distributed Systems	20	20	20	80	03	25	25	150		
CPE803X	Elective-III	20	20	20	80	03	25	25	150		
CPP802	Project II	-	-	-	-	-	50	50	100		
CPL801	Cloud Computing Laboratory	-	-	-	-	-	25	-	25		
	Total			80	320		175	150	725		

Indicate workload for Learner and not for Faculty in semester VII and VIII




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Elective II Sem 7

System Group	CPE7021	Advance Algorithms
	CPE7022	Computer Simulation and Modeling
Electronics Group	CPE7023	Image Processing
Software Group	CPE7024	Software Architecture
DB Group	✓ CPE7025	Soft Computing - 2017
	✓ CPE7026	ERP and Supply Chain Management - 2017

Elective III - Sem 8

Electronics Group	✓ CPE8031	Machine Learning - 2018, 2019
Digital Group	CPE8032	Embedded Systems
Network Group	CPE8033	Adhoc wireless networks
DB Group	✓ CPE8034	Digital Forensic - 2018, 2019
	CPE8035	Big data Analytics




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EE
ETC
SE EXTC

VG
Electronic & Telecommunication
R-2012 Old Syllabus



UNIVERSITY OF MUMBAI



Bachelor of Engineering

Electronics & Telecommunication Engineering
(Second Year – Sem. III & IV), Revised course
(REV- 2012) from Academic Year 2012 -13.

Under
FACULTY OF TECHNOLOGY

(As per Semester Based Credit and Grading System)

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Dr. S. K. Ukarande
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**Programme structure B.E.(Electronics & Telecommunication)
S.E. (Electronics & Telecommunication) Sem III**

Sub Code	Subject Name	Teaching Scheme (Hrs.)			Credits Assigned			
		Theory	Practical	Tutorial	Theory	Practical	Tutorial	Total
ETS301	*Applied Mathematics III	04	--	01	04	--	01	05
ETC302	Analog Electronics I	04	--	--	04	--	--	04
ETC303	Digital Electronics	04	--	--	04	--	--	04
ETC304	Circuits and Transmission Lines	04	--	--	04	--	--	04
ETC305	Electronic Instruments and Measurements	04	--	--	04	--	--	04
ETS306	*Object Oriented Programming Methodology	--	--	--	--	--	--	--
ETL301	Analog Electronics I Laboratory	--	02	--	--	01	--	01
ETL302	Digital Electronics Laboratory	--	02	--	--	01	--	01
ETL303	Circuits and Measurements Laboratory	--	02	--	--	01	--	01
ETSL304	* Object Oriented Programming Methodology Laboratory	--	04 **	--	--	01	--	01
Total		20	10	01	20	04	01	25

** Out of four hours, 2 hours theory shall be taught to entire class followed by 2 hrs. Practical in batches.

Subject Code	Subject Name	Examination Scheme							
		Theory Marks				Term Work	Practical and Oral	Oral	Total
		Internal assessment			End Sem. Exam				
		Test 1	Test 2	Avg. of Test 1 & Test 2					
ETS301	* Applied Mathematics III	20	20	20	80	25	--	--	125
ETC302	Analog Electronics I	20	20	20	80	--	--	--	100
ETC303	Digital Electronics	20	20	20	80	--	--	--	100
ETC304	Circuits and Transmission Lines	20	20	20	80	--	--	--	100
ETC305	Electronic Instruments and Measurements	20	20	20	80	--	--	--	100
ETS306	Object Oriented Programming Methodology	--	--	--	--	--	--	--	--
ETL301	Analog Electronics I Laboratory	--	--	--	--	25	25	--	50
ETL302	Digital Electronics Laboratory	--	--	--	--	25	25	--	50
ETL303	Circuits and Measurements Laboratory	--	--	--	--	25	--	--	25
ETSL304	Object Oriented Programming Methodology Laboratory	--	--	--	--	25	50	--	75
Total		--	--	100	400	125	100	--	725

* Indicate common subject for Electronics, Electronics & Telecommunication, Instrumentation, Biomedical and Electrical Engineering



**Programme Structure B.E. (Electronics & Telecommunication)
S.E. (Electronics & Telecommunication) Sem IV**

Sub Code	Subject Name	Teaching Scheme(Hrs.)			Credits Assigned			
		Theory	Practical	Tutorial	Theory	Practical	Tutorial	Total
ETS401	* Applied Mathematics IV	04	--	01	04	--	01	05
ETC402	Analog Electronics II	04	--	--	04	--	--	04
ETC403	Microprocessors and Peripherals	04	--	--	04	--	--	04
ETC404	Wave Theory and Propagation	04	--	--	04	--	-	04
ETC 405	Signals and Systems	03	--	01	03	-	01	04
ETC406	Control Systems	04	--	--	04	--	-	04
ETL401	Analog Electronics II Laboratory	--	02	--	--	01	--	01
ETL402	Microprocessors and Peripherals Laboratory	--	02	--	--	01	--	01
ETL403	Software Simulation Laboratory	--	02	--	--	01	--	01
Total		23	06	02	23	03	02	28

Subject Code	Subject Name	Examination Scheme							
		Theory Marks				Term Work	Practical and Oral	Oral	Total
		Internal assessment			End Sem. Exam				
		Test 1	Test 2	Avg. Of Test 1 and Test 2					
ETS401	*Applied Mathematics IV	20	20	20	80	25	--	--	125
ETC402	Analog Electronics II	20	20	20	80	--	--	--	100
ETC403	Microprocessors and Peripherals	20	20	20	80	--	--	--	100
ETC404	Wave Theory and Propagation	20	20	20	80	--	--	--	100
ETC 405	Signals and Systems	20	20	20	80	25	--	--	125
ETC406	Control Systems	20	20	20	80	--	--	--	100
ETL401	Analog Electronics II Laboratory	--	--	--	--	25	25	--	50
ETL402	Microprocessors and Peripherals Laboratory	--	--	--	--	25	25	--	50
ETL403	Software Simulation Laboratory	--	--	--	--	25	25	--	50
Total		--	--	120	480	125	75	--	800

* Indicate common subject for Electronics, Electronics & Telecommunication, Instrumentation, Biomedical and Electrical Engineering





UNIVERSITY OF MUMBAI



Bachelor of Engineering
Electronics and Telecommunication
Engineering

Third Year Engineering
(Sem. V and Sem. VI), (Rev-2012)
effective from Academic Year 2014 -15

Under
FACULTY OF TECHNOLOGY
(As per Semester Based Credit and Grading System)



PRINCIPAL
St. Francis Institute
Of Technology (Engg-College)
Mount Poincur, S. V. P. Road,
Borivli (West), Mumbai - 400 103.

From Dean's Desk:


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Credit and grading based system was implemented for First Year of Engineering from the academic year 2012-2013. Subsequently this system will be carried forward for Second Year Engineering in the academic year 2013-2014, for Third Year and Final Year Engineering in the academic years 2014-2015 and 2015-2016 respectively.

Dr. S. K. Ukarande
Dean, Faculty of Technology,
Member - Management Council, Senate, Academic Council
University of Mumbai, Mumbai




PRINCIPAL
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Meynt Poinaur, S. V. P. Road,
Borivli (West), Mumbai - 400 103.

SEMESTER V

Course Code	Course Name	Teaching Scheme (Hrs.)			Credits Assigned			
		Theory	Practical	Tutorial	Theory	Practical	Tutorial	Total
ETC501	Microcontrollers and Applications	04	--	--	04	--	--	04
ETC502	Analog Communication	04	--	--	04	--	--	04
ETC503	Random Signal Analysis	04	--	01	04	--	01	05
ETC504	RF Modeling and Antennas	04	--	--	04	--	--	04
ETC505	Integrated Circuits	04	--	--	04	--	--	04
ETS506	Business Communication and Ethics	--	04 *	--	--	02	--	02
ETL501	Microcontrollers and Applications Laboratory	--	02	--	--	01	--	01
ETL502	Communication Engineering Laboratory I	--	02	--	--	01	--	01
ETL503	Communication Engineering Laboratory II	--	02	--	--	01	--	01
ETL504	Mini Project I	--	02	--	--	01	--	01
Total		20	12	01	20	06	01	27

* Out of 4 hours, 2 hours class wise theory and 2 hours batch wise practical

Course Code	Course Name	Examination Scheme								
		Theory Marks				Term Work	Practical and Oral	Oral	Total	
		Internal assessment			End Sem. Exam					
Test 1	Test 2	Ave. of Test 1 & Test 2								
ETC501	Microcontrollers and Applications	20	20	20		80	--	--	--	100
ETC502	Analog Communication	20	20	20		80	--	--	--	100
ETC503	Random Signal Analysis	20	20	20		80	25	--	--	125
ETC504	RF Modeling and Antennas	20	20	20		80	--	--	--	100
ETC505	Integrated Circuits	20	20	20		80	--	--	--	100
ETS506	Business Communication and Ethics	--	--	--		--	50	--	--	50
ETL501	Microcontrollers and Applications Laboratory	--	--	--		--	25	25	--	50
ETL502	Communication Engineering Laboratory I	--	--	--		--	25	25	--	50
ETL503	Communication Engineering Laboratory II	--	--	--		--	25	25	--	50
ETL504	Mini Project I	--	--	--		--	25	25	--	50
Total		100	100	100		400	175	100	--	775



SEMESTER VI

Course Code	Course Name	Teaching Scheme (Hrs.)			Credits Assigned			
		Theory	Practical	Tutorial	Theory	Practical	Tutorial	Total
ETC601	Digital Communication	04	--	--	04	--	--	04
ETC602	Discrete Time Signal Processing	04	--	--	04	--	--	04
ETC603	Computer Communication and Telecom Networks	04	--	--	04	--	--	04
ETC604	Television Engineering	04	--	--	04	--	--	04
ETC605	Operating Systems	04	--	--	04	--	--	04
ETC606	VLSI Design	04	--	--	04	--	--	04
ETL601	Discrete Time Signal Processing Laboratory	--	02	--	--	01	--	01
ETL602	Communication Engineering Laboratory III	--	02	--	--	01	--	01
ETL603	Communication Engineering Laboratory IV	--	02	--	--	01	--	01
ETL604	Mini Project II	--	02	--	--	01	--	01
Total		24	08	--	24	04	--	28

Course Code	Course Name	Examination Scheme							Total
		Theory Marks				Term Work	Practical And Oral	Oral	
		Internal assessment			End Sem. Exam				
		Test 1	Test 2	Ave. of Test 1 & Test 2					
ETC601	Digital Communication	20	20	20	80	--	--	--	100
ETC602	Discrete Time Signal Processing	20	20	20	80	--	--	--	100
ETC603	Computer Communication and Telecom Networks	20	20	20	80	--	--	--	100
ETC604	Television Engineering	20	20	20	80	--	--	--	100
ETC605	Operating Systems	20	20	20	80	--	--	--	100
ETC606	VLSI Design	20	20	20	80	--	--	--	100
ETL601	Discrete Time Signal Processing Laboratory	--	--	--	--	25	25	--	50
ETL602	Communication Engineering Laboratory III	--	--	--	--	25	25	--	50
ETL603	Communication Engineering Laboratory IV	--	--	--	--	25	25	--	50
ETL604	Mini Project II	--	--	--	--	25	25	--	50
Total		120	120	120	480	100	100	--	800





AC 7/6/2014

Item No. 4.22

UNIVERSITY OF MUMBAI



Bachelor of Engineering Electronics and Telecommunication Engineering

Final Year Engineering
(Sem. VII and VIII), Revised Course
(REV- 2012) effective from Academic Year 2015 - 16

Under
FACULTY OF TECHNOLOGY

(As per Semester Based Credit and Grading System)



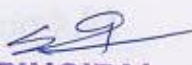
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Dr. S. K. Ukarande
Dean,
Faculty of Technology,
Member - Management Council, Senate, Academic Council
University of Mumbai, Mumbai




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Borivli (West), Mumbai - 400 103.

Semester VII

Course Code	Course Name	Teaching Scheme (Hrs.)			Credits Assigned			
		Theory	Practical	Tutorial	Theory	Practical	Tutorial	Total
ETC701	Image and Video Processing	04	--	--	04	--	--	04
ETC702	Mobile Communication	04	--	--	04	--	--	04
ETC703	Optical Communication and Networks	04	--	-	04	--	-	04
ETC704	Microwave and Radar Engineering	04	--	--	04	--	--	04
ETE70X	Elective	04	--	--	04	--	--	04
ETL701	Image and Video Processing Laboratory	--	02	--	--	01	--	01
ETL702	Advanced communication Engineering. Laboratory I	--	02	--	--	01	--	01
ETL703	Advanced communication Engineering. Laboratory II	--	02	--	--	01	--	01
ETEL70X	Elective	--	02	--	--	01	--	01
ETP701	Project (Stage I)	--	*	--	--	03	--	03
Total		20	08	--	20	07	--	27

Course Code (ETE70X)	Sem. VII Elective
✓ ETE 701	Data Compression and Encryption 2017-2018
ETE 702	Statistical Signal Processing
ETE 703	Neural Network and Fuzzy Logic
ETE 704	Analog and Mixed Signal VLSI

- Work load of learner in Semester VII is equivalent to 6 hours /week





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Semester VII

Course Code	Course Name	Examination Scheme							
		Theory Marks				End Sem. Exam	Term Work	Practical and Oral	Total
		Internal assessment							
		Test 1	Test 2	Ave. of Test 1 & Test 2					
ETC701	Image and Video Processing ✓	20	20	20	80	--	--	100	
ETC702	Mobile Communication ✓	20	20	20	80	--	--	100	
ETC703	Optical Communication and Networks ✓	20	20	20	80	-	--	100	
ETC704	Microwave and Radar Engineering	20	20	20	80	--	--	100	
EET70X	Elective	20	20	20	80	--	--	100	
ETL701	Image and Video Processing Laboratory ✓	--	--	--	--	25	25	50	
ETL702	Advanced communication Engineering. Laboratory I ✓	--	--	--	--	25	25	50	
ETL703	Advanced Communication Engineering. Laboratory II ✓	--	--	--	--	25	25	50	
EETL70X	Elective ✓	--	--	--	--	25	25	50	
ETP701	Project (Stage I) ✓					25	25	50	
Total		100	100	100	400	125	125	750	




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Semester VIII

Course Code	Course Name	Teaching Scheme (Hrs.)			Credits Assigned			
		Theory	Practical	Tutorial	Theory	Practical	Tutorial	Total
ETC801	Wireless Networks	04	--	--	04	--	--	04
ETC802	Satellite communication and Networks	04	--	--	04	--	--	04
ETC803	Internet and Voice Communication	04	--	--	04	--	--	04
ETE80X	Elective	04	--	--	04	--	--	04
ETL801	Wireless Networks Laboratory	--	02	--	--	01	--	01
ETL802	Satellite communication and Networks Laboratory	--	02	--	--	01	--	01
ETL803	Internet and Voice Communication Laboratory	--	02	--	--	01	--	01
ETEL80X	Elective Laboratory	--	02	--	--	01	--	01
ETP801	Project (Stage II)	--	**	--	--	06	--	06
Total		16	08	--	16	10		26

Course Code (ETE 80X)	Sem. VIII Elective
ETE 801	Speech Processing
✓ ETE 802	Telecom Network Management - 2018, 2019
✓ ETE 803	Microwave Integrated Circuits - 2018, 2019
ETE 804	Ultra Wideband Communication

** Work load of learner in Semester VIII is equivalent to 12 hours /week.




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Semester VIII

Course Code	Course Name	Examination Scheme								
		Theory Marks				End Sem. Exam	Term Work	Practical and Oral	Oral	Total
		Internal assessment								
		Test 1	Test 2	Ave. of Test 1 & Test 2						
ETC801	Wireless Networks	20	20	20	80	--	--	--	100	
ETC802	Satellite communication and Networks	20	20	20	80	--	--	--	100	
ETC803	Internet and Voice Communication	20	20	20	80	--	--	--	100	
ETE80X	Elective	20	20	20	80	--	--	--	100	
ETL801	Wireless Networks Laboratory	--	--	--	--	25	--	25	50	
ETL802	Satellite communication and Networks Laboratory	--	--	--	--	25	--	25	50	
ETL803	Internet and Voice Communication Laboratory	--	--	--	--	25	--	25	50	
ETEL80X	Elective Laboratory	--	--	--	--	25	--	25	50	
ETP801	Project (Stage II)	--	--	--	--	50	--	50	100	
Total		80	80	80	320	150		150	700	



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UG - Information Technology
R-2012 Old syllabus



UNIVERSITY OF MUMBAI



Bachelor of Engineering

Information Technology (Second Year – Sem. III & IV)

Revised course (REV- 2012)


From Academic Year 2013 -14

Under

FACULTY OF TECHNOLOGY

(As per Semester Based, Credit and Grading System)




PRINCIPAL
St. Francis Institute
Of Technology (Engg-College)
Mount Poincur, S. V. P. Road,
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From Dean's Desk:

To meet the challenge of ensuring excellence in engineering education, the issue of quality needs to be addressed, debated and taken forward in a systematic manner. Accreditation is the principal means of quality assurance in higher education. The major emphasis of accreditation process is to measure the outcomes of the program that is being accredited. In line with this Faculty of Technology of University of Mumbai has taken a lead in incorporating philosophy of outcome based education in the process of curriculum development.

Faculty of Technology, University of Mumbai, in one of its meeting unanimously resolved that, each Board of Studies shall prepare some Program Educational Objectives (PEO's) and give freedom to affiliated Institutes to add few (PEO's) and course objectives and course outcomes to be clearly defined for each course, so that all faculty members in affiliated institutes understand the depth and approach of course to be taught, which will enhance learner's learning process. It was also resolved that, maximum senior faculty from colleges and experts from industry to be involved while revising the curriculum. I am happy to state that, each Board of studies has adhered to the resolutions passed by Faculty of Technology, and developed curriculum accordingly. In addition to outcome based education, semester based credit and grading system is also introduced to ensure quality of engineering education.

Semester based Credit and Grading system enables a much-required shift in focus from teacher-centric to learner-centric education since the workload estimated is based on the investment of time in learning and not in teaching. It also focuses on continuous evaluation which will enhance the quality of education. University of Mumbai has taken a lead in implementing the system through its affiliated Institutes and Faculty of Technology has devised a transparent credit assignment policy and adopted ten points scale to grade learner's performance. Credit assignment for courses is based on 15 weeks teaching learning process, however content of courses is to be taught in 12-13 weeks and remaining 3-2 weeks to be utilized for revision, guest lectures, coverage of content beyond syllabus etc.

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Dean,
Faculty of Technology,
Member - Management Council, Senate, Academic Council
University of Mumbai, Mumbai




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Preamble

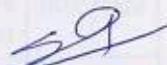
The engineering education in India in general is expanding in manifolds. Now, the challenge is to ensure its quality to the stakeholders along with the expansion. To meet this challenge, the issue of quality needs to be addressed, debated and taken forward in a systematic manner. Accreditation is the principal means of quality assurance in higher education and reflects the fact that in achieving recognition, the institution or program of study is committed and open to external review to meet certain minimum specified standards. The major emphasis of this accreditation process is to measure the outcomes of the program that is being accredited. Program outcomes are essentially a range of skills and knowledge that a student will have at the time of graduation from the program. In line with this Faculty of Technology of University of Mumbai has taken a lead in incorporating philosophy of outcome based education in the process of curriculum development.

I, as Chairman, Board of Studies in Information Technology of University of Mumbai, happy to state here that, Program Educational Objectives were finalized in a meeting where more than 30 members from different Institutes were attended, who were either Heads or their representatives of Information Technology Department. The Program Educational Objectives finalized for undergraduate program in Information Technology are listed below;

1. To prepare Learner's with a sound foundation in the basics of engineering fundamentals.
2. To prepare Learner's to use effectively modern programming tools to solve real life problems.
3. To prepare Learner's for successful career in Indian and Multinational Organisations and to excel in Postgraduate studies
4. To encourage and motivate Learner's for entrepreneurship.
5. To inculcate professional and ethical attitude, good leadership qualities and commitment to social responsibilities in Learners.
6. To encourage Learner to use best practices and implement technologies to enhance information security and enable compliance, ensuring confidentiality, information integrity, and availability.

In addition to Program Educational Objectives, for each course of undergraduate program, objectives and expected outcomes from learner's point of view are also included in the curriculum to support the philosophy of outcome based education. I believe strongly that small step taken in right direction will definitely help in providing quality education to the stake holders.

Dr. J. W. Bakal
Chairman, Board of Studies in Information Technology,
University of Mumbai, Mumbai


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Mount Poinzur, S. V. P. Road,
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S. E. (Information Technology) Sem.-III

Course Code	Course Name	Teaching Scheme			Credits Assigned			
		Theory	Pract.	Tut	Theory	TW/Pract	Tut	Total
SEITC301	Applied Mathematics – III *	4		1	4		1	5
SEITC302	Data Structure and Algorithm Analysis	4			4			5
SEITC303	Object Oriented Programming Methodology*	4			4			5
SEITC304	Analog and Digital Circuits	4			4			5
SEITC305	Database Management Systems	3			3			4
SEITC306	Principles of Analog and Digital Communication.	3			3			4
SEITL302	Data Structure and Algorithm Analysis		2			1		
SEITL303	Object Oriented Programming Methodology*		2			1		
SEITL304	Analog and Digital Circuits		2			1		
SEITL305	Database Management Systems		2			1		
SEITL306	Principles of Analog and Digital Communication		2			1		
	TOTAL	22	10	1	22	5	1	28

Examination Scheme

Course Code	Course Name	Theory					Term work	Pract /Oral	Total
		Internal Assessment			End sem exam	Exam duration (in Hrs)			
		TEST1	TEST 2	AVG.					
SEITC301	Applied Mathematics-III*	20	20	20	80	3	25	--	125
SEITC302	Data Structure & Algorithm Analysis	20	20	20	80	3	25	25	150
SEITC303	Object Oriented Programming Methodology*	20	20	20	80	3	25	25	150
SEITC304	Analog & Digital Circuits	20	20	20	80	3	25	25	150
SEITC305	Database Management Systems	20	20	20	80	3	25	25	150
SEITC306	Principles of Analog & Digital Communication.	20	20	20	80	3	25	25	150
	Total	120	120	120	480		150	125	875

* Common with Computer Engineering.
Tutorials will be evaluated as term work.



S. E. (Information Technology) Sem.-IV

Course Code	Course Name	Teaching Scheme			Credits Assigned			
		Th	Pract	Tut	Th.	Pract/	Tut	Total
SEITC401	Applied Mathematics-IV*	4		1	4		1	5
SEITC402	Computer Networks	4			4			5
SEITC403	Computer Organization and Architecture*	4			4			4
SEITC404	Automata Theory	3		1	3		1	4
SEITC405	Web Programming	4			4			5
SEITC406	Information Theory and Coding	4		1	4		1	5
SEITL402	Computer Networks		2			1		
SEITL405	Web Programming		2			1		
	Total	23	4	3	23	2	3	28

Examination Scheme

Course Code	Course Name	Theory					Term work	Pract/ Oral	Total
		Internal Assessment			END SEM EXAM	EXAM DURATION (in Hrs)			
		TEST1	TEST 2	AVG.					
SEITC401	Applied Mathematics-IV*	20	20	20	80	3	25	--	125
SEITC402	Computer Networks	20	20	20	80	3	25	25	150
SEITC403	Computer Organization and Architecture*	20	20	20	80	3	25	25	150
SEITC404	Automata Theory	20	20	20	80	3	25	--	125
SEITC405	Web Programming	20	20	20	80	3	25	25	150
SEITC406	Information Theory and Coding	20	20	20	80	3	25	--	125
	Total	120	120	120	480		150	75	825

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UNIVERSITY OF MUMBAI



Bachelor of Engineering

Information Technology (Third Year – Sem. V & VI)

Revised course

(REV- 2012) from Academic Year 2014 -15

Under

FACULTY OF TECHNOLOGY

(As per Semester Based Credit and Grading System)



Third Year Engineering (Semester V)
Revised course for Information Technology
Academic Year 2014-15 (REV- 2012)

Sub Code	Subject Name	Teaching Scheme (hrs/week)			Credits Assigned			
		Theory	Practical	Tut.	Theory	TW/ Practical	Tut.	Total
TEITC501	Computer Graphics and Virtual Reality	4			4			4
TEITC502	Operating Systems	4			4			4
TEITC503	Microcontroller and Embedded Systems	4			4			4
TEITC504	Advanced Database Management Systems	4			4			4
TEITC505	Open Source Technologies	3			3			3
TEITC506	Business Communication and Ethics*		2**+2			2		2
TEITL501	Computer Graphics and Virtual Reality		2			1		1
TEITL502	Operating Systems		2			1		1
TEITL503	Microcontroller and Embedded Systems		2			1		1
TEITL504	Advanced Database Management Systems		2			1		1
TEITL505	Open Source Technologies		2			1		1
	Total	19	12		19	07		26

*Common for all programs.

**Theory class to be conducted for entire class.

Note: During third year of engineering learners can be exposed to industrial environment by arranging an industrial visit.


Examination Scheme



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Course Code	Course Name	Theory					Term work	Pract/ Oral	Total
		Internal Assessment			End sem exam	Exam duration (in Hrs)			
		TEST 1	TEST 2	AVG.					
TEITC501	Computer Graphics and Virtual Reality	20	20	20	80	3	25	25	150
TEITC502	Operating Systems	20	20	20	80	3	25	25	150
TEITC503	Microcontroller and Embedded Systems	20	20	20	80	3	25	25	150
TEITC504	Advanced Database Management Systems	20	20	20	80	3	25	25	150
TEITC505	Open Source Technologies	20	20	20	80	3	25	25	150
TEITC506	Business Communication and Ethics*	---	---	---	---	---	25	25	050
	Total	100	100	100	400	15	150	150	800




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Third Year Engineering (Semester VI)
Revised course for Information Technology
Academic Year 2014 -15 (REV- 2012)

Subject Code	Subject Name	Teaching Scheme (hrs/week)			Credits Assigned			
		Theory	Practical	Tut.	Theory	TW/Pract.	Tut.	Total
TEITC601	Software Engineering	4			4			4
TEITC602	Distributed Systems	4			4			4
TEITC603	System and Web Security	4			4			4
TEITC604	Data Mining and Business Intelligence	4			4			4
TEITC605	Advance Internet Technology	4			4			4
TEITL601	Software Engineering		2			1		1
TEITL602	Distributed Systems		2			1		1
TEITL603	System and Web Security		2			1		1
TEITL604	Data Mining and Business Intelligence		2			1		1
TEITL605	Advance Internet Technology		2			1		1
	Total	20	10		20	05		25



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AC7/6/2014

Item no. - 4.29

UNIVERSITY OF MUMBAI



Bachelor of Engineering

Information Technology (Final Year – Sem.VII & VIII)

Revised course (REV- 2012)

From Academic Year 2015 -16

Under

FACULTY OF TECHNOLOGY

(As per Semester Based Credit and Grading System)



From Dean's Desk:

To meet the challenge of ensuring excellence in engineering education, the issue of quality needs to be addressed, debated and taken forward in a systematic manner. Accreditation is the principal means of quality assurance in higher education. The major emphasis of accreditation process is to measure the outcomes of the program that is being accredited. In line with this Faculty of Technology of University of Mumbai has taken a lead in incorporating philosophy of outcome based education in the process of curriculum development.

Faculty of Technology, University of Mumbai, in one of its meeting unanimously resolved that, each Board of Studies shall prepare some Program Educational Objectives (PEO's) and give freedom to affiliated Institutes to add few (PEO's) and course objectives and course outcomes to be clearly defined for each course, so that all faculty members in affiliated institutes understand the depth and approach of course to be taught, which will enhance learner's learning process. It was also resolved that, maximum senior faculty from colleges and experts from industry to be involved while revising the curriculum. I am happy to state that, each Board of studies has adhered to the resolutions passed by Faculty of Technology, and developed curriculum accordingly. In addition to outcome based education, semester based credit and grading system is also introduced to ensure quality of engineering education.

Semester based Credit and grading system enables a much-required shift in focus from teacher-centric to learner-centric education since the workload estimated is based on the investment of time in learning and not in teaching. It also focuses on continuous evaluation which will enhance the quality of education. University of Mumbai has taken a lead in implementing the system through its affiliated Institutes and Faculty of Technology has devised a transparent credit assignment policy and adopted ten points scale to grade learner's performance. Credit assignment for courses is based on 15 weeks teaching learning process, however content of courses is to be taught in 12-13 weeks and remaining 3-2 weeks to be utilized for revision, guest lectures, coverage of content beyond syllabus etc.

Credit and grading based system was implemented for First Year of Engineering from the academic year 2012-2013. Subsequently this system will be carried forward for Second Year Engineering in the academic year 2013-2014, for Third Year and Final Year Engineering in the academic years 2014-2015 and 2015-2016 respectively.

Dr. S. K. Ukarande
Dean,
Faculty of Technology,
Member - Management Council, Senate, Academic Council
University of Mumbai, Mumbai




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Preamble

The engineering education in India in general is expanding in manifolds. Now, the challenge is to ensure its quality to the stakeholders along with the expansion. To meet this challenge, the issue of quality needs to be addressed, debated and taken forward in a systematic manner. Accreditation is the principal means of quality assurance in higher education and reflects the fact that in achieving recognition, the institution or program of study is committed and open to external review to meet certain minimum specified standards. The major emphasis of this accreditation process is to measure the outcomes of the program that is being accredited. Program outcomes are essentially a range of skills and knowledge that a student will have at the time of graduation from the program. In line with this Faculty of Technology of University of Mumbai has taken a lead in incorporating philosophy of outcome based education in the process of curriculum development.

I, as Chairman, Board of Studies in Information Technology of University of Mumbai, happy to state here that, Program Educational Objectives were finalized in a meeting where more than 30 members from different Institutes were attended, who were either Heads or their representatives of Information Technology Department. The Program Educational Objectives finalized for undergraduate program in Information Technology are listed below;

1. To prepare Learner's with a sound foundation in the basics of engineering fundamentals.
2. To prepare Learner's to use effectively modern programming tools to solve real life problems.
3. To prepare Learner's for successful career in Indian and Multinational Organisations and to excel in Postgraduate studies
4. To encourage and motivate Learner's for entrepreneurship.
5. To inculcate professional and ethical attitude, good leadership qualities and commitment to social responsibilities in Learners.
6. To encourage learner to use best practices and implement technologies to enhance information security and enable compliance, ensuring confidentiality, information integrity, and availability.

In addition to Program Educational Objectives, for each course of undergraduate program, objectives and expected outcomes from learner's point of view are also included in the curriculum to support the philosophy of outcome based education. I believe strongly that small step taken in right direction will definitely help in providing quality education to the stake holders.

Dr. J. W. Bakal

Chairman, Board of Studies in Information Technology,



B.E. Engineering (Semester VII)
Revised course for Information Technology
Academic Year 2015 -16 (REV- 2012)

Course Code	Course Name	Teaching Scheme (hrs/week)			Credits Assigned			
		Theory	Pract.	Tut.	Theory	TW/Prac	Tut.	Total
ITC701	Software Project Management	4			4			4
ITC702	Cloud Computing	3			3			3
ITC703	Intelligent System	4			4			4
ITC704	Wireless Technology	4			4			4
ITC705	Elective - I	4			4			4
ITL701	Software Project Management		2			1		1
ITL702	Cloud Computing		2			1		1
ITL703	Intelligent System		2			1		1
ITL704	Wireless Technology		2			1		1
ITL705	Elective - I		2			1		1
ITP706	Project-I		*			3		3
	Total	19	10		19	08		27

*Work load of the teacher in semester VII is equivalent to 6 hrs/week.


Elective -I (Semester VII)	
ITC7051	<input checked="" type="checkbox"/> Image Processing 2017, 2018
ITC7052	<input type="checkbox"/> Software Architecture
ITC7053	<input checked="" type="checkbox"/> E-Commerce & E-Business 2017, 2018
ITC7054	<input type="checkbox"/> Multimedia Systems
ITC7055	<input type="checkbox"/> Usability Engineering
ITC7056	<input type="checkbox"/> Ubiquitous Computing



Examination Scheme

Course Code	Course Name	Theory					Term work	Pract/ Oral	Total
		Internal Assessment			End sem exam	Exam duration (in Hrs)			
		TEST 1	TEST 2	AVG.					
ITC701	Software Project Management	20	20	20	80	3	25	25	150
ITC702	Cloud Computing	20	20	20	80	3	25	25	150
ITC703	Intelligent System	20	20	20	80	3	25	25	150
ITC704	Wireless Technology	20	20	20	80	3	25	25	150
ITC705	Elective - I	20	20	20	80	3	25	25	150
ITP706	Project-I						25	25	050
	Total	100	100	100	400	15	150	150	800




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B.E. Engineering (Semester VIII)
Revised course for Information Technology from
Academic Year 2015 -16, (REV- 2012)

Course Code	Course Name	Teaching Scheme			Credits Assigned			
		Theory	Pract.	Tut.	Theory	TW/Pract	Tut.	Total
ITC801	Storage Network Management and Retrieval	4			4			4
ITC802	Big Data Analytics	4			4			4
ITC803	Computer Simulation and Modeling	4			4			4
ITC804	Elective -II	4			4			4
ITL801	Storage Network Management and Retrieval		2			1		1
ITL802	Big Data Analytics		2			1		1
ITL803	Computer Simulation and Modeling		2			1		1
ITL804	Elective -II		2			1		1
ITP805	Project - II		**			6		6
	Total	16	08		16	10		26

****Workload of the teacher in semester VIII is equivalent to 12 hrs/week.**

Elective -II (Semester VIII)	
ITC8041	Enterprise Resource Planning
ITC8042	Wireless Sensor Networks
ITC8043	Geographical Information Systems
ITC8044	Robotics
ITC8045	✓ Soft Computing - 2018, 2019
ITC8046	✓ Software Testing & Quality Assurance - 2018, 2019





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Examination Scheme

Course Code	Course Name	Theory					Term work	Pract/ Oral	Total
		Internal Assessment			End sem exam	Exam duration (in Hrs)			
		TEST 1	TEST 2	AVG					
ITC801	Storage Network Management and Retrieval	20	20	20	80	3	25	25	150
ITC802	Big Data Analytics	20	20	20	80	3	25	25	150
ITC803	Computer Simulation and Modeling	20	20	20	80	3	25	25	150
ITC804	Elective -II	20	20	20	80	3	25	25	150
ITP805	Project - II						50	50	100
	Total	80	80	80	320	12	150	150	700




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