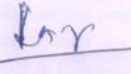


UNIVERSITY OF MUMBAI
No. UG/243 of 2017-18

CIRCULAR:-

Attention of the Principals of affiliated Colleges in Engineering, (M.E) degree course is invited to this office Circular No.UG/33 of 2015, dated 27th July, 2015 relating to the details of Equivalence/alternate subjects of the M.E. degree course. They are informed that the recommendations made by the Faculty of Technology at its meeting held on 19th April, 2017 have been accepted by the Academic Council at its meeting held on 11th May, 2017 vide item no.4.276 and in accordance therewith, the Equivalence/alternate subjects of the M.E. Level syllabus for all branches of Revised 2012-13 with credit and grading system applicable to the Revised Syllabus of 2016-17 with choice based credit and grading system from the academic year 2017-18 (i.e. December 2017 Exam) and the same has been brought into force with effect from the academic year 2017-18. (The same is available on the University's web site (www.mu.ac.in)).

MUMBAI - 400 032
17th October, 2017


(Dr. Dinesh Kamble)
I/c REGISTRAR

To,

The Principals of affiliated Colleges in Engineering.

A.C/ 4.276/11/05/2017.

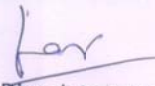
No. UG/243 -A of 2017

MUMBAI-400 032

17th October, 2017

Copy forwarded with compliments for information to:-

- 1.The Co-Ordinator, Faculty of Science & Technology,
- 2.The Chairmen/Chairpersons of various Board of the Studies in Engineering and Technology.
- 3.The Offg.Director, Board of Examinations and Evaluation,
- 4.The Director, Board of Students Development.,
- 5.The Co-Ordinator, University Computerization Centre,


(Dr. Dinesh Kamble)
I/c REGISTRAR

M.E. (Computer Network & Information Security)

Subject Mapping of Syllabus - CBGS (Revision 2014) to CBCGS (Revision 2016)

	CBGS (Revision 2014)	CBCGS (Revision 2016)
Sem. I	Mobile and Adaptive System	Mobile and Adaptive System
	Network Programming	Advanced Network Programming
	Information Security	Information Security System
	Elective -I	
	Distributed System	Ad-hoc and Sensor Network *
	High Speed And Broadband Network	High Speed And Broadband Network
	Operating System Security	Digital Business Management *
	Advanced Computer Forensic Analysis	Advanced Computer Forensic Analysis
	Elective -II	
	Grid and Cloud Computing	Grid and Cloud Computing
	Computer Communication Network	Management Information System *
	Cyber Law & Ethics	Cyber Security & Laws
	Bio-Metrics Security	Internet of Things *
Sem. II	Network Security	Mobile Wireless Security
	Web Application Security	Web Application Security
	Internet Routing Design	Internet Routing Design
	Elective III	
	Mobile & Wireless security	Project Management *
	Network Management & Performance Evaluation	Network Management & Performance Evaluation
	Network Vulnerabilities & Risk Management	Network Vulnerabilities & Risk Management
	Information Hacking Techniques	Information Hacking Techniques
	Elective IV	
	Information Retrieval system	Professional Ethics & CSR *
	Database Security	Database Issues & Security
	Public Key Infrastructure & Trust Management	Reliability Engineering *
	TCP/IP Technology	TCP/IP Technology

* Alternate subject

Biomedical Engineering Department

ME Biomedical, Equivalent/Alternate Subjects

	Syllabus R-2012		Equivalent Subject, R-2016	
	Sem-I		Sem-I	
Sr.No.	Subject Code	Name of the Subject	Subject Code	Name of the Subject
1	BMC101	Physiology for Engineers	BMC101	Anatomy and Physiology For Engineers
2	BMC102	Biomedical Sensors	BMC102	Bio-Medical Sensors, Applications and Intelligent Instrumentation
3	BMC103	Advanced Digital Signal Processing	BMC103	Advanced Digital Signal Processing
4	BME1011	Elective I , Embedded Systems in Biomedical Engineering	BMDLO1011	Embedded Systems in Biomedical Engineering
5	BME1024	Elective II , Rehabilitation Engineering	BMDLO1014	Rehabilitation Engineering
6	BML101	Circuits and Instrumentation	BML101	Laboratory-I
7	BML102	Advanced Digital Signal Processing	BML102	Laboratory-II
	Sem-II		Sem-II	
Sr.No.	Subject Code	Name of the Subject	Subject Code	Name of the Subject
1	BMC201	Biomedical Instrumentation and Design	BMC201	Biomedical Instrumentation and Design
2	BMC202	Biomedical Image Processing	BMC202	Biomedical Image Processing
3	BMC203	Advanced Medical Imaging	BMC203	Advanced Medical Imaging
4	BME2031	Elective III , Neural Networks	BMDLO2023	Neural Networks
5	BME2043	Elective IV , Lasers and Fiber Optics for Therapy and Surgery	BMDLO2025	Lasers and Fiber Optics for Therapy and Surgery
6	BML201	Biomedical Instrumentation and Embedded Systems	BML201	Laboratory -III
7	BML202	Biomedical Image Processing	BML202	Laboratory –IV

University of Mumbai
ME Chemical Engineering
Equivalence of Subjects
From 2012 to 2016

SR. No.	2012		2016	
	Subject Code	Subject Name	Subject Code	Subject Name
Sem I				
1	CHC101	Advanced Fluid Dynamics	CHC101	Advanced Fluid Dynamics
2	CHC102	Advanced Reaction Engineering	CHC102	Advanced Chemical Reaction Engineering
3	CHC103	Advanced Thermodynamics	CHC103	Advanced Thermodynamics
4	CHE101X	Elective I	CHDLO101X	Department Level Optional Course-I (Students can opt for any optional course from the group other than they have opted for this program)
5	CHE102X	Elective II	ILO101X	Institute Level Optional Course-I (Students can opt for any optional course from the group other than they have opted for this program)
Sem II				
1	CHC201	Advanced Mass Transfer	CHC202	Advanced Mass Transfer Operation
2	CHC202	Advanced Process Dynamics & Control	CHC203	Advanced Process Control And Dynamics
3	CHC203	Process Heat Transfer	CHC201	Process Heat Transfer
4	CHE201X	Elective III	CHDLO202X	Department Level Optional Course-II (Students can opt for any optional course from the group other than they have opted for this program)
5	CHE2021	Elective IV	ILO202X	Institute Level Optional Course-II (Students can select any optional course from the group other than they have opted for this program)
Sem III				
1	CHS301	Seminar	CHS301	Special Topic Seminar
2	CHD301	Dissertation I	CHD302	Dissertation I
Sem IV				
1	CHD401	Dissertation II	CHD401	Dissertation II

Table showing the subjects as per the **Old scheme of the syllabus (R-2012 CBSGS)** and the subjects equivalent / alternative to these subjects as per the **Revised Scheme of Syllabus (R-2016 CBCGS)**

M.E. Civil (Construction Engineering & Management)

Sr. No	Old Scheme CBSGS (R-2012)		Revised Scheme CBCGS (R-2016)	
	Subject Code	Subject Name	Subject Code	Subject Name
Semester I				
1	CEM101	Probability & Statistics	CEMC101	Probability & Statistics
2	CEM102	Management & Project Planning in Construction	CEMC102	Management & Project Planning in Construction
3	CEM201	Construction Contracts, Administration & Management	CEMC103	Construction Contracts, Administration & Management
4	CEM1011	Advanced Construction Materials	DLOC101	Advanced Construction Materials
5	CEM1012	Disaster Management	ILOC 1017	Disaster Management & Mitigation measures
6	CEM1013	Repairs, Rehabilitation & Retrofitting of Structures	DLOC102	Repairs, Rehabilitation & Retrofitting of Structures
7	CEM1014	Construction Safety	DLOC104	Quality control & safety in Construction
8	CEM1021	Resources Management	DLOC103	Resources Management
9	CEM1022	Total quality Management in construction.	DLOC104	Quality control & safety in Construction
10	CEM1023	Value Engineering	DLOC105	Value Engineering
11	CEM1024	Project Risk Analysis & Mitigation Techniques	DLOC202	Risk Management in Construction
Semester II				
1	CEM202	Operation Research	ILOC1015	Operation Research
2	CEM203	Project Economics & Financial Management	CEMC203	Project Economics & Financial Management
3	CEM2011	Advanced Construction Technology	CEMC201	Advanced Construction Technology
4	CEM2012	Infrastructure Development	CEMC202	Infrastructure Development
5	CEM2013	International Contracting	CEMC103	Construction Contracts, Administration & Management
6	CEM 2021	Principles of sustainable development	ILOC2029	Environmental Management
7	CEM 2022	Energy Conservation Techniques in Building Construction	DLOC204	Energy Conservation Techniques in Building Construction
8	CEM2023	Principles of Architecture & Planning	DLOC205	Principles of Architecture & Planning

Table showing the subjects as per the **Old scheme of the syllabus (R-2012 CBSGS)** and the subjects equivalent / alternative to these subjects as per the **Revised Scheme of Syllabus (R-2016 CBCGS)**

M.E. Civil (Structural Engineering)

Sr. No	Old Scheme (R-2012 CBSGS)		Revised Scheme (R-2016 CBCGS)	
	Subject Code	Subject Name	Subject Code	Subject Name
Sem-I				
1	STC101	Non Linear Analysis.	STR-C101	Theory of Elasticity, Plasticity and Stability.
2	STC102	Theory of Elasticity and Plasticity.	STR-C101	Theory of Elasticity, Plasticity and Stability.
3	STC103	Advanced Structural Mechanics.	STR-DLO 1012	Analysis and Design of Transportation Structures
4	STE101X Elective I	Experimental Stress Analysis	STR-DLO 1015	Advanced Concrete Technology
		Analysis of Composite Structures	STR-DLO 1013	Analysis of Composite Structures
		Structural Reliability	STR-ILO 1012	Reliability Engineering
5	STE102X Elective II	Structural Optimization	STR-ILO 1015	Operational Research
		Advanced Foundation Engineering	STR-C102	Foundation Analysis and Design
		Structural Stability	STR-C101	Theory of Elasticity, Plasticity and Stability.
Sem-II				
6	STC201	Finite Element Analysis	STR-C201	Finite Element Analysis
7	STC202	Theory of Plates and Shells	STR-DLO2011	Theory of Plates and Shells
8	STC203	Advance Design of Concrete Structures	STR-C203	Advance Design of Concrete Structures
9	STE201X Elective-III	Prestressed Concrete	STR-C103	Advanced Prestressed Concrete Structures
		Advanced Numerical Methods	STR-DLO 1014	Numerical Methods
		Management in Structural Engineering	STR-ILO 1017	Disaster Management and Mitigation Measures
10	STE202X Elective-IV	Offshore Structures	STR-C202	Structural Dynamics
		Structural Dynamics	STR-C202	Structural Dynamics
		Bridge Engineering	STR-DLO 1011	Design of Bridge Structures

Table showing the subjects as per the **Old scheme of the syllabus (R-2012 CBSGS)** and the subjects equivalent / alternative to these subjects as per the **Revised Scheme of Syllabus (R-2016 CBCGS)**

M.E. Civil (Water Resources Engineering)

Sr. No.	Old Scheme (R-2012 CBSGS)		Revised Scheme (R-2016 CBCGS)	
	Subject Code	Subject Name	Subject Code	Subject Name
Semester I				
1	WRC 101	Applied Statistics	WRDLO 1011	Applied Statistics (Departmental Level Optional Course -I)
2	WRC 102	Applied Hydrology	WRC 102	Applied Hydrology
3	WRC 103	Ground Water Engineering	WRC 103	Ground Water Engineering
4	WRC 101X	Elective I: Water Shed Development and Management	WRDLO 1012	Watershed Development And Management (Department Level Optional Course -I)
5	WRC 102X	Elective II: Soil Science & Agro-technology	WRDLO 1014	Soil Science & Agro-Technology (Department Level Optional Course -I)
6	WRC 102X	Elective II: Environmental impact assessment	WRDLO 1013	Environmental Impact Assessment (Department Level Optional Course -I)
7	WRC 102X	Elective II: Water Power Engineering	WRDLO 1015	Water Power Engineering (Department Level Optional Course -I)
Semester II				
1.	WRC 201	Water Resources Economics and Management	WRC201	Water Resources Economics Planning And Management
2	WRC 202	Design of Hydraulic Structures	WRC 202	Design of Hydraulic Structures
3	WRC 203	System Engineering and its Application	WRC 203	System Engineering and its Application
4	WRC 201X	Elective III: Advanced Hydrologic Analysis and Design	WRDLO 2021	Advanced Hydrologic Analysis And Design (Department Level Optional Course -II)
5	WRC 202X	Elective IV: Integrated River Basin Management	WRDLO 2022	Integrated River Basin Management (Department Level Optional Course -Ii)
6	WRC 202X	Elective IV: Soft Computing Techniques in Hydrology and Water Resources Engineering	WRDLO 2023	Soft Computing Techniques In Hydrology And Water Resources Engg (Department Level Optional Course - II)
7	WRC 202X	Elective IV:Advances in Irrigation Engineering	WRDLO 2024	Advances In Irrigation Engineering (Department Level Optional Course - II)

M.E. (Computer Engineering)

Subject Mapping of Syllabus - CBGS (Revision 2012) to CBCGS (Revision 2016)

	CBGS (Revision 2012)	CBCGS (Revision 2016)
Sem. I	Advanced Algorithms and Complexity	Algorithm & Complexity
	Parallel Computing	High performance Computing
	Network Design and Management	Advance Computer Network and Design
	Elective -I	
	Operation Research	Operation Research
	Software Testing	User Experience Design *
	Machine Learning	Computational Intelligence *
	Elective -II	
	Bioinformatics	Image Analysis & Interpretation *
	High Performance Computing	High performance Computing
	Service Oriented Architecture	Semantic Web & Social Network Analysis
	E-Business Technology	Internet of Things
Sem. II	Advanced Operating System	Advanced Operating Systems
	Cyber Security	Ethical Hacking and Digital Forensics *
	Decision Making and Adaptive Business Intelligence	Data Science *
	Elective III	
	Advance Computer Graphics	Natural Language Processing *
	Information Retrieval	Data Storage & Retrieval *
	Storage Area Network	Semantic Web & Social Network Analysis*
	Soft Computing	Advance Soft Computing
	Elective IV	
	Semantic Web Technology	Natural Language Processing *
	Ubiquitous Computing	Logic & Automated Reasoning *
	Emerging wireless Technologies and Future Mobile Internet	ICT for Social cause *

* Alternate subject

M.E. (Computer Engineering)

Subject Mapping of Syllabus – Rev. 2002 to Rev. 2012 (CBGS)

	Rev. 2002	Rev. 2012
Sem. I	Parallel Computer Architecture	Parallel Computing
	Algorithms and Complexity	Advanced Algorithms and Complexity
	Object Oriented Analysis & Design	Service Oriented Architecture
	Network Protocol & Networking	Network Design and Management
	Elective	
	1] Artificial Intelligence 2] Neural Network and Fuzzy System 3] Data mining & Information Retrieval 4] Cryptography & Networking Security	1] Machine Learning 2] Soft Computing 3] Information Retrieval 4] Cyber Security
Sem. II	Software Engineering	Software Testing
	Distributed Operating System	Advanced Operating System
	Advance Database Management Systems	Advance Database Management Systems
	Image Processing	Advance Computer Graphics
	Elective	
	[1] E-Commerce [2] Advanced Systems [3] Advances in Management Information System [4] Wireless Communication and Networks	1] E-Business Technology 2] Emerging wireless Technologies and Future Mobile Internet 3] Ubiquitous Computing * 4] Emerging wireless Technologies and Future Mobile Internet*

* Alternate subject

M.E. (Electrical Engineering) with Electrical Power System

Subject Mapping of Syllabus - CBGS (2012) to CBCGS (2016)

Sr No.	Sem.	CBGS (Revision 2012)	CBCGS (Revision 2016)	Sem
1	I	Applied Engineering Mathematics	Applied Linear Algebra	I
2	I	Advanced Power System Protection	Advanced Power System Protection	II
3	I	Advanced Power System Analysis	Advanced Power System Analysis	I
4	I	Elective I- Application of Power Electronics in Power System	DLOC-I: Power Electronics in Power System	I
5	I	Elective I – Restructured Power System	DLOC-I: Restructured Power System	I
6	I	Elective I- Modern Control System	DLOC-II ; Advanced Control System	II
7	I	Elective I- Advanced Power Electronic Converter	ILOC- I :Reliability Engineering*	I
8	I	Elective II – Evaluation of Power System Reliability	DLOC-II: Evaluation of Power System Reliability	II
9	I	Elective II -Artificial Intelligence and its Application in Power System	ILOC- II : Project Management *	II
10	I	Elective II – Non Conventional Energy Sources and Systems	DLOC-I:Renewable Energy Systems and Energy Storage	I
11	I	Elective II – Distribution Generation and Microgrid	ILOC-I: Product Lifecycle Management*	I
12	II	Power System Modeling	Electrical Power System Modeling	I
13	II	Electrical Power Quality	Power Quality Issues and Mitigation	II
14	II	Power System Stability and Control	Power System Dynamics and Control	II
15	II	Elective -III: Optimization Techniques and its Application in Power System	ILOC – I : Operation Research	I
16	II	Elective -III: - DSP and its Application in Power System	ILOC-II: Research Methodology*	II
17	II	Elective -III: Smart Grid	ILOC-II : Digital Business Management*	II
18	II	Elective -III:Energy Management and Auditing	ILOC – I : Energy Audit and Management	I
19	II	Elective -IV: Industrial Drives and Control	DLOC -I : Industrial Drives and Control	I
20	II	Elective -IV: Extra high Voltage Transmission	DLOC -II : EHV AC Transmission System	II
21	II	Elective -IV: High Voltage Insulation System	DLOC-II: Power Conditioning System For Renewable Energy*	II
22	II	Elective -IV: Entrepreneurship Development	ILOC – II: Entrepreneurship Development and Management	II

* Alternate subject

M.E. (Electrical Engineering) with Power Electronics And Drives

Subject Mapping of Syllabus - CBGS (2012) to CBCGS (2016)

Sr No.	Se m.	CBGS (Revision 2012)	CBCGS (Revision 2016)	Sem
1	I	Applied Engineering Mathematics	Applied Linear Algebra	I
2	I	Power Electronic Devices and Converters	Power Electronic Technologies	I
3	I	Electrical Machine Analysis and Control	Electrical Machine Modeling and Analysis	I
4	I	Power Electronics Simulations Lab	Laboratory – I	I
5	I	Power Electronics Hardware Lab	Laboratory - II	I
6	I	Elective I: Application of Power Electronics in Power System	DLOC-I: Power Electronics in Power System	I
7	I	Elective I: Computational Electromagnetics	ILOC-I: Reliability Engineering#	I
8	I	Elective I: Modern Control System	DLOC-II: Advanced Control System	II
9	I	Elective I: Advanced Protection System	ILOC-I: Operation Research#	I
10	I	Elective II: Artificial Intelligence & its Application in Power System	DLOC-I: Electrical and Hybrid Vehicle Technology #	I
11	I	Elective II Non-Conventional Energy Sources and Systems	DLOC-I: Renewable Energy Systems and Energy Storage	I
12	I	Elective II Dynamic Analysis of Synchronous Machine	DLOC- I: Dynamic Analysis of Synchronous Machine	I
13	I	Elective II Distributed Generation and Microgrid	ILOC-II: Research Methodology#	II
14	II	Modern Power Electronic Converters	Advanced Power Electronic Converters	II
15	II	Electrical Power Quality	Power Quality Issues and Mitigation	II
16	II	Advanced Machine Drives	Electrical Drives and Control	II
17	II	Applied Power Electronics Lab	Laboratory – III	II
18	II	DSP Applications Lab	Laboratory – IV	II
19	II	Elective III: DSP and its Application in Power System	DLOC-II: Digital Signal Processors for Control and Power Applications	II
20	II	Elective III: Smart Grid	DLOC-I: Microgrid and Smart Grid	I
21	II	Elective III: Energy Management and Auditing	ILOC-I: Energy Audit and Management	I
22	II	Elective III: Special Machine Modeling and Control	ILOC-II: Project Management#	II
23	II	Elective IV: Power Electronics Interfaces for Renewable Energy Systems	DLOC-II: Power Conditioning Systems for Renewable Energy	II
24	II	Elective IV: Extra High Voltage Transmission	DLOC-II: EHV AC Transmission System	II
25	II	Elective IV: EMI and EMC in Power Electronic Systems	DLOC-II: Electromagnetic Interference & Compatibility in Power Electronic	II
26	II	Elective IV: Entrepreneurship Development	ILOC-II: Entrepreneurship Development and Management	II

Subject is not equivalent but mapped

ME in Electronics Engineering Equivalent / Alternate Subjects

ME Electronics Engineering SUBJECTS (R-2012)		ME Electronics NEW SUBJECTS CBGS (R-2016)	
Old Subjects		Equivalent/Alternate Subjects in CBSGS	
Subject Code	Name of the subject in Sem I		Subject Code
EXC101	System Modeling and Simulation	Modeling & Simulations	ELXDLO1014
EXC102	Modelling of Microelectronic Devices	Microelectronic Devices	ELXDLO1013
EXC102	Embedded Systems	Real Time System Design	ELXC2022
Elective -I and Elective-II			
	Advance Digital Communication	Advanced Digital Communication	ELXC1011
	Instrumentation System Design	Virtual Instrumentation	ELXDLO2025
	Optical Fiber Communication	Advanced Digital Communication	ELXC1011
	Analog IC Design	Mixed Signal VLSI Design	ELXC1011
	Wireless Mobile Network	Wireless & Mobile Networking	ELXDLO2022
	Analytical Models and Simulation of Systems	Modeling & Simulations	ELXDLO1014
	Advance Digital Image Processing	Advanced Digital Image Processing	ELXDLO1015
	Internetworking Technologies	Wireless & Mobile Networking	ELXDLO2022
	Digital System Design	Digital Design with Reconfigurable Architecture	ELXC2021
Name of the subject in SEM II			
EXC201	Power Electronic Devices and Design	Power Electronics System Design	ELXC1013
EXC202	Advanced Processor Architecture	Advanced Processor Architecture-I	ELXDLO1011
EXC203	Applications of DSP and IP	Advanced Digital Image Processing	ELXDLO1015
Elective -III and Elective-IV			
	Advance Networking Technologies	Network & System Administration	ELXDLO1012
	Machine Learning	*Virtual Instrumentation	ELXDLO2025
	Microwave ICs	*Microelectronic Devices	ELXDLO1013
	Fabrication of Microelectronic IC	Microelectronic Devices	ELXDLO1013
	Real Time Operating System	Real Time System Design	ELXC2022
	Modelling and Synthesis with VHDL	Digital Design with Reconfigurable Architecture	ELXC2021
	Cryptography and Network Security	Cyber Security and Laws	ILO1016
	Application Specific IC Design	Digital Design with Reconfigurable Architecture	ELXC2021

***Alternative subject**

ME in Information Technology Equivalent / Alternate Subjects

MEIT NEW SUBJECTS CBGS (R-2012)

MEIT NEW SUBJECTS CBCGS (R-2016)

Sr. No.	Subjects in CGBS		Equivalent/Alternate Subjects in CBCGS	
	Sem-I	Subject Code	Sem-I	Subject Code
1	Advanced Data Mining With BI	ITC101	Data Science	MEITC101
2	Data Storgae Management and Retrieval	ITC102	IT Infrastructure Design	MEITC102
3	Network Design and Management	ITC103	IT Infrastructure Design	MEITC102
Elective -I			Elective -I	
1	Operation Research	ITE1011	Operation Research	LO1015
2	Applications of DSP for Multimedia Communications	ITE1012	Morden Digital Signal Processing Application ETRX elective I	
3	Usability Engineering	ITE1013	User Experience Engineering	MEITDLO1011
Elective -II			Elective -II	
1	Software Quality Assurance	ITE1021	Advances in Software Engineering	MEITC103
2	BioInformatics	ITE1022	Healthcare database mangmanet system ME (biomedical)	
3	E-Business Techniques	ITE1023	E-Business & Social Network Analysis	MEITDLO2021

MEIT NEW SUBJECTS CBGS (R-2012)

MEIT NEW SUBJECTS CBCGS (R-2016)

Sr. No.	Subjects in CGBS		Equivalent/Alternate Subjects in CBCGS	
	Sem-II	Subject Code	Sem-II	Subject Code

1	Advanced Software Architecture	ITC201	Advanced Software Quality Assurance	MEITDLO2025
2	Enterprise Security and Risk management	ITC202	Security & Risk Management	MEITC201
3	Soft Computing	ITC203	Advanced soft computing Dloc1 Computer engineering	
Elective -III			Elective -III	
1	Wireless Ad-hoc Sensor Network	ITE2011	Adhoc Networks	MEITDLO1012
2	Virtualization and Cloud Computing	ITE2012	Cloud Computing	MEITDLO1013
3	Knowledge Management	ITE2013	Knowledge Management	MEITDLO1015
Elective -IV			Elective -IV	
1	Ubiquitous computing	ITE2021	Internet of Things	MEITDLO2024
2	Ethical hacking and digital Forensic	ITE2022	Ethical Hacking & Forensic	MEITDLO2023
3	Next Generation Network	ITE2023	Adhoc Networks	MEITDLO1012

MEIT SUBJECTS (R-2002)**MEIT NEW SUBJECTS CBCGS (R-2016)**

SN	OLD Subjects	Equivalent/Alternate Subjects in CBCGS	
	Name of Subject in Sem-I	Sem-I	Subject Code
1	Object Oriented Software Engineering	Advances in Software Engineering	MEITC103
2	Advanced Database Management System	No equivalent	
3	Principles of Nework Architechure and Protocols	IT Infrastructure Design	MEITC102
Elective -I and Elective-II			
1	Information Retrieval and Data Mining	Data Science	MEITC101
2	Internetworking and Nework Design	IT Infrastructure Design	MEITC102
3	Telecommunication Network Performance Analysis	No equivalent	
4	Management Information Systems	Management Information System	ILO1013
5	Document Desing and Advanced Publishing Technolo	No equivalent	
6	Analytical Models and Simulation of Systems	No equivalent	

MEIT SUBJECTS (R-2002)**MEIT NEW SUBJECTS CBCGS (R-2016)**

SN	OLD Subjects	Equivalent/Alternate Subjects in CBCGS	
	Name of Subject in Sem-II	Sem-II	Subject Code
1	Human Computer Interaction	User Experience Engineering	MEITDLO1011
2	Distributed Operting Systems	No equivalent	
3	Software Architechure	Advances in Software Engineering	MEITC103
Elective -III and Elective-IV			

1	Information Security	Security & Risk Management	MEITC201
2	Mobile and Wireless Networking	Adhoc Networks	MEITDLO1012
3	Artificial Intelligence and Knowledge Based Systems	AI & Machine Learning	MEITDLO2022
4	E-Commerce	E-Business & Social Network Analysis	MEITDLO2021
5	Image Processing and Applications	No equivalent	
6	Web Engineering	Advance web technology	

University of Mumbai

M.E Instrumentation Engineering (Equivalence)

Semester-I

Credit Based Semester And Grading System with effect from the academic year 2012–2013			As per Choice Based Credit and Grading System with effect from the academic year 2016-2017	
Sr. No.	Subject Code	Subject	Subject Code	Subject
1	IS101	Applied Linear Algebra	ISC101	Computational Techniques in Instrumentation Engineering
2	IS102	Advanced sensors and signal processing systems	ISC102	Sensors and Measurement Systems
3	IS103	System Modeling and simulation	ISC103	Process Dynamics and Control
4	ISE1011	Bio- instrumentation and imaging	ISDLO101X	Applied Biomedical Instrumentation
5	ISE1023	Advanced Electronic Circuits For Instrumentation And Control Applications	ILO101X	Operation Research

Semester-II

Credit Based Semester And Grading System with effect from the academic year 2012–2013			As per Choice Based Credit and Grading System with effect from the academic year 2016-2017	
1	IS201	Modern Control System	ISC201	Modern Control Theory
2	IS202	Advanced process Instrumentation and control	ISC202	Industrial Automation
3	IS203	Introduction to Nonlinear control system	ISC203	Applied Instrumentation for Process Industries
4	NISE203X	ISE2032 Advanced Nuclear Instrumentation	ISDLO202X	Advanced Nuclear Instrumentation
5	ISE204X	ISE2043 Fuzzy Logic, Neural network and control	ILO202X	Research Methodology

BOS in Electronics and Telecommunication Engg.

Details of equivalent / alternative subjects between M.E. (Signal Processing) CBSGS and M.E. (Signal Processing) (Choice Based Semester and Grading System) scheme for Institutions and examinations

	R-2012-13 Subject	R-2016-17 Subject
Sem I	Sem I	
1	Signal Detection and Estimation Theory	Signal Detection and Estimation Theory
2	Digital Signal Processing	Digital Signal Processing
3	Image Processing	Image Processing
4	Elective I and II	
(i)	Radar and Satellite Signal Processing and Applications	Radar and Satellite Signal Processing and Applications
(ii)	DSP Processors	DSP Processors
(iii)	Speech Processing	Speech Processing
(iv)	VSLI Signal Processing	VSLI Signal Processing
	Sem II	
1	Adaptive Signal Processing	Adaptive Signal Processing
2	Signal processing Algorithms and Applications	Signal processing Algorithms and Applications
3	Video Processing	Video Processing
4	Elective III and IV	
(i)	Wavelet Transform and Applications	Wavelet Transform and Applications
(ii)	Biomedical Signal Processing	Biomedical Signal Processing
(iii)	Wireless Network	Wireless Network
(iv)	DSP Structure for VSLI	DSP System Design

BOS in Electronics and Telecommunication Engg.

Details of equivalent / alternative subjects between M. E. (Signal Processing) R 2014-15 scheme and M. E. (Signal Processing) R-2016-17 scheme for Institutions and examinations.

Sr. No.	R 2014-15 subject	R 2016-17 subject
	Sem I	
1	Signal Detection and Estimation Theory	Signal Detection and Estimation Theory
2	Digital Signal Processing	Digital Signal Processing
3	Image Processing	Image Processing
4	Elective I	
(i)	Radar and Satellite Signal Processing and Application	Radar and Satellite Signal Processing and Application
(ii)	DSP Processors	DSP Processors
5	Elective II	
(i)	Speech Processing	Speech Processing
(ii)	VLSI Signal Processing	VLSI Signal Processing
	Sem II	
1	Adaptive Signal Processing	Adaptive Signal Processing
2	Signal Processing Algorithm and Applications	Signal Processing Algorithm and Applications
3	Video Processing	Video Processing
4	Elective I	
	Wavelet Transform and Applications	Wavelet Transform and Applications
	Biomedical Signal Processing	Biomedical Signal Processing
5	Elective II	
(i)	DSP System Design	DSP System Design
(ii)	Wireless Network	Wireless Network

BOS in Electronics and Telecommunication Engg.

Details of equivalent / alternative subjects between M.E. (Electronics and Telecommunication Engg.) R-2007-08 (R-2003-04 Scheme) and M.E. (Electronics and Telecommunication Engg.) R-2016-17 scheme for Institutions and examinations

	R-2007-08 Subject (R-2003-04 Subject)	R-2016-17 Subject
	Sem I	
1	Statistical Theory of Communication	Statistical Signal Processing (Sem-I)
2	Communication Networks	Next Generation Networks (Sem-I)
3	Microwave Integrated Circuits	RF and Microwave Engineering (Sem-II)
4	Error Correcting Codes	Remote Sensing (Sem-II)
5	Elective I	
(i)	Fiber Optical Communication	Optical Communication Network (Sem-I)
(ii)	Antenna Theory and design	Advanced Antenna Design (Sem-I)
	Sem II	
1	Microwave Devices and amplifier Design	Mixed Signal VLSI Design (Sem-I, ME Electronics, ELXC1012)
2	Satellite Communication System	Satellite Networking (Sem-II)
3	Advanced Digital Communication	Modern Digital Communications (Sem-II)
4	Mobile Communications Systems (R-2003: Mobile Communication)	Wireless Adhoc and Sensor Networks
5	Elective III	
(i)	Advanced Digital Signal Processing	Advanced Signal Processing (Sem-II, ME Electronics, ELXC2023)
(ii)	Data Compression Methods	Network and Cyber Security (ETDLO2022)
(iii)	Simulation of Communication System	Modeling & Simulations (Sem-I, ME Electronics, ELXDLO1014)

BOS in Electronics and Telecommunication Engg.

Details of equivalent / alternative subjects between M.E. (Electronics and Telecommunication Engg.) R-2012-13 and M.E. (Electronics and Telecommunication Engg.) R-2016-17 scheme for Institutions and examinations

	R-2012-13 Subject	R-2016-17 Subject
	Sem I	
1	Statistical Signal Analysis	Statistical Signal Processing (Sem-I)
2	Optical Fiber Communication	Optical Communication Network (Sem-I)
3	Digital Signal Processing and Its Applications	Modern Digital Signal Processing Applications (Sem-I)
4	Elective I	
(i)	Image and Video Processing and Broadcasting	Image Analysis and Machine learning (Sem-I)
(ii)	Modeling and Simulation of Communication System	Modeling & Simulations (Sem-I, ME Electronics, ELXDLO1014)
(iii)	VLSI and Mixed Signal Circuits and System	Mixed Signal VLSI Design (Sem-I, ME Electronics, ELXC1012)
(iv)	Advanced Satellite Communication	Satellite Networking (Sem-II)
5	Elective II	
(i)	Speech Processing	Remote Sensing (Sem-II)
(ii)	Micro Electro Mechanical Systems	Mechatronics (Sem-II, ME Electronics, ELXDLO2024)
(iii)	Embedded System	Embedded Communication Systems Design (Sem-I)
(iv)	Next Generation Networks	Next Generation Networks (Sem-I)
	Sem II	
1	Advanced Digital Communications	Modern Digital Communications (Sem-II)
2	Mobile and Wireless Communications	Wireless Adhoc and Sensor Networks
3	Microwave and Millimeter wave Communication Systems	RF and Microwave Engineering (Sem-II)
4	Elective III	
(i)	Adaptive Signal Processing	Advanced Signal Processing (Sem-II, ME

		Electronics, ELXC2023)
(ii)	Nano-electronics	Error control coding (Sem-II)
(iii)	Advanced Antenna and Arrays	Advanced Antenna Design (Sem-I)
(iv)	Optical Networks	Wireless & Mobile Networking (Sem-II, ME Electronics, ELXDLO2022)
5	Elective IV	
(i)	Wavelets	Advanced Digital Image Processing (Sem-I, ME Electronics, ELXDLO1015)
(ii)	Cloud Computing	Cyber Security and Laws (ILO1016)
(iii)	Sensor Array Networks	Wireless Adhoc and Sensor Networks (Sem-II)
(iv)	Network Security	Network and Cyber Security (ETDLO2022)

ME (MECHANICAL ENGINEERING) CAD/CAM and Robotics

Semester I

Sr. No.	Subjects from Revised Course (R-2012)	Equivalent Subjects from Revised Course (R-20016)
1.	Computer Aided Design	Computer Aided Design
2.	Control Engineering	Control Engineering
3.	Mechatronics	Mechatronics
4.	Elective I	Elective I -DLO courses I
5.	Elective II	Elective II - ILO Courses I
6.	Laboratory I CAD and FEA	Laboratory I CAD and Computer Aided Engineering
7.	Laboratory II Object Oriented Programming	Exempted

ME (MECHANICAL ENGINEERING) CAD/CAM and Robotics

Semester II

Sr. No.	Subjects from Revised Course (R-2012)	Equivalent Subjects from Revised Course (R-20016)
1	Robotics	Robotics
2	Optimization	Exempted
3	Computer Aided Machining (CAM)	Computer Aided Machining (CAM)
4	Elective III	Elective III -DLO courses II
5	Elective IV	Elective IV - ILO Courses II
6	Laboratory III CAM	Laboratory III CAM
7	Laboratory IV Mechatronics and Robotics	Exempted

ME (MECHANICAL ENGINEERING) CAD/CAM and Robotics

Semester III

Sr. No.	Subjects from Revised Course (R-2012)	Equivalent Subjects from Revised Course (R-20016)
1	Seminar	Seminar
2	Dissertation I	Dissertation I

ME (MECHANICAL ENGINEERING) CAD/CAM and Robotics

Semester IV

Sr. No.	Subjects from Revised Course (R-2012)	Equivalent Subjects from Revised Course (R-20016)
1	Dissertation II	Dissertation II

ME (MECHANICAL ENGINEERING) Energy Systems and Management

Semester I

	Subjects from Revised Course (2014)	Equivalent Subjects from Revised Course (R-20016)
1.	Advanced Thermodynamics and Heat Transfer	Advanced Heat Transfer (Thermal Sem I)
2.	Energy Scenario, Policy and Environment	Energy Scenario, Policy and Environment
3.	Conventional Power Plant	Conventional Power Plant
4.	Elective I	Elective I -DLO courses I
5.	Elective II	Elective II - ILO Courses I
6.	Laboratory I Modelling and Simulation Lab	Laboratory I Energy Systems Modelling and Simulation Lab
7.	Laboratory II Renewable Energy Lab	Laboratory II Renewable Energy Lab (Thermal Sem I)

ME (MECHANICAL ENGINEERING) Energy Systems and Management

Semester II

Sr. No.	Subjects from Revised Course (2014)	Equivalent Subjects from Revised Course (R-2016)
1	Energy Planning Management and Audit	Advances in Energy Management and Audit
2	Cogeneration and Waste Heat Recovery	Cogeneration and Waste Heat Recovery Systems (TEDLO1012)
3	Non-Conventional Power Plants	Non-Conventional Power Plants (TEDLO2014)
4	Elective III	Elective III -DLO courses II
5	Elective IV	Elective IV - ILO Courses II
6	Laboratory III Energy Audit Lab	Laboratory III Energy Audit Lab (Sem I)
7	Laboratory IV Measurement and Virtual Instrumentation Lab	Laboratory IV Measurement and Virtual Instrumentation Lab

ME (MECHANICAL ENGINEERING) Energy Systems and Management

Semester III

Sr.No.	Subjects from Revised Course (2014)	Equivalent Subjects from Revised Course (R-2016)
1	Seminar	Seminar
2	Dissertation I	Dissertation I

ME (MECHANICAL ENGINEERING) Energy Systems and Management

Semester IV

Sr. No.	Subjects from Revised Course (2014)	Equivalent Subjects from Revised Course (R-2016)
1	Dissertation II	Dissertation II

ME (MECHANICAL ENGINEERING) Heat Power Engineering

Semester I

Sr. No.	Subjects from Revised Course (R-2012)	Equivalent Subjects from Revised Course (R-20016)
1.	Numerical Methods in Heat Transfer and Fluid Flow	Exempted
2.	Advanced Thermodynamics	Advanced Thermodynamics
3.	Energy Conservation and Financial Management	Exempted
4.	Elective I	Elective I -DLO courses I
5.	Elective II	Elective II - ILO Courses I
6.	Laboratory I Modelling and Simulation of IC Engines	Laboratory I – Simulation of Thermal Systems
7.	Laboratory II Computational Heat Transfer and Fluid Flow	Laboratory III Computational Fluid Dynamics (Sem II)

ME (MECHANICAL ENGINEERING) Heat Power Engineering

Semester II

Sr. No.	Subjects from Revised Course (R-2012)	Equivalent Subjects from Revised Course (R-20016)
1	Advanced Heat and Mass Transfer	Advanced Heat Transfer (Sem I)
2	Advanced Fluid Mechanics	Advanced Fluid Mechanics
3	Instrumentation and Control Systems	Exempted
4	Elective III	Elective III -DLO courses II
5	Elective IV	Elective IV - ILO Courses II
6	Laboratory III CFD Lab	Laboratory III CFD Lab
7	Laboratory IV Measurement and Virtual Instrumentation Lab	Exempted

ME (MECHANICAL ENGINEERING) Heat Power Engineering

Semester III

Sr. No.	Subjects from Revised Course (R-2012)	Equivalent Subjects from Revised Course (R-20016)
1	Seminar	Seminar
2	Dissertation I	Dissertation I

ME (MECHANICAL ENGINEERING) Heat Power Engineering**Semester IV**

Sr. No.	Subjects from Revised Course (R-2012)	Equivalent Subjects from Revised Course (R-20016)
1	Dissertation II	Dissertation II

ME (MECHANICAL ENGINEERING) Machine Design

Semester I

Sr. No.	Subjects from Revised Course (R-2012)	Equivalent Subjects from Revised Course (R-20016)
1.	Mechanical Vibration	Mechanical Vibration
2.	Analysis and Synthesis of Mechanisms	Analysis and Synthesis of Mechanisms
3.	Advanced Stress Analysis	Advanced Stress Analysis
4.	Elective I	Elective I -DLO courses I
5.	Elective II	Elective II - ILO Courses I
6.	Laboratory I Finite Element Analysis	Laboratory I Finite Element Analysis
7.	Laboratory II Vibration Measurement and Analysis	Laboratory II Vibration Measurement and Analysis

ME (MECHANICAL ENGINEERING) Machine Design

Semester II

Sr. No.	Subjects from Revised Course (R-2012)	Equivalent Subjects from Revised Course (R-20016)
1	System Modelling and Analysis	System Modelling and Analysis
2	Optimization	Optimization
3	Statistical Techniques and Design of Experiments	Exempted
4	Elective III	Elective III -DLO courses II
5	Elective IV	Elective IV - ILO Courses II
6	Laboratory III CAD/CAM/CIM	Laboratory III CAD/CAM/CIM
7	Laboratory IV Measurement and Virtual Instrumentation Lab	Laboratory IV Measurement and Virtual Instrumentation Lab

ME (MECHANICAL ENGINEERING) Machine Design

Semester III

Sr. No.	Subjects from Revised Course (R-2012)	Equivalent Subjects from Revised Course (R-20016)
1	Seminar	Seminar
2	Dissertation I	Dissertation I

ME (MECHANICAL ENGINEERING) Machine Design

Semester IV

Sr. No.	Subjects from Revised Course (R-2012)	Equivalent Subjects from Revised Course (R-20016)
1	Dissertation II	Dissertation II

ME (MECHANICAL ENGINEERING) Manufacturing Systems Engineering

Semester I

Sr. No.	Subjects from Revised Course (R-2012)	Equivalent Subjects from Revised Course (R-20016)
1.	Product Design & Development	Product Design & Development
2.	Computer Integrated Manufacturing Systems	Computer Integrated Manufacturing Systems
3.	Quality & Reliability Engineering	Quality Engineering
4.	Elective I	Elective I- DLO Courses I
5.	Elective II	Elective II ILO Courses I
6.	Laboratory I – Computer Integrated Manufacturing Systems	Laboratory I - Computer Integrated Manufacturing Systems
7.	Laboratory II – Quality & Reliability Engineering	Laboratory II - Quality Engineering

ME (MECHANICAL ENGINEERING) Manufacturing Systems Engineering

Semester II

Sr. No.	Subjects from Revised Course (R-2012)	Equivalent Subjects from Revised Course (R-20016)
1	Sustainable Manufacturing	Sustainable Manufacturing
2	Mechatronics and Industrial Automation	Industrial Automation
3	Advanced Quantitative Techniques	Advanced Quantitative Techniques
4	Elective III	Elective III - DLO Courses II
5	Elective IV	Elective IV - ILO Courses II
6	Laboratory III - Mechatronics & Industrial Automation	Laboratory III - Industrial Automation
7	Laboratory IV - Advanced Quantitative Techniques	Laboratory IV - Advanced Quantitative Techniques

ME (MECHANICAL ENGINEERING) Manufacturing Systems Engineering

Semester III

Sr. No.	Subjects from Revised Course (R-2012)	Equivalent Subjects from Revised Course (R-20016)
1	Seminar	Seminar
2	Dissertation I	Dissertation I

ME (MECHANICAL ENGINEERING) Manufacturing Systems Engineering

Semester IV

Sr. No.	Subjects from Revised Course (R-2012)	Equivalent Subjects from Revised Course (R-20016)
1	Dissertation II	Dissertation II

ME (MECHANICAL ENGINEERING) Product Design and Development

Semester I

Sr. No.	Subjects from Revised Course (R-2014)	Equivalent Subjects from Revised Course (R-20016)
1.	Product Design and Development	Product Design and Development
2.	Quality Concepts in Design	Quality Concepts in Design (Sem II)
3.	Material in Product Design and Development	Material in Product Design and Development
4.	Elective I	Elective I -DLO courses I
5.	Elective II	Elective II - ILO Courses I
6.	Laboratory I CAD Solid Modelling Lab	Laboratory I CAD Solid Modelling Lab
7.	Laboratory II Rapid Prototyping and Tooling Lab	Laboratory II Rapid Prototyping and Tooling Lab

ME (MECHANICAL ENGINEERING) Product Design and Development

Semester II

Sr. No.	Subjects from Revised Course (R-2014)	Equivalent Subjects from Revised Course (R-20016)
1	Product Life Cycle Management	Exempted
2	Design for X	Design for X
3	Applied Ergonomics	Applied Ergonomics
4	Elective III PDE	Elective III -DLO courses II
5	Elective IV	Elective IV - ILO Courses II
6	Laboratory III Surface Modelling Lab	Laboratory III CAD: Surface Modelling Lab
7	Laboratory IV Computer Aided Engineering Lab	Laboratory IV CAE: Computer Aided Engineering

ME (MECHANICAL ENGINEERING) Product Design and Development

Semester III

Sr. No.	Subjects from Revised Course (R-2014)	Equivalent Subjects from Revised Course (R-20016)
1	Seminar	Seminar
2	Dissertation I	Dissertation I

ME (MECHANICAL ENGINEERING) Product Design and Development

Semester IV

Sr. No.	Subjects from Revised Course (R-2014)	Equivalent Subjects from Revised Course (R-20016)
1	Dissertation II	Dissertation II

ME (MECHANICAL ENGINEERING) **Thermal Engineering**

Semester I

	Subjects from Revised Course (2012)	Equivalent Subjects from Revised Course (R-20016)
1.	Advanced Thermodynamics and Heat Transfer	Advanced Heat Transfer
2.	Experimental Techniques and Instrumentation in Thermal and Fluids Engineering	Exempted
3.	Numerical Methods and Computational Techniques	Numerical Methods and Computational Techniques
4.	Elective I	Elective I -DLO courses I
5.	Elective II	Elective II - ILO Courses I
6.	Laboratory I Simulation of Thermal Systems	Laboratory I Simulation of Thermal Systems
7.	Laboratory II Renewable Energy Lab	Laboratory II Renewable Energy Lab

ME (MECHANICAL ENGINEERING) **Thermal Engineering**

Semester II

Sr. No.	Subjects from Revised Course (2012)	Equivalent Subjects from Revised Course (R-2016)
1	Modelling and Analysis in Thermal Engineering	Modelling and Analysis in Thermal Engineering
2	Computational Fluid Dynamics	Computational Fluid Dynamics
3	Fuels. Combustion and Emission Control	Exempted
4	Elective III	Elective III -DLO courses II
5	Elective IV	Elective IV - ILO Courses II
6	Laboratory III CFD Lab	Laboratory III CFD Lab
7	Laboratory IV Measurement and Virtual Instrumentation Lab	Laboratory IV Measurement and Virtual Instrumentation Lab

ME (MECHANICAL ENGINEERING) Thermal Engineering

Semester III

Sr.No.	Subjects from Revised Course (2012)	Equivalent Subjects from Revised Course (R-2016)
1	Seminar	Seminar
2	Dissertation I	Dissertation I

ME (MECHANICAL ENGINEERING) Thermal Engineering

Semester IV

Sr. No.	Subjects from Revised Course (2012)	Equivalent Subjects from Revised Course (R-2016)
1	Dissertation II	Dissertation II

M.E Instrumentation and Control

Equivalent subjects of M.E Instrumentation and Control for the Course 2012-2013 to 2016-2017.

Sem I

Equivalent subjects (CBSGS-2012-2013)	Equivalent subjects (CBCGS - 2016-2017)
Applied Linear Algebra (ISC101)	Higher Mathematics for Control Engineering (ISEC101)
Advanced Sensor and Signal Processing Systems (ISC102)	Advanced Signal Processing for Sensors (ISEC102)
Adaptive Control Theory (ISC103)	Robust Control (ISEC103)
Elective –I -1. Bio- instrumentation & Imaging (ISE1011)	Advanced Biomedical Instrumentation (ISEDLO1011)
2. Advanced Analytical Instrumentation (ISE1012)	Advanced Measurement Techniques (ISEDLO1012)
3. Automotive Instrumentation (ISE1013)	Advanced Process Control & Automation (ISEC203) (Sem –II)
4. Robotics (ISE1014)	Robotics & Control (ISEDLO1014)
Elective II -.1. Instrumentation for Non-conventional Energy source (ISE1021)	Energy Audit & Management (ILO1018)
2. Advanced micro / Nano systems (ISE1022)	MEMS & Nanotechnology (ISEDLO2024) (Sem –II)
3. Advanced Electronic Circuits for Instrumentation and Control Application (ISE1023)	Electronic Systems Design (ISEC201)
4.Process Identification (ISE1024)	Rehabilitation Engineering (ISEDLO2021) (Sem –II)

M.E Instrumentation and Control

Equivalent subjects of M.E Instrumentation and Control for the Course 2012-2013 to 2016-2017.

Sem II

Equivalent subjects (CBSGS-2012-2013)	Equivalent subjects (CBCGS - 2016-2017)
Stochastic Processes (ISC201)	State Estimation & Stochastic Processes (ISEC202)
Advanced Process Instrumentation & Control (ISC203)	Advanced Process Control & Automation (ISEC203)
Introduction to Non –linear Control Theory (ISC203)	Operation Research (Sem –I) (ILO1015)
Elective III -1. Advanced Digital signal Processing (ISE2031)	Advanced Measurement Techniques (ISEDLO1012) (Sem- I)
2. Advanced Nuclear Instrumentation (ISE2032)	Advanced Nuclear Instrumentation (ISEDLO1023)
3. Reliability Engineering (ISE2033)	Reliability Engineering (ILO1012) (Sem –I)
4. Fiber Optics & Laser Instrumentation (ISE2034)	Advanced Fiber Optics and LASER Instrumentation (ISEDLO2022)
Elective –IV 1. Advanced Embedded System for Instrumentation (ISE2041)	MEMS & Nanotechnology (ISEDLO2024)
2. Principles of Tomographic Imaging (ISE2042)	Advanced Biomedical Instrumentation (ISEDLO1011) (Sem –I)
3. Fuzzy Logic, neural Network & Conatrol (ISE2043)	Expert Systems (ISEDLO1013) (Sem –I)
4. Intelligent and Autonomous Control (ISE2044)	Advanced Fiber Optics & LASER Instrumentation (ISEDLO2022)