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DEEMED TO BE UNIVERSITY

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OFFICE COMMUNICATION

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Subject: Equivalent courses between 2015 and 2019 curricula

List of equivalent courses between 2015 and 2019 curricula, approved by the Faculty of Engineering, is attached in Annexure-1. Guidance on options for courses that don't have direct equivalence can be found in the suggestions column of Annexure-1. Campuses offering Undergraduate Engineering Programs are required to adopt the approved equivalency table.

Dr. Sasangan Ramanathan
Dean-Faculty of Engineering

To:
Associate Dean, Amritapuri Campus; Dy. Dean (Coimbatore campus); CoE
Principals of Amritapuri, Chennai and Bangalore campuses (for distribution to all departments)
Coimbatore Campus:
Chairpersons of Departments of Engineering, Mathematics, Sciences, English, Amrita Darshanam for distribution to all faculty; Academic Coordinator's office; Office of DyCoE; AUMS Admin

Copy:
Head ICTS; Head, Students Affairs; Professor, Students Welfare; Admissions Office;

For Information:
Registrar's office; Vice-Chancellor's office; International office (Amritapuri)

ANNEXURE-1

EQUIVALENT COURSES (2015 and 2019 Curricula)

AEROSPACE ENGINEERING

2015 Curriculum				2019 Curriculum			
Sem	**Course Code**	**Course Title**	**Cr**	**Equivalent**	**Course Title**	**L T P**	**Cr**
2	15AES111	Introduction to Aerospace Technology	3	19AEE111	Introduction to Aerospace Technology	3 0 0	3
3	15AES201	Mechanics of Fluids	4	19AEE201	Mechanics of Fluids	3 1 0	4
3	15AES202	Introduction to Thermodynamics	3	19AEE202	Introduction to Thermodynamics	2 1 0	3
3	15AES203	Mechanics of Materials	3	19AEE203	Mechanics of Materials	2 1 0	3
3	15AES204	Materials for Aviation and Space	3	19AEE204	Materials for Aviation and Space	3 0 0	3
3	15AES281	Measurement and Instrumentation Lab.	1	19AEE281	Measurement and Instrumentation Lab.	0 0 3	1
4	15AES211	Aerodynamics I	3	19AEE211	Aerodynamics I	3 0 0	3
4	15AES212	Compressible Fluid Flow	3	19AEE212	Compressible Fluid Flow	2 1 0	3
4	15AES213	Aerospace Structures I	3	19AEE213	Aerospace Structures I	3 0 0	3
4	15AES214	Introduction to Control Theory	3	19AEE214	Introduction to Control Theory	2 1 0	3
4	15AES285	Mechanics of Fluids Lab.	1	19AEE282	Mechanics of Fluids Lab.	0 0 3	1
4	15AES286	Materials Testing Lab.	1	19AEE283	Materials Testing Lab.	0 0 3	1
5	15AES301	Aerodynamics II	3	19AEE301	Aerodynamics II	2 1 0	3
5	15AES302	Aerospace Propulsion	3	19AEE302	Aerospace Propulsion	2 1 0	3
5	15AES303	Aerospace Structures II	3	19AEE303	Aerospace Structures II	3 0 0	3
5	15AES304	Avionics	3	19AEE304	Avionics	3 0 0	3
5	15AES381	Aero-structures Lab.@	1	19AEE381	Aero-structures Lab.@	0 0 3	1
5	15AES382	Avionics Lab.@	1	19AEE382	Avionics Lab.@	0 0 3	1
5	15AES390	Live-in-Lab.	3	19AEE390	Live-in-Lab.		3
6	15AES311	Finite Element Methods for Aerospace	3	19AEE311	Finite Element Methods for Aerospace	2 1 0	3
6	15AES312	Flight Mechanics	3	19AEE312	Flight Mechanics	2 1 0	3
6	15AES383	Propulsion Lab.@	1	19AEE383	Propulsion Lab.@	0 0 3	1
6	15AES384	Low-speed Aerodynamics Lab.@	1	19AEE384	Low-speed Aerodynamics Lab.@	0 0 3	1
6	15AEE385	Innovations Lab.	1	19AEE385	Innovations Lab.	0 0 3	1
7	15AES401	Computational Fluid Dynamics for Aerospace	3	19AEE401	Computational Fluid Dynamics for Aerospace	2 1 0	3
7	15AES402	Aero Design	5	19AEE402	Aero Design	2 2 2	5
7	15AES403	Flight Dynamics and Control	3	19AEE403	Flight Dynamics and Control	3 0 0	3
7	15AES481	UAV Lab	1	19AEE481	Flight testing Lab.@	0 0 3	1
7	15AES495	Project Phase I	2	19AEE495	Project Phase I		2
8	15AES499	Project Phase II	10	19AEE499	Project Phase II		10
Elective	15AES432	Air Breathing Engines	3	19AEE431	Air Breathing Engines	3 0 0	3
Elective	15AES452	Engineering Fracture Mechanics	3	19AEE432	Engineering Fracture Mechanics	3 0 0	3
Elective	15AES462	Helicopter Theory	3	19AEE433	Helicopter Theory	3 0 0	3
Elective	15AES430	Rocket and Spacecraft Propulsion	3	19AEE441	Rocket and Spacecraft Propulsion	3 0 0	3
Elective	15AES454	Advanced Composite Structures	3	19AEE442	Advanced Composite Structures	3 0 0	3
Elective	15AES470	State Space Techniques	3	19AEE443	State Space Techniques	3 0 0	3
Elective	15AES440	Turbulent Flows	3	19AEE451	Turbulent Flows	3 0 0	3
Elective	15AES460	Space Flight Mechanics	3	19AEE452	Space Flight Mechanics	3 0 0	3
Elective	15AES471	Multidisciplinary Design Optimization	3	19AEE453	Multidisciplinary Design Optimization	3 0 0	3
Elective	15AES441	Advanced Computational Fluid Dynamics	3	19AEE461	Advanced Computational Fluid Dynamics	3 0 0	3
Elective	15AES450	Surface Engineering, Coating and Joining Technologies	3	19AEE462	Surface Engineering, Coating and Joining Technologies	3 0 0	3
Elective	15AES461	Principles of Airport Management	3	19AEE463	Principles of Airport Management	3 0 0	3
Elective	15AES362	Computational Methods for Engineers	3	19AEE334	Computational Methods for Engineers	3 0 0	3
Elective	15AES332	Fundamentals of Heat Transfer	3	19AEE331	Fundamentals of Heat Transfer	3 0 0	3
Elective	15AES372	Manufacturing Processes	3	19AEE332	Manufacturing Processes	3 0 0	3
Elective	15AES352	Vibration Analysis	3	19AEE333	Vibration Analysis	3 0 0	3
Elective	15AES342	Experimental Aerodynamics	3	19AEE341	Experimental Aerodynamics	3 0 0	3
Elective	15AES353	Composite Materials and Mechanics	3	19AEE342	Composite Materials and Mechanics	3 0 0	3
Elective	15AES373	Advanced Avionics	3	19AEE343	Advanced Avionics	3 0 0	3
Elective	15AES442	Hypersonic Flow Theory	3	19AEE344	Hypersonic Flow Theory	3 0 0	3
Elective	15AES453	Aero-Elasticity	3	19AEE345	Aero-Elasticity	3 0 0	3

ANNEXURE-1

EQUIVALENT COURSES (2015 and 2019 Curricula)

CHEMICAL ENGINEERING

2015 Curriculum				2019 Curriculum				Suggestions for Courses without equivalence/ Credit Variation/Change in Evaluation Pattern
Sem	Course Code	Course Title	Cr	Equivalent	Course Title	L T P	Cr	
2	15CHE111	Introduction to Chemical Engineering	3	19CHE111	Introduction to Chemical Engineering	3 0 0	3	
2	15CHE112	Material Balances	4	19CHE101	Material Balances	3 1 0	4	
3	15CHE201	Energy Balance and Thermodynamics	4	19CHE201	Energy Balance and Thermodynamics	2 0 3	3	Syllabus has not changed; ASE can take a decision to give 4 credits for the course
3	15CHE202	Fluid Mechanics	4	19CHE202	Fluid Mechanics	3 0 0	3	Syllabus matches 85%, and for remaining missing topics, an assignment will be given, to justify the 1 credit extra
3	15CHE203	Mechanical Operations	3	19CHE203	Mechanical Operations	3 0 0	3	
3	15CHE281	Fluid Mechanics Lab	1	19CHE282	Chemical Engineering Lab – 2	0 0 3	1	*
3	15CHE282	Mechanical Operations Lab	1					
4	15CHE211	Chemical Engineering Thermodynamics	3	19CHE211	Chemical Engineering Thermodynamics	2 1 0	3	One hour changed from L to T
4	15CHE212	Chemical Technology	4	19CHE212	Industrial Chemistry	3 0 0	3	Since 2019 Chemical Technology, we could give the option of taking Industrial Chemistry + 1 credit independent study for CT
4	15CHE213	Process Heat Transfer	4	19CHE204	Principles of Heat Transfer	2 1 0	3	Mapped to 19CHE204, and for remaining topics, assignment can be given for 1 extra credit.
3	15CHE285	Chemical Engineering Instrumentation Lab	2	19CHE281	Chemical Engineering Lab – 1	0 0 3	1	*
3	15CHE286	Chemical Technology Lab	1					
5	15CHE301	Chemical Reaction Engineering I	3	19CHE301	Chemical Reaction Engineering I	3 0 0	3	
5	15CHE302	Diffusional Mass Transfer Operations	4	19CHE303	Principles of Mass Transfer	2 1 0	3	Mapped to 19CHE303, and for remaining topics, assignment can be given for 1 extra credit.
5	15CHE303	Statics and Strength of Materials	4	19CHE214	Strength of Materials	3 0 0	3	For topics on Statics, an assignment can be given for the extra 1 credit;
5	15MAT214	Probability and Statistics	3	19CHE215	Statistical Analysis of Process Data	2 0 3	3	
5	15CHE381	Heat Transfer Lab.	1	19CHE381	Chemical Engineering Lab - 3	0 0 3	1	*
5	15CHE382	Strength of Materials Lab.	1					
5	15CHE391	Project Based Learning - Phase I	1	19CHE383	Project Based Learning	0 0 3	2	*
6	15CHE396	Project Based Learning –Phase II	2					
6	15CHE311	Chemical Reaction Engineering II	3	19CHE311	Chemical Reaction Engineering II	3 0 0	3	
6	15CHE312	Equilibrium Staged Operations	4	19CHE312	Design of Mass Transfer Equipment	3 0 0	3	In 2019 leaching, adsorption & ion exchange are missing; in 2015 drying is missing; Hence assignment can be given for 1 extra credit, based on leaching, adsorption and ion exchange
6	15CHE313	Materials Technology	3	19CHE205	Materials Technology	3 0 0	3	
6	15CHE314	Process Dynamics and Control	4	19CHE313	Transforms & Control Systems Theory	3 1 0	4	
6	15CHE385	Chemical Reaction Engineering Lab.	1	19CHE382	Chemical Engineering Lab 4	0 0 3	1	Chemical Reaction Engineering Lab. Contents combined with newly introduced experiments in thermodynamics
6	15CHE386	Mass Transfer Lab.	1	19CHE481	Chemical Engineering Lab - 5	0 0 3	1	*
7	15CHE481	Chemical Process Control Lab.	1					
7	15CHE401	Process Design and Integration	3	19CHE401	Process Design and Integration	3 0 0	3	
7	15CHE402	Process Equipment Design and Drawing	3	19CHE402	Process Equipment Design	2 0 3	3	
7	15CHE403	Transport Phenomena	4	19CHE403	Transport Phenomena	3 0 0	3	Syllabus has not changed; ASE can take a decision to give 4 credits for the course
7	15CHE482	Computer Aided Design Lab.	2	19CHE482	Process Simulation Lab	2 0 3	3	
7	15CHE495	Project Phase 1	2	19CHE495	Project Phase 1	0 0 2	2	
8	15CHE499	Project Phase 2	10	19CHE499	Project Phase - II	0 0 10	10	

*For lab courses- The following pattern will be followed- The subjects 15CHE281 and 15CHE282 are combined into 19CHE282. Let us say a student needs only 15CHE281. He would take 19CHE282, and do 3 additional experiments relevant to 15CHE281, and be given the 1 credit. Similary for the other lab courses.

ANNEXURE-1

EQUIVALENT COURSES (2015 and 2019 Curricula)

CIVIL ENGINEERING

2015 Curriculum				2019 Curriculum			Suggestions for Courses without equivalence/ Credit Variation/Change in Evaluation Pattern
Sem	Course Code	Course Title	Cr	Equivalent	Course Title	Cr	
2	15CVL102	Mechanics: Statics and Dynamics	3	19CIE102	Mechanics: Statics and Dynamics	3	
2	15CVL111	Introduction to Civil Engineering	1	19CIE111	Introduction to Civil Engineering	2	Made it as lab course to make it more project oriented
2	15CVL112	Engineering Graphics - CAD	2	19MEE182	Computer Aided Drafting	1	Extra assignments are given for balancing the credit
3	15CVL201	Construction Materials	3	19CIE204	Construction materials & methods	3	
3	15CVL202	Principles of Fluid Mechanics	3	19CIE202	Principles of Fluid Mechanics	3	
3	15CVL203	Solid Mechanics	4	19CIE201	Solid Mechanics	4	Lab is combined with Theory to have more clarity on theory part. If the student failed in Theory, they can attend only the theory class and write the corresponding exam and if failed in lab alone, they can attend only the lab and write the corresponding exam
3	15CVL281	Material Testing Lab	1				
3	15CVL204	Surveying	4	19CIE203	Principles of Surveying	4	Lab is combined with Theory to have more clarity on theory part. If the student failed in Theory, they can attend only the theory class and write the corresponding exam and if failed in lab alone, they can attend only the lab and write the corresponding exam
3	15CVL282	Survey Practice	2				
4	15CVL211	Building Technology	3	19CIE282	Materials Testing & Evaluation	2	Combined with Materials Testing & Evaluation in Sr 4. Theory portion on Building Technology is introduced. If the student failed in Theory, they can attend only the theory class and write the corresponding exam and if failed in lab alone, they can attend only the lab and write the corresponding exam. Extra assignments are given for balancing the credit
4	15CVL285	Construction materials lab	1				
4	15CVL212	Geology and Soil Mechanics	3	19CIE211	Geology and Soil Mechanics	3	
4	15CVL213	Hydraulic Engineering	3	19CIE213	Hydraulic Engineering	3	
4	15CVL214	Structural Analysis	3	19CIE212	Structural Analysis	4	Few topics are added from Adv.Structural analysis
4	15CVL286	Hydraulic Engineering lab	1	19CIE281	Hydraulic Engineering lab	1	
5	15CVL301	Advanced structural analysis	3				Portions not covered in structural analysis can be taken in contact mode
5	15CVL302	Design of concrete structures	4	19CIE303	Basic R C Design	4	
5	15CVL303	Geotechnical Engineering	4	19CIE301	Geotechnical Engineering	3	Extra assignments are given for balancing the credit
5	15CVL381	Building drawing	2	19CIE381	Computer aided CE drawing	2	
5	15CVL382	Geotechnical Engg lab	1	19CIE382	Geotechnical Engg lab	1	
6	15CVL311	Design of steel structures	4	19CIE312	Basic steel design	4	
6	15CVL312	Environmental Engg I	3	19CIE302	Environmental Engineering I	3	
6	15CVL385	Environmental Engg Lab	1	19CIE311	Environmental Engg II	3	Students failed in lab can do only lab component
6	15CVL386	Estimation and Valuation Practice	2	19CIE313	Estimation, costing & professional practice	3	More practical applications are introduced
6	15CVL313	Transportation Engg I	3	19CIE214	Transportation Engg I	3	
6	15CVL314	Water resources and Irrigation Engg	4	19CIE314	Hydrology & water resources Engg	3	Extra assignments are given for balancing the credit
7	15CVL401	Construction management	4	19CIE402	Construction management	3	Extra assignments are given for balancing the credit
7	15CVL402	Environmental Engg II	3	19CIE311	Environmental Engg II	3	
7	15CVL481	Structural design & detailing	1	19CIE401	Structural design & detailing	3	Software training is introduced. The student needs to do structural training part also
7	15CVL403	Transportation Engg II	3	19CIE304	Transportation Engg II	2	Extra assignments are given for balancing the credit
7	15CVL491	Professional project	2	19CIE491	Professional project	2	
7	15CVL495	Project phase I	2	19CIE495	Minor project	2	
8	15CVL499	Project phase II	10	19CIE499	Project	10	

ANNEXURE-1

EQUIVALENT COURSES (2015 and 2019 Curricula)

COMPUTER SCIENCE & ENGINEERING

2015 Curriculum				2019 Curriculum				Suggestions for Courses without equivalence/ Credit Variation/Change in Evaluation Pattern
Sem	Code	Course	Credits	Code	Course	L-T-P	Credits	
1	15CSE100	Computational Thinking and Problem Solving	4	19CSE100	Problem Solving and Algorithmic Thinking	2 1 3	4	
2	15CSE102	Computer Programming	3	19CSE102	Computer Programming	3 0 3	4	Those failed in 15CSE102 will repeat the course 19CSE102
2	15CSE180	Computer Programming Lab	1					Backlog in lab cleared through I grade mode or special Lab fast-track
2	15CSE111	Computer Science Essentials	3	19CSE101	Computer Systems Essentials	3 0 3	4	Those failed in 15CSE111 will repeat the course 19CSE101
3	15CSE201	Data Structures and Algorithms	4	19CSE212	Data Structures and Algorithms	3 0 3	4	Those failed in 15CSE201 will repeat the course 19CSE212
3	15CSE281	Data Structures Lab	1					Backlog in lab cleared through I grade mode or special Lab fast-track
3	15CSE202	Object Oriented Programming	3	19CSE204	Object Oriented Paradigm	2 0 3	3	
3	15CSE282	Object Oriented Programming Lab	1					Backlog in lab cleared through I grade mode or special Lab fast-track
3	15ECE202	Digital Circuits and Systems	4	19CSE203	Digital Electronics	3 1 0	4	
3	15ECE281	Digital Circuits and Systems Lab	1	19CSE281	Digital Electronics Lab	0 0 3	1	
4	15CSE211	Design and Analysis of Algorithms	4	19CSE302	Design and Analysis of Algorithms	3 0 3	4	
4	15CSE212	Introduction to Embedded Systems	3	19CSE303	Embedded Systems	3 0 3	4	
4	15CSE285	Embedded Systems Lab	1					Backlog in lab cleared through I grade mode or special Lab fast-track
4	15CSE213	Operating Systems	4	19CSE213	Operating Systems	3 0 3	4	Those failed in 15CSE213 will repeat the course 19CSE213
4	15CSE286	Operating Systems Lab	1					Backlog in lab cleared through I grade mode or special Lab fast-track
5	15CSE301	Computer Organization and Architecture	3	19CSE211	Computer Organization and Architecture	3 0 3	4	Those failed in 15CSE301 will repeat the course 19CSE211
5	15CSE381	Computer Organization and Architecture Lab	1					Backlog in lab cleared through I grade mode or special Lab fast-track
5	15CSE302	Database Management Systems	3	19CSE202	Database Management Systems	3 0 3	4	Those failed in 15CSE302 will repeat the course 19CSE202
5	15CSE303	Theory of Computation	3	19CSE214	Theory of Computation	3 0 0	3	
5	15LIV390	Live-in-Labs	[3]	19LIV390	Live-in –Labs***		[3]	
6	15CSE311	Compiler Design	4	19CSE401	Compiler Design	2 0 3	3	Minimum 3 additional eval will be given to adjust 1 credit
6	15CSE385	Compiler Design Lab	1					Backlog in lab cleared through I grade mode or special Lab fast-track
6	15CSE312	Computer Networks	3	19CSE301	Computer Networks	3 0 3	4	Those failed in 15CSE312 will repeat the course 19CSE301
6	15CSE386	Computer Networks Lab	1					Backlog in lab cleared through I grade mode or special Lab fast-track
6	15CSE313	Software Engineering	3	19CSE314	Software Engineering	2 0 3	3	
6	15CSE387	Open Lab	2					No equivalent course, any alternative course as approved by Chairperson."
7	15CSE401	Machine Learning and Data Mining	3	19CSE305	Machine Learning	3 0 3	4	Those failed in 15CSE401 will repeat the course 19CSE305
7	15CSE481	Machine Learning and Data Mining Lab						Backlog in lab cleared through I grade mode or special Lab fast-track
7	15CSE402	Structure and Interpretation of Computer Programs	4					No equivalent course.Can be taken as contact course or any alternative course as approved by Chairperson.
7	15CSE495	Project Phase I	2	19CSE491/ 19CSE495	Project Phase I/Seminar	0 0 6	2	
7	15CSE490	Live-in-Labs	[3]	19LIV490	Live-in –Labs***		[3]	
8	15CSE411	Software Project Management	3	19CSE358	Software Project Management - Free Elective	3 0 0	3	
8	15CSE499	Project Phase II	10	19CSE499	Project - Phase – 2	0 0 30	10	
Elective	15CSE330	Information Technology Essentials	3	19CSE466	Foundation of Information Technology	2 0 3	3	Evaluation pattern altered
Elective	15CSE331	Advanced Algorithms and Analysis	3	19CSE459	Advanced Algorithms and Analysis	3 0 0	3	
Elective	15CSE332	Advanced Computer Architecture	3					No equivalence course.In-lieu can be opted
Elective	15CSE334	Big Data Analytics	3	19CSE357	Big Data Analytics	2 0 3	3	Evaluation pattern altered
Elective	15CSE335	Bioinformatics	3					No equivalence course.In-lieu can be opted
Elective	15CSE336	Biometrics	3	19CSE440	Biometrics	3 0 0	3	
Elective	15CSE337	Cloud Computing and Services	3	19CSE445	Cloud Computing	2 0 3	3	Evaluation pattern altered
Elective	15CSE338	Computational Intelligence	3	19CSE458	Computational Intelligence	2 0 3	3	Evaluation pattern altered
Elective	15CSE339	Computer Systems Engineering	3					No equivalence course.In-lieu can be opted
Elective	15CSE340	Computer Vision	3	19CSE435	Computer Vision	3 0 0	3	
Elective	15CSE341	Cryptography	3	19CSE331	Cryptography	3 0 0	3	
Elective	15CSE342	Data Compression	3					No equivalence course.In-lieu can be opted
Elective	15CSE343	Design Patterns	3					No equivalence course.In-lieu can be opted
Elective	15CSE344	Digital Watermarking	3					No equivalence course.In-lieu can be opted
Elective	15CSE345	Distributed Embedded Systems	3					No equivalence course.In-lieu can be opted
Elective	15CSE347	Enterprise Architecture	3					No equivalence course.In-lieu can be opted
Elective	15CSE349	Information Coding Techniques	3					No equivalence course.In-lieu can be opted
Elective	15CSE350	Information Retrieval	3	19CSE454	Information Retrieval	2 0 3	3	Evaluation pattern altered
Elective	15CSE351	Information Security	3	19CSE332	Information Security	3 0 0	3	
Elective	15CSE352	Intelligent Systems	3					No equivalence course.In-lieu can be opted
Elective	15CSE353	Introduction to Intellectual Property Rights	3					No equivalence course.In-lieu can be opted
Elective	15CSE355	Modelling and Simulation	3					No equivalence course.In-lieu can be opted
Elective	15CSE358	Natural Language Processing	3	19CSE453	Natural Language Processing	2 0 3	3	Evaluation pattern altered
Elective	15CSE360	Parallel and Distributed Computing	3					No equivalence course.In-lieu can be opted
Elective	15CSE361	Pattern Recognition	3	19CSE432	Pattern Recognition	3 0 0	3	
Elective	15CSE362	Pervasive Computing	3	19CSE442	Pervasive and Ubiquitous Systems	3 0 0	3	
Elective	15CSE363	Principles of Digital Image Processing	3	19CSE431	Digital Image Processing	2 0 3	3	Evaluation pattern altered
Elective	15CSE364	Real-Time Computing Systems	3	19CSE444	Real-Time Systems	3 0 0	3	
Elective	15CSE365	Scientific Computing	3					No equivalence course.In-lieu can be opted
Elective	15CSE366	Semantic Web	3	19CSE452	Semantic Web	2 0 3	3	Evaluation pattern altered
Elective	15CSE367	Service-oriented Architecture	3					No equivalence course.In-lieu can be opted
Elective	15CSE368	Software Quality Assurance	3					No equivalence course.In-lieu can be opted
Elective	15CSE369	Spatiotemporal Data Management	3	19CSE443	Spatiotemporal data management	3 0 0	3	
Elective	15CSE370	Wireless and Mobile Communication	3	19CSE342	Wireless and Mobile Communications	3 0 0	3	
Elective	15CSE371	Wireless and Mobile Computing	3					No equivalence course.In-lieu can be opted
Elective	15CSE372	Wireless Sensor Networks	3	19CSE339	Wireless Sensor Networks	3 0 0	3	
Elective	15CSE378	Introduction to Game Theory	3	19CSE462	Introduction to Game Theory	3 0 0	3	
Elective	15CSE431	Foundations of Data Science	3	19CSE304	Foundations of Data Science	2 0 3	3	Evaluation pattern altered
Elective	15CSE333	Advanced Database Management Systems	3					No equivalence course.In-lieu can be opted
Elective	15CSE346	Embedded Programming	3					No equivalence course.In-lieu can be opted
Elective	15CSE348	Human Computer Interface	3					No equivalence course.In-lieu can be opted
Elective	15CSE356	Multimedia Databases	3					No equivalence course.In-lieu can be opted
Elective	15CSE357	Nand2tetris: Building Computers from First Principles	3					No equivalence course.In-lieu can be opted
Elective	15CSE359	OS for Smart Devices (Android and IOS)	3					No equivalence course.In-lieu can be opted
Elective	15CSE376	Net Centric Programming	3	19CSE461	Net-Centric Programming	2 0 3	3	
Elective	15CSE375	Android Application Development	3	19CSE463	Mobile Application Development	2 0 3	3	
Elective	15CSE380	Neural Networks and Deep Learning	3	19CSE456	Neural Networks and Deep Learning	2 0 3	3	

ANNEXURE-1

EQUIVALENT COURSES (2015 and 2019 Curricula)

ELECTRONICS AND COMMUNICATION ENGINEERING

2015 Curriculum					2019 Curriculum			Suggestions for Courses without equivalence/ Credit Variation/Change in Evaluation Pattern
Sem	Course Code	Course Title	Cr	Equivalent	Course Title	L T P	Cr	
2	15ECE111	Solid State Devices	3	19ECE112	Electronic Devices and Circuits	3 0 0	3	
2	15ECE112	Fundamentals of Electrical Technology	4	19EEE100	Basic Electrical and Electronics Engineering	3 0 0	3	The subject handling faculty can provide the tutorial for balancing the credit
3	15ECE201	Applied Electromagnetics	4	19ECE202	Applied Electromagnetics	3 1 0	4	
3	15ECE202	Digital Circuits and Systems	4	19ECE204	Digital Electronics and Systems	3 1 0	4	
3	15ECE203	Network Theory	3	19ECE111	Circuit Theory	3 0 0	3	
3	15ECE204	Signals Processing I	4	19ECE203	Signals and Systems	3 1 0	4	
3	15ECE281	Digital Circuits and Systems Lab.	1	19ECE282	Digital Electronics and Systems Lab	0 0 3	1	
3	15ECE282	Signals Processing I Lab.	1					Vacation Courses can be preferred
4	15ECE211	Electronic Circuits	4	19ECE201	Analog Electronic Circuits	3 0 0	3	The subject handling faculty can provide the tutorial for balancing the credit
4	15ECE212	Signal Processing II	4	19ECE211	Digital Signal Processing	3 0 0	3	
4	15ECE213	Transmission Lines and Waveguides	3	19ECE213	Transmission Lines and Radiating Systems	3 1 0	4	
4	15ECE285	Digital Signal Processing Lab.	1	19ECE282	Digital Signal Processing Lab	0 0 3	1	
4	15ECE286	Electronic Circuits Lab.	1	19ECE281	Analog Electronics Lab	0 0 3	1	
5	15ECE301	Communication Theory	4	19ECE214	Communication Theory	3 1 0	4	
5	15ECE302	Control Systems Engineering	4	19ECE301	Control Theory	3 1 0	4	
5	15ECE303	Linear Integrated Circuits	3	19ECE212	Linear Integrated Circuits	3 0 0	3	
5	15ECE304	Microprocessor and Microcontroller	4	19ECE304	Microcontrollers and Interfacing	3 0 3	4	
5	15ECE381	Circuits and Communication Lab.	1	19ECE283	Linear Integrated Circuits Lab	0 0 3	1	
5	15ECE382	Microcontroller Lab.	1					To be checked with EEE department if any equivalent course is offered / Vacation course option can be preffered
6	15ECE311	Data Communication and Networking	3	19ECE311	Computer Networks	4 0 0	4	
6	15ECE312	Digital Communication	4	19ECE302	Digital Communication	3 0 0	3	The subject handling faculty can provide the tutorial for balancing the credit
6	15ECE313	VLSI Design	3	19ECE313	VLSI Design	3 0 0	3	
6	15ECE314	Computer System Architecture	3					To be checked with CSE department if any equivalent course is offered / Runtime option can be preffered
6	15ECE385	Digital Communication Lab.	1	19ECE382	Communication Systems lab	0 0 3	1	
6	15ECE386	VLSI Design Lab.	1	19ECE383	VLSI Design Lab	0 0 3	1	
6	15ECE387	Open Lab.	2	19ECE384	Open Lab	0 0 3	1	The subject handling faculty can provide more presentation and review sessions for compensating the credit
7	15ECE401	Information Theory and Coding Techniques	4	19ECE312	Information Theory and Coding	3 0 0	3	Extra assignments are given for balancing the credit
7	15ECE402	Radio Frequency Engineering	4	19ECE303	Radio Frequency Engineering	3 0 0	3	The subject handling faculty can provide the tutorial for balancing the credit
7	15ECE481	Microwave Engineering Lab.	1	19ECE381	RF and Simulation lab	0 0 3	1	
7	15ECE495	Project Phase I	2	19ECE495	Project Phase I	0 0 6	2	
8	15ECE499	Project Phase II	10	19ECE499	Project Phase II	0 0 30	10	

ANNEXURE-1

EQUIVALENT COURSES (2015 and 2019 Curricula)

ELECTRICAL AND ELECTRONICS ENGINEERING

2015 curriculum				2019 curriculum						Suggestions for Courses without equivalence/ Credit Variation/Change in Evaluation Pattern
Semester	Course Code	Course Title	Credits	Course Code	Course Title	L	T	P	Credits	
2	15EEE111	Fundamentals of Electrical and Electronics Engineering	4	19EEE100	Basic Electrical and Electronics Engineering Offered to AERO, MECH, CIVIL AND ECE	3	0	0	3	Extra assignments are given for balancing the credit
2	15MEC111	Fundamentals of Mechanical Engineering	3	19EEE205	Fundamentals of Mechanical Engineering	2	0	0	2	Extra assignments are given for balancing the credit
2	15EEE180	Workshop B	1	19EEE113	Electrical Engineering Practice	1	0	3	2	
3	15EEE201	Analog Electronic Circuits	4	19EEE114	Electronic Circuits	3	0	3	4	2019 regulation has lab and theory together. 2015 regulation student can attend for the respective theory or lab based on
3	15EEE282	Electronic Circuits and Simulation Lab I	1							
3	15EEE202	Electric Circuits	4	19EEE112	Electric Circuits	3	0	3	4	2019 regulation has lab and theory together. 2015 regulation student can attend for the respective theory or lab based on
3	15EEE281	Electric Circuits Lab	1							
3	15EEE203	Electromagnetic Theory	4	19EEE201	Electromagnetic Theory	3	0	0	3	Extra assignments are given for balancing the credit
4	15EEE211	Analog Integrated Circuits	3	19EEE202	Analog Integrated Circuits	3	0	3	4	2019 regulation has lab and theory together. 2015 regulation student can attend for the respective theory or lab based on
4	15EEE287	Electronic Circuits and Simulation Lab II	1							
4	15EEE212	Electrical Machines I	4	19EEE213	Electrical Machines I	3	0	3	4	2019 regulation has lab and theory together. 2015 regulation student can attend for the respective theory or lab based on
4	15EEE285	Electrical Machines Lab I	1							
4	15EEE213	Electrical Measurements	3	19EEE204	Electrical Measurements	3	0	3	4	2019 regulation has lab and theory together. 2015 regulation student can attend for the respective theory or lab based on
4	15EEE286	Electrical Measurements Lab	1							
5	15EEE301	Control Systems	3	19EEE211	Control Systems	3	0	3	4	
5	15EEE302	Digital Systems	3	19EEE203	Digital Systems	3	0	3	4	
5	15EEE303	Electrical Machines II	3	19EEE303	Electrical Machines II	3	0	3	4	2019 regulation has lab and theory together. 2015 regulation student can attend for the respective theory or lab based on
5	15EEE382	Electrical Machines Lab II	1							
5	15EEE304	Signals and Systems	3	19EEE214	Signals and Systems	3	0	3	4	2019 regulation has lab and theory together. 2015 regulation student can attend for the respective theory or lab based on
5	15EEE381	Digital Systems and Signals Lab	1							
5	15LIV390	Live-in-Lab	3*	19LIV390	[Live in Labs]***				[3]	
5	15MEC305	Thermal Engineering and Fluid Machinery	3							No equivalent course.Can be taken as contact course or any alternative course as approved by Chairperson.
6	15EEE311	Digital Signal Processing	3	19EEE301	Digital Signal Processing	3	0	3	4	
6	15EEE312	Electrical Energy Systems I	3	19EEE212	Electrical Energy Systems I	3	0	3	4	
6	15EEE313	Power Electronics	3	19EEE304	Power Electronics	3	0	3	4	2019 regulation has lab and theory together. 2015 regulation student can attend for the respective theory or lab based on
6	15EEE386	Power Electronics Lab	1							
6	15EEE314	Microcontroller and Applications	3	19ELC212	Microcontrollers and Applications	3	0	3	4	2019 regulation has lab and theory together. 2015 regulation student can attend for the respective theory or lab based on
6	15EEE385	DSP and Microcontroller Lab	1							
6	15EEE387	Open Lab	2	19EEE381	Open Lab	0	0	3	1	Extra assignments are given for balancing the credit
7	15EEE401	Electrical Drives and Control	4	19EEE312	Electric Drives and Control	3	0	3	4	2019 regulation has lab and theory together. 2015 regulation student can attend for the respective theory or lab based on
7	15EEE481	Drives and Control Lab	1							
7	15EEE402	Electrical Energy Systems II	4	19EEE302	Electrical Energy Systems II	3	0	3	4	2019 regulation has lab and theory together. 2015 regulation student can attend for the respective theory or lab based on
7	15EEE482	Power Systems Lab	1							
7	15EEE495	Project Phase I	2	19EEE495	Project Phase I	0	0	6	2	
7	15LIV490	Live-in-Lab	3*	19LIV490	[Live in Labs]*** - 6th semester				[3]	
8	15EEE499	Project Phase II	10	19EEE499	Project Phase II	0	0	30	10	

ANNEXURE-1

EQUIVALENT COURSES (2015 and 2019 Curricula)

MECHANICAL ENGINEERING

2015 Curriculum						2019 Curriculum				Suggestions for Courses without equivalence/ Credit Variation/Change in Evaluation Pattern
Sem	Course Code	Course Title	LTP C	Cr	Equivalent	Course Title	L T P Cr		Cr	
1	15MEC180	Workshop A	002 1	1	19MEE181	MANUFACTURING PRACTICE	003 1		1	
1	15MEC100	Engineering Drawing - CAD	202 3	3						No equivalent course.Department to suggest options if there are any failures
2	15MEC101	Engineering Drawing - CAD II	202 3	3						No equivalent course.Department to suggest options if there are any failures
2	15MEC102	Engineering Mechanics	300 3	3	19MEE111	Engineering Mechanics	310 4		4	
3	15MEC201	Engineering Thermodynamics	300 3	3	19MEE201	Thermodynamics	310 4		4	
3	15MEC204	Mechanics of Solids	300 3	3	19MEE203	Mechanics of solids	310 4		4	
3	15MEC203	Material Science and Metallurgy	300 3	3	19MEE204	Metallurgy and Material science	300 3		3	
3	15MEC281	Material Testing and Metallurgy Lab	002 1	1	19MEE281	Material Testing and Metallurgy Lab	003 1		1	
3	15MEC202	Machine Drawing	202 3	3	19MEE305	Machine Drawing	203 3		3	
4	15MEC211	Fluid Mechanics and Machinery	400 4	4	19MEE212	Fluid Mechanics and Machinery	310 4		4	
4	15MEC213	Manufacturing Process I	300 3	3						No equivalent course.Can be taken as contact course or any alternative course as approved by Chairperson.
4	15MEC212	Kinematics of Machines	302 4	4	19MEE214	Kinematics of Machines	303 4		4	
4	15MEC285	Fluid Mechanics and Machinery Lab	002 1	1						No equivalent course.Department to suggest options if there are any failures
5	15MEC304	Manufacturing Process II	300 3	3						No equivalent course.Can be taken as contact course or any alternative course as approved by Chairperson.
5	15MEC303	Heat Power Engineering	300 3	3	15MEE213	Heat Power Engineering	310 4		4	
5	15MEC301	Design of Machine Elements I	300 3	3	19MEE301	Design of Machine Elements - I	300 3		3	
5	15MEC302	Dynamics of Machines	300 3	3	19MEE302	Dynamics of Machines	300 3		3	
5	15MEC381	Manufacturing Process Lab.	002 1	1						No equivalent course.Department to suggest options if there are any failures
5	15MEC382	Thermal Sciences Lab.	002 1	1	19MEE284	Thermal Science Laboratory	003 1		1	
6	15MEC314	Metrology and Measurements	300 3	3						No equivalent course.Can be taken as contact course or any alternative course as approved by Chairperson.
6	15MEC385	Heat Transfer and Thermal Analysis Lab.	002 1	1	19MEE381	Heat Transfer Laboratory	003 1		1	
6	15MEC313	Introduction to Finite Element Methods	302 4	4	19MEE314	Introduction to Finite Element Method	303 4		4	
6	15MEC311	Design of Machine Elements II	310 4	4	19MEE313	Design of Machine Elements - II	210 3		3	Course is equivalent with one credit lower, where project component has been introduced with 40%weightage in evaluation pattern
6	15MEC386	Metrology and Measurements Lab.	002 1	1						Not equivalent course.Department to suggest options if there are any failures
7	15MEC401	ADVANCED FLUID MECHANICS	300 3	3	19MEE359	ADVANCED FLUID MECHANICS	303 3		3	This course is shifted to an elective course. 19MEE359 The compressible fluid mechanics concept is replaced with turbulent flow. 80% of the syllabus are matched with R2015 syllabus. Equivalent some extra asignments can be given to match that remaining 20 % of old 2015 syllabus
7	15MEC402	Control Engineering	300 3	3						No equivalent course.Can be taken as contact course or any alternative course as approved by Chairperson.
7	15MEC403	Industrial Robotics	300 3	3	19MEE434	Industrial Robotics	300 3		3	
7	15MEC404	Mechanical Vibrations	300 3	3						No equivalent course.Can be taken as contact course or any alternative course as approved by Chairperson.
7	15MEC481	Computer Integrated Manufacturing Lab.	002 1	1						No equivalent course.Department to suggest options if there are any failures
7	15MEC482	Machine Dynamics and Control Lab.	002 1	1	19MEE383	Machine Dynamics Laboratory	003 1		1	
7	15MEC495	Project Phase - 1	2 cr	2	19MEE495	Project Phase I	006 2		2	
8	15MEC411	Operations Research	300 3	3	19MEE306	Operations Research	203 3		3	
8	15MEC499	Project Phase II	10	10	19MEE499	Project Phase II	0030 10		10	
Elective	15MEC230	Aircraft Systems and Engineering	300 3	3						No equivalence course.In-lieu can be opted
Elective	15MEC231	Automotive Chassis Design	300 3	3						No equivalence course.In-lieu can be opted
Elective	15MEC233	Condition Monitoring and Diagnostic Maintenance	300 3	3	19MEE331	Machine Learning Based Condition Monitoring	300 3		3	
Elective	15MEC234	Design for Manufacture and Assembly.	300 3	3						No equivalence course.In-lieu can be opted
Elective	15MEC235	Fracture Mechanics	300 3	3	19MEE337	Fundamentals of Fracture Mechanics	300 3		3	
Elective	15MEC236	Materials Selection in Mechanical Design	300 3	3						No equivalence course.In-lieu can be opted
Elective	15MEC237	Mechatronics	300 3	3						No equivalence course.In-lieu can be opted
Elective	15MEC238	Micro-Electro Mechanical Systems	300 3	3						No equivalence course.In-lieu can be opted
Elective	15MEC239	Modelling and Simulation of Engineering Systems	300 3	3						No equivalence course.In-lieu can be opted
Elective	15MEC240	Optimization Techniques in Engineering	300 3	3						No equivalence course.In-lieu can be opted
Elective	15MEC241	Pressure Vessel Design	300 3	3						No equivalence course.In-lieu can be opted

ANNEXURE-1

EQUIVALENT COURSES (2015 and 2019 Curricula)

MECHANICAL ENGINEERING

2015 Curriculum					2019 Curriculum				Suggestions for Courses without equivalence/ Credit Variation/Change in Evaluation Pattern
Sem	Course Code	Course Title	LTP C	Cr	Equivalent	Course Title	L T P C	Cr	
Elective	15MEC242	Theory of Elasticity	300 3	3	19MEE339	Theory of Elasticity	300 3	3	
Elective	15MEC243	Tool Design	300 3	3	19MEE335	Tool Design	300 3	3	
Elective	15MEC261	Advanced Casting Technology	300 3	3	19MEE437	Advanced Casting Technology	300 3	3	
Elective	15MEC262	Advanced Manufacturing Processes	300 3	3	19MEE438	Advanced Manufacturing Processes	300 3	3	
Elective	15MEC263	Advanced Materials and Processes	300 3	3	19MEE439	Advanced Materials and Processes	300 3	3	
Elective	15MEC264	Advanced Metrology and Sensing Systems	300 3	3	19MEE440	Advanced Metrology and Sensing Systems	300 3	3	
Elective	15MEC266	CNC Machines	300 3	3	19MEE431	CNC Machines	300 3	3	
Elective	15MEC267	Composite Materials and Processing	300 3	3	19MEE432	Composite Materials and Design	300 3	3	
Elective	15MEC268	Metal Forming Technology	300 3	3					No equivalence course.In-lieu can be opted
Elective	15MEC269	Micro-manufacturing	300 3	3	19MEE442	Micro-Manufacturing	300 3	3	
Elective	15MEC270	Modern Practices in Product Design and Manufacture	300 3	3					No equivalence course.In-lieu can be opted
Elective	15MEC271	Non-Destructive Testing	300 3	3	19MEE443	Non-Destructive Testing	300 3	3	
Elective	15MEC272	Product Cost Estimation	300 3	3	19MEE444	Product Cost Estimation	300 3	3	
Elective	15MEC273	Quality Control and Reliability Engineering	300 3	3	19MEE445	Quality Control and Reliability Engineering	300 3	3	
Elective	15MEC274	Simulation, Modelling of Manufacturing Systems	300 3	3	19MEE446	Simulation Modeling of Manufacturing Systems	300 3	3	
Elective	15MEC275	Design Thinking	2 0 2 3	3	19MEE311	Design Thinking	103 2	2	
Elective	15MEC276	ADDITIVE MANUFACTURING	3 0 2 4	3	19MEE435	Additive Manufacturing	300 3	3	
Elective	15MEC265	Advanced Welding Technology	300 3	3	19MEE441	Advanced Welding Technology	300 3	3	
Elective	15MEC246	Automotive Electronics	300 3	3					No equivalence course.In-lieu can be opted
Elective	15MEC247	Combustion Engineering	300 3	3					No equivalence course.In-lieu can be opted
Elective	15MEC248	Computational Fluid Dynamics	300 3	3					No equivalence course.In-lieu can be opted
Elective	15MEC249	Design of Thermal Systems	300 3	3					No equivalence course.In-lieu can be opted
Elective	15MEC250	Fluid Power Drives and Controls.	300 3	3					No equivalence course.In-lieu can be opted
Elective	15MEC251	Fundamentals of Nuclear Engineering	300 3	3					No equivalence course.In-lieu can be opted
Elective	15MEC252	Gas Dynamics and Jet Propulsion	300 3	3	19MEE352	Gas Dynamics and Jet Propulsion	300 3	3	
Elective	15MEC253	Internal Combustion Engines and Pollution Control	300 3	3	19MEE358	IC Engines and Emission	300 3	3	
Elective	15MEC254	Petroleum Refinery Engineering	300 3	3			300 3		No equivalence course.In-lieu can be opted
Elective	15MEC255	Power Plant Engineering	300 3	3	19MEE354	Power Plant Engineering	300 3	3	
Elective	15MEC256	Refrigeration and Air Conditioning	300 3	3					No equivalence course.In-lieu can be opted
Elective	15MEC257	Renewable Sources of Energy	300 3	3					No equivalence course.In-lieu can be opted
Elective	15MEC258	Turbomachinery	300 3	3	19MEE355	Turbo Machinery	300 3	3	
Elective	15MEC232	Automotive Technology	300 3	3	19MEE356	Automotive Technology	300 3	3	
Elective	15MEC331	Engineering Economic Analysis	300 3	3	19MEE341	Engineering Economic Analysis	300 3	3	
Elective	15MEC332	Enterprise Management	300 3	3					No equivalence course.In-lieu can be opted
Elective	15MEC333	Financial Management	300 3	3					No equivalence course.In-lieu can be opted
Elective	15MEC334	Industrial Engineering	300 3	3	19MEE401	Industrial Engineering	300 3	3	
Elective	15MEC335	Lean Manufacturing	300 3	3	19MEE342	Lean Manufacturing	300 3	3	
Elective	15MEC336	Managerial Statistics	300 3	3					No equivalence course.In-lieu can be opted
Elective	15MEC337	Marketing Management	300 3	3					No equivalence course.In-lieu can be opted
Elective	15MEC338	Operations Management	300 3	3					No equivalence course.In-lieu can be opted
Elective	15MEC339	Project Management	300 3	3					No equivalence course.In-lieu can be opted
Elective	15MEC340	Supply Chain Management	300 3	3					No equivalence course.In-lieu can be opted
Elective	15MEC341	Total Quality Management	300 3	3					No equivalence course.In-lieu can be opted

ANNEXURE-1

EQUIVALENT COURSES (2015 and 2019 Curricula)

MATHEMATICS, ENGLISH, SCIENCES & COMMON SUBJECTS

2015 Curriculum				2019 Curriculum				Suggestions for Courses without equivalence/ Credit Variation/Change in Evaluation Pattern
Dept	Course Code	Course Name	Cr	Department	Course Code	Course Name	Cr	
All	15MAT111	Calculus and Matrix Algebra	3	Aero, CCE, Civil, CSE, EAC, ECE, EEE, ELC, Mech	19MAT101	Single Variable Calculus	1	
				Aero, CCE, Civil, CSE, EAC, ECE, EEE, ELC, Mech	19MAT102	Matrix Algebra	2	
All	15MAT121	Vector Calculus and Ordinary Differential Equations	4	Aero, CCE, Civil, CSE, ECE, EEE, ELC	19MAT111	Multivariable Calculus	2	
				Aero, EEE, ELC	19MAT106	Ordinary Differential Equations	2	
CSE	15MAT201	Discrete Mathematics	4	CSE, EAC	19MAT115	Discrete Mathematics	4	
Aero, ECE	15MAT202	Linear Algebra	3	Aero, CCE, Civil, CSE, ECE	19MAT112	Linear Algebra	3	
EEE	15MAT203	Transforms and Complex Analysis	4	EEE, ELC	19MAT116	Laplace Transform	1	
					19MAT214	Fourier Transform and Complex Analysis	3	
Aero, Chem, Civil, EIE, Mech	15MAT204	Transforms and Partial Differential Equations	3	Civil	19MAT208	Transforms and Partial Differential Equations	3	
Aero	15MAT211	Calculus of Variations and Numerical Methods	3			----		No equivalent course.Can be taken as contact course or any alternative course as approved by Chairperson, Maths
Civil, EIE	15MAT212	Complex Analysis and Numerical Methods	3	EEE, ELC	19MAT214	Fourier Transform and Complex Analysis	3	
CSE, ECE	15MAT213	Probability and Random Processes	4	CCE, CSE, EAC, ECE	19MAT205	Probability and Random Processes	4	
Chem, Civil, EEE, EIE, Mech	15MAT214	Probability and Statistics	3	EEE, ELC	19MAT216	Probability and Statistics	3	
CSE	15MAT301	Linear Algebra, Queueing Theory and Optimization	4	EAC	19MAT209	Linear Algebra and Optimization Techniques	4	
Chem, Mech	15MAT302	Numerical Methods	3	Aero	19MAT211	Numerical Computing	3	Both 19MAT211 and 19MAT302 are equivalent to 15MAT302. Students can register which ever course is available during the semester.
				(OR)				
				Chem	19MAT302	Numerical Methods	3	
ECE, EEE	15MAT303	Optimization Techniques	3	CCE, ECE, EEE	19MAT213	Optimization Techniques	3	
All	15PHY100	Physics	3			----		No equivalent course.Can be taken as contact course if the number of failures , If more failures then can be offered in Runtime Mode
All	15PHY181	Physics Lab	1	Circuit Branches	19PHY181	Engineering Physics A Lab	1	
All				Non Circuit Branches	19PHY182	Engineering Physics B Lab	1	
All	15PHY230/PHY271	Advanced Classical Dynamics	3	All	19PHY340	ADVANCED CLASSICAL DYNAMICS	3	
All	15PHY233/PHY277	Biophysics and Biomaterials	3					No equivalent course.In-lieu can be opted
All	15PHY234	Introduction to Computational Physics	3					No equivalent course.In-lieu can be opted
All	15PHY238/PHY250	Electrical Engineering Materials	3	All	19PHY342	ELECTRICAL ENGINEERING MATERIALS	3	
All	15PHY239/PHY253	Electromagnetic Fields and Waves	3					No equivalent course.In-lieu can be opted
All	15PHY240	Electronic Material Sciences	3					No equivalent course.In-lieu can be opted
All	15PHY241/PHY261	Lasers in Material Processing	3					No equivalent course.In-lieu can be opted
All	15PHY243/PHY254	Microelectronic Fabrication	3					No equivalent course.In-lieu can be opted
All	15PHY245	Nuclear Energy – Principles and Applications	3					No equivalent course.In-lieu can be opted
All	15PHY247/PHY276	Photovoltaics	3					No equivalent course.In-lieu can be opted
All	15PHY248/PHY260	Physics of Lasers and Applications	3	All	19PHY331	PHYSICS OF LASERS AND APPLICATIONS	3	
All	15PHY250	Quantum Physics and Applications	3					No equivalent course.In-lieu can be opted
All	15PHY251/PHY264	Thin Film Physics	3					No equivalent course.In-lieu can be opted
All	15PHY331/PHY278	Astronomy	3					No equivalent course.In-lieu can be opted
All	15PHY333/PHY263	Concepts of Nanophysics and Nanotechnology	3	All	19PHY341	CONCEPTS OF NANOPHYSICS AND NANOTECHNOLOGY	3	
All	15PHY335/PHY270	Medical Physics	3					No equivalent course.In-lieu can be opted
All	15PHY338/PHY252	Physics of Semiconductor Devices	3	All	19PHY343	PHYSICS OF SEMICONDUCTOR DEVICES	3	
All	15PHY532/PHY274	Astrophysics	3	All	19PHY339	ASTROPHYSICS	3	
All	15PHY535	Earth's Atmosphere	3					No equivalent course.In-lieu can be opted
All	15PHY536	Earth's Structure and Evolution	3					No equivalent course.In-lieu can be opted
All	15PHY540	Nonlinear Dynamics	3					No equivalent course.In-lieu can be opted
All	15PHY542	Optoelectronic Devices	3					No equivalent course.In-lieu can be opted
All	15CHY100	Chemistry	3					No equivalent course.Can be taken as contact course if the number of failures , If more failures then can be offered in Runtime Mode
All	15CHY181	Chemistry Lab	1					Not equivalent course.Department to suggest options if there are any failures
All	15CHY239/CHY272	Computational Chemistry and Molecular Modelling	3	All	19CHY243	Computational Chemistry and Molecular Modell	3	
All	15CHY241/CHY271	Electrochemical Energy Systems and Processes	3	All	19CHY236	Electrochemical Energy Systems and Processes	3	
All	15CHY243/CHY276	Fuels and Combustions	3	All	19CHY240	Fuels and Combustions	3	
All	15CHY244/CHY264	Green Chemistry and Technology	3					No equivalent course.In-lieu can be opted
All	5CHY245/CHY259	Instrumental Methods of Analysis	3	All	19CHY239	Instrumental Methods of Analysis	3	
All	15CHY331/CHY275	Batteries and Fuel Cells	3	All	19CHY241	Batteries and Fuel Cells	3	
All	15CHY332/CHY270	Corrosion Science	3	All	19CHY242	Corrosion Science	3	
All	15CHY242/CHY258	Environmental Chemistry	3					No equivalent course.In-lieu can be opted
All	15CHY244/CHY264	Green Chemistry and Technology	3	All	19CHY232 -	Green Chemistry and Technology	3	
All	15ENGI11	Communicative English	3					No equivalent course.In-lieu can be opted
All	15ENV300	Environmental Science and Sustainability	3					No equivalent course.In-lieu can be opted