

## 1.2 Academic Flexibility

1.2.1 Percentage of new courses introduced of the total number of courses across all programs offered during the last five years

Total number of new courses offered in last Five Years are -

2021-22	2020-21	2019-20	2018-19	2017-18
90	56	64	22	19

Total courses offered in last Five years – 532

Total new courses introduced in last five years – 251

**Percentage of new courses introduced – 47.18**

List of courses –

Programme code	Programme Name	Course Code	Course name	Year
UG-CS	Computer Engineering	CS641	Big Data Analytics	2017-18
UG-CS	Computer Engineering	CS643	Business Intelligence	2017-18
UG-CS	Computer Engineering	CS212	Database Management Systems	2017-18
UG-CH	Chemical Engineering	CH202	Material and Energy Balance	2017-18
UG-CH	Chemical Engineering	CH211	Momentum Transfer	2017-18
UG-CS	Computer Engineering	CS634	Network Security Techniques	2017-18
UG-CS	Computer Engineering	CS642	Virtualization and Cloud Computing	2017-18
UG-CS	Computer Engineering	CS644	Ad-hoc Wireless Network: Principle, Protocol and Applications	2017-18
PG-ME	Mechanical Engineering (Heat Power)	ME641	Advanced Air Conditioning and Refrigeration Technology	2017-18
UG-CV	Civil Engineering	CV211	Building Design & Construction	2017-18
UG-IT	Information Technology	IT201	Engineering Informatics	2017-18
UG-CH	Chemical Engineering	CH201	Environmental Science	2017-18
UG-ME	Mechanical Engineering	ME211	Fluid Mechanics	2017-18
UG-CV	Civil Engineering	CV202	Geospatial Engineering Technology	2017-18
UG-CV	Civil Engineering	CV212	Geotechnical Engineering	2017-18
PG-ME	Mechanical Engineering (Heat Power)	ME642	Industrial Hydraulics and Pneumatics	2017-18
UG-ME	Mechanical Engineering	ME212	Manufacturing Technology	2017-18
UG-ME	Mechanical Engineering	ME201	Material Engineering	2017-18
UG-ET	Electronics and Telecommunication Engineering	ET201	System Engineering	2017-18
UG- B Tech	Common to all programs	HP303	Basics of Entrepreneurship	2018-19



(Common)				
UG-CS	Computer Engineering	CS311	Descriptive Analytics	2018-19
UG-CS	Computer Engineering	CS321	Design and Analysis of Algorithm	2018-19
UG-CV	Civil Engineering	CV321	Design of Structures	2018-19
UG-CV	Civil Engineering	CV304	ETABS (Extended Three-Dimensional analysis of building system)	2018-19
UG-CS	Computer Engineering	CS331	Predictive Analytics	2018-19
UG- B Tech (Common)	Common to all programs	HP302	Professional Skills	2018-19
UG- B Tech (Common)	Common to all programs	HP301	Project Management	2018-19
UG-CS	Computer Engineering	CS307	Python for machine learning	2018-19
UG-CS	Computer Engineering	CS305	Python with kali linux	2018-19
UG-ME	Mechanical Engineering	ME322	Quality Assurance	2018-19
UG-CS	Computer Engineering	CS306	R Proramming	2018-19
UG-CH	Chemical Engineering	CH321	Separation Process	2018-19
UG-ME	Mechanical Engineering	ME304	Skill Development Lab (Autodesk Inventor)	2018-19
UG-ME	Mechanical Engineering	ME305	Skill Development Lab (CATIA)	2018-19
UG-CH	Chemical Engineering	CH304	Skill Development Lab 1	2018-19
UG-CV	Civil Engineering	CV302	Structural Analysis	2018-19
UG-CS	Computer Engineering	CS303	Theory of Computation	2018-19
UG-CV	Civil Engineering	CV322	Transportation Engineering	2018-19
UG-CV	Civil Engineering	CV323	Water Resources Engineering	2018-19
UG-IT	Information Technology	IT303	Web Technology	2018-19
UG-ME	Mechanical Engineering	ME313	Work Process Assessment	2018-19
UG-CH	Chemical Engineering	CH444	Bioprocess Technology	2019-20
UG-CH	Chemical Engineering	CH445	Chemical Process Safety	2019-20
UG-CH	Chemical Engineering	CH442	Energy Management and Audit	2019-20
UG-CH	Chemical Engineering	CH415	Environment Engineering	2019-20
UG-CS	Computer Engineering	CS404	Adv. Java	2019-20
UG-CV	Civil Engineering	CV444	Air & Noise Pollution and Control measures	2019-20
UG-CS	Computer Engineering	CS102	Applications Programming - Python	2019-20
UG-ET	Electronics and Telecommunication Engineering	ET442	Artificial Intelligence	2019-20
UG- B Tech (Common)	Common to all programs	HP403	Business Strategies	2019-20
UG-CS	Computer Engineering	CS443	Cloud & Virtualization	2019-20
UG-ME	Mechanical Engineering	ME421	Computational Fluid Dynamics	2019-20
UG-IT	Information Technology	IT451	Digital forensics	2019-20
UG-CS	Computer Engineering	CS441	Distributed System	2019-20
UG-CV	Civil Engineering	CV401	Drinking Water & Sanitary	2019-20





			Engineering	
UG-ME	Mechanical Engineering	ME405	Energy Audit	2019-20
UG-CH	Chemical Engineering	CH412	Energy Engineering	2019-20
UG-ET	Electronics and Telecommunication Engineering	ET452	Energy Management for IoT Devices	2019-20
UG-ME	Mechanical Engineering	ME444	Enterprise Resource Planning	2019-20
UG-CV	Civil Engineering	CV431	Estimation & Costing	2019-20
UG-IT	Information Technology	IT421	Ethical hacking & cyber laws/	2019-20
UG-CV	Civil Engineering	CV421	Financial Management	2019-20
UG-CV	Civil Engineering	CV441	Foundation Engineering	2019-20
UG- B Tech (Common)	Common to all programs	HP103	German	2019-20
UG-ME	Mechanical Engineering	ME401	Heating Ventilation & Air Conditioning	2019-20
UG-CS	Computer Engineering	CS431	Human Computer Interaction	2019-20
UG- B Tech (Common)	Common to all programs	HP105	Indian Constitution	2019-20
UG- B Tech (Common)	Common to all programs	HP106	Indian Constitution	2019-20
UG-CS	Computer Engineering	CS413	Information Retrieval	2019-20
UG- B Tech (Common)	Common to all programs	HP104	Japanese	2019-20
UG-CS	Computer Engineering	CS101	Logic Development-C Programming	2019-20
UG-ME	Mechanical Engineering	ME431	Noise Vibration & Harshness	2019-20
UG-ME	Mechanical Engineering	ME443	Non-Conventional Machining	2019-20
UG-IT	Information Technology	IT411	Operating System Administration	2019-20
UG-CV	Civil Engineering	CV451	Operation Research	2019-20
UG-ME	Mechanical Engineering	ME423	Operations Management	2019-20
UG-CS	Computer Engineering	CS452	Pattern Recognition	2019-20
UG-ME	Mechanical Engineering	ME413	Power Plant Engineering	2019-20
UG-CS	Computer Engineering	CS451	Practitioner's approach for data analytics	2019-20
UG-ME	Mechanical Engineering	ME412	Pressure Vessel Design	2019-20
UG-ET	Electronics and Telecommunication Engineering	ET422	Privacy and Security in IoT	2019-20
UG-CH	Chemical Engineering	CH451	Process Intensification and Integration	2019-20
UG-CH	Chemical Engineering	CH421	Process Optimization	2019-20
UG-ME	Mechanical Engineering	ME414	Product Lifecycle Management	2019-20
UG-ET	Electronics and Telecommunication Engineering	ET403	Programming in Java	2019-20
UG-CS	Computer Engineering	Cs403	Python with kali Linux	2019-20





UG-CS	Computer Engineering	CS402	R Programming	2019-20
UG-CV	Civil Engineering	CV413	Railway Engineering	2019-20
UG-ET	Electronics and Telecommunication Engineering	ET451	Real-Time Embedded System	2019-20
UG-CH	Chemical Engineering	CH101	Science of Nature	2019-20
UG-ME	Mechanical Engineering	ME404	Six Sigma	2019-20
UG-CH	Chemical Engineering	CH402	Skill Development Lab 2	2019-20
UG- B Tech (Common)	Common to all programs	HP402	Sociology	2019-20
UG-CS	Computer Engineering	CS401	Software Engineering, Testing and Quality Assurance.	2019-20
UG-ET	Electronics and Telecommunication Engineering	ET444	Speech Signal Processing	2019-20
UG-FY	First Year Engineering	AS107	Statistics and Integral Calculus	2019-20
UG-CH	Chemical Engineering	CH404	Summer Internship	2019-20
UG-CS	Computer Engineering	CS406	Summer Internship	2019-20
UG-CV	Civil Engineering	CV404	Summer Internship	2019-20
UG-ET	Electronics and Telecommunication Engineering	ET404	Summer Internship	2019-20
UG-EX	Electronics Engineering	EX404	Summer Internship	2019-20
UG-ME	Mechanical Engineering	ME406	Summer Internship	2019-20
UG-ME	Mechanical Engineering	ME453	Supply Chain Management	2019-20
UG-CS	Computer Engineering	CS442	Ubiquitous Systems	2019-20
UG-CV	Civil Engineering	CV403	Urban & Town Planning	2019-20
PG-EX	Electronics Engineering	EX532	Modern Technologies	2020-21
PG-EX	Electronics Engineering	EX531	Research Methodology	2020-21
PG-EX	Electronics Engineering	EX533	Technical Writing	2020-21
UG-BD	Bachelor of Design	21FD103	Applied Design Drawing: Technical	2020-21
PG-EX	Electronics Engineering	EX662	ASIC Design	2020-21
PG-CS	Computer Engineering	CS642	Business Intelligence	2020-21
PG-CS	Computer Engineering	CS544	Cloud Application Development and Management	2020-21
UG-BD	Bachelor of Design	21FD102	Colour	2020-21
UG-CS	Computer Engineering	CS223	Computer Graphics	2020-21
PG-CS	Computer Engineering	CS632	Computer Vision	2020-21
PG-EX	Electronics Engineering	EX661	Computer Vision	2020-21
UG-FY	First Year Engineering	AS502	Computing and Higher Mathematics	2020-21
UG-CS	Computer Engineering	CS227	Core Java	2020-21
UG-CS	Computer Engineering	CS226	CPP	2020-21
UG-BD	Bachelor of Design	21FD107	Design Evolution: Design History	2020-21





UG-BD	Bachelor of Design	21FD204	Design Thinking:- Problem Identification /Analysis/Solving	2020-21
UG-ET	Electronics and Telecommunication Engineering	ET224	Digital Prototyping	2020-21
UG-BD	Bachelor of Design	21FD201	Digital Tools: Digital Drawing	2020-21
UG-ET	Electronics and Telecommunication Engineering	ET231	Electromagnetic Theory and Applications	2020-21
UG-ME	Mechanical Engineering	ME105	Experimental Tools & techniques	2020-21
UG-BD	Bachelor of Design	21FD202	Form Space & Structure- II	2020-21
UG-BD	Bachelor of Design	21FD105	Form Space & Structure-I	2020-21
UG-CV	Civil Engineering	CV215	Geospatial Engineering	2020-21
PG-EX	Electronics Engineering	EX672	Hybrid and Electric Vehicle	2020-21
PG-CS	Computer Engineering	CS631	Information Retrieval	2020-21
UG-CH	Chemical Engineering	CH222	Inorganic and analytical chemistry	2020-21
PG-EX	Electronics Engineering	EX671	Internet of Things	2020-21
UG- B Tech (Common)	Common to all programs	HP203	Liberal Learning	2020-21
PG-CS	Computer Engineering	CS531	Management Systems	2020-21
UG-CH	Chemical Engineering	CH233	Mass Transfer	2020-21
UG-ME	Mechanical Engineering	ME221	Material Engineering	2020-21
UG-CV	Civil Engineering	CV214	Mechanics of fluids	2020-21
UG-CV	Civil Engineering	CV206	Mechanics of Solids	2020-21
UG-ET	Electronics and Telecommunication Engineering	ET233	Microcontroller & Appl.	2020-21
UG-BD	Bachelor of Design	21FD205	Model Making:II (Hard Material)	2020-21
UG-BD	Bachelor of Design	21FD104	Model Making-I: Soft Material	2020-21
PG-CS	Computer Engineering	CS532	Modern Technologies	2020-21
PG-ME	Mechanical Engineering (Heat Power)	ME532	Modern Technologies	2020-21
UG-CH	Chemical Engineering	CH223	Momentum Transfer	2020-21
PG-CS	Computer Engineering	CS633	Network Security Techniques	2020-21
UG- B Tech (Common)	Common to all programs	HP202	Professional Communication	2020-21
UG-CS	Computer Engineering	CS224	Programming lab	2020-21
UG-ET	Electronics and Telecommunication Engineering	ET235	Rapid Prototyping	2020-21
UG-BD	Bachelor of Design	21FD101	Representation Techniques: Free hand Drawing colours	2020-21
UG-ET	Electronics and Telecommunication Engineering	ET223	Signals & Systems	2020-21





UG-ME	Mechanical Engineering	ME241	Skill Development Course 1 (Industrial Measurements & Instrumentation)	2020-21
UG-ET	Electronics and Telecommunication Engineering	ET226	Skill Development Course Data Structures & Algorithms	2020-21
UG-CV	Civil Engineering	CV231	Skill Development Course MS Excel	2020-21
UG-CV	Civil Engineering	CV232	Skill Development Course Revit	2020-21
UG-BD	Bachelor of Design	21FD106	Society, Environment & Culture (IDS)- I	2020-21
UG-BD	Bachelor of Design	21FD206	Society/Culture/Environment (IDS)- II	2020-21
PG-ME	Mechanical Engineering (Heat Power)	ME674	Steam Engineering	2020-21
UG-ME	Mechanical Engineering	ME231	Strength of Materials	2020-21
UG-CV	Civil Engineering	CV216	Structural Analysis	2020-21
UG-BD	Bachelor of Design	21FD203	Technologies in Design: Material & Process	2020-21
UG-ME	Mechanical Engineering	ME232	Thermal Engineering	2020-21
UG-CS	Computer Engineering	CS35	.Net core	2021-22
UG-CS	Computer Engineering	CS351	Descriptive Analytics	2021-22
UG-CS	Computer Engineering	CS347	Design Analysis and Algorithms	2021-22
UG-BD	Bachelor of Design	DS20CD406	UI-UX fundamentals	2021-22
UG-BD	Bachelor of Design	DS20CD402	Advance digital tools	2021-22
UG-CV	Civil Engineering	CV327	Advanced mechanics of Solids	2021-22
UG-CV	Civil Engineering	CV334	Advanced Structural Analysis	2021-22
UG-EX	Electronics Engineering	EX471	AI in Robotics /Cognitive Robotics	2021-22
UG-CS	Computer Engineering	CS352	Artificial Intelligence	2021-22
UG-ME	Mechanical Engineering	ME353	Automobile System Design	2021-22
UG-CS	Computer Engineering	CS353	Cloud Computing Foundation	2021-22
UG-CS	Computer Engineering	CS356	Cloud Native Application Development	2021-22
UG-BD	Bachelor of Design	AE20UX402	Cognitive Ergonomics: Tools & Techniques	2021-22
UG-CS	Computer Engineering	CS348	Compiler Design	2021-22
UG-ME	Mechanical Engineering	ME371	Computer Aided Product Design	2021-22
UG-IT	Information Technology	IT352	Cyber Security and Forensics	2021-22
UG-ET	Electronics and Telecommunication Engineering	ET472	Data Management & Analytics	2021-22
UG-BD	Bachelor of Design	SE20PD401	Design Drawing –Digital: sketching & Rendering Techniques (Wacom)	2021-22
UG-BD	Bachelor of Design	SE20PD301	Design Drawing (product sketching & renderings)	2021-22

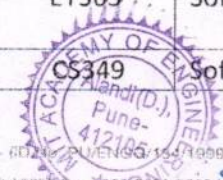


UG-BD	Bachelor of Design	DS20CD301	Design Drawing-Mediums & techniques	2021-22
UG-ME	Mechanical Engineering	ME344	Design of Transmission Systems	2021-22
UG-BD	Bachelor of Design	DS20PD306	Design Project 1- Simple Product Design SPD (Research methods included here)	2021-22
UG-BD	Bachelor of Design	DS20PD405	Design Project 2: Human-Product Interface (visual and organizational ergonomics)	2021-22
UG-BD	Bachelor of Design	DS 20CD405	Design Project- Redesign	2021-22
UG-BD	Bachelor of Design	SE20CD401	Digital illustration	2021-22
UG-BD	Bachelor of Design	SE20CD302	Digital tools – PS, Illustrator, InDesign	2021-22
UG-BD	Bachelor of Design	SE20PD303	Digital tools (CAID)- intro to CAID tools (Rhinceros 3D modelling)	2021-22
UG-BD	Bachelor of Design	SE20UX306	Digital Tools for UX & Typography	2021-22
UG-BD	Bachelor of Design	SE20PD406	Digital tools: CAID & Digital 3D rendering	2021-22
UG-ET	Electronics and Telecommunication Engineering	ET343	Embedded Systems Design	2021-22
UG- B Tech (Common)	Common to all programs	HP305	Employability Skills	2021-22
UG-CV	Civil Engineering	CV342	ETABS	2021-22
UG-BD	Bachelor of Design	DS20PD302	Form Studies 1: Radii Manipulation (form exploration/mock-up making)	2021-22
UG-BD	Bachelor of Design	DS20PD402	Form Studies 2: Form Transition (form exploration in foam/mock-up making)	2021-22
UG-BD	Bachelor of Design	DS20UX302	Fundamentals of User Centred Design	2021-22
UG-BD	Bachelor of Design	DS20CD305	Graphic composition & layouts/color –basics & color palettes	2021-22
UG-BD	Bachelor of Design	AE20PD403	How things work (Products, systems & services - understanding everyday science)	2021-22
UG-BD	Bachelor of Design	AE20CD307	IDS - Folk arts	2021-22
UG-BD	Bachelor of Design	SE20UX301	Illustration for Digital Products	2021-22
UG-BD	Bachelor of Design	AE20UX303	Introduction to Ergonomics	2021-22
UG-BD	Bachelor of Design	AE20PD304	Introduction to Ergonomics	2021-22
UG-BD	Bachelor of Design	DS20UX304	Introduction to Interaction Design	2021-22
UG-ET	Electronics and Telecommunication Engineering	ET372	IoT Network & Protocols	2021-22





UG-ME	Mechanical Engineering	ME341	Machine Design	2021-22
UG-BD	Bachelor of Design	DS20PD305	Materials & Processes + Advance mfg.	2021-22
UG-ME	Mechanical Engineering	ME381	Mechanical Simulations	2021-22
PG-CS	Computer Engineering	CS663	Network Security Techniques	2021-22
UG-CV	Civil Engineering	CV332	Operation Research	2021-22
UG-BD	Bachelor of Design	AE20UX305	Overview to Software Design Process & Modelling	2021-22
UG-BD	Bachelor of Design	DS 20CD404	Packaging design	2021-22
UG-BD	Bachelor of Design	DS 20CD403	Photography + Digital image making	2021-22
UG-ET	Electronics and Telecommunication Engineering	ET361	Power Electronics	2021-22
UG-CS	Computer Engineering	CS354	Predictive Analysis	2021-22
UG-ET	Electronics and Telecommunication Engineering	ET362	Principles of Communication Systems	2021-22
UG-CH	Chemical Engineering	CH 351	Process Engineering	2021-22
UG-CH	Chemical Engineering	CH371	Process Modelling and Simulation	2021-22
UG-ME	Mechanical Engineering	ME347	Quality Assurance	2021-22
UG-CS	Computer Engineering	CS344	Red Hat Linux	2021-22
UG-EX	Electronics Engineering	EX371	Robot Dynamics and Control	2021-22
UG-ME	Mechanical Engineering	ME352	Robot Fundamental & Kinematics	2021-22
UG-CH	Chemical Engineering	CH361	Separation Process	2021-22
UG-ET	Electronics and Telecommunication Engineering	ET345	Skill Development - Data Sciences	2021-22
UG-ET	Electronics and Telecommunication Engineering	ET464	Skill Development Course – Cloud Computing	2021-22
UG-ET	Electronics and Telecommunication Engineering	ET463	Skill Development Course - Embedded Linux	2021-22
UG-ET	Electronics and Telecommunication Engineering	ET465	Skill Development Course – MATLAB Based System Modeling	2021-22
UG-CH	Chemical Engineering	CH344	Skill Development Course 2 (ASPEN Plus)	2021-22
UG-CH	Chemical Engineering	CH364	Skill Development Course 3 (ASPEN EDR)	2021-22
UG-ET	Electronics and Telecommunication Engineering	ET344	Skill Development Course OOP JAVA / C++	2021-22
UG-ET	Electronics and Telecommunication Engineering	ET363	Soft Computing	2021-22
UG-CS	Computer Engineering	CS349	Software Engineering	2021-22





UG-CV	Civil Engineering	CV326	Solid Waste Management	2021-22
UG-BD	Bachelor of Design	DS20CD306	SPD - Design method	2021-22
UG-CV	Civil Engineering	CV344	STADDPRO	2021-22
UG-CV	Civil Engineering	CV307	Structural Design- I	2021-22
UG-CV	Civil Engineering	CV312	Structural Design-II	2021-22
UG-BD	Bachelor of Design	DS20UX405	Task Analysis & System Visualization	2021-22
UG-CS	Computer Engineering	CS342	Theory of Computation	2021-22
UG-BD	Bachelor of Design	SE20UX406	Tools for UXD – Photography & visual communication	2021-22
UG-CV	Civil Engineering	CV313	Transportation Engineering	2021-22
UG-BD	Bachelor of Design	AE20UX404	Trends in Interactive Technologies	2021-22
UG-ME	Mechanical Engineering	ME342	Turbomachines	2021-22
UG-BD	Bachelor of Design	SE20CD304	Typography / Calligraphy	2021-22
UG-CV	Civil Engineering	CV333	Unit Operations for Liquid Waste/Effluent Treatment	2021-22
UG-BD	Bachelor of Design	DS20UX401	User Experience Design Methods	2021-22
UG-BD	Bachelor of Design	DS20UX403	User Study	2021-22
UG-ME	Mechanical Engineering	ME363	Vehicle Dynamics	2021-22
UG-CV	Civil Engineering	CV343	VISSIM	2021-22
UG-CV	Civil Engineering	CV314	Water Resources Engineering	2021-22
UG-CS	Computer Engineering	CS346	Web Technology	2021-22
UG-BD	Bachelor of Design	SE20PD404	Workshop techniques: Material explorations & Model making skills	2021-22

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