

Name of The Institute: SIT

Name of the Programme: B.Tech. (Computer Science & Engineering)

Revision in Syllabus

Institute Code	Institute Name	Program me Code	Program Name	Catalog Course Code	Catalog Course Name	Course Type	Batch 2020	Batch 2021	Change in T-Code Yes / No	Change in course/Nature	Change in Pedagogy	Change in evaluation	Change in instruction method	Add on course	Changes Yes: Revised No: Not Revised
701	SIT, Pune	70122	B.Tech. (Computer Science and Engineering)	F7010	Agile Software Development	Core	Base PS	Dropped	Yes						Yes
701	SIT, Pune	70122	B.Tech. (Computer Science and Engineering)	F7045	F7045	Core		Added	Yes						Yes
701	SIT, Pune	70122	B.Tech. (Computer Science and Engineering)	GEN002	Project	Core	Base PS	No Change	No						No
701	SIT, Pune	70122	B.Tech. (Computer Science and Engineering)	GEN003	Internship	Core	Base PS	No Change	No						No



701	SIT, Pune	70122	B.Tech. (Computer Science and Engineering)	GEN005	Non Catalog Courses	Core	Base PS	No Change	No						No
701	SIT, Pune	70122	B.Tech. (Computer Science and Engineering)	T2228	Business Analytics	Core	Base PS	Dropped	Yes						Yes
701	SIT, Pune	70122	B.Tech. (Computer Science and Engineering)	T2585	Organizational Behaviour	Elective	Base PS	No Change	No						No
701	SIT, Pune	70122	B.Tech. (Computer Science and Engineering)	T2618	Project Management	Elective	Base PS	Dropped	Yes						Yes
701	SIT, Pune	70122	B.Tech. (Computer Science and Engineering)	T2646	Entrepreneurship Venture	Core	Base PS	No Change	No						No
701	SIT, Pune	70122	B.Tech. (Computer Science and En			Elective	Base PS	Dropped	Yes						Yes



701	SIT, Pune	70122	B.Tech. (Computer Science and Engineering)	T2658	Design Thinking	Core	Base PS	Dropped	Yes						Yes
701	SIT, Pune	70122	B.Tech. (Computer Science and Engineering)	T3276	Digital Electronics	Core	Base PS	Dropped	Yes						Yes
701	SIT, Pune	70122	B.Tech. (Computer Science and Engineering)	T4005	Integrated Disaster Management	Core	Base PS	No Change	No						No
701	SIT, Pune	70122	B.Tech. (Computer Science and Engineering)	T6004	Organizational Behavior	Elective	Base PS	Dropped	Yes						Yes
701	SIT, Pune	70122	B.Tech. (Computer Science and Engineering)	T6012	Basic German I	Elective	Base PS	Dropped	Yes						Yes



701	SIT, Pune	70122	B.Tech. (Computer Science and Engineering)	T6014	Basic French I	Elective	Base PS	Dropped	Yes						Yes
701	SIT, Pune	70122	B.Tech. (Computer Science and Engineering)	T6016	Basic Spanish I	Elective	Base PS	Dropped	Yes						Yes
701	SIT, Pune	70122	B.Tech. (Computer Science and Engineering)	T6184	Basic German I	Elective		Added	Yes						Yes
701	SIT, Pune	70122	B.Tech. (Computer Science and Engineering)	T6186	Basic French I	Elective		Added	Yes						Yes
701	SIT, Pune	70122	B.Tech. (Computer Science and Engineering)	T6188	Basic Spanish I	Elective		Added	Yes						Yes



701	SIT, Pune	70122	B.Tech. (Computer Science and Engineering)	T6732	Critical Thinking	Elective	Base PS	No Change	No							No
701	SIT, Pune	70122	B.Tech. (Computer Science and Engineering)	T6749	Design Thinking	Core	Base PS	No Change	No							No
701	SIT, Pune	70122	B.Tech. (Computer Science and Engineering)	T6760	Introduction to Indian Philosophy	Elective	Base PS	No Change	No							No
701	SIT, Pune	70122	B.Tech. (Computer Science and Engineering)	T6761	Foundation of Ethics	Elective	Base PS	Dropped	Yes							Yes
701	SIT, Pune	70122	B.Tech. (Computer Science and Engineering)	T6773	Creative Thinking	Elective	Base PS	No Change	No							No



701	SIT, Pune	70122	B.Tech. (Computer Science and Engineering)	T6774	Principles of Economics	Core	Base PS	No Change	No						No
701	SIT, Pune	70122	B.Tech. (Computer Science and Engineering)	T6872	Foundation of Ethics	Elective		Added	Yes						Yes
701	SIT, Pune	70122	B.Tech. (Computer Science and Engineering)	T6873	Creative Thinking	Elective		Added	Yes						Yes
701	SIT, Pune	70122	B.Tech. (Computer Science and Engineering)	T7020	Nanotechnology	Elective	Base PS	Dropped	Yes						Yes
701	SIT, Pune	70122	B.Tech. (Computer Science and Engineering)	T7138	Network Security	Elective	Base PS	No Change	No						No



701	SIT, Pune	70122	B.Tech. (Computer Science and Engineering)	T7381	Chemistry	Elective	Base PS	No Change	No							No
701	SIT, Pune	70122	B.Tech. (Computer Science and Engineering)	T7382	Chemistry Lab	Elective	Base PS	No Change	No							No
701	SIT, Pune	70122	B.Tech. (Computer Science and Engineering)	T7383	Communication Skills	Elective	Base PS	No Change	No							No
701	SIT, Pune	70122	B.Tech. (Computer Science and Engineering)	T7384	Communication skills lab	Elective	Base PS	No Change	No							No
701	SIT, Pune	70122	B.Tech. (Computer Science and Engineering)	T7391	Physics	Elective	Base PS	No Change	No							No



701	SIT, Pune	70122	B.Tech. (Computer Science and Engineering)	T7392	Physics lab	Elective	Base PS	No Change	No						No
701	SIT, Pune	70122	B.Tech. (Computer Science and Engineering)	T7393	Computer based Statistical Packages	Elective	Base PS	No Change	No						No
701	SIT, Pune	70122	B.Tech. (Computer Science and Engineering)	T7394	Smart Materials	Elective	Base PS	Dropped	Yes						Yes
701	SIT, Pune	70122	B.Tech. (Computer Science and Engineering)	T7473	Artificial Intelligence	Elective	Base PS	No Change	No						No
701	SIT, Pune	70122	B.Tech. (Computer Science and Engineering)	T7474	Basics of Database	Elective	Base PS	No Change	No						No



701	SIT, Pune	70122	B.Tech. (Computer Science and Engineering)	T7476	Cloud Computing	Core	Base PS	Dropped	Yes							Yes
701	SIT, Pune	70122	B.Tech. (Computer Science and Engineering)		Elective		Base PS	No Change	No							No
701	SIT, Pune	70122	B.Tech. (Computer Science and Engineering)	T7477	Compiler Construction	Core	Base PS	Dropped	Yes							Yes
701	SIT, Pune	70122	B.Tech. (Computer Science and Engineering)	T7478	Compiler Construction Lab	Core	Base PS	No Change	No							No
701	SIT, Pune	70122	B.Tech. (Computer Science and Engineering)	T7482	Computer Networks Lab	Core	Base PS	No Change	No							No
701	SIT, Pune	70122	B.Tech. (Computer Science and Engineering)	T7487	Data Base Management Systems Lab	Core	Base PS	No Change	No							No



701	SIT, Pune	70122	B.Tech. (Computer Science and Engineering)	T7488	Data Structures	Core	Base PS	No Change	No						No
701	SIT, Pune	70122	B.Tech. (Computer Science and Engineering)	T7489	Data Structures Lab	Core	Base PS	No Change	No						No
701	SIT, Pune	70122	B.Tech. (Computer Science and Engineering)	T7499	Java	Elective	Base PS	No Change	No						No
701	SIT, Pune	70122	B.Tech. (Computer Science and Engineering)	T7506	Network Security Lab	Elective	Base PS	No Change	No						No
701	SIT, Pune	70122	B.Tech. (Computer Science and Engineering)	T7509	Open Source Technologies	Elective	Base PS	Dropped	Yes						Yes



701	SIT, Pune	70122	B.Tech. (Computer Science and Engineering)	T7510	Operating Systems	Core	Base PS	No Change	No							No
701	SIT, Pune	70122	B.Tech. (Computer Science and Engineering)	T7511	Operating Systems Lab	Core	Base PS	No Change	No							No
701	SIT, Pune	70122	B.Tech. (Computer Science and Engineering)	T7512	Programming Paradigms	Core	Base PS	No Change	No							No
701	SIT, Pune	70122	B.Tech. (Computer Science and Engineering)	T7513	Programming Paradigms Lab	Core	Base PS	No Change	No							No
701	SIT, Pune	70122	B.Tech. (Computer Science and Engineering)	T7528	Internet Of Things Lab	Elective	Base PS	No Change	No							No



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701	SIT, Pune	70122	B.Tech. (Computer Science and Engineering)	T7529	Machine Learning	Elective	Base PS	No Change	No						No
701	SIT, Pune	70122	B.Tech. (Computer Science and Engineering)	T7540	Basic Electrical and Electronics Engineering	Elective	Base PS	No Change	No						No
701	SIT, Pune	70122	B.Tech. (Computer Science and Engineering)	T7555	Digital Electronics and Logic Design Lab	Core	Base PS	No Change	No						No
701	SIT, Pune	70122	B.Tech. (Computer Science and Engineering)	T7574	MATLAB	Elective	Base PS	No Change	No						No
701	SIT, Pune	70122	B.Tech. (Computer Science and Engineering)	T7584	Printed Circuit Board (PCB) Design	Elective	Base PS	No Change	No						No



701	SIT, Pune	70122	B.Tech. (Computer Science and Engineering)	T7593	Basic Electrical and Electronics Engineering Lab	Elective	Base PS	No Change	No						No
701	SIT, Pune	70122	B.Tech. (Computer Science and Engineering)	T7616	Fundamentals of Automotive Technology	Elective	Base PS	No Change	No						No
701	SIT, Pune	70122	B.Tech. (Computer Science and Engineering)	T7650	Six Sigma	Elective	Base PS	No Change	No						No
701	SIT, Pune	70122	B.Tech. (Computer Science and Engineering)	T7674	Cyber Security	Core	Base PS	No Change	No						No
701	SIT, Pune	70122	B.Tech. (Computer Science and Engineering)	T7801	Advanced Digital Communication	Core		Added	Yes						Yes



701	SIT, Pune	70122	B.Tech. (Computer Science and Engineering)	T7802	Electronics for smart cities	Core		Added	Yes						Yes
701	SIT, Pune	70122	B.Tech. (Computer Science and Engineering)	T7805	Green Electronics	Core		Added	Yes						Yes
701	SIT, Pune	70122	B.Tech. (Computer Science and Engineering)	T7906	Fundamentals of Data Structures	Core	Base PS	No Change	No						No
701	SIT, Pune	70122	B.Tech. (Computer Science and Engineering)	T7907	Database Management Systems	Core	Base PS	No Change	No						No
701	SIT, Pune	70122	B.Tech. (Computer Science and Engineering)	T7908	Computer Networks	Core	Base PS	No Change	No						No



701	SIT, Pune	70122	B.Tech. (Computer Science and Engineering)	T7925	Engineering Graphics Lab	Elective	Base PS	No Change	No						No
701	SIT, Pune	70122	B.Tech. (Computer Science and Engineering)	T7928	Automotive Engineering Lab	Core	Base PS	Dropped	Yes						Yes
701	SIT, Pune	70122	B.Tech. (Computer Science and Engineering)	T7995	Discrete Mathematics and Probability Theory	Core	Base PS	No Change	No						No
701	SIT, Pune	70122	B.Tech. (Computer Science and Engineering)	T7996	Computer Organization	Core	Base PS	No Change	No						No
701	SIT, Pune	70122	B.Tech. (Computer Science and Engineering)	T7997	Digital Electronics and Logic Design	Core	Base PS	No Change	No						No



701	SIT, Pune	70122	B.Tech. (Computer Science and Engineering)	TE7008	Distributed Systems and Resource management	Core	Base PS	No Change	No							No
701	SIT, Pune	70122	B.Tech. (Computer Science and Engineering)	TE7013	Data Warehousing and Mining Lab	Elective	Base PS	No Change	No							No
701	SIT, Pune	70122	B.Tech. (Computer Science and Engineering)	TE7014	Artificial Intelligence Lab	Elective	Base PS	No Change	No							No
701	SIT, Pune	70122	B.Tech. (Computer Science and Engineering)	TE7097	Neural Network	Elective	Base PS	No Change	No							No
701	SIT, Pune	70122	B.Tech. (Computer Science and Engineering)	TE7101	Internet of Things	Elective	Base PS	No Change	No							No



701	SIT, Pune	70122	B.Tech. (Computer Science and Engineering)	TE7103	Natural Language Processing	Elective	Base PS	No Change	No							No
701	SIT, Pune	70122	B.Tech. (Computer Science and Engineering)	TE7105	Machine Learning Lab	Elective	Base PS	No Change	No							No
701	SIT, Pune	70122	B.Tech. (Computer Science and Engineering)	TE7106	Natural Language Processing Lab	Elective	Base PS	No Change	No							No
701	SIT, Pune	70122	B.Tech. (Computer Science and Engineering)	TE7112	Neural Networks Lab	Elective	Base PS	No Change	No							No
701	SIT, Pune	70122	B.Tech. (Computer Science and Engineering)	TE7168	Engineering Mathematics -I	Elective	Base PS	No Change	No							No



701	SIT, Pune	70122	B.Tech. (Computer Science and Engineering)	TE7169	Engineering Mathematics -II	Elective	Base PS	No Change	No						No
701	SIT, Pune	70122	B.Tech. (Computer Science and Engineering)	TE7170	Engineering Mathematics-III	Core	Base PS	No Change	No						No
701	SIT, Pune	70122	B.Tech. (Computer Science and Engineering)	TE7171	Introduction to Mathematical Modelling	Elective	Base PS	No Change	No						No
701	SIT, Pune	70122	B.Tech. (Computer Science and Engineering)	TE7177	Application of Sensor Technology to Smart Cities	Core	Base PS	No Change	No						No
701	SIT, Pune	70122	B.Tech. (Computer Science and Engineering)	TE7188	Environmental Science	Elective	Base PS	No Change	No						No



701	SIT, Pune	70122	B.Tech. (Computer Science and Engineering)	TE7195	GIS Applications	Elective	Base PS	No Change	No						No
701	SIT, Pune	70122	B.Tech. (Computer Science and Engineering)	TE7203	Intelligent Transportation Management	Elective		Added	Yes						Yes
701	SIT, Pune	70122	B.Tech. (Computer Science and Engineering)	TE7204	Intelligent Transportation Systems	Elective	Base PS	Dropped	Yes						Yes
701	SIT, Pune	70122	B.Tech. (Computer Science and Engineering)	TE7205	Intelligent Transportation Systems	Elective		Added	Yes						Yes
701	SIT, Pune	70122	B.Tech. (Computer Science and Engineering)	TE7206	IOT for Smart Cities	Core	Base PS	No Change	No						No



701	SIT, Pune	70122	B.Tech. (Computer Science and Engineering)	TE7207	IOT for Smart Cities Lab	Core	Base PS	No Change	No						No
701	SIT, Pune	70122	B.Tech. (Computer Science and Engineering)	TE7220	Smart Cities : Context Policy and Governance	Core	Base PS	No Change	No						No
701	SIT, Pune	70122	B.Tech. (Computer Science and Engineering)	TE7223	Smart Urban Planning	Elective	Base PS	No Change	No						No
701	SIT, Pune	70122	B.Tech. (Computer Science and Engineering)	TE7234	Urban Hydrology and Hydraulics	Elective	Base PS	No Change	No						No
701	SIT, Pune	70122	B.Tech. (Computer Science and Engineering)	TE7240	Water Resource Planning and Management	Elective	Base PS	No Change	No						No



701	SIT, Pune	70122	B.Tech. (Computer Science and Engineering)	TE7243	Advanced Algorithms	Elective	Base PS	No Change	No						No
701	SIT, Pune	70122	B.Tech. (Computer Science and Engineering)	TE7244	Advanced Algorithms Lab	Elective	Base PS	No Change	No						No
701	SIT, Pune	70122	B.Tech. (Computer Science and Engineering)	TE7246	Block Chain	Core	Base PS	No Change	No						No
701	SIT, Pune	70122	B.Tech. (Computer Science and Engineering)	TE7247	Business Analytics	Core		Added	Yes						Yes
701	SIT, Pune	70122	B.Tech. (Computer Science and Engineering)	TE7248	Cloud Computing	Core		Added	Yes						Yes



701	SIT, Pune	70122	B.Tech. (Computer Science and Engineering)	TE7249	Cloud Computing Platforms	Core	Base PS	No Change	No							No
701	SIT, Pune	70122	B.Tech. (Computer Science and Engineering)	TE7250	Cloud Environment in Public Model	Core	Base PS	No Change	No							No
701	SIT, Pune	70122	B.Tech. (Computer Science and Engineering)	TE7251	Computer Graphics	Elective	Base PS	No Change	No							No
701	SIT, Pune	70122	B.Tech. (Computer Science and Engineering)	TE7252	Cryptography	Core	Base PS	No Change	No							No
701	SIT, Pune	70122	B.Tech. (Computer Science and Engineering)	TE7253	Data Science	Elective	Base PS	No Change	No							No



701	SIT, Pune	70122	B.Tech. (Computer Science and Engineering)	TE7254	Data Science Lab	Elective	Base PS	No Change	No						No
701	SIT, Pune	70122	B.Tech. (Computer Science and Engineering)	TE7255	Data Warehousing and Mining	Elective	Base PS	No Change	No						No
701	SIT, Pune	70122	B.Tech. (Computer Science and Engineering)	TE7256	Entrepreneurship in Game Development	Core	Base PS	No Change	No						No
701	SIT, Pune	70122	B.Tech. (Computer Science and Engineering)	TE7257	Fundamentals of Data Structures Lab	Core	Base PS	No Change	No						No
701	SIT, Pune	70122	B.Tech. (Computer Science and Engineering)	TE7258	Hardware Security	Core	Base PS	No Change	No						No



701	SIT, Pune	70122	B.Tech. (Computer Science and Engineering)	TE7259	Human Computer Interface	Elective	Base PS	No Change	No						No
701	SIT, Pune	70122	B.Tech. (Computer Science and Engineering)	TE7260	Human Computer Interface Lab	Elective	Base PS	No Change	No						No
701	SIT, Pune	70122	B.Tech. (Computer Science and Engineering)	TE7263	Introduction to AI and Machine Learning	Elective	Base PS	No Change	No						No
701	SIT, Pune	70122	B.Tech. (Computer Science and Engineering)	TE7264	Introduction to BIGDATA	Elective	Base PS	No Change	No						No
701	SIT, Pune	70122	B.Tech. (Computer Science and Engineering)	TE7265	Introduction to Data Science	Elective	Base PS	No Change	No						No



701	SIT, Pune	70122	B.Tech. (Computer Science and Engineering)	TE7266	Introduction to Deep Learning	Core	Base PS	No Change	No						No
701	SIT, Pune	70122	B.Tech. (Computer Science and Engineering)	TE7267	Introduction to Game Development	Core	Base PS	No Change	No						No
701	SIT, Pune	70122	B.Tech. (Computer Science and Engineering)	TE7268	Introduction to IOT	Core	Base PS	No Change	No						No
701	SIT, Pune	70122	B.Tech. (Computer Science and Engineering)	TE7269	IOT Security and Privacy	Core	Base PS	No Change	No						No
701	SIT, Pune	70122	B.Tech. (Computer Science and Engineering)	TE7271	Machine Learning Clustering and Retrieval	Core	Base PS	No Change	No						No



701	SIT, Pune	70122	B.Tech. (Computer Science and Engineering)	TE7273	Machine Learning: Classification	Core	Base PS	No Change	No						No
701	SIT, Pune	70122	B.Tech. (Computer Science and Engineering)	TE7274	Machine Learning: Regression	Core	Base PS	No Change	No						No
701	SIT, Pune	70122	B.Tech. (Computer Science and Engineering)	TE7275	Modern Platforms in Game Development	Core	Base PS	No Change	No						No
701	SIT, Pune	70122	B.Tech. (Computer Science and Engineering)	TE7281	Open Source Tools for Data Science	Core	Base PS	No Change	No						No
701	SIT, Pune	70122	B.Tech. (Computer Science and Engineering)	TE7282	Optimization Techniques and Algorithms	Elective	Base PS	No Change	No						No



701	SIT, Pune	70122	B.Tech. (Computer Science and Engineering)	TE7283	Optimization Techniques and Algorithms Lab	Elective	Base PS	No Change	No							No
701	SIT, Pune	70122	B.Tech. (Computer Science and Engineering)	TE7284	Power BI	Core	Base PS	No Change	No							No
701	SIT, Pune	70122	B.Tech. (Computer Science and Engineering)	TE7285	Principles of Game Design	Core	Base PS	No Change	No							No
701	SIT, Pune	70122	B.Tech. (Computer Science and Engineering)	TE7286	Programming and Problem Solving	Elective	Base PS	No Change	No							No
701	SIT, Pune	70122	B.Tech. (Computer Science and Engineering)	TE7287	Programming and Problem Solving Lab	Elective	Base PS	No Change	No							No



701	SIT, Pune	70122	B.Tech. (Computer Science and Engineering)	TE7288	Programming in C	Elective	Base PS	No Change	No							No
701	SIT, Pune	70122	B.Tech. (Computer Science and Engineering)	TE7289	Programming in C Lab	Elective	Base PS	No Change	No							No
701	SIT, Pune	70122	B.Tech. (Computer Science and Engineering)	TE7290	Project Based Learning -I	Core		Added	Yes							Yes
701	SIT, Pune	70122	B.Tech. (Computer Science and Engineering)	TE7291	Project Based Learning-II	Core		Added	Yes							Yes
701	SIT, Pune	70122	B.Tech. (Computer Science and Engineering)	TE7292	R Programming	Core	Base PS	No Change	No							No



701	SIT, Pune	70122	B.Tech. (Computer Science and Engineering)	TE7293	Raspberry Pi and Python	Core	Base PS	No Change	No						No
701	SIT, Pune	70122	B.Tech. (Computer Science and Engineering)	TE7295	Software Defined Networking	Core	Base PS	No Change	No						No
701	SIT, Pune	70122	B.Tech. (Computer Science and Engineering)	TE7296	Software Security	Core	Base PS	No Change	No						No
701	SIT, Pune	70122	B.Tech. (Computer Science and Engineering)	TE7297	Software Testing Tools	Elective	Base PS	No Change	No						No
701	SIT, Pune	70122	B.Tech. (Computer Science and Engineering)	TE7298	System Programming	Core	Base PS	No Change	No						No



701	SIT, Pune	70122	B.Tech. (Computer Science and Engineering)	TE7299	Theory of Computation	Core	Base PS	No Change	No						No
701	SIT, Pune	70122	B.Tech. (Computer Science and Engineering)	TE7300	Tinker Lab	Core	Base PS	Dropped	Yes						Yes
701	SIT, Pune	70122	B.Tech. (Computer Science and Engineering)			Elective	Base PS	No Change	No						No
701	SIT, Pune	70122	B.Tech. (Computer Science and Engineering)	TE7301	Usable Security	Core	Base PS	No Change	No						No
701	SIT, Pune	70122	B.Tech. (Computer Science and Engineering)	TE7304	Advanced Microcontrollers and RTOS	Core	Base PS	No Change	No						No
701	SIT, Pune	70122	B.Tech. (Computer Science and Engineering)	TE7305	Advanced Microcontrollers and RTOS Lab	Core	Base PS	No Change	No						No



701	SIT, Pune	70122	B.Tech. (Computer Science and Engineering)	TE7325	Embedded Linux	Core	Base PS	No Change	No							No
701	SIT, Pune	70122	B.Tech. (Computer Science and Engineering)	TE7328	Image Processing	Elective	Base PS	No Change	No							No
701	SIT, Pune	70122	B.Tech. (Computer Science and Engineering)	TE7329	Image Processing Lab	Elective	Base PS	No Change	No							No
701	SIT, Pune	70122	B.Tech. (Computer Science and Engineering)	TE7332	Introduction to Image Processing	Elective	Base PS	Dropped	Yes							Yes
701	SIT, Pune	70122	B.Tech. (Computer Science and Engineering)	TE7334	Introduction to Mechatronics	Elective	Base PS	No Change	No							No



701	SIT, Pune	70122	B.Tech. (Computer Science and Engineering)	TE7335	Introduction to Robotics	Elective	Base PS	No Change	No							No
701	SIT, Pune	70122	B.Tech. (Computer Science and Engineering)	TE7338	Principles of Modern Communication Systems	Elective	Base PS	No Change	No							No
701	SIT, Pune	70122	B.Tech. (Computer Science and Engineering)	TE7339	Renewable Energy Systems	Elective	Base PS	No Change	No							No
701	SIT, Pune	70122	B.Tech. (Computer Science and Engineering)	TE7351	3D Printing and Prototyping	Elective	Base PS	No Change	No							No
701	SIT, Pune	70122	B.Tech. (Computer Science and Engineering)	TE7355	Basics of Automotive Engineering	Core	Base PS	No Change	No							No



701	SIT, Pune	70122	B.Tech. (Computer Science and Engineering)	TE7365	Electrical and Electronic Materials	Elective	Base PS	No Change	No							No
701	SIT, Pune	70122	B.Tech. (Computer Science and Engineering)	TE7376	Introduction to Operations Research	Elective	Base PS	No Change	No							No
701	SIT, Pune	70122	B.Tech. (Computer Science and Engineering)	TE7377	Introduction to Optimisation	Elective	Base PS	No Change	No							No
701	SIT, Pune	70122	B.Tech. (Computer Science and Engineering)	TE7387	Project Management	Elective		Added	Yes							Yes
701	SIT, Pune	70122	B.Tech. (Computer Science and Engineering)	TE7388	Quality Management Techniques	Elective	Base PS	No Change	No							No



701	SIT, Pune	70122	B.Tech. (Computer Science and Engineering)	TE7396	Software Tools	Elective	Base PS	No Change	No							No
701	SIT, Pune	70122	B.Tech. (Computer Science and Engineering)	TE7428	Introduction to Image Processing	Elective		Added	Yes							Yes
701	SIT, Pune	70122	B.Tech. (Computer Science and Engineering)	TE7435	Automotive Engine and Transmission System	Core	Base PS	No Change	No							No
701	SIT, Pune	70122	B.Tech. (Computer Science and Engineering)	TE7438	History of Science and Technology	Elective	Base PS	No Change	No							No
701	SIT, Pune	70122	B.Tech. (Computer Science and Engineering)	TE7580	Vehicle Dynamics and NVH Lab	Core	Base PS	Dropped	Yes							Yes



701	SIT, Pune	70122	B.Tech. (Computer Science and Engineering)	TE7665	Automotive Electronics and Instrumentation	Core		Added	Yes						Yes
701	SIT, Pune	70122	B.Tech. (Computer Science and Engineering)	TE7666	Automotive Vehicle Dynamics and NVH Lab	Core		Added	Yes						Yes
701	SIT, Pune	70122	B.Tech. (Computer Science and Engineering)	TE7669	Hybrid Technology	Core		Added	Yes						Yes
701	SIT, Pune	70122	B.Tech. (Computer Science and Engineering)	TE7698	TE7698	Elective		Added	Yes						Yes
701	SIT, Pune	70122	B.Tech. (Computer Science and Engineering)	TE7700	TE7700	Elective		Added	Yes						Yes



701	SIT, Pune	70122	B.Tech. (Computer Science and Engineering)	TE7751	TE7751	Core		Added	Yes						Yes
701	SIT, Pune	70122	B.Tech. (Computer Science and Engineering)	TE7756	TE7756	Elective		Added	Yes						Yes
701	SIT, Pune	70122	B.Tech. (Computer Science and Engineering)	TH4095	Smart Fitness for Life	Core	Base PS	Dropped	Yes						Yes
701	SIT, Pune	70122	B.Tech. (Computer Science and En			Elective		Added	Yes						Yes
701	SIT, Pune	70122	B.Tech. (Computer Science and Engineering)	TH4272	Certificate in COVID-19 Care for the Community	Elective		Added	Yes						Yes

Total Number of Courses= 182

Revision in No. of courses= 48

Revision in % = 26.37



SYMBIOSIS INSTITUTE OF TECHNOLOGY

Symbiosis International (Deemed University)

(Established under section 3 of the UGC Act, 1956)

Re-accredited by NAAC with 'A' grade (3.58/4) | Awarded Category - I by UGC

Founder: Prof. Dr. S. B. Mujumdar, M. Sc., Ph. D. (Awarded Padma Bhushan and Padma Shri by President of India)



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Percentage of Programmes where syllabus revision was carried out

from AY 2020-21 to 2021-2022

Name of the Institute: Symbiosis Institute of Technology (SIT), Pune

Name of the Programme: Bachelor of Technology (CSE)

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Head of the Department, CSE

SIT, Pune





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Symbiosis Institute of Technology, Pune
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Programme Structure 2020-24

1. OBJECTIVE	<p>B.Tech is a full-time four year graduation programme, which aims at transforming a student into a technically sound professional. The syllabus contains courses on basic sciences, technical arts, humanities & liberal arts and professional courses. The mix of these courses has been evolved with an aim to produce professionals who have knowledge not only of Engineering but who are good managers to contribute in a cross-functional team and have human values.</p> <p>Being a professional programme it ensures a healthy balance between theoretical foundation and practical exposure to the present day world.</p> <p>The emphasis is to develop all round personality that would enable the students to take up the challenges of the corporate world and also become responsible citizens of the society.</p>			
2. DURATION (IN MONTHS)	48 (Full Time)			
3. INTAKE	180			
4. RESERVATION	I. Within the sanctioned intake	a) SC (In Percentage)	b) ST (In Percentage)	c) Differently abled (In Percentage)
		15	7.5	3
	II. Over and above the sanctioned intake	a) Kashmiri Migrants (In Seats)		b) International Students (In Percentage)
		2		15
5. ELIGIBILITY	<p>Passed 10+2 examination with Physics and Mathematics as compulsory subjects along with one of Chemistry/ Biotechnology/ Biology/ Technical Vocational subjects. Obtained at least 45% marks or equivalent grade (40% marks or equivalent grade for Scheduled Caste /Scheduled Tribes) in the above subjects taken together.</p> <p>B. Tech (Lateral entry to second year) :</p> <p>a) Passed Diploma examination from an AICTE approved Institution; with at least 45% marks or equivalent grade (40% marks or equivalent grade for Scheduled Caste /Scheduled Tribes) in appropriate branch of Engineering / Technology.</p>			





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		<p>b) Passed B.Sc. Degree from a recognized University as defined by UGC, with at least 45% marks or equivalent grade (40% marks or equivalent grade for Scheduled Caste /Scheduled Tribes) and passed XII standard with mathematics as a subject.</p> <p>c) Provided that in case of students belonging to B. Sc. Stream, shall clear the subjects of Engineering Graphics / Engineering Drawing and Engineering Mechanics of the first year Engineering program along with the second year subjects.</p> <p>d) Provided further that, the students belonging to B. Sc. Stream shall be considered only after filling the supernumerary seats in this category with students belonging to the Diploma stream.</p> <p>e) Provided further that students, who have passed Diploma in Engineering and Technology from an AICTE approved Institution or B. Sc. Degree from a recognized University as defined by UGC, shall also be eligible for admission to the first year Engineering Degree courses subject to vacancies in the first year class in case the vacancies at lateral entry are exhausted. However the admissions shall be based strictly on the eligibility criteria as mentioned in a, b, c, and d above.</p>
6.	SELECTION PROCEDURE	Merit list by a valid score of Symbiosis Entrance Test (SIT EEE) or Joint Entrance Examination (JEE - Mains) or All States Engineering Entrance Test
7.	MEDIUM OF INSTRUCTION	English
8.	PROGRAMME PATTERN	Semester
9.	COURSE & SPECIALIZATION	<p>Annexure A: Bachelor of Technology (Computer Science and Engineering)</p> <p>Students may pursue optional 'Honours' OR 'Minor' specialization in one of the specialization areas by completing additional 20 credits in Semester: 5, 6 and 7 as specified in Annexure B for Honours and Annexure C for Minor in the respective specialization area.</p> <p>Annexure B: Optional 'Honours' specialization area</p> <ol style="list-style-type: none"> 1. Artificial Intelligence and Machine Learning 2. Computing 3. Data Science 4. Game Design & Development 5. Security and Privacy 6. Internet of Things <p>Annexure C: Optional 'Minor' specialization area</p>






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		1. Automobile Engineering With Hybrid And Autonomous Technology (ME) 1. Embedded Systems (E&TC) 2. Smart Cities and Urban Analytics (CE)			
10.	FEE		Academic Fee p.a	Institute Deposit	Total
		Indian Students	260000	20000	280000
		International Students (USD equivalent to INR)	390000	20000	410000
11.	ASSESSMENT	All internal courses will have 100% component as internal evaluation at the institute level. All external courses will have 40% internal component and 60% component as external [University] examination. The internal and external will be separate heads of passing.			
12.	STANDARD OF PASSING	The assessment of the student for each examination is done, based on relative performance. Maximum Grade Point (GP) is 10 corresponding to O (Outstanding). For all courses, a student is required to pass both internal and external examination separately with a minimum Grade Point of 4 corresponding to Grade P. Students securing less than 40% absolute marks in each head of passing will be declared FAIL. The University awards a degree to the student who has achieved a minimum CGPA of 4 out of maximum of 10 CGPA for the programme.			
13.	AWARD OF DEGREE/ DIPLOMA/ CERTIFICATE	Bachelor of Technology (Information Technology) OR Bachelor of Technology (Information Technology) with Honours in Artificial Intelligence and Machine Learning / Computing / Data Science / Game Design & Development / Security and Privacy /Internet of Things. OR Bachelor of Technology (Information Technology) with Minor in Automobile Engineering with Hybrid and Autonomous Technology / Embedded Systems /Smart Cities and Urban Analytics will be awarded at the end of semester VIII examination by taking into consideration the performance of all semester examinations after obtaining minimum 4.00 CGPA out of 10 CGPA			

14. CLASSIFICATION OF CREDITS								
Semester	Generic Core	Generic Elective	Specialization Core	Specialization Elective	Open Elective	Audit	Total	
Group A								
1	18	0	0	0	0	0	18	
2	20	0	0	0	1	0	21	
3	24	0	0	0	0	1*	24	
4	17	2	0	0	0	1*	19	
5	22	0	0	0	3	0	25	
6	14	8	0	0	3	0	25	
7	11	11	0	0	2	0	24	
8	14	0	0	0	0	0	14	
Total	140	21	0	0	9	0	170	
Group B								
1	19	0	0	0	0	0	19	
2	19	0	0	0	1	0	20	
3	24	0	0	0	0	1*	24	
4	17	2	0	0	0	1*	19	
5	22	0	0	0	3	0	25	
6	14	8	0	0	3	0	25	
7	11	11	0	0	2	0	24	
8	14	0	0	0	0	0	14	
Total	140	21	0	0	9	0	170	
Optional Additional Courses (Honours)								
Total	0	0	20	0	0	0	20	
Optional Additional Courses (Minor)								
Total	0	0	20/17	0/3	0	0	20	
SIU	22/08/2022 (R-4)					Granc		190

* Satisfactory completion of the non letter grade courses 'Integrated Disaster Management', 'Fitness for Life', 'Certificate in COVID-19 Care for the Community' is mandatory for the award of degree.

Note: For additional specializations (optional) as applicable, fees of Rs.25000/- will be charged, additionally in the third year

The revised programme structure supersedes the previously approved programme structure dated 14/03/2022 for the programme.

This Programme Structure is aligned with the norms laid down by the University and is approved by the Academic Council. Hereafter changes (if any) which conform to the policy on "Curriculum Development and Review" would be permissible, subject to revision of the Programme Structure, following the specified processes.

Head - Academics

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Celebrating 50 Years of Excellence

Symbiosis Institute of Technology, Pune
Bachelor of Technology (Computer Science and Engineering)
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Annexure A

Catalog Course Code	Course Code	Course Title	Nature	Specialization/ Area/ Department	Teaching Scheme (Hours Per Week)			Examination Scheme (Marks)				Total Credits	Total
					L	T	La b	Practical		Theory			
								CA	ESE	CA	ESE		
Semester : 1													
Group - A - Generic Core Courses													
TE7168	0701220101	Engineering Mathematics -I	BS		3	1	0	0	0	40	60	4	100
T7391	0701220102	Physics	BS		3	0	0	0	0	30	45	3	75
T7392	0701220103	Physics lab	BS		0	0	2	10	15	0	0	1	25
TE7288	0701220104	Programming in C	PC		3	0	0	0	0	30	45	3	75
TE7289	0701220105	Programming in C Lab	PC		0	0	2	10	15	0	0	1	25
T7383	0701220106	Communication Skills	HS		2	0	0	0	0	20	30	2	50
T7384	0701220107	Communication skills lab	HS		0	0	2	10	15	0	0	1	25
TE7188	0701220108	Environmental Science	ES		2	0	0	0	0	20	30	2	50
T6773	0701220109	Creative Thinking	HS		1	0	0	0	0	25	0	1	25
Total Required Credits								30	45	165	210	18	450
Group - B - Generic Core Courses													
TE7168	0701220101	Engineering Mathematics -I	BS		3	1	0	0	0	40	60	4	100
T7381	0701220110	Chemistry	BS		3	0	0	0	0	30	45	3	75
T7382	0701220111	Chemistry Lab	BS		0	0	2	10	15	0	0	1	25
T7540	0701220112	Basic Electrical and Electronics Engineering	ES		3	0	0	0	0	30	45	3	75
T7593	0701220113	Basic Electrical and Electronics Engineering Lab	ES		0	0	2	10	15	0	0	1	25



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Catalog Course Code	Course Code	Course Title	Nature	Specialization/ Area/ Department	Teaching Scheme (Hours Per Week)			Examination Scheme (Marks)				Total Credits	Total
					L	T	La b	Practical		Theory			
								CA	ESE	CA	ESE		
TE7286	0701220114	Programming and Problem Solving	ES		2	0	0	0	0	20	30	2	50
TE7287	0701220115	Programming and Problem Solving Lab	ES		0	0	2	10	15	0	0	1	25
T7925	0701220116	Engineering Graphics Lab	ES		0	0	4	20	30	0	0	2	50
T6732	0701220117	Critical Thinking	HS		1	0	0	0	0	25	0	1	25
TE7396	0701220118	Software Tools	PC		0	0	2	25	0	0	0	1	25
Total Required Credits								75	75	145	180	19	475
Semester : 2													
Group - A -Generic Core Courses													
TE7169	0701220201	Engineering Mathematics -II	BS		3	1	0	0	0	40	60	4	100
T7381	0701220202	Chemistry	BS		3	0	0	0	0	30	45	3	75
T7382	0701220203	Chemistry Lab	BS		0	0	2	10	15	0	0	1	25
T7540	0701220204	Basic Electrical and Electronics Engineering	ES		3	0	0	0	0	30	45	3	75
T7593	0701220205	Basic Electrical and Electronics Engineering Lab	ES		0	0	2	10	15	0	0	1	25
TE7286	0701220206	Programming and Problem Solving	ES		2	0	0	0	0	20	30	2	50
TE7287	0701220207	Programming and Problem Solving Lab	ES		0	0	2	10	15	0	0	1	25
T7925	0701220208	Engineering Graphics Lab	ES		0	0	4	20	30	0	0	2	50
T6732	0701220209	Critical Thinking	HS		1	0	0	0	0	25	0	1	25
TE7396	0701220210	Software Tools	PC		0	0	2	25	0	0	0	1	25





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Catalog Course Code	Course Code	Course Title	Nature	Specialization/ Area/ Department	Teaching Scheme (Hours Per Week)			Examination Scheme (Marks)				Total Credits	Total
					L	T	La b	Practical		Theory			
								CA	ESE	CA	ESE		
T2646	0701220211	Entrepreneurship Venture	HS		1	0	0	0	0	25	0	1	25
Total Required Credits								75	75	170	180	20	500
Group - B - Generic Core Courses													
TE7169	0701220201	Engineering Mathematics -II	BS		3	1	0	0	0	40	60	4	100
T2646	0701220211	Entrepreneurship Venture	HS		1	0	0	0	0	25	0	1	25
TE7288	0701220216	Programming in C	PC		3	0	0	0	0	30	45	3	75
T7391	0701220214	Physics	BS		3	0	0	0	0	30	45	3	75
T7392	0701220215	Physics lab	BS		0	0	2	10	15	0	0	1	25
TE7289	0701220217	Programming in C Lab	PC		0	0	2	10	15	0	0	1	25
T7383	0701220218	Communication Skills	HS		2	0	0	0	0	20	30	2	50
T7384	0701220219	Communication skills lab	HS		0	0	2	10	15	0	0	1	25
T6773	0701220220	Creative Thinking	HS		1	0	0	0	0	25	0	1	25
TE7188	0701220221	Environmental Science	ES		2	0	0	0	0	20	30	2	50
Total Required Credits								30	45	190	210	19	475
Open Elective Courses Group													
T6761	0701220212	Foundation of Ethics	OE		1	0	0	0	0	25	0	1	25
T6760	0701220213	Introduction to Indian Philosophy	OE		1	0	0	0	0	25	0	1	25
Total Required Credits								0	0	25	0	1	25



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Annexure A

Catalog Course Code	Course Code	Course Title	Nature	Specialization/ Area/ Department	Teaching Scheme (Hours Per Week)			Examination Scheme (Marks)				Total Credits	Total
					L	T	La b	Practical		Theory			
								CA	ESE	CA	ESE		
Semester : 3													
Generic Core Courses													
T7995	0701220301	Discrete Mathematics and Probability Theory	BS		3	1	0	0	0	40	60	4	100
T7996	0701220302	Computer Organization	PC		3	0	0	0	0	30	45	3	75
T7906	0701220303	Fundamentals of Data Structures	PC		3	0	0	0	0	30	45	3	75
TE7257	0701220304	Fundamentals of Data Structures Lab	PC		0	0	2	10	15	0	0	1	25
T7512	0701220305	Programming Paradigms	PC		3	0	0	0	0	30	45	3	75
T7513	0701220306	Programming Paradigms Lab	PC		0	0	2	10	15	0	0	1	25
T7997	0701220307	Digital Electronics and Logic Design	ES		3	0	0	0	0	30	45	3	75
T7555	0701220308	Digital Electronics and Logic Design Lab	ES		0	0	2	10	15	0	0	1	25
F7010	0701220309	Agile Software Development	PC		3	0	0	0	0	75	0	3	75
TE7300	0701220310	Tinker Lab	ES		0	0	4	50	0	0	0	2	50
TH4095	0701220311	Fitness for Life *			0	0	0	0	0	0	0	Non Letter Grade	0
TH4272	0701220312	Certificate in COVID-19 Care for the Community *			0	0	0	0	0	0	0	Non Letter Grade	0
Total					18	1	10	80	45	235	240	24	600
Semester : 4													





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Catalog Course Code	Course Code	Course Title	Nature	Specialization/ Area/ Department	Teaching Scheme (Hours Per Week)			Examination Scheme (Marks)				Total Credits	Total
					L	T	La b	Practical		Theory			
								CA	ESE	CA	ESE		
Generic Core Courses													
TE7170	0701220401	Engineering Mathematics-III	BS		2	1	0	0	0	30	45	3	75
F7034	0701220402	Java	PC		4	0	0	0	0	100	0	4	100
T7488	0701220403	Data Structures	PC		3	0	0	0	0	30	45	3	75
T7489	0701220404	Data Structures Lab	PC		0	0	2	10	15	0	0	1	25
T7510	0701220405	Operating Systems	PC		3	0	0	0	0	30	45	3	75
T7511	0701220406	Operating Systems Lab	PC		0	0	2	10	15	0	0	1	25
TE7290	0701220407	Project Based Learning -I	PIS		0	0	4	50	0	0	0	2	50
T4005	0701220408	Integrated Disaster Management *			0	0	0	0	0	0	0	Non Letter Grade	0
Total					12	1	8	70	30	190	135	17	425
Generic Elective Courses Group													
T6184	0701220409	Basic German I	GE		2	0	0	0	0	50	0	2	50
T6186	0701220410	Basic French I	GE		2	0	0	0	0	50	0	2	50
T6188	0701220411	Basic Spanish I	GE		2	0	0	0	0	50	0	2	50
Total Required Credits								0	0	50	0	2	50
Semester : 5													



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Catalog Course Code	Course Code	Course Title	Nature	Specialization/ Area/ Department	Teaching Scheme (Hours Per Week)			Examination Scheme (Marks)				Total Credits	Total
					L	T	La b	Practical		Theory			
								CA	ESE	CA	ESE		
Generic Core Courses													
T8000	0701220501	Service Learning	HS		0	0	8	100	0	0	0	4	100
F7046	0701220502	Introduction to Full Stack Development	PC		4	0	0	0	0	100	0	4	100
T7908	0701220503	Computer Networks	PC		3	0	0	0	0	30	45	3	75
T7482	0701220504	Computer Networks Lab	PC		0	0	2	10	15	0	0	1	25
T7907	0701220505	Database Management Systems	PC		3	0	0	0	0	30	45	3	75
T7487	0701220506	Data Base Management Systems Lab	PC		0	0	4	20	30	0	0	2	50
TE7299	0701220507	Theory of Computation	PC		3	0	0	0	0	30	45	3	75
T6774	0701220508	Principles of Economics	HS		2	0	0	0	0	50	0	2	50
Total					15	0	14	130	45	240	135	22	550
Open Elective Courses Group													
T7393	0701220509	Computer Based Statistical Packages	OE		3	0	0	0	0	30	45	3	75
T7499	0701220510	Java	OE		3	0	0	0	0	30	45	3	75
T7574	0701220511	MATLAB	OE		3	0	0	0	0	30	45	3	75
TE7698	0701220512	Nanotechnology	OE		3	0	0	0	0	30	45	3	75
TE7387	0701220513	Project Management	OE		3	0	0	0	0	30	45	3	75
TE7223	0701220514	Smart Urban Planning	OE		3	0	0	0	0	30	45	3	75
TE7240	0701220515	Water Resource Planning and Management	OE		3	0	0	0	0	30	45	3	75
TE7263	0701220516	Introduction to AI and Machine Learning	OE		3	0	0	0	0	30	45	3	75



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Catalog Course Code	Course Code	Course Title	Nature	Specialization/ Area/ Department	Teaching Scheme (Hours Per Week)			Examination Scheme (Marks)				Total Credits	Total
					L	T	La b	Practical		Theory			
								CA	ESE	CA	ESE		
TE7265	0701220517	Introduction to Data Science	OE		3	0	0	0	0	30	45	3	75
TE7428	0701220518	Introduction to Image Processing	OE		3	0	0	0	0	30	45	3	75
TE7335	0701220519	Introduction to Robotics	OE		3	0	0	0	0	30	45	3	75
TE7339	0701220520	Renewable Energy Systems	OE		3	0	0	0	0	30	45	3	75
TE7351	0701220521	3D Printing and Prototyping	OE		3	0	0	0	0	30	45	3	75
TE7365	0701220522	Electrical and Electronics Materials	OE		3	0	0	0	0	30	45	3	75
TE7388	0701220523	Quality Management Techniques	OE		3	0	0	0	0	30	45	3	75
Total Required Credits								0	0	30	45	3	75
Semester : 6													
Generic Core Courses													
TE7008	0701220601	Distributed Systems and Resource Management	PC		3	0	0	0	0	30	45	3	75
F0003	0701220602	Flexi-Credit Course	PC		3	0	0	0	0	75	0	3	75
T6749	0701220603	Design Thinking	HS		2	0	0	0	0	50	0	2	50
T7674	0701220604	Cyber Security	PC		2	0	0	0	0	50	0	2	50
TE7291	0701220605	Project Based Learning-II	PIS		0	0	4	50	0	0	0	2	50
T7802	0701220606	Capstone Course	PC		2	0	0	0	0	50	0	2	50
Total					12	0	4	50	0	255	45	14	350
Generic Elective Courses Group - I													



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Catalog Course Code	Course Code	Course Title	Nature	Specialization/ Area/ Department	Teaching Scheme (Hours Per Week)			Examination Scheme (Marks)				Total Credits	Total
					L	T	La b	Practical		Theory			
								CA	ESE	CA	ESE		
TE7255	0701220607	Data Warehousing and Mining	PE		3	0	0	0	0	30	45	3	75
TE7101	0701220608	Internet of Things	PE		3	0	0	0	0	30	45	3	75
TE7328	0701220609	Image Processing	PE		3	0	0	0	0	30	45	3	75
Total Required Credits								0	0	30	45	3	75
Generic Elective Courses Group - II													
TE7013	0701220610	Data Warehousing and Mining Lab	PE		0	0	2	10	15	0	0	1	25
T7528	0701220611	Internet of Things Lab	PE		0	0	2	10	15	0	0	1	25
TE7329	0701220612	Image Processing Lab	PE		0	0	2	10	15	0	0	1	25
Total Required Credits								10	15	0	0	1	25
Generic Elective Courses Group - III													
T7473	0701220613	Artificial Intelligence	PE		3	0	0	0	0	30	45	3	75
TE7259	0701220614	Human Computer Interface	PE		3	0	0	0	0	30	45	3	75
TE7243	0701220615	Advanced Algorithms	PE		3	0	0	0	0	30	45	3	75
Total Required Credits								0	0	30	45	3	75
Generic Elective Courses Group - IV													
TE7014	0701220616	Artificial Intelligence Lab	PE		0	0	2	10	15	0	0	1	25
TE7260	0701220617	Human Computer Interface Lab	PE		0	0	2	10	15	0	0	1	25
TE7244	0701220618	Advanced Algorithms Lab	PE		0	0	2	10	15	0	0	1	25



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Catalog Course Code	Course Code	Course Title	Nature	Specialization/ Area/ Department	Teaching Scheme (Hours Per Week)			Examination Scheme (Marks)				Total Credits	Total
					L	T	La b	Practical		Theory			
								CA	ESE	CA	ESE		
Total Required Credits								10	15	0	0	1	25
Open Elective Courses Group													
T7474	0701220619	Basics of Database	OE		3	0	0	0	0	30	45	3	75
T7616	0701220620	Fundamentals of Automotive Technology	OE		3	0	0	0	0	30	45	3	75
T7529	0701220621	Machine Learning	OE		3	0	0	0	0	30	45	3	75
TE7756	0701220622	Open Source Technologies	OE		3	0	0	0	0	30	45	3	75
T7584	0701220623	Printed Circuit Board (PCB) Design	OE		3	0	0	0	0	30	45	3	75
T7650	0701220624	Six sigma	OE		3	0	0	0	0	30	45	3	75
TE7700	0701220625	Smart Materials	OE		3	0	0	0	0	30	45	3	75
TE7195	0701220626	GIS Applications	OE		3	0	0	0	0	30	45	3	75
TE7264	0701220627	Introduction to BIGDATA	OE		3	0	0	0	0	30	45	3	75
TE7171	0701220628	Introduction to Mathematical Modelling	OE		3	0	0	0	0	30	45	3	75
TE7203	0701220629	Intelligent Transportation Management	OE		3	0	0	0	0	30	45	3	75
TE7334	0701220630	Introduction to Mechatronics	OE		3	0	0	0	0	30	45	3	75
TE7338	0701220631	Principles of Modern Communication Systems	OE		3	0	0	0	0	30	45	3	75
TE7376	0701220632	Introduction to Operations Research	OE		3	0	0	0	0	30	45	3	75
TE7377	0701220633	Introduction to Optimisation	OE		3	0	0	0	0	30	45	3	75
Total Required Credits								0	0	30	45	3	75



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Annexure A

Catalog Course Code	Course Code	Course Title	Nature	Specialization/ Area/ Department	Teaching Scheme (Hours Per Week)			Examination Scheme (Marks)				Total Credits	Total
					L	T	La b	Practical		Theory			
								CA	ESE	CA	ESE		
Semester : 7													
Generic Core Courses													
T7804	0701220701	B.Tech Project	PIS		0	0	8	40	60	0	0	4	100
TE7751	0701220702	Compiler Construction	PC		3	0	0	0	0	30	45	3	75
T7478	0701220703	Compiler Construction Lab	PC		0	0	2	10	15	0	0	1	25
F0003	0701220704	Flexi-Credit Course	PC		3	0	0	0	0	75	0	3	75
Total					6	0	10	50	75	105	45	11	275
Generic Elective Courses Group													
T2585	0701220705	Organizational Behaviour	OE		2	0	0	0	0	50	0	2	50
TE7438	0701220706	History of Science and Technology	OE		2	0	0	0	0	50	0	2	50
Total Required Credits								0	0	50	0	2	50
Generic Elective Courses Group - I													
TE7253	0701220707	Data Science	PE		3	0	0	0	0	30	45	3	75
TE7282	0701220708	Optimization Techniques and Algorithms	PE		3	0	0	0	0	30	45	3	75
TE7097	0701220709	Neural Network	PE		3	0	0	0	0	30	45	3	75
Total Required Credits								0	0	30	45	3	75
Generic Elective Courses Group - II													
TE7112	0701220710	Neural Networks Lab	PE		0	0	2	10	15	0	0	1	25
TE7283	0701220711	Optimization Techniques and Algorithms Lab	PE		0	0	2	10	15	0	0	1	25





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Catalog Course Code	Course Code	Course Title	Nature	Specialization/ Area/ Department	Teaching Scheme (Hours Per Week)			Examination Scheme (Marks)				Total Credits	Total
					L	T	La b	Practical		Theory			
								CA	ESE	CA	ESE		
TE7254	0701220712	Data Science Lab	PE		0	0	2	10	15	0	0	1	25
Total Required Credits								10	15	0	0	1	25
Generic Elective Courses Group - III													
T7529	0701220713	Machine Learning	PE		3	0	0	0	0	30	45	3	75
T7138	0701220714	Network Security	PE		3	0	0	0	0	30	45	3	75
TE7103	0701220715	Natural Language Processing	PE		3	0	0	0	0	30	45	3	75
Total Required Credits								0	0	30	45	3	75
Generic Elective Courses Group - IV													
TE7105	0701220716	Machine Learning Lab	PE		0	0	2	10	15	0	0	1	25
TE7106	0701220717	Natural Language Processing Lab	PE		0	0	2	10	15	0	0	1	25
T7506	0701220718	Network Security Lab	PE		0	0	2	10	15	0	0	1	25
Total Required Credits								10	15	0	0	1	25
Generic Elective Courses Group - V													
TE7251	0701220719	Computer Graphics	PE		3	0	0	0	0	30	45	3	75
TE7297	0701220720	Software Testing Tools	PE		3	0	0	0	0	30	45	3	75
TE7916	0701220721	Cloud Computing Tools and Techniques	PE		3	0	0	0	0	30	45	3	75
Total Required Credits								0	0	30	45	3	75
Semester : 8													



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Catalog Course Code	Course Code	Course Title	Nature	Specialization/ Area/ Department	Teaching Scheme (Hours Per Week)			Examination Scheme (Marks)				Total Credits	Total
					L	T	La b	Practical		Theory			
								CA	ESE	CA	ESE		
Generic Core Courses													
T7912	0701220801	Internship	PIS		0	0	24	120	180	0	0	12	300
T7802	0701220802	Seminar	PIS		0	0	4	50	0	0	0	2	50
Total					0	0	28	170	180	0	0	14	350

Abbreviations (Nature)

BS	Basic Sciences
ES	Engineering Sciences
HS	Humanities and Social Sciences
OE	Open Electives
PC	Professional Core
PE	Professional Elective
PIS	Project, Internship, Seminar
PD	Professional Development Course
MC	Mandatory Course
L	Lecture
T	Tutorial
CA	Continuous Assessment
ESE	End Semester Examination



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Semester	Internal Credits	External Credits	Total Credits	Total Marks
Group A				
Semester 1	1	17	18	450
Semester 2	4	17	21	525
Semester 3	5	19	24	600
Semester 4	8	11	19	475
Semester 5	10	15	25	625
Semester 6	11	14	25	625
Semester 7	5	19	24	600
Semester 8	2	12	14	350
Total	46	124	170	4250
Group B				
Semester 1	2	17	19	475
Semester 2	3	17	20	500
Semester 3	5	19	24	600
Semester 4	8	11	19	475
Semester 5	10	15	25	625
Semester 6	11	14	25	625
Semester 7	5	19	24	600
Semester 8	2	12	14	350
Total	46	124	170	4250

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Annexure B
Optional 'Honours' Specialization

Catalog Course Code	Course Code	Course Title	Nature	Specialization/ Area/ Department	Teaching Scheme (Hours Per Week)			Examination Scheme (Marks)				Total Credits	Total
					L	T	La b	Practical		Theory			
								CA	ESE	CA	ESE		
Semester : 5													
Artificial Intelligence and Machine Learning Specialization Core Courses													
TE7273	0701220524	Machine Learning: Classification	PC		3	0	0	0	0	30	45	3	75
TE7274	0701220525	Machine Learning: Regression	PC		3	0	0	0	0	30	45	3	75
Total					6	0	0	0	0	60	90	6	150
Semester : 5													
Computing Specialization Core Courses													
TE7248	0701220526	Cloud Computing	PC		3	0	0	0	0	30	45	3	75
TE7250	0701220527	Cloud Environment in Public Model	PC		3	0	0	0	0	30	45	3	75
Total					6	0	0	0	0	60	90	6	150
Semester : 5													
Data Science Specialization Core Courses													
TE7281	0701220528	Open Source Tools for Data Science	PC		4	0	0	0	0	40	60	4	100
TE7292	0701220529	R Programming	PC		3	0	0	0	0	30	45	3	75
Total					7	0	0	0	0	70	105	7	175

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Annexure B
Optional 'Honours' Specialization

Catalog Course Code	Course Code	Course Title	Nature	Specialization/ Area/ Department	Teaching Scheme (Hours Per Week)			Examination Scheme (Marks)				Total Credits	Total
					L	T	La b	Practical		Theory			
								CA	ESE	CA	ESE		
Semester : 5													
Game Design and Development Specialization Core Courses													
TE7267	0701220530	Introduction to Game Development	PC		3	0	0	0	0	30	45	3	75
TE7285	0701220531	Principles of Game Design	PC		3	0	0	0	0	30	45	3	75
Total					6	0	0	0	0	60	90	6	150
Semester : 5													
Internet of Things Specialization Core Courses													
TE7268	0701220532	Introduction to IOT	PC		4	0	0	0	0	40	60	4	100
TE7293	0701220533	Raspberry Pi and Python	PC		3	0	0	0	0	30	45	3	75
Total					7	0	0	0	0	70	105	7	175
Semester : 5													
Security and Privacy Specialization Core Courses													
TE7296	0701220534	Software Security	PC		3	0	0	0	0	30	45	3	75
TE7301	0701220535	Usable Security	PC		3	0	0	0	0	30	45	3	75
Total					6	0	0	0	0	60	90	6	150

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Optional 'Honours' Specialization

Catalog Course Code	Course Code	Course Title	Nature	Specialization/ Area/ Department	Teaching Scheme (Hours Per Week)			Examination Scheme (Marks)				Total Credits	Total
					L	T	La b	Practical		Theory			
								CA	ESE	CA	ESE		
Semester : 6													
Artificial Intelligence and Machine Learning Specialization Core Courses													
TE7266	0701220634	Introduction to Deep Learning	PC		4	0	0	0	0	40	60	4	100
TE7271	0701220635	Machine Learning Clustering and Retrieval	PC		3	0	0	0	0	30	45	3	75
Total					7	0	0	0	0	70	105	7	175
Semester : 6													
Computing Specialization Core Courses													
TE7246	0701220636	Block Chain	PC		4	0	0	0	0	40	60	4	100
TE7249	0701220637	Cloud Computing Platforms	PC		3	0	0	0	0	30	45	3	75
Total					7	0	0	0	0	70	105	7	175
Semester : 6													
Data Science Specialization Core Courses													
TE7247	0701220638	Business Analytics	PC		3	0	0	0	0	30	45	3	75
TE7284	0701220639	Power BI	PC		3	0	0	0	0	30	45	3	75
Total					6	0	0	0	0	60	90	6	150

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Optional 'Honours' Specialization

Catalog Course Code	Course Code	Course Title	Nature	Specialization/ Area/ Department	Teaching Scheme (Hours Per Week)			Examination Scheme (Marks)				Total Credits	Total
					L	T	La b	Practical		Theory			
								CA	ESE	CA	ESE		
Semester : 6													
Game Design and Development Specialization Core Courses													
TE7275	0701220640	Modern Platforms in Game Development	PC		4	0	0	0	0	40	60	4	100
TE7256	0701220641	Entrepreneurship in Game Development	PC		3	0	0	0	0	30	45	3	75
Total					7	0	0	0	0	70	105	7	175
Semester : 6													
Internet of Things Specialization Core Courses													
TE7269	0701220642	IOT Security and Privacy	PC		3	0	0	0	0	30	45	3	75
TE7295	0701220643	Software Defined Networking	PC		3	0	0	0	0	30	45	3	75
Total					6	0	0	0	0	60	90	6	150
Semester : 6													
Security and Privacy Specialization Core Courses													
TE7252	0701220644	Cryptography	PC		4	0	0	0	0	40	60	4	100
TE7258	0701220645	Hardware Security	PC		3	0	0	0	0	30	45	3	75
Total					7	0	0	0	0	70	105	7	175

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Optional 'Honours' Specialization

Catalog Course Code	Course Code	Course Title	Nature	Specialization/ Area/ Department	Teaching Scheme (Hours Per Week)			Examination Scheme (Marks)				Total Credits	Total
								Practical		Theory			
					L	T	La b	CA	ESE	CA	ESE		
Semester : 7													
Artificial Intelligence and Machine Learning Specialization Core Courses													
T7805	0701220722	Specialization Project	PIS		0	0	10	50	75	0	0	5	125
T7802	0701220723	Specialization Seminar	PIS		0	0	4	20	30	0	0	2	50
Total					0	0	14	70	105	0	0	7	175
Semester : 7													
Computing Specialization Core Courses													
T7805	0701220722	Specialization Project	PIS		0	0	10	50	75	0	0	5	125
T7802	0701220723	Specialization Seminar	PIS		0	0	4	20	30	0	0	2	50
Total					0	0	14	70	105	0	0	7	175
Semester : 7													
Data Science Specialization Core Courses													
T7805	0701220722	Specialization Project	PIS		0	0	10	50	75	0	0	5	125
T7802	0701220723	Specialization Seminar	PIS		0	0	4	20	30	0	0	2	50
Total					0	0	14	70	105	0	0	7	175

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Annexure B
Optional 'Honours' Specialization

Catalog Course Code	Course Code	Course Title	Nature	Specialization/ Area/ Department	Teaching Scheme (Hours Per Week)			Examination Scheme (Marks)				Total Credits	Total
								Practical		Theory			
					L	T	La b	CA	ESE	CA	ESE		
Semester : 7													
Game Design and Development Specialization Core Courses													
T7805	0701220722	Specialization Project	PIS		0	0	10	50	75	0	0	5	125
T7802	0701220723	Specialization Seminar	PIS		0	0	4	20	30	0	0	2	50
Total					0	0	14	70	105	0	0	7	175
Semester : 7													
Internet of Things Specialization Core Courses													
T7805	0701220722	Specialization Project	PIS		0	0	10	50	75	0	0	5	125
T7802	0701220723	Specialization Seminar	PIS		0	0	4	20	30	0	0	2	50
Total					0	0	14	70	105	0	0	7	175
Semester : 7													
Security and Privacy Specialization Core Courses													
T7805	0701220722	Specialization Project	PIS		0	0	10	50	75	0	0	5	125
T7802	0701220723	Specialization Seminar	PIS		0	0	4	20	30	0	0	2	50
Total					0	0	14	70	105	0	0	7	175



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Optional 'Honours' Specialization

Semester	Internal Credits	External Credits	Total Credits	Total Marks
Artificial Intelligence and Machine Learning				
Semester 5	0	6	6	150
Semester 6	0	7	7	175
Semester 7	0	7	7	175
Total	0	20	20	500
Computing				
Semester 5	0	6	6	150
Semester 6	0	7	7	175
Semester 7	0	7	7	175
Total	0	20	20	500
Data Science				
Semester 5	0	7	7	175
Semester 6	0	6	6	150
Semester 7	0	7	7	175
Total	0	20	20	500
Game Design & Development				
Semester 5	0	6	6	150
Semester 6	0	7	7	175
Semester 7	0	7	7	175
Total	0	20	20	500
Internet of Things				
Semester 5	0	7	7	175
Semester 6	0	6	6	150



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Optional 'Honours' Specialization

Semester 7	0	7	7	175
Total	0	20	20	500
Security and Privacy				
Semester 5	0	6	6	150
Semester 6	0	7	7	175
Semester 7	0	7	7	175
Total	0	20	20	500

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Annexure C
Optional 'Minor' Specialization

Catalog Course Code	Course Code	Course Title	Nature	Specialization/ Area/ Department	Teaching Scheme (Hours Per Week)			Examination Scheme (Marks)				Total Credits	Total
					L	T	La b	Practical		Theory			
								CA	ESE	CA	ESE		
Semester : 5													
Automobile Engineering with Hybrid and Autonomous Technology													
Specialization Core Courses													
TE7355	0701220536	Basics of Automotive Engineering	PC		3	0	0	0	0	30	45	3	75
TE7665	0701220537	Automotive Electronics and Instrumentation	PC		2	0	0	0	0	50	0	2	50
TE7666	0701220538	Automotive Vehicle Dynamics and NVH Lab	PC		0	0	2	10	15	0	0	1	25
Total					5	0	2	10	15	80	45	6	150
Semester : 5													
Embedded Systems													
Specialization Core Courses													
T7801	0701220539	Specialization Project	PIS		0	0	2	10	15	0	0	1	25
T7802	0701220540	Specialization Seminar	PIS		0	0	4	20	30	0	0	2	50
TE7298	0701220541	System Programming	PC		4	0	0	0	0	40	60	4	100
Total					4	0	6	30	45	40	60	7	175
Semester : 5													
Smart Cities and Urban Analytics													
Specialization Core Courses													
TE7220	0701220542	Smart Cities : Context Policy and Governance	PC		3	0	0	0	0	30	45	3	75
TE7206	0701220543	IOT for Smart Cities	PC		3	0	0	0	0	30	45	3	75

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Annexure C
Optional 'Minor' Specialization

Catalog Course Code	Course Code	Course Title	Nature	Specialization/ Area/ Department	Teaching Scheme (Hours Per Week)			Examination Scheme (Marks)				Total Credits	Total
								Practical		Theory			
					L	T	La b	CA	ESE	CA	ESE		
TE7207	0701220544	IOT for Smart Cities Lab	PC		0	0	2	10	15	0	0	1	25
Total					6	0	2	10	15	60	90	7	175
Semester : 6													
Automobile Engineering with Hybrid and Autonomous Technology													
Specialization Core Courses													
TE7669	0701220646	Hybrid Technology	PC		2	0	0	0	0	20	30	2	50
F0002	0701220647	Flexi-Credit Course	PC		2	0	0	0	0	50	0	2	50
TE7435	0701220648	Automotive Engine and Transmission System	PC		3	0	0	0	0	30	45	3	75
Total					7	0	0	0	0	100	75	7	175
Semester : 6													
Embedded Systems													
Specialization Core Courses													
T7802	0701220649	Specialization Project	PC		0	0	4	20	30	0	0	2	50
TE7325	0701220650	Embedded Linux	PC		4	0	0	0	0	40	60	4	100
Total					4	0	4	20	30	40	60	6	150
Semester : 6													
Smart Cities and Urban Analytics													
Specialization Core Courses													

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Annexure C
Optional 'Minor' Specialization

Catalog Course Code	Course Code	Course Title	Nature	Specialization/ Area/ Department	Teaching Scheme (Hours Per Week)			Examination Scheme (Marks)				Total Credits	Total
								Practical		Theory			
					L	T	La b	CA	ESE	CA	ESE		
T7802	0701220651	Specialization Project	PIS		0	0	4	50	0	0	0	2	50
T7802	0701220652	Specialization Seminar	PIS		0	0	4	50	0	0	0	2	50
TE7177	0701220653	Application of Sensor Technology to Smart Cities	PE		3	0	0	0	0	30	45	3	75
Total					3	0	8	100	0	30	45	7	175
Semester : 7													
Automobile Engineering with Hybrid and Autonomous Technology													
Specialization Core Courses													
T7805	0701220722	Specialization Project	PIS		0	0	10	50	75	0	0	5	125
T7802	0701220723	Specialization Seminar	PIS		0	0	4	20	30	0	0	2	50
Total					0	0	14	70	105	0	0	7	175
Semester : 7													
Embedded Systems													
Specialization Core Courses													
T7802	0701220724	Specialization Project	PIS		0	0	4	20	30	0	0	2	50
TE7304	0701220725	Advanced Microcontrollers and RTOS	PC		4	0	0	0	0	40	60	4	100
TE7305	0701220726	Advanced Microcontrollers and RTOS Lab	PC		0	0	2	10	15	0	0	1	25
Total					4	0	6	30	45	40	60	7	175

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Optional 'Minor' Specialization

Catalog Course Code	Course Code	Course Title	Nature	Specialization/ Area/ Department	Teaching Scheme (Hours Per Week)			Examination Scheme (Marks)				Total Credits	Total
					L	T	La b	Practical		Theory			
								CA	ESE	CA	ESE		
Semester : 7													
Smart Cities and Urban Analytics Specialization Core Courses													
T7803	0701220727	Specialization Project	PIS		0	0	6	30	45	0	0	3	75
Total					0	0	6	30	45	0	0	3	75
Specialization Elective : Smart Cities and Urban Analytics													
TE7205	0701220728	Intelligent Transportation Systems	PE		3	0	0	0	0	30	45	3	75
TE7234	0701220729	Urban Hydrology and Hydraulics	PE		3	0	0	0	0	30	45	3	75
Total Required Credits								0	0	30	45	3	75



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Semester	Internal Credits	External Credits	Total Credits	Total Marks
Automobile Engineering with Hybrid and Autonomous Technology				
Semester 5	2	4	6	150
Semester 6	2	5	7	175
Semester 7	0	7	7	175
Total	4	16	20	500
Embedded Systems				
Semester 5	0	7	7	175
Semester 6	0	6	6	150
Semester 7	0	7	7	175
Total	0	20	20	500
Smart Cities and Urban Analytics				
Semester 5	0	7	7	175
Semester 6	4	3	7	175
Semester 7	0	6	6	150
Total	4	16	20	500



Pooja Bagane <pooja.bagane@sitpune.edu.in>

Fwd: First Approval Letter

Head CSIT <headcsit@sitpune.edu.in>

Fri, Jul 30, 2021 at 9:25 AM

To: Shubhangi Deokar <shubhangi.deokar@sitpune.edu.in>, Rahul Joshi <rahulj@sitpune.edu.in>, Pooja Bagane <pooja.bagane@sitpune.edu.in>

Thanks and Best Regards,

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Researchgate: https://www.researchgate.net/profile/Dr_Ambika_Pawar

Research id: <https://researchid.co/ambikap>

Publons id: <https://publons.com/researcher/4166003/ambika-pawar/>

----- Forwarded message -----

From: **DyDirector Academics** <dydirectoracademics@sitpune.edu.in>

Date: Thu, Jul 29, 2021 at 5:59 PM

Subject: Fwd: First Approval Letter

To: Head CSIT <headcsit@sitpune.edu.in>, SIT Syllabus Structure <sit.syllabusstructure@sitpune.edu.in>

----- Forwarded message -----

From: **head_academics@siu.edu.in** <head_academics@siu.edu.in>

Date: Thu, 29 Jul, 2021, 3:52 pm

Subject: First Approval Letter

To: <director@sitpune.edu.in>, <coe@siu.edu.in>, <ar@siu.edu.in>, <dydirectoracademics@sitpune.edu.in>, <os_academics@siu.edu.in>, <head_academics@siu.edu.in>, <ar_academics@siu.edu.in>



SYMBIOSIS INTERNATIONAL (DEEMED UNIVERSITY)

(Established under section 3 of the UGC Act 1956)

Re - accredited by NAAC with 'A' Grade

Founder: Prof. Dr. S. B. Mujumdar, M.Sc.,Ph.D. (Awarded Padma Bhushan and Padma Shri by President of India)

SIU/U-110(SIT, Pune)/2021/2836

Date: 29/07/2021

To

The Director

Symbiosis Institute of Technology, Pune

Subject: Approval of the Programme Structure/s for the academic year 2021-2022

Dear Sir/Madam,

This is to inform you that the following Programme Structure has been duly approved by the Academic Council for the Academic Year 2021-2022.

Sr.No.	Programme	Batch
1	Bachelor of Technology (Computer Science and Engineering)	2021-2025

You may download the same using your login credentials using the link and the path mentioned-

Link:

<http://eduwiz.intechsolutionspune.in/eduwiz/login.html>

Path:

Academics->Catalogue->Programme Structure-> View Course Structure -> Select Institute -> Select Academic Year -> Select Programme -> Select Batch -> Show Course Structure -> Print Programme Structure.

Thanking you.

Sincerely,



Dr. Pravin Dange
Head- Academics

Copy to: Controller of Examinations, SIU

1 Of 1



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Symbiosis Institute of Technology, Pune
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Programme Structure 2021-25

1. OBJECTIVE	<p>B.Tech is a full-time four year graduation programme, which aims at transforming a student into a technically sound professional. The syllabus contains courses on basic sciences, technical arts, humanities & liberal arts and professional courses. The mix of these courses has been evolved with an aim to produce professionals who have knowledge not only of Engineering but who are good managers to contribute in a cross-functional team and have human values.</p> <p>Being a professional programme it ensures a healthy balance between theoretical foundation and practical exposure to the present day world.</p> <p>The emphasis is to develop all round personality that would enable the students to take up the challenges of the corporate world and also become responsible citizens of the society.</p>			
2. DURATION (IN MONTHS)	48 (Full Time)			
3. INTAKE	180			
4. RESERVATION	I. Within the sanctioned intake	a) SC (In Percentage)	b) ST (In Percentage)	c) Differently abled (In Percentage)
		15	7.5	3
	II. Over and above the sanctioned intake	a) Kashmiri Migrants (In Seats)		b) International Students (In Percentage)
		2		15
5. ELIGIBILITY	<p>Passed 10+2 examination with Physics and Mathematics as compulsory subjects along with one of Chemistry/ Biotechnology/ Biology/ Technical Vocational subjects. Obtained at least 45% marks or equivalent grade (40% marks or equivalent grade for Scheduled Caste /Scheduled Tribes) in the above subjects taken together.</p> <p>B. Tech (Lateral entry to second year) :</p> <p>a) Passed Diploma examination from an AICTE approved Institution; with at least 45% marks or equivalent grade (40% marks or equivalent grade for Scheduled Caste /Scheduled Tribes) in appropriate branch of Engineering / Technology.</p>			





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		<p>b) Passed B.Sc. Degree from a recognized University as defined by UGC, with at least 45% marks or equivalent grade (40% marks or equivalent grade for Scheduled Caste /Scheduled Tribes) and passed XII standard with mathematics as a subject.</p> <p>c) Provided that in case of students belonging to B. Sc. Stream, shall clear the subjects of Engineering Graphics / Engineering Drawing and Engineering Mechanics of the first year Engineering program along with the second year subjects.</p> <p>d) Provided further that, the students belonging to B. Sc. Stream shall be considered only after filling the supernumerary seats in this category with students belonging to the Diploma stream.</p> <p>e) Provided further that students, who have passed Diploma in Engineering and Technology from an AICTE approved Institution or B. Sc. Degree from a recognized University as defined by UGC, shall also be eligible for admission to the first year Engineering Degree courses subject to vacancies in the first year class in case the vacancies at lateral entry are exhausted. However the admissions shall be based strictly on the eligibility criteria as mentioned in a, b, c, and d above.</p>
6.	SELECTION PROCEDURE	Merit list by valid score of Symbiosis Entrance Test (SITEEE) or Joint Entrance Examination (JEE - Main) or Any State Government Engineering Entrance Examination.
7.	MEDIUM OF INSTRUCTION	English
8.	PROGRAMME PATTERN	Semester
9.	COURSE & SPECIALIZATION	<p>Annexure A: Bachelor of Technology (Computer Science and Engineering)</p> <p>Students may pursue optional 'Honours' OR 'Minor' specialization in one of the specialization areas by completing additional 20 credits in Semester: 5, 6 and 7 as specified in Annexure B for Honours and Annexure C for Minor in the respective specialization area.</p> <p>Annexure B: Optional 'Honours' specialization area</p> <ol style="list-style-type: none"> 1. Artificial Intelligence and Machine Learning 2. Computing 3. Data Science 4. Game Design & Development 5. Security and Privacy 6. Internet of Things <p>Annexure C: Optional 'Minor' specialization area</p>





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		1. Automobile Engineering with Hybrid and Autonomous Technology (ME) 2. Embedded Systems (E&TC) 3. Smart Cities and Urban Analytics (CE)			
10.	FEE		Academic Fee p.a	Institute Deposit	Total
		Indian Students	260000	20000	280000
		International Students (USD equivalent to INR)	390000	20000	410000
Note: For additional optional specialization 'Honours' or 'Minor', an additional fees of Rs. 25000/- will be charged in the third year.					
11.	ASSESSMENT	All internal courses will have 100% component as internal evaluation at the institute level. All external courses will have 40% internal component and 60% component as external [University] examination. The internal and external will be separate heads of passing.			
12.	STANDARD OF PASSING	The assessment of the student for each examination is done, based on relative performance. Maximum Grade Point (GP) is 10 corresponding to O (Outstanding). For all courses, a student is required to pass both internal and external examination separately with a minimum Grade Point of 4 corresponding to Grade P. Students securing less than 40% absolute marks in each head of passing will be declared FAIL. The University awards a degree to the student who has achieved a minimum CGPA of 4 out of maximum of 10 CGPA for the programme.			
13.	AWARD OF DEGREE/ DIPLOMA/ CERTIFICATE	Bachelor of Technology (Computer Science and Engineering) OR Bachelor of Technology (Computer Science and Engineering) with Honours in Artificial Intelligence and Machine Learning / Computing / Data Science / Game Design & Development / Security and Privacy /Internet of Things. OR			



		Bachelor of Technology (Computer Science and Engineering) with Minor in Automobile Engineering with Hybrid and Autonomous Technology / Embedded Systems /Smart Cities and Urban Analytics will be awarded at the end of semester VIII examination by taking into consideration the performance of all semester examinations after obtaining minimum 4.00 CGPA out of 10 CGPA
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14. CLASSIFICATION OF CREDITS							
Semester	Generic Core	Generic Elective	Specialization Core	Specialization Elective	Open Elective	Audit	Total
Group A							
1	18	0	0	0	0	1*	18
2	21	0	0	0	0	1*	21
3	23	0	0	0	1	0	24
4	17	2	0	0	0	1*	19
5	22	0	0	0	3	0	25
6	14	8	0	0	3	0	25
7	11	13	0	0	0	0	24
8	14	0	0	0	0	0	14
Total	140	23	0	0	7	0	170
Group B							
1	19	0	0	0	0	1*	19
2	20	0	0	0	0	1*	20
3	23	0	0	0	1	0	24
4	17	2	0	0	0	1*	19
5	22	0	0	0	3	0	25
6	14	8	0	0	3	0	25
7	11	13	0	0	0	0	24
8	14	0	0	0	0	0	14
Total	140	23	0	0	7	0	170
Optional Additional Courses (Honours)							
Total	0	0	20	0	0	0	20
Optional Additional Courses (Minor)							
Total	0	0	20/17	0/3	0	0	20
\$IU						Granc	190

22/08/2022 (R-2)

Granc



* Satisfactory completion of the non letter grade courses 'Integrated Disaster Management', 'Fitness for Life', 'Certificate in COVID-19 Care for the Community' is mandatory for the award of degree.

The revised programme structure supersedes the previously approved programme structure dated 12/03/2022 for the programme.

This Programme Structure is aligned with the norms laid down by the University and is approved by the Academic Council. Hereafter changes (if any) which conform to the policy on "Curriculum Development and Review" would be permissible, subject to revision of the Programme Structure, following the specified processes.

Head - Academics

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Symbiosis Institute of Technology, Pune
Bachelor of Technology (Computer Science and Engineering)
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Annexure A

Catalog Course Code	Course Code	Course Title	Nature	Specialization/ Area/ Department	Teaching Scheme (Hours Per Week)			Examination Scheme (Marks)				Total Credits	Total
					L	T	La b	Practical		Theory			
								CA	ESE	CA	ESE		
Semester : 1													
Group - A Generic Core Courses													
TE7168	0701220101	Engineering Mathematics -I	BS		3	1	0	0	0	40	60	4	100
T7391	0701220102	Physics	BS		3	0	0	0	0	30	45	3	75
T7392	0701220103	Physics lab	BS		0	0	2	10	15	0	0	1	25
T7383	0701220104	Communication Skills	HS		2	0	0	0	0	20	30	2	50
T7384	0701220105	Communication skills lab	HS		0	0	2	10	15	0	0	1	25
TE7288	0701220106	Programming in C	PC		3	0	0	0	0	30	45	3	75
TE7289	0701220107	Programming in C Lab	PC		0	0	2	10	15	0	0	1	25
TE7188	0701220108	Environmental Science	ES		2	0	0	0	0	20	30	2	50
T6773	0701220109	Creative Thinking	HS		1	0	0	0	0	25	0	1	25
TH4272	0701220119	Certificate in COVID-19 Care for the Community *			0	0	0	0	0	0	0	Non Letter Grade	0
Total Required Credits								30	45	165	210	18	450
Group - B Generic Core Courses													
TE7168	0701220101	Engineering Mathematics -I	BS		3	1	0	0	0	40	60	4	100
T7381	0701220110	Chemistry	BS		3	0	0	0	0	30	45	3	75
T7382	0701220111	Chemistry Lab	BS		0	0	2	10	15	0	0	1	25



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Catalog Course Code	Course Code	Course Title	Nature	Specialization/ Area/ Department	Teaching Scheme (Hours Per Week)			Examination Scheme (Marks)				Total Credits	Total
					L	T	La b	Practical		Theory			
								CA	ESE	CA	ESE		
T7540	0701220112	Basic Electrical and Electronics Engineering	ES		3	0	0	0	0	30	45	3	75
T7593	0701220113	Basic Electrical and Electronics Engineering Lab	ES		0	0	2	10	15	0	0	1	25
TE7286	0701220114	Programming and Problem Solving	ES		2	0	0	0	0	20	30	2	50
TE7287	0701220115	Programming and Problem Solving Lab	ES		0	0	2	10	15	0	0	1	25
T6732	0701220116	Critical Thinking	HS		1	0	0	0	0	25	0	1	25
T7925	0701220117	Engineering Graphics Lab	ES		0	0	4	20	30	0	0	2	50
TE7396	0701220118	Software Tools	ES		0	0	2	25	0	0	0	1	25
TH4272	0701220119	Certificate in COVID-19 Care for the Community *			0	0	0	0	0	0	0	Non Letter Grade	0
Total Required Credits								75	75	145	180	19	475
Semester : 2													
Group-A Generic Core Courses													
TE7169	0701220201	Engineering Mathematics -II	BS		3	1	0	0	0	40	60	4	100
T7381	0701220202	Chemistry	BS		3	0	0	0	0	30	45	3	75
T7382	0701220203	Chemistry Lab	BS		0	0	2	10	15	0	0	1	25
T7540	0701220204	Basic Electrical and Electronics Engineering	ES		3	0	0	0	0	30	45	3	75
T7593	0701220205	Basic Electrical and Electronics Engineering Lab	ES		0	0	2	10	15	0	0	1	25





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Catalog Course Code	Course Code	Course Title	Nature	Specialization/ Area/ Department	Teaching Scheme (Hours Per Week)			Examination Scheme (Marks)				Total Credits	Total
					L	T	La b	Practical		Theory			
								CA	ESE	CA	ESE		
TE7286	0701220206	Programming and Problem Solving	ES		2	0	0	0	0	20	30	2	50
TE7287	0701220207	Programming and Problem Solving Lab	ES		0	0	2	10	15	0	0	1	25
T7925	0701220208	Engineering Graphics Lab	ES		0	0	4	20	30	0	0	2	50
T6732	0701220209	Critical Thinking	HS		1	0	0	0	0	25	0	1	25
TE7396	0701220210	Software Tools	ES		0	0	2	25	0	0	0	1	25
TE7300	0701220211	Tinker Lab	ES		0	0	4	50	0	0	0	2	50
TH4095	0701220212	Fitness for Life *			0	0	0	0	0	0	0	Non Letter Grade	0
Total Required Credits								125	75	145	180	21	525
Group- B Generic Core Courses													
TE7169	0701220201	Engineering Mathematics -II	BS		3	1	0	0	0	40	60	4	100
TE7300	0701220211	Tinker Lab	ES		0	0	4	50	0	0	0	2	50
TH4095	0701220212	Fitness for Life *			0	0	0	0	0	0	0	Non Letter Grade	0
T7391	0701220213	Physics	BS		3	0	0	0	0	30	45	3	75
T7392	0701220214	Physics lab	BS		0	0	2	10	15	0	0	1	25
TE7288	0701220215	Programming in C	ES		3	0	0	0	0	30	45	3	75
TE7289	0701220216	Programming in C Lab	PC		0	0	2	10	15	0	0	1	25



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Catalog Course Code	Course Code	Course Title	Nature	Specialization/ Area/ Department	Teaching Scheme (Hours Per Week)			Examination Scheme (Marks)				Total Credits	Total
					L	T	La b	Practical		Theory			
								CA	ESE	CA	ESE		
T7383	0701220217	Communication Skills	HS		2	0	0	0	0	20	30	2	50
T7384	0701220218	Communication skills lab	HS		0	0	2	10	15	0	0	1	25
T6873	0701220219	Creative Thinking	HS		1	0	0	0	0	25	0	1	25
TE7188	0701220220	Environmental Science	ES		2	0	0	0	0	20	30	2	50
Total Required Credits								80	45	165	210	20	500
Semester : 3													
Generic Core Courses													
T7995	0701220301	Discrete Mathematics and Probability Theory	BS		3	1	0	0	0	40	60	4	100
T7996	0701220302	Computer Organization	PC		3	0	0	0	0	30	45	3	75
T7906	0701220303	Fundamentals of Data Structures	PC		3	0	0	0	0	30	45	3	75
TE7257	0701220304	Fundamentals of Data Structures Lab	PC		0	0	2	10	15	0	0	1	25
T7512	0701220305	Programming Paradigms	PC		3	0	0	0	0	30	45	3	75
T7513	0701220306	Programming Paradigms Lab	PC		0	0	2	10	15	0	0	1	25
T7997	0701220307	Digital Electronics and Logic Design	ES		3	0	0	0	0	30	45	3	75
T7555	0701220308	Digital Electronics and Logic Design Lab	ES		0	0	2	10	15	0	0	1	25
T2646	0701220309	Entrepreneurship Venture	HS		1	0	0	0	0	25	0	1	25
F7045	0701220310	Agile Software Engineering	PC		3	0	0	0	0	75	0	3	75
Total					19	1	6	30	45	260	240	23	575



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Catalog Course Code	Course Code	Course Title	Nature	Specialization/ Area/ Department	Teaching Scheme (Hours Per Week)			Examination Scheme (Marks)				Total Credits	Total
					L	T	La b	Practical		Theory			
								CA	ESE	CA	ESE		
Generic Elective Courses Group													
T6872	0701220311	Foundation of Ethics	GE		1	0	0	0	0	25	0	1	25
T6760	0701220312	Introduction to Indian Philosophy	GE		1	0	0	0	0	25	0	1	25
Total Required Credits								0	0	25	0	1	25
Semester : 4													
Generic Core Courses													
TE7170	0701220401	Engineering Mathematics-III	BS		2	1	0	0	0	30	45	3	75
F0004	0701220402	Flexi-Credit Course	PC		4	0	0	0	0	100	0	4	100
T7488	0701220403	Data Structures	PC		3	0	0	0	0	30	45	3	75
T7489	0701220404	Data Structures Lab	PC		0	0	2	10	15	0	0	1	25
T7510	0701220405	Operating Systems	PC		3	0	0	0	0	30	45	3	75
T7511	0701220406	Operating Systems Lab	PC		0	0	2	10	15	0	0	1	25
TE7290	0701220407	Project Based Learning -I	PIS		0	0	4	50	0	0	0	2	50
T4005	0701220408	Integrated Disaster Management *			0	0	0	0	0	0	0	Non Letter Grade	0
Total					12	1	8	70	30	190	135	17	425
Generic Elective Courses Group													



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Catalog Course Code	Course Code	Course Title	Nature	Specialization/ Area/ Department	Teaching Scheme (Hours Per Week)			Examination Scheme (Marks)				Total Credits	Total
					L	T	La b	Practical		Theory			
								CA	ESE	CA	ESE		
T6186	0701220409	Basic French I	GE		2	0	0	0	0	50	0	2	50
T6184	0701220410	Basic German I	GE		2	0	0	0	0	50	0	2	50
T6188	0701220411	Basic Spanish I	GE		2	0	0	0	0	50	0	2	50
Total Required Credits								0	0	50	0	2	50
Semester : 5													
Generic Core Courses													
F0004	0701220501	Flexi-Credit Course	PC		4	0	0	0	0	100	0	4	100
T8000	0701220502	Service Learning	HS		0	0	8	100	0	0	0	4	100
T7908	0701220503	Computer Networks	PC		3	0	0	0	0	30	45	3	75
T7482	0701220504	Computer Networks Lab	PC		0	0	2	10	15	0	0	1	25
T7907	0701220505	Database Management Systems	PC		3	0	0	0	0	30	45	3	75
T7487	0701220506	Data Base Management Systems Lab	PC		0	0	4	20	30	0	0	2	50
TE7299	0701220507	Theory of Computation	PC		3	0	0	0	0	30	45	3	75
T6774	0701220508	Principles of Economics	HS		2	0	0	0	0	50	0	2	50
Total					15	0	14	130	45	240	135	22	550
Open Elective Courses Group													
T7393	0701220509	Computer Based Statistical Packages	OE	Applied Science	3	0	0	0	0	30	45	3	75
T7499	0701220510	Java	OE	Computer Science and Engineering	3	0	0	0	0	30	45	3	75



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Catalog Course Code	Course Code	Course Title	Nature	Specialization/ Area/ Department	Teaching Scheme (Hours Per Week)			Examination Scheme (Marks)				Total Credits	Total
					L	T	La b	Practical		Theory			
								CA	ESE	CA	ESE		
T7574	0701220511	MATLAB	OE	Electronics & Tele-communication Engineering	3	0	0	0	0	30	45	3	75
TE7698	0701220512	Nanotechnology	OE	Applied Science	3	0	0	0	0	30	45	3	75
TE7387	0701220513	Project Management	OE	Mechanical Engineering	3	0	0	0	0	30	45	3	75
TE7223	0701220514	Smart Urban Planning	OE	Civil Engineering	3	0	0	0	0	30	45	3	75
TE7240	0701220515	Water Resource Planning and Management	OE	Civil Engineering	3	0	0	0	0	30	45	3	75
TE7263	0701220516	Introduction to AI and Machine Learning	OE	Computer Science and Engineering	3	0	0	0	0	30	45	3	75
TE7265	0701220517	Introduction to Data Science	OE	Computer Science and Engineering	3	0	0	0	0	30	45	3	75
TE7428	0701220518	Introduction to Image Processing	OE	Electronics & Tele-communication Engineering	3	0	0	0	0	30	45	3	75
TE7339	0701220520	Renewable Energy Systems	OE	Electronics & Tele-communication Engineering	3	0	0	0	0	30	45	3	75
TE7351	0701220521	3D Printing and Prototyping	OE	Mechanical Engineering	3	0	0	0	0	30	45	3	75
TE7388	0701220523	Quality Management Techniques	OE	Mechanical Engineering	3	0	0	0	0	30	45	3	75
TE7365	0701220522	Electrical and Electronics Materials	OE	Mechanical Engineering	3	0	0	0	0	30	45	3	75





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Catalog Course Code	Course Code	Course Title	Nature	Specialization/ Area/ Department	Teaching Scheme (Hours Per Week)			Examination Scheme (Marks)				Total Credits	Total
					L	T	La b	Practical		Theory			
								CA	ESE	CA	ESE		
TE7335	0701220519	Introduction to Robotics	OE	Electronics & Tele-communication Engineering	3	0	0	0	0	30	45	3	75
Total Required Credits								0	0	30	45	3	75
Semester : 6													
Generic Core Courses													
TE7008	0701220601	Distributed Systems and Resource Management	PC		3	0	0	0	0	30	45	3	75
F0003	0701220602	Flexi-Credit Course	PC		3	0	0	0	0	75	0	3	75
T6749	0701220603	Design Thinking	HS		2	0	0	0	0	50	0	2	50
T7674	0701220604	Cyber Security	PC		2	0	0	0	0	50	0	2	50
TE7291	0701220605	Project Based Learning-II	PIS		0	0	4	50	0	0	0	2	50
T7802	0701220606	Capstone Course	PC		2	0	0	0	0	50	0	2	50
Total					12	0	4	50	0	255	45	14	350
Generic Elective Courses Group- I													
TE7255	0701220607	Data Warehousing and Mining	PE		3	0	0	0	0	30	45	3	75
TE7101	0701220608	Internet of Things	PE		3	0	0	0	0	30	45	3	75
TE7328	0701220609	Image Processing	PE		3	0	0	0	0	30	45	3	75
Total Required Credits								0	0	30	45	3	75



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Catalog Course Code	Course Code	Course Title	Nature	Specialization/ Area/ Department	Teaching Scheme (Hours Per Week)			Examination Scheme (Marks)				Total Credits	Total
					L	T	La b	Practical		Theory			
								CA	ESE	CA	ESE		
Generic Elective Courses Group- II													
TE7013	0701220610	Data Warehousing and Mining Lab	PE		0	0	2	10	15	0	0	1	25
T7528	0701220611	Internet of Things Lab	PE		0	0	2	10	15	0	0	1	25
TE7329	0701220612	Image Processing Lab	PE		0	0	2	10	15	0	0	1	25
Total Required Credits								10	15	0	0	1	25
Generic Elective Courses Group- III													
T7473	0701220613	Artificial Intelligence	PE		3	0	0	0	0	30	45	3	75
TE7259	0701220614	Human Computer Interface	PE		3	0	0	0	0	30	45	3	75
TE7243	0701220615	Advanced Algorithms	PE		3	0	0	0	0	30	45	3	75
Total Required Credits								0	0	30	45	3	75
Generic Elective Courses Group- IV													
TE7014	0701220616	Artificial Intelligence Lab	PE		0	0	2	10	15	0	0	1	25
TE7260	0701220617	Human Computer Interface Lab	PE		0	0	2	10	15	0	0	1	25
TE7244	0701220618	Advanced Algorithms Lab	PE		0	0	2	10	15	0	0	1	25
Total Required Credits								10	15	0	0	1	25
Open Elective Courses Group													
T7474	0701220619	Basics of Database	OE	Computer Science and Engineering	3	0	0	0	0	30	45	3	75



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Catalog Course Code	Course Code	Course Title	Nature	Specialization/ Area/ Department	Teaching Scheme (Hours Per Week)			Examination Scheme (Marks)				Total Credits	Total
					L	T	La b	Practical		Theory			
								CA	ESE	CA	ESE		
T7616	0701220620	Fundamentals of Automotive Technology	OE	Mechanical Engineering	3	0	0	0	0	30	45	3	75
T7529	0701220621	Machine Learning	OE	Computer Science and Engineering	3	0	0	0	0	30	45	3	75
TE7756	0701220622	Open Source Technologies	OE	Computer Science and Engineering	3	0	0	0	0	30	45	3	75
T7584	0701220623	Printed Circuit Board (PCB) Design	OE	Electronics & Tele-communication Engineering	3	0	0	0	0	30	45	3	75
T7650	0701220624	Six sigma	OE	Mechanical Engineering	3	0	0	0	0	30	45	3	75
TE7700	0701220625	Smart Materials	OE	Applied Science	3	0	0	0	0	30	45	3	75
TE7195	0701220626	GIS Applications	OE	Civil Engineering	3	0	0	0	0	30	45	3	75
TE7264	0701220627	Introduction to BIGDATA	OE	Computer Science and Engineering	3	0	0	0	0	30	45	3	75
TE7171	0701220628	Introduction to Mathematical Modelling	OE	Applied Science	3	0	0	0	0	30	45	3	75
TE7203	0701220629	Intelligent Transportation Management	OE	Civil Engineering	3	0	0	0	0	30	45	3	75
TE7334	0701220630	Introduction to Mechatronics	OE	Electronics & Tele-communication Engineering	3	0	0	0	0	30	45	3	75
TE7338	0701220631	Principles of Modern Communication Systems	OE	Electronics & Tele-communication Engineering	3	0	0	0	0	30	45	3	75



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Catalog Course Code	Course Code	Course Title	Nature	Specialization/ Area/ Department	Teaching Scheme (Hours Per Week)			Examination Scheme (Marks)				Total Credits	Total
					L	T	La b	Practical		Theory			
								CA	ESE	CA	ESE		
TE7376	0701220632	Introduction to Operations Research	OE	Mechanical Engineering	3	0	0	0	0	30	45	3	75
TE7377	0701220633	Introduction to Optimisation	OE	Mechanical Engineering	3	0	0	0	0	30	45	3	75
Total Required Credits								0	0	30	45	3	75
Semester : 7													
Generic Core Courses													
T7804	0701220701	B.Tech Project	PIS		0	0	8	40	60	0	0	4	100
TE7751	0701220702	Compiler Construction	PC		3	0	0	0	0	30	45	3	75
T7478	0701220703	Compiler Construction Lab	PC		0	0	2	10	15	0	0	1	25
F0003	0701220704	Flexi-Credit Course	PC		3	0	0	0	0	75	0	3	75
Total					6	0	10	50	75	105	45	11	275
Generic Elective Courses Group- I													
T2585	0701220705	Organizational Behaviour	GE		2	0	0	0	0	50	0	2	50
TE7438	0701220706	History of Science and Technology	GE		2	0	0	0	0	50	0	2	50
Total Required Credits								0	0	50	0	2	50
Generic Elective Courses Group- II													
TE7253	0701220707	Data Science	PE		3	0	0	0	0	30	45	3	75
TE7282	0701220708	Optimization Techniques and Algorithms	PE		3	0	0	0	0	30	45	3	75
TE7097	0701220709	Neural Network	PE		3	0	0	0	0	30	45	3	75



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Catalog Course Code	Course Code	Course Title	Nature	Specialization/ Area/ Department	Teaching Scheme (Hours Per Week)			Examination Scheme (Marks)				Total Credits	Total
					L	T	La b	Practical		Theory			
								CA	ESE	CA	ESE		
Total Required Credits								0	0	30	45	3	75
Generic Elective Courses Group- III													
TE7254	0701220710	Data Science Lab	PE		0	0	2	10	15	0	0	1	25
TE7283	0701220711	Optimization Techniques and Algorithms Lab	PE		0	0	2	10	15	0	0	1	25
TE7112	0701220712	Neural Networks Lab	PE		0	0	2	10	15	0	0	1	25
Total Required Credits								10	15	0	0	1	25
Generic Elective Courses Group- IV													
T7529	0701220713	Machine Learning	PE		3	0	0	0	0	30	45	3	75
T7138	0701220714	Network Security	PE		3	0	0	0	0	30	45	3	75
TE7103	0701220715	Natural Language Processing	PE		3	0	0	0	0	30	45	3	75
Total Required Credits								0	0	30	45	3	75
Generic Elective Courses Group- V													
TE7105	0701220716	Machine Learning Lab	PE		0	0	2	10	15	0	0	1	25
T7506	0701220717	Network Security Lab	PE		0	0	2	10	15	0	0	1	25
TE7106	0701220718	Natural Language Processing Lab	PE		0	0	2	10	15	0	0	1	25
Total Required Credits								10	15	0	0	1	25
Generic Elective Courses Group- VI													
TE7251	0701220719	Computer Graphics	PE		3	0	0	0	0	30	45	3	75



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Catalog Course Code	Course Code	Course Title	Nature	Specialization/ Area/ Department	Teaching Scheme (Hours Per Week)			Examination Scheme (Marks)				Total Credits	Total
					L	T	La b	Practical		Theory			
								CA	ESE	CA	ESE		
TE7297	0701220720	Software Testing Tools	PE		3	0	0	0	0	30	45	3	75
TE7916	0701220721	Cloud Computing Tools and Techniques	PE		3	0	0	0	0	30	45	3	75
Total Required Credits								0	0	30	45	3	75
Semester : 8													
Generic Core Courses													
T7912	0701220801	Internship	PIS		0	0	24	120	180	0	0	12	300
T7802	0701220802	Seminar	PIS		0	0	4	50	0	0	0	2	50
Total					0	0	28	170	180	0	0	14	350



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Abbreviations (Nature)

BS	Basic Sciences
ES	Engineering Sciences
HS	Humanities and Social Sciences
OE	Open Electives
PC	Professional Core
PE	Professional Elective
PIS	Project, Internship, Seminar
PD	Professional Development Course
MC	Mandatory Course
L	Lecture
T	Tutorial
CA	Continuous Assessment
ESE	End Semester Examination



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Semester	Internal Credits	External Credits	Total Credits	Total Marks
Group A				
Semester 1	1	17	18	450
Semester 2	4	17	21	525
Semester 3	5	19	24	600
Semester 4	8	11	19	475
Semester 5	10	15	25	625
Semester 6	11	14	25	625
Semester 7	5	19	24	600
Semester 8	2	12	14	350
Total	46	124	170	4250
Group B				
Semester 1	2	17	19	475
Semester 2	3	17	20	500
Semester 3	5	19	24	600
Semester 4	8	11	19	475
Semester 5	10	15	25	625
Semester 6	11	14	25	625
Semester 7	5	19	24	600
Semester 8	2	12	14	350
Total	46	124	170	4250

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Optional 'Honours' Specialization

Catalog Course Code	Course Code	Course Title	Nature	Specialization/ Area/ Department	Teaching Scheme (Hours Per Week)			Examination Scheme (Marks)				Total Credits	Total
					L	T	La b	Practical		Theory			
								CA	ESE	CA	ESE		
Semester : 5													
Artificial Intelligence and Machine Learning Specialization Core Courses													
TE7273	0701220524	Machine Learning: Classification	PC		3	0	0	0	0	30	45	3	75
TE7274	0701220525	Machine Learning: Regression	PC		3	0	0	0	0	30	45	3	75
Total					6	0	0	0	0	60	90	6	150
Semester : 5													
Computing Specialization Core Courses													
TE7248	0701220526	Cloud Computing	PC		3	0	0	0	0	30	45	3	75
TE7250	0701220527	Cloud Environment in Public Model	PC		3	0	0	0	0	30	45	3	75
Total					6	0	0	0	0	60	90	6	150
Semester : 5													
Data Science Specialization Core Courses													
TE7281	0701220528	Open Source Tools for Data Science	PC		4	0	0	0	0	40	60	4	100
TE7292	0701220529	R Programming	PC		3	0	0	0	0	30	45	3	75
Total					7	0	0	0	0	70	105	7	175

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Optional 'Honours' Specialization

Catalog Course Code	Course Code	Course Title	Nature	Specialization/ Area/ Department	Teaching Scheme (Hours Per Week)			Examination Scheme (Marks)				Total Credits	Total
					L	T	La b	Practical		Theory			
								CA	ESE	CA	ESE		
Semester : 5													
Game Design and Development Specialization Core Courses													
TE7267	0701220530	Introduction to Game Development	PC		3	0	0	0	0	30	45	3	75
TE7285	0701220531	Principles of Game Design	PC		3	0	0	0	0	30	45	3	75
Total					6	0	0	0	0	60	90	6	150
Semester : 5													
Internet of Things Specialization Core Courses													
TE7268	0701220532	Introduction to IOT	PC		4	0	0	0	0	40	60	4	100
TE7293	0701220533	Raspberry Pi and Python	PC		3	0	0	0	0	30	45	3	75
Total					7	0	0	0	0	70	105	7	175
Semester : 5													
Security and Privacy Specialization Core Courses													
TE7296	0701220534	Software Security	PC		3	0	0	0	0	30	45	3	75
TE7301	0701220535	Usable Security	PC		3	0	0	0	0	30	45	3	75
Total					6	0	0	0	0	60	90	6	150

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Catalog Course Code	Course Code	Course Title	Nature	Specialization/ Area/ Department	Teaching Scheme (Hours Per Week)			Examination Scheme (Marks)				Total Credits	Total
					L	T	La b	Practical		Theory			
								CA	ESE	CA	ESE		
Semester : 6													
Artificial Intelligence and Machine Learning Specialization Core Courses													
TE7266	0701220634	Introduction to Deep Learning	PC		4	0	0	0	0	40	60	4	100
TE7271	0701220635	Machine Learning Clustering and Retrieval	PC		3	0	0	0	0	30	45	3	75
Total					7	0	0	0	0	70	105	7	175
Semester : 6													
Computing Specialization Core Courses													
TE7246	0701220636	Block Chain	PC		4	0	0	0	0	40	60	4	100
TE7249	0701220637	Cloud Computing Platforms	PC		3	0	0	0	0	30	45	3	75
Total					7	0	0	0	0	70	105	7	175
Semester : 6													
Data Science Specialization Core Courses													
TE7247	0701220638	Business Analytics	PC		3	0	0	0	0	30	45	3	75
TE7284	0701220639	Power BI	PC		3	0	0	0	0	30	45	3	75
Total					6	0	0	0	0	60	90	6	150

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Optional 'Honours' Specialization

Catalog Course Code	Course Code	Course Title	Nature	Specialization/ Area/ Department	Teaching Scheme (Hours Per Week)			Examination Scheme (Marks)				Total Credits	Total
					L	T	La b	Practical		Theory			
								CA	ESE	CA	ESE		
Semester : 6													
Game Design and Development Specialization Core Courses													
TE7275	0701220640	Modern Platforms in Game Development	PC		4	0	0	0	0	40	60	4	100
TE7256	0701220641	Entrepreneurship in Game Development	PC		3	0	0	0	0	30	45	3	75
Total					7	0	0	0	0	70	105	7	175
Semester : 6													
Internet of Things Specialization Core Courses													
TE7269	0701220642	IOT Security and Privacy	PC		3	0	0	0	0	30	45	3	75
TE7295	0701220643	Software Defined Networking	PC		3	0	0	0	0	30	45	3	75
Total					6	0	0	0	0	60	90	6	150
Semester : 6													
Security and Privacy Specialization Core Courses													
TE7252	0701220644	Cryptography	PC		4	0	0	0	0	40	60	4	100
TE7258	0701220645	Hardware Security	PC		3	0	0	0	0	30	45	3	75
Total					7	0	0	0	0	70	105	7	175

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Optional 'Honours' Specialization

Catalog Course Code	Course Code	Course Title	Nature	Specialization/ Area/ Department	Teaching Scheme (Hours Per Week)			Examination Scheme (Marks)				Total Credits	Total
					L	T	La b	Practical		Theory			
								CA	ESE	CA	ESE		
Semester : 7													
Artificial Intelligence and Machine Learning Specialization Core Courses													
T7805	0701220722	Specialization Project	PIS		0	0	10	50	75	0	0	5	125
T7802	0701220723	Specialization Seminar	PIS		0	0	4	20	30	0	0	2	50
Total					0	0	14	70	105	0	0	7	175
Semester : 7													
Computing Specialization Core Courses													
T7805	0701220722	Specialization Project	PIS		0	0	10	50	75	0	0	5	125
T7802	0701220723	Specialization Seminar	PIS		0	0	4	20	30	0	0	2	50
Total					0	0	14	70	105	0	0	7	175
Semester : 7													
Data Science Specialization Core Courses													
T7802	0701220723	Specialization Seminar	PIS		0	0	4	20	30	0	0	2	50
T7805	0701220722	Specialization Project	PIS		0	0	10	50	75	0	0	5	125
Total					0	0	14	70	105	0	0	7	175

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Optional 'Honours' Specialization

Catalog Course Code	Course Code	Course Title	Nature	Specialization/ Area/ Department	Teaching Scheme (Hours Per Week)			Examination Scheme (Marks)				Total Credits	Total
								Practical		Theory			
					L	T	La b	CA	ESE	CA	ESE		
Semester : 7													
Game Design and Development Specialization Core Courses													
T7805	0701220722	Specialization Project	PIS		0	0	10	50	75	0	0	5	125
T7802	0701220723	Specialization Seminar	PIS		0	0	4	20	30	0	0	2	50
Total					0	0	14	70	105	0	0	7	175
Semester : 7													
Internet of Things Specialization Core Courses													
T7805	0701220722	Specialization Project	PIS		0	0	10	50	75	0	0	5	125
T7802	0701220723	Specialization Seminar	PIS		0	0	4	20	30	0	0	2	50
Total					0	0	14	70	105	0	0	7	175
Semester : 7													
Security and Privacy Specialization Core Courses													
T7805	0701220722	Specialization Project	PIS		0	0	10	50	75	0	0	5	125
T7802	0701220723	Specialization Seminar	PIS		0	0	4	20	30	0	0	2	50
Total					0	0	14	70	105	0	0	7	175



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Optional 'Honours' Specialization

Semester	Internal Credits	External Credits	Total Credits	Total Marks
Artificial Intelligence and Machine Learning				
Semester 5	0	6	6	150
Semester 6	0	7	7	175
Semester 7	0	7	7	175
Total	0	20	20	500
Computing				
Semester 5	0	6	6	150
Semester 6	0	7	7	175
Semester 7	0	7	7	175
Total	0	20	20	500
Data Science				
Semester 5	0	7	7	175
Semester 6	0	6	6	150
Semester 7	0	7	7	175
Total	0	20	20	500
Game Design & Development				
Semester 5	0	6	6	150
Semester 6	0	7	7	175
Semester 7	0	7	7	175
Total	0	20	20	500
Internet of Things				
Semester 5	0	7	7	175
Semester 6	0	6	6	150



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Semester 7	0	7	7	175
Total	0	20	20	500
Security and Privacy				
Semester 5	0	6	6	150
Semester 6	0	7	7	175
Semester 7	0	7	7	175
Total	0	20	20	500

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Annexure C
Optional 'Minor' Specialization

Catalog Course Code	Course Code	Course Title	Nature	Specialization/ Area/ Department	Teaching Scheme (Hours Per Week)			Examination Scheme (Marks)				Total Credits	Total
					L	T	La b	Practical		Theory			
								CA	ESE	CA	ESE		
Semester : 5													
Automobile Engineering with Hybrid and Autonomous Technology													
Specialization Core Courses													
TE7355	0701250536	Basics of Automotive Engineering	PC		3	0	0	0	0	30	45	3	75
TE7665	0701250537	Automotive Electronics and Instrumentation	PC		2	0	0	0	0	50	0	2	50
TE7666	0701250538	Automotive Vehicle Dynamics and NVH Lab	PC		0	0	2	10	15	0	0	1	25
Total					5	0	2	10	15	80	45	6	150
Semester : 5													
Embedded Systems													
Specialization Core Courses													
T7801	0701250539	Specialization Project	PIS		0	0	2	10	15	0	0	1	25
T7802	0701250540	Specialization Seminar	PIS		0	0	4	20	30	0	0	2	50
TE7298	0701250541	System Programming	PC		4	0	0	0	0	40	60	4	100
Total					4	0	6	30	45	40	60	7	175
Semester : 5													
Smart Cities and Urban Analytics													
Specialization Core Courses													
TE7220	0701250542	Smart Cities : Context Policy and Governance	PC		3	0	0	0	0	30	45	3	75
TE7206	0701250543	IOT for Smart Cities	PC		3	0	0	0	0	30	45	3	75

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Annexure C
Optional 'Minor' Specialization

Catalog Course Code	Course Code	Course Title	Nature	Specialization/ Area/ Department	Teaching Scheme (Hours Per Week)			Examination Scheme (Marks)				Total Credits	Total
								Practical		Theory			
					L	T	La b	CA	ESE	CA	ESE		
TE7207	0701250544	IOT for Smart Cities Lab			0	0	2	10	15	0	0	1	25
Total					6	0	2	10	15	60	90	7	175
Semester : 6													
Automobile Engineering with Hybrid and Autonomous Technology													
Specialization Core Courses													
TE7669	0701220646	Hybrid Technology	PC		2	0	0	0	0	20	30	2	50
F0002	0701220647	Flexi-Credit Course	PC		2	0	0	0	0	50	0	2	50
TE7435	0701220648	Automotive Engine and Transmission System	PC		3	0	0	0	0	30	45	3	75
Total					7	0	0	0	0	100	75	7	175
Semester : 6													
Embedded Systems													
Specialization Core Courses													
T7802	0701220649	Specialization Project	PIS		0	0	4	20	30	0	0	2	50
TE7325	0701220650	Embedded Linux	PC		4	0	0	0	0	40	60	4	100
Total					4	0	4	20	30	40	60	6	150
Semester : 6													
Smart Cities and Urban Analytics													
Specialization Core Courses													

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Annexure C
Optional 'Minor' Specialization

Catalog Course Code	Course Code	Course Title	Nature	Specialization/ Area/ Department	Teaching Scheme (Hours Per Week)			Examination Scheme (Marks)				Total Credits	Total
								Practical		Theory			
					L	T	La b	CA	ESE	CA	ESE		
T7802	0701210651	Specialization Project	PIS		0	0	4	50	0	0	0	2	50
T7802	0701210652	Specialization Seminar	PIS		0	0	4	50	0	0	0	2	50
TE7177	0701210653	Application of Sensor Technology to Smart Cities	PC		3	0	0	0	0	30	45	3	75
Total					3	0	8	100	0	30	45	7	175
Semester : 7													
Automobile Engineering with Hybrid and Autonomous Technology													
Specialization Core Courses													
T7805	0701220724	Specialization Project	PIS		0	0	10	50	75	0	0	5	125
T7802	0701220725	Specialization Seminar	PIS		0	0	4	20	30	0	0	2	50
Total					0	0	14	70	105	0	0	7	175
Semester : 7													
Embedded Systems													
Specialization Core Courses													
T7802	0701220726	Specialization Project	PIS		0	0	4	20	30	0	0	2	50
TE7304	0701220727	Advanced Microcontrollers and RTOS	PC		4	0	0	0	0	40	60	4	100
TE7305	0701220728	Advanced Microcontrollers and RTOS Lab	PC		0	0	2	10	15	0	0	1	25
Total					4	0	6	30	45	40	60	7	175

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Annexure C
Optional 'Minor' Specialization

Catalog Course Code	Course Code	Course Title	Nature	Specialization/ Area/ Department	Teaching Scheme (Hours Per Week)			Examination Scheme (Marks)				Total Credits	Total
					L	T	Lab	Practical		Theory			
								CA	ESE	CA	ESE		
Semester : 7													
Smart Cities and Urban Analytics Specialization Core Courses													
T7803	0701220729	Specialization Project	PIS		0	0	6	30	45	0	0	3	75
Total					0	0	6	30	45	0	0	3	75
Specialization Elective : Smart Cities and Urban Analytics													
TE7205	0701220730	Intelligent Transportation Systems	PE		3	0	0	0	0	30	45	3	75
TE7234	0701220731	Urban Hydrology and Hydraulics	PE		3	0	0	0	0	30	45	3	75
Total Required Credits								0	0	30	45	3	75



Celebrating 50 Years of Excellence

Symbiosis Institute of Technology, Pune
Bachelor of Technology (Computer Science and Engineering)
Programme Structure 2021-25
Annexure C
Optional 'Minor' Specialization

Semester	Internal Credits	External Credits	Total Credits	Total Marks
Automobile Engineering with Hybrid and Autonomous Technology				
Semester 5	0	6	6	150
Semester 6	2	5	7	175
Semester 7	0	7	7	175
Total	2	18	20	500
Embedded Systems				
Semester 5	0	7	7	175
Semester 6	0	6	6	150
Semester 7	0	7	7	175
Total	0	20	20	500
Smart Cities and Urban Analytics				
Semester 5	0	7	7	175
Semester 6	4	3	7	175
Semester 7	0	6	6	150
Total	4	16	20	500