



Indrashil University

(Established by an Act under the Gujarat Private Universities Act, 2009)

A Life Sciences University

Sustained Excellence with Relevance

School of Engineering Computer Science and Engineering

Proposed Course Curriculum

w.e.f Academic Year 2018-19

B.TECH. (All Branches) ENGINEERING PROGRAMME (w.e.f. academic year 2019-20)

Semester : 1	Minimum Semester Credit Required :21 Cumulative Semester Credit Required : 21			
Course Code	Subject No.	Subject Name	L-T-P	Credits
CHE101		Engineering Chemistry	3-0-2	4
MATH 101		Engineering Mathematics-I	3-1-0	4
HS 101		Communication Skills – I	2-2-0	4
TA 101 / TA 102		Computer Programming / Engineering Graphics	3-0-2/2-0-4	4/4
HS 102		Soft Skills – I	2-0-0	0
ES 101 / ES 102		Engineering Mechanics / Electrical Technology	2-1-2/3-0-2	4/4
WS101		Engineering Workshop	0-0-2	1
		Total	15-4-8/15-3-10	21/21
Semester : 2	Minimum Semester Credit Required :22 Cumulative Semester Credit Required : 43			
Course Code	Subject No.	Subject Name	L-T-P	Credits
PHY 101		Engineering physics	3-0-2	4
MATH 102		Engineering Mathematics-II	3-1-0	4
HS 103		Communication Skills – II	2-2-0	4
TA 102 / TA 101		Engineering Graphics / Computer Programming	2-0-4/3-0-2	4/4
HS 104		Soft Skills – II	2-0-0	0
ES 102 / ES 101		Electrical Technology / Engineering Mechanics	3-0-2/2-1-2	4/4
ES 103		Environmental science	2-0-0	2
		Total	17-3-8/17-4-6	22/22

**CURRICULUM FOR B.TECH. COMPUTER SCIENCE AND ENGINEERING
PROGRAMME**

Semester : 3		Minimum Semester Credit Required : 22 Cumulative Semester Credit Required : 65		
Course Code	Subject No.	Subject Name	L-T-P	Credits
MATH302		Discrete Mathematics	3-1-0	4
CS301		Data Structures	3-0-2	4
CS302		Object Oriented Programming	3-0-2	4
CS303		Digital Logic Design	3-0-2	4
CS304		Database Management System	3-0-2	4
CS305		Engineering Innovation Project – I	0-0-2	1
CS306		Community Connect Programme	0-0-1	1
HS301		SS-III	2-0-0	0
		Total	17-1-10	22
Semester : 4		Minimum Semester Credit Required : 21 Cumulative Semester Credit Required : 86		
Course Code	Subject No.	Subject Name	L-T-P	Credits
MATH401		Probability and Statistics	3-1-0	4
CS401		Operating System	3-0-2	4
CS402		Web Technology	3-0-2	4
CS403		Computer Organization and Architecture	3-1-0	4
CS404		Computer Networks	3-0-2	4
CS405		Engineering Innovation Project – II	0-0-2	1
HS401		SS-IV	2-0-0	0
		Total	17-2-9	21

Semester : 5		Minimum Semester Credit Required : 24 Cumulative Semester Credit Required : 110		
Course Code	Subject No.	Subject Name	L-T-P	Credits
CS501		Design and Analysis of Algorithms	3-1-2	5
CS502		Theory of Computation	3-1-0	4
CS503		Cyber Security	3-0-2	4
CS5E1		Elective-1	3-0-0	3
CS5E2		Elective-2	3-0-0	3
CS504		Engineering Innovation Project III	0-0-2	1
HS501		SS-V	2-0-0	0
CS505		Industrial Practice*	0-0-0	4
		Total	17-2-6	24
Semester : 6		Minimum Semester Credit Required : 19 Cumulative Semester Credit Required : 129		
Course Code	Subject No.	Subject Name	L-T-P	Credits
CS601		Compiler Design	3-1-0	4
CS602		Software Engineering	3-0-2	4
CS603		Artificial Intelligence	3-0-2	4
CS6E1		Elective-3	3-0-0	3
CS6E2		Elective-4	3-0-0	3
CS604		Engineering Innovation Project IV	0-0-2	1
HS601		SS-VI	2-0-0	0
		Total	17-1-6	19

Semester : 7		Minimum Semester Credit Required : 24 Cumulative Semester Credit Required : 153		
Course Code	Subject No.	Subject Name	L-T-P	Credits
CS701		Data Science	2-0-2	3
CS702		Machine Learning	3-0-2	4
CS7E1		Elective-5	3-0-0	3
CS7E2		Elective-6	3-0-0	3
HS701		Foreign Language	3-0-0	3
IU7E1		Elective-7	3-0-0	3
CS704		Comprehensive Viva	0-0-0	1
CS705		Industrial Practice *	0-0-0	4
		Total	17-0-4	24
Semester : 8		Minimum Semester Credit Required : 15 Cumulative Semester Credit Required : 168		
Course Code	Subject No.	Subject Name	L-T-P	Credits
CS801		Industrial Practice III / 2 Courses + Project III / Thesis / Entrepreneur project	0-0-30	15
		Total	0-0-30	15

*Industry Practice will be of 6 to 8 weeks during summer vacations only.

Specialization

Big Data & Data Science

Data Mining and Warehousing
 Big data Analytics for Programmers
 Big data with Hadoop
 Advance Database Management
 Digital System Design
 Cryptography and Network Security
 Advance Computer Architecture
 Business Intelligence using Cognos insight
 Real Time System

Machine Learning

Mathematics for Machine Learning
 Machine Learning for Data Analysis
 Deep Learning
 Neural Networks
 Advanced Machine Learning
 Applied Data Science with Python
 Sequence Models
 Applied AI with Deep Learning
 Data Analysis and Interpretation
 Natural Language Processing
 Automation

Cyber Security

Cryptography and Network Security
Ethical Hacking
Web and Database Security
Cyber Crimes, Ethics and Laws
Defense Programming in Python
Internetworking and Security
Risk Assessment and Security Audit
Cyber Forensics
Wireless Security

Embedded Systems and IoT

Wireless Network
Sensors Device and Components
Industrial IoT
Hybrid Application Development
Networking and Internet
Embedded System Design
Embedded Programming

Open Elective:

Design Thinking

Soft Social Skill Courses:

1. English
2. Communication Skill
3. Ethics and Values
4. Economics for Engineers
5. Laws for Engineers
6. Entrepreneurship Development
7. Organizational Behaviour

Artificial Intelligent

Human-Computer Interaction
Artificial Intelligent-n Search & Logic
Computation Neuroscience
AI for Computer Games and Virtual
Humans.
AI with Speech and Multimodal Interaction
Artificial intelligence and Intelligent
Agents

Cloud/Blockchain

ERP on Cloud
Cloud Computing
Blockchain Technology
Computer Vision
Augmented Reality
Additive Manufacturing (3D printing)

Foreign Language:

Japanese, French, German