INDIAN INSTITUTE OF INFORMATION TECHNOLOGY, SURAT
B.Tech. (CSE) Computer Science and Engineering
Curriculum as per NEP - 2020
(Applicable from 2022-23 batch onwards)

Regular Entry to the Course

- Candidates who have cleared JEE (Main) are eligible.
- Admissions managed by CSAB and JoSAA

Semester-1

Sr. No	Course	Code	Credit	Teaching Scheme			Examination Scheme			Total
				L	T	P	L	T	P	
1	Fundamentals of Computers & Programming	CS 101	4	3	0	2	100	0	50	150
2	Digital Design	EC 102	4	3	0	2	100	0	50	150
3	Engineering Physics	AS 103	4	3	0	2	100	0	50	150
4	Engineering Mathematics	AS 104	3	3	0	0	100	0	0	100
5	ICT Workshop - I	EC 105	2	0	0	4	0	0	100	100
6	Engineering Circuit Analysis	EC 106	2	2	0	0	50	0	0	50
7	Indian Constitution	HM 107	2	2	0	0	50	0	0	50
	Total		21	16	0	10	500	0	250	750
	Total Contact Hours per Week			26						

Semester-2

Sr. No	Course	Code	Credit	Teaching Scheme			Examination Scheme			Total
				L	T	P	L	T	P	
1	Data Structure and Algorithm	CS 201	4	3	0	2	100	0	50	150
2	Electronic Devices and Circuits	EC 202	4	3	0	2	100	0	50	150
3	Computer Architecture & Organisation	CS 203	3	3	0	0	100	0	0	100
4	Discrete Mathematics	AS 204	3	3	0	0	100	0	0	100
5	ICT Workshop - II	CS 205	2	0	0	4	0	0	100	100
6	Yoga Practice	HM 206	2	2	0	0	50	0	0	50
	Total		18	14	0	8	450	50	200	700
	Total Contact Hours per Week			22						

Lateral Entry

- The lateral entry to B.Tech. in the third semester is only for candidates who have completed 3-year diploma after 12th in the respective subject and must have passed the JEE (Main) examination with reasonably good rank.
- Students willing to get transfer from IIITs should have credit in first year B.Tech. equivalent to that of IIIT-Surat.
- The intake number is equal to actual vacancy created at the end of 2nd semester after change of branch offer is completed for native students.
- The merit-cum-reservation policy is applicable for lateral entry as per Government of India directives.
- Admission applications submitted along with NoC from the previous institute will be scrutinized for eligibility.
- Candidates will be admitted only if the current strength does not exceed the total sanctioned strength in each course.

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Semester-3

Sr. No	Course	Code	Credit	Teaching Scheme			Examination Scheme			Total
				L	T	P	L	T	P	
1	Operating System	CS 301	4	3	0	2	100	0	50	150
2	Database Management Systems	CS 302	4	3	0	2	100	0	50	150
3	Programming for Problem Solving	CS 303	4	3	0	2	100	0	50	150
4	Automata & Formal Languages	CS 304	3	3	0	0	100	0	0	100
5	Probability & Statistical Analysis	AS 305	3	3	0	0	100	0	0	100
6	Economics & Business Management	HM 306	2	2	0	0	50	0	0	50
	Total		20	17	0	6	550	0	150	700
	Total Contact Hours per Week			23						

Semester-4

Sr. No	Course	Code	Credit	Teaching Scheme			Examination Scheme			Total
				L	T	P	L	T	P	
1	Software Engineering	CS 401	4	3	0	2	100	0	50	150
2	Computer Networks	CS 402	4	3	0	2	100	0	50	150
3	System Software	CS 403	4	3	0	2	100	0	50	150
4	Object Oriented Technology	CS 404	4	3	0	2	100	0	50	150
5	Design Analysis and Algorithm	CS 405	3	3	0	0	100	0	0	100
6	Analog & Digital Communication	EC 407	3	3	0	0	100	0	0	100
	Total		22	18	0	8	600	0	200	800
	Total Contact Hours per Week			26						

Semester-5

Sr. No	Course	Code	Credit	Teaching Scheme			Examination Scheme			Total
				L	T	P	L	T	P	
1	Data Science	CS 501	4	3	0	2	100	0	50	150
2	Computer Graphics	CS 502	4	3	0	2	100	0	50	150
3	High Performance Computing	CS 503	4	3	0	2	100	0	50	150
4	Cloud Computing & Big Data Infrastructure	CS 504	4	3	0	2	100	0	50	150
5	Innovation & Entrepreneurship	HM 505	2	2	0	0	50	0	0	50
6	Elective - 1*	-	3	-	0	-	-	0	-	100
	Total		21	-	0	-	-	0	-	750
	Total Contact Hours per Week			-						
	* Electives will be offered either as 3 – 0 – 0 or 2 – 0 – 2 scheme.									

Semester-6

Sr. No	Course	Code	Credit	Teaching Scheme			Examination Scheme			Total
				L	T	P	L	T	P	
1	Machine Learning	CS 601	4	3	0	2	100	0	50	150
2	Information Security	CS 602	4	3	0	2	100	0	50	150
3	Web Engineering	CS 603	4	3	0	2	100	0	50	150
4	Mini Project	CS 604	3	0	0	6	0	0	100	100
5	Elective - 2*	-	3	-	0	-	-	0	-	100
6	Elective - 3*	-	3	-	0	-	-	0	-	100
	Total		21	-	0	-	-	0	-	750
	Total Contact Hours per Week			-						
	* Electives will be offered either as 3 – 0 – 0 or 2 – 0 – 2 scheme.									

Exit Option - 1

- A candidate willing to exit after successful completion of three years will be given a degree as ***Bachelor of Science (BS) in Computer Science and Engineering***
- Candidates will be allowed to leave only if the current strength doesn't fall below 95% of the total sanctioned strength in each course.
- Students with confirmed placement opportunities will be given priority.

Semester-7

Sr. No	Course	Code	Credit	Teaching Scheme			Examination Scheme			Total
				L	T	P	L	T	P	
1	Artificial Intelligence	CS 701	4	3	0	2	100	0	50	150
2	Natural Language Processing	CS 702	4	3	0	2	100	0	50	150
3	Elective - 4*	-	3	-	0	-	-	0	-	100
4	Elective - 5*	-	3	-	0	-	-	0	-	100
5	Elective - 6*	-	3	-	0	-	-	0	-	100
	Total		17	-	0	-	-	0	-	600
	Total Contact Hours per Week			-						
	* Electives will be offered either as 3 – 0 – 0 or 2 – 0 – 2 scheme.									

Semester-8

Sr. No	Course	Code	Credit	Teaching Scheme			Examination Scheme			Total
				L	T	P	L	T	P	
1	B.Tech. Project	CS 801	20	0	0	40	0	0	800	800
	Total		20	0	0	40	0	0	800	800
	Total Contact Hours per Week			40						

Exit Option - 2

- A candidate leaving after successful completion of fourth year will be given ***B.Tech. degree in Computer Science & Engineering***

Elective Courses

- The elective subjects are offered based on current trends in the relevant industry.
- Electives can be offered either in 3-0-0 or in 2-0-2 scheme.
- The elective subjects are listed below:

Introduction to Game Design	Game Theory	Sensors & Instrumentation
Human Computer Interface	Probabilistic Graphical Model	Wireless Communication
Mathematical Optimization	Cognitive Psychology	Information Theory & Coding
Augmented & Virtual Reality	Compiler Design	Image Processing & Computer Vision
Block-Chain & Ledger	Deep Learning	Computing Technology
Computer Ethics & Public Policy	Bioinformatics	Internet of Things
Cyber Security	Advanced Database Management	Embedded Systems
Robotics and Humanoids	Quantum Computing	Microprocessors
Hardware Security	Digital Signal Processors	Satellite Communication
Advanced Internet Technologies	Linux Administration and Programming	Information Retrieval
Data Mining and Data Warehousing	Distributed Computing Systems	Grid and Peer-to-Peer Computing
Wireless Sensor Networks	Mobile Computing	Ethical Hacking
Fuzzy Logic & Neural Networks	Social Network Analysis	Robotics and Humanoids
Interactive Design & User Experience		Numerical Methods

- The Courses proposed by Industry experts will be offered with the involvement of a course coordinator nominated by the Institute.
- Any change in the elective courses shall be approved by the Senate.

Discontinuation from the course for a maximum period of one year

On health (self/parents) and financial grounds a student may opt to discontinue for a maximum period of one year subject to the condition that he/she will complete the course in six years.

- The student must have completed successfully the first year for this option.
- Students with failure in subjects are not eligible.
- This facility will be available only once in the entire course.
- Such students will not be given transfer to any other Institute after discontinuation. If they desire so, they have to pay entire course fee to the Institute.
- The exam related repetition does not fall under this category.

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