

Indian Institute of Technology Tirupati  
Dual Degree (B.Tech. & M.Tech) Curriculum:  
Computer Science and Engineering  
from Academic Year 2018-2019 onwards

## Semester-I

S.No.	Course Code	Course Name	Category	L-T-P-C	Course Code (prior to Jul 2022)	Senate
1.	ES103M/ EA101M	Introduction to Programming/ Engineering Drawing	BET/ BES	2-0-3-4 1-0-3-3	ES1101/ EA1101	14 4
2.	CY101L/ CY102L	Physical and Theoretical Chemistry/ Organic and Inorganic Chemistry	SCY	2-1-0-3	CY1101/ CY1202	4 4
3.	ES101M	Concepts in Engineering and Design	BET	1-0-2-2	ID1101	4
4.	MA101L	Calculus	SMA	3-1-0-4	MA1101	4
5.	PH101L	Introduction to Classical Mechanics	SPH	2-1-0-3	PH1101	4
6.	PH103P	Physics Laboratory	SPH	0-0-3-2	PH1103	4
7.	EA102P	Workshop-I	BES	0-0-3-2	EA1103	4
8.	HS10XN	Language Course (Pass/Fail)	HPF	2-0-0-2	HS110X	
<b>Total Credits</b>				<b>22/21</b>		

### Approved Language Courses

Course Code	Course Name	Category	L-T-P-C	Course Code (prior to Jul 2022)	Senate
HS101N	Proficiency in English	HPF	2-0-0-2	HS1101	4
HS102N	Basic Course in German			HS1103	6
HS103N	Basic Course in Japanese			HS1105	6
HS104N	Basic Course in Sanskrit			HS1107	6
HS105N	Basic Course in Spanish Language			HS1109	9

## Semester-II

S.No.	Course Code	Course Name	Category	L-T-P-C	Course Code (prior to Jul 2022)	Senate
1.	ES103M/ EA101M	Introduction to Programming/ Engineering Drawing	BET/ BES	2-0-3-4 1-0-3-3	ES1101/ EA1101	14 4
2.	CY101L/ CY102L	Physical and Theoretical Chemistry/ Organic and Inorganic Chemistry	SCY	2-1-0-3	CY1101/ CY1202	4 4
3.	ES102L	Basic Electrical Engineering	BET	3-1-0-4	ES1201	8
4.	MA102L	Differential Equations and Matrices	SMA	3-1-0-4	MA1202	4
5.	PH102L	Introduction to Electrodynamics and Quantum Mechanics	SPH	2-1-0-3	PH1202	4
6.	PH103P/ CY103P	Physics Laboratory/ Chemistry Laboratory	SPH/SCY	0-0-3-2	PH1103/ CY1204	4 4
7.	EA103P	Workshop-II	BES	0-0-3-2	EA1202	4
<b>Total Credits</b>				<b>21/22</b>		

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### Semester-III

S. No.	Course Code	Course Name	Category	L-T-P-C	Course Code (prior to Jul 2022)	Senate
1.	EE206L	Digital Systems	PMT	3-1-0-4	CS/EE2101	8
2.	CS201L	Discrete Mathematics for Computer Science	PMT	3-0-0-3	CS2103	8
3.	CS202M	Programming Methodology	PMT	2-0-3-4	CS2105	8
4.	EE206P	Digital Systems Laboratory	PML	0-0-3-2	CS/EE2191	8
5.	ES201L	Engineering Mechanics	BET	3-1-0-4	ES2101	4
6.	ES202L	Ecology and Environment	BET	2-0-0-2	ES2103	8
7.	HSE1	Humanities Elective-1	HSS	3-0-0-3		
8.	MA201L	Linear Algebra	SMA	3-0-0-3	MA2021	12
<b>Total Credits</b>				<b>25</b>		

### Semester-IV

S.No.	Course Code	Course Name	Category	L-T-P-C	Course Code (prior to Jul 2022)	Senate
1.	ES203L	Life Sciences	SLS	2-0-0-2	BS2101	9
2.	CS205L	Theory of Computation	PMT	3-0-0-3	CS2202	8
3.	CS203L	Computer Organization	PMT	3-0-0-3	CS2204	8
4.	CS204L	Data Structures and Algorithms	PMT	3-1-0-4	CS2206	8
5.	CS203P	Computer Organization Laboratory	PML	0-0-3-2	CS2292	8
6.	CS204P	Data Structures and Algorithms Laboratory	PML	0-0-3-2	CS2294	8
7.	HSE2	Humanities Elective-2	HSS	3-0-0-3		
8.	MA204L	Probability and Statistics	SMA	3-0-0-3	MA2023	9
<b>Total Credits</b>				<b>22</b>		

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### Semester-V

S. No.	Course Code	Course Name	Category	L-T-P-C	Course Code (prior to Jul 2022)	Senate
1.	CS304L	Design and Analysis of Algorithms	PMT	3-0-0-3	CS3101	8
2.	CS301L	Compiler Design	PMT	3-0-0-3	CS3103	8
3.	CS302L	Software Engineering	PMT	3-0-0-3	CS3105	8
4.	CS305L	Operating Systems	PMT	3-0-0-3	CS3107	8
5.	CS303L	Machine Learning	PMT	3-0-0-3	CS3109	12
6.	CS301P	Compiler Design Laboratory	PML	0-0-3-2	CS3191	8
7.	CS305P	Operating Systems Laboratory	PML	0-0-3-2	CS3193	8
8.	FRE1	Free Elective-1	FRE	3-0-0-3		
<b>Total Credits</b>				<b>22</b>		

### Semester-VI

S.No.	Course Code	Course Name	Category	L-T-P-C	Course Code (prior to Jul 2022)	Senate
1.	CS306L	Computer Networks	PMT	3-0-0-3	CS3202	8
2.	CS307L	Artificial Intelligence	PMT	3-0-0-3	CS3204	12
3.	CS308M	Database Systems	PMT	3-0-2-4	CS3206	8
4.	CS306P	Computer Networks Laboratory	PML	0-0-3-2	CS3292	8
5.	CS302P	Software Engineering Laboratory	PML	0-0-3-2	CS3294	8
6.	CS303P	Intelligent Systems Laboratory	PML	0-0-3-2	CS3296	12
7.	HSE3	Humanities Elective-3	HSS	3-0-0-3		
8.	FRE2	Free Elective-2	FRE	3-0-0-3		
<b>SUMMER</b>						
9.	CS309G	Industrial/Research Internship	PIT	---2	IT3202	1
<b>Total Credits</b>				<b>24</b>		

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### Semester-VII

S. No.	Course Code	Course Name	Category	L-T-P-C	Course Code (prior to Jul 2022)	Senate
1.	CS401L	Computer System Design	PMT	3-0-0-3	CS4101	8
2.	CS401P	Computer System Design Laboratory	PML	0-0-3-2	CS4191	8
3.	CS520L	Parallel Computing	PMT	3-0-0-3	CS5105	12
4.	CS515L	Computational Methods in Optimization	PMT	3-0-0-3	CS5107	12
5.	CS516L	Data Science and Engineering	PMT	3-0-0-3	CS5109	12
6.	DPE1	Department Elective 1	PMT	3-0-0-3		
7.	CS516P	Data Science Programming Laboratory	PML	0-0-3-2	CS5195	12
8.	CS402N	Industrial Lecture	PIL	1-0-0-1	IL4101	1
<b>Total Credits</b>				<b>20</b>		

### Semester-VIII

S. No.	Course Code	Course Name	Category	L-T-P-C	Course Code (prior to Jul 2022)	Senate
1.	CS523L	Distributed Systems	PMT	3-0-0-3	CS5208	12
2.	CS518L	Deep Learning	PMT	3-0-0-3	CS5223	12
3.	DPE2	Department Elective 2	PMT	3-0-0-3		
4.	DPE3	Department Elective 3	PMT	3-0-0-3		
5.	FRE3	Free Elective 3	FRE	3-0-0-3		
6.	HS401L	Professional Ethics	HPE	2-0-0-2	HS4202	7
<b>Total Credits</b>				<b>17</b>		

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**Semester-IX**

S. No.	Course Code	Course Name	Category	L-T-P-C	Course Code (prior to Jul 2022)	Senate
1.	FRE4	Free Elective 4	FRE	3-0-0-3		
2.	DPE4	Department Elective 4	PMT	3-0-0-3		
3.	CS607G	Seminar	PMT	- - - 1	CS6110	4
4.	CS605G	Project Phase I	PMP	- - - 10	CS6150	4
<b>Total Credits</b>				<b>17</b>		

**Semester-X**

S. No.	Course Code	Course Name	Category	L-T-P-C	Course Code (prior to Jul 2022)	Senate
1.	CS606G	Project Phase II	PMP	- - - 15	CS6250	4
<b>Total Credits</b>				<b>15</b>		

**TOTAL CREDITS: 205**