HYDERABAD INSTITUTE OF TECHNOLOGY AND MANAGEMENT

Gowdavelli (V), Medchal & Malkajgiri District, Telangana-501401

UGC-Autonomous, Accredited by NAAC (with A+) & NBA

Approved by AICTE, Affiliated by JNTUH

CSE-COURSE STRUCTURE

w.e.f. from 2021-22

Updated on: 14 Sep 2022

HYDERABAD INSTITUTE OF TECHNOLOGY AND MANAGEMENT

B.TECH. HR-2021 COURSE STRUCTURE

COMPUTER SCIENCE AND ENGINEERING

(Applicable from the batch admitted during 2021-22 and onwards)

Induction Program-2 Weeks

I – Semester (I – Year)

S. No.	Course code	Subject	Hours Per Week			Credits	Scheme of Evaluation		
							Maximum Marks		
			L	T	P		Int.	Ext.	Tot.
1	21BS1MT01	Matrix Algebra and Calculus	3	1	-	4	30	70	100
2	21BS1PH01	Applied Physics	3	-	-	3	30	70	100
3	21ES1EE01	Basic Electrical and Electronics Engineering	3	-	-	3	30	70	100
4	21HS1EG01	English	2	-	-	2	30	70	100
5	21HS1MB01	Business Economics and Financial Analysis	2	-	-	2	30	70	100
6	21ES1EE02	Basic Electrical and Electronics Engineering-Lab	-	-	3	1.5	30	70	100
7	21HS1EG02	English Language Communication Skills Lab	-	-	3	1	30	70	100
8	21BS1PH02	Applied Physics Lab	-	-	3	1.5	30	70	100
TOTAL						**18**	**240**	**560**	**800**
Non Credit Courses									
9	21AC1ME02	Engineering Projects in Community Services	-	-	2	0	0	0	**0**

II – Semester (I – Year)

S. No.	Course code	Subject	Hours Per Week			Credits	Scheme of Evaluation		
							Maximum Marks		
			L	T	P		Int.	Ext.	Tot.
1	21BS2MT02	Advanced Calculus for Engineers	3	1	-	4	30	70	100
2	21BS2CH01	Engineering Chemistry	3	-	-	3	30	70	100
3	21ES2ME01	Engineering Graphics	2	-	-	3	30	70	100
4	21ES2CS01	Problem Solving using C	3	-	-	3	30	70	100
5	21BS2CH02	Engineering Chemistry Lab	-	-	2	1.5	30	70	100
6	21ES2ME02	Engineering Prototyping Lab	1	-	2	2	30	70	100
7	21ES2CS02	Problem Solving using C -Lab	-	-	3	1.5	30	70	100
TOTAL						**18**	**210**	**490**	**700**
Non Credit Courses									
8	21MC2HS02	Environmental Science	2	-	-	0	100	0	**100**
9	21AC2HS01	Social and Health Consciousness	-	2	-	0	0	0	**0**

III – Semester (II – Year)									
S. No.	Course code	Subject	Hours Per Week			Credits	Scheme of Evaluation		
							Maximum Marks		
			L	T	P		Int.	Ext.	Tot.
1	21BS3MT03	Probability and Statistics	3	1	-	4	30	70	100
2	21ES3CS03	Python Programming	3	-	-	3	30	70	100
3	21PC3CS01	Data Structures using C	3	1	-	4	30	70	100
4	21PC3CS02	Discrete Mathematics	3	-	-	3	30	70	100
5	21PC3CS03	Database Management Systems	3	-	-	3	30	70	100
6	21ES3CS04	Python Programming Lab	-	-	3	1.5	30	70	100
7	21PC3CS04	Data Structures using C Lab	-	-	2	1	30	70	100
8	21PC3CS05	Database Management Systems Lab	-	-	3	1.5	30	70	100
9	21PR3IN01	Evaluation of Summer Internship-1	-	-	2	1	100	-	100
TOTAL						**22**	**340**	**560**	**900**
Non Credit Courses									
10	21AC3HS02	Universal Human Values	2	-	-	0	0	-	**0**

IV – Semester (II – Year)									
S. No.	Course code	Subject	Hours Per Week			Credits	Scheme of Evaluation		
							Maximum Marks		
			L	T	P		Int.	Ext.	Tot.
1	21HS4EG03	English for Employability	1	-	-	1	30	70	100
2	21PC4CS06	Computer Organization and Architecture	3	-	-	3	30	70	100
3	21PC4CS07	Design and Analysis of Algorithms	3	-	-	3	30	70	100
4	21PC4CS08	Formal Languages and Automata Theory	3	-	-	3	30	70	100
5	21PC4CS09	Object Oriented Programming using Java	3	1	-	4	30	70	100
6	21PC4CS10	Software Engineering	3	-	-	3	30	70	100
7	21HS4EG04	English for Employability-Lab	-	-	2	1	30	70	100
8	21PC4CS11	Object Oriented Programming using Java Lab	-	-	3	1.5	30	70	100
9	21PC4CS12	Software Engineering Lab	-	-	2	1	30	70	100
10	21PR4CS01	Doing Engineering-1	1	-	1	1.5	30	70	100
TOTAL						**22**	**300**	**700**	**1000**

V – Semester (III – Year)									
S. No.	Course code	Subject	Hours Per Week			Credits	Scheme of Evaluation		
							Maximum Marks		
			L	T	P		Int.	Ext.	Tot.
1	21PC5CS13	Operating Systems	3	-	-	3	30	70	100
2	21PC5CS14	Computer Networks	3	-	-	3	30	70	100
3	21PC5CS15	Compiler Design	3	1	-	4	30	70	100
4		**Professional Elective - I**	3	-	-	3	30	70	100
5		**Open Elective - 1**	3	-	-	3	30	70	100
6	21PC5CS16	Operating Systems & Computer Networks Lab	-	-	3	1.5	30	70	100
7	21PC5CS17	Web Technologies Lab	-	-	2	1	30	70	100
8	21HS5EG05	Advanced English Communication Skills-Lab	-	-	2	1	30	70	100
9	21PR5IN02	Evaluation of Summer Internship-2	-	-	2	1	100	0	100
10	21PR5CS02	Doing Engineering-2	1	-	1	1.5	30	70	100
TOTAL						22	**370**	**630**	**1000**
Non Credit Courses									
11	21MC5HS03	Analytical Reasoning	2	-	-	0	100	0	**100**

VI – Semester (III – Year)									
S. No.	Course code	Subject	Hours Per Week			Credits	Scheme of Evaluation		
							Maximum Marks		
			L	T	P		Int.	Ext.	Tot.
1	21ES6CS05	Statistical Programming with R-Programming	3	-	-	3	30	70	100
2	21HS6MB02	Fundamentals of Engineering Management	2	-	-	2	30	70	100
3	21PC6CS18	Cloud Computing	3	-	-	3	30	70	100
4	21PC6CS19	Data Mining	3	-	-	3	30	70	100
5		**Professional Elective - II**	3	-	-	3	30	70	100
6		**Open Elective - II**	3	-	-	3	30	70	100
7	21ES6CS06	R Programming Lab	-	-	3	1.5	30	70	100
8	21PC6CS20	Data Mining Lab	-	-	3	1.5	30	70	100
9	21PC6CS21	Cloud Computing Lab	-	-	2	1	30	70	100
10	21PC6CS22	Mobile Application Development Lab	-	-	2	1	30	70	100
TOTAL						22	**300**	**700**	**1000**
Non Credit Courses									
11	21MC6HS04	Quantitative Aptitude	2	-	-	0	100	0	**100**

VII – Semester (IV – Year)									
S. No.	Course code	Subject	Hours Per Week			Credits	Scheme of Evaluation		
							Maximum Marks		
			L	T	P		Int.	Ext.	Tot.
1	21PC7CM03	Machine Learning	3	-	-	3	30	70	100
2		**Professional Elective - III**	3	-	-	3	30	70	100
3		**Professional Elective - IV**	3	-	-	3	30	70	100
4	21OE7CS03	**Open Elective - III**	3	-	-	3	30	70	100
5	21PC7CM04	Machine Learning Lab	-	-	3	1.5	30	70	100
6	21PC7CD10	Full Stack Development Lab	-	-	3	1.5	30	70	100
7	21PR7IN03	**Doing Engineering-3(MINI PROJ/Internship)**	-	2	-	2	30	70	100
8	21PR7PS01	**Project Stage-I**	-	-	6	3	100	0	100
TOTAL						**20**	**310**	**490**	**800**
Non Credit Courses									
9	21MC7HS05	Intellectual Property Rights	2	-	-	0	0	0	**0**

VIII – Semester (IV – Year)									
S. No.	Course code	Subject	Hours Per Week			Credits	Scheme of Evaluation		
							Maximum Marks		
			L	T	P		Int.	Ext.	Tot.
1	21PE8CS05	**Professional Elective - V**	3	-	-	3	30	70	100
2	21PE8CS06	**Professional Elective - VI**	3	-	-	3	30	70	100
3	21OE8CS04	**Open Elective - IV**	3	-	-	3	30	70	100
4	21PR8PS02	Project Stage-II	-	-	14	7	30	70	100
TOTAL						**16**	**120**	**280**	**500**
Non Credit Courses									
5	21MC8HS06	Constitution of India	2	-	-	0	100	0	**100**
6	21AC8HS03	Foreign Languages (German/French/Japanese)	-	-	2	0	0	0	**0**

Subject Code	Professional Elective 1
21PE5CS11	Software Testing Methodologies
21PE5CS12	Distributed Databases
21PE5CS13	Web Technologies
21PE5CS14	Data Analytics
21PE5CS15	Statistical Programming With R

	Professional Elective 2
21PE6CS21	Software Process And Project Management
21PE6CS22	Mobile Application Development
21PE6CS23	Information Retrieval System
21PE6CS24	Computer Forensics
21PE6CS25	Big Data Architecture

	Professional Elective 3
21PE7CS31	Information Security
21PE7CS32	Data Security
21PE7CS33	Adhoc Sensor Networks
21PE7CS34	Modern Software Engineering
21PE7CS35	Big Data Analytics

	Professional Elective 4
21PE7CS41	Data Science
21PE7CS42	Big Data and Business Analytics
21PE7CS43	Cloud Security
21PE7CS44	Advanced Algorithms
21PE7CS45	Big Data Security

	Professional Elective 5
21PE8CS51	Deep Learning
21PE8CS52	Software Engineering
21PE8CS53	Natural Language Processing
21PE8CS54	Artificial Intelligence
21PE8CS55	Data Visualisation

	Professional Elective 6
21PE8CS61	Expert Systems
21PE8CS62	Data Visualisation
21PE8CS63	Deep Learning
21PE8CS64	Blockchain Technology
21PE8CS65	Big Data Analytics - AP Skills

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ECE-COURSE STRUCTURE

w.e.f. from 2021-22

Updated on: 14 Sep 2022

HYDERABAD INSTITUTE OF TECHNOLOGY AND MANAGEMENT

B.TECH. HR-21 COURSE STRUCTURE

ELECTRONICS AND COMMUNICATION ENGINEERING

(Applicable for the batch admitted from 2021-22 onwards)

Induction Program-2 Weeks

I – Semester (I – Year)

S. No.	Course code	Subject	Hours Per Week			Credits	Scheme of Evaluation		
							Maximum Marks		
			L	T	P		Int.	Ext.	Tot.
1	21BS1MT01	Matrix Algebra and Calculus	3	1	-	4	30	70	100
2	21BS1PH01	Applied Physics	3	-	-	3	30	70	100
3	21HS1EG01	English	2	-	-	2	30	70	100
4	21ES1EE01	Basic Electrical and Electronics Engineering	3	-	-	3	30	70	100
5	21HS1MB01	Business Economics and Financial Analysis	2	-	-	2	30	70	100
6	21BS1PH02	Applied Physics Lab	-	-	3	1.5	30	70	100
7	21HS1EG02	English Language Communication Skills Lab	-	-	3	1	30	70	100
8	21ES1EE02	Basic Electrical and Electronics Engineering-Lab	-	-	3	1.5	30	70	100
TOTAL						**18**	**240**	**560**	**800**
Non Credit Courses									
9	21AC1ME01	Engineering Projects in Community Services	-	-	2	0	0	0	**0**

II – Semester (I – Year)

S. No.	Course code	Subject	Hours Per Week			Credits	Scheme of Evaluation		
							Maximum Marks		
			L	T	P		Int.	Ext.	Tot.
1	21BS2MT02	Advanced Calculus for Engineers	3	1	-	4	30	70	100
2	21BS2CH01	Engineering Chemistry	3	-	-	3	30	70	100
3	21ES2ME01	Engineering Graphics	2	-	2	3	30	70	100
4	21ES2CS01	Problem Solving using C	3	-	-	3	30	70	100
5	21BS2CH02	Engineering Chemistry Lab	-	-	2	1.5	30	70	100
6	21ES2CS02	Problem Solving using C -Lab	-	-	3	1.5	30	70	100
7	21ES2ME02	Engineering Prototyping Lab	1	-	2	2	30	70	100
TOTAL						**18**	**210**	**490**	**700**
Non Credit Courses									
8	21MC2HS02	Environmental Science	2	-	-	0	100	0	**100**
9	21AC2HS01	Social and Health Consciousness	-	2	-	0	0	0	**0**

III – Semester (II – Year)									
S. No.	Course code	Subject	Hours Per Week			Credits	Scheme of Evaluation		
							Maximum Marks		
			L	T	P		Int.	Ext.	Tot.
1	21BS3MT03	Laplace Transforms, Numerical Methods & Complex variables	3	1	-	4	30	70	100
2	21PC3CS01	Data Structures using C	3	-	-	3	30	70	100
3	21PC3EC01	Electronic Devices and Circuits	3	1	-	4	30	70	100
4	21PC3EC02	Digital Logic design	3	-	-	3	30	70	100
5	21PC3EC03	Signals and Systems	3	-	-	3	30	70	100
6	21PC3CS04	Data Structures using C Lab	-	-	3	1.5	30	70	100
7	21PC3EC04	Electronic Devices and Circuits Laboratory	-	-	2	1	30	70	100
8	21PC3EC05	Digital logic Design Laboratory	-	-	3	1.5	30	70	100
9	21PR3IN01	Evaluation of Summer Internship-I	-	-	2	1	100	0	100
TOTAL						**22**	**340**	**560**	**900**
Non Credit Courses									
12	21MC3HS01	Universal Human Values	2	-	-	0	100	0	**100**

IV – Semester (II – Year)									
S. No.	Course code	Subject	Hours Per Week			Credits	Scheme of Evaluation		
							Maximum Marks		
			L	T	P		Int.	Ext.	Tot.
1	21PC4EC06	Communication Systems	3	-	-	3	30	70	100
2	21PC4EC07	Linear Integrated circuit applications	3	-	-	3	30	70	100
3	21PC4EC08	Electromagnetic field & Waves	3	-	-	3	30	70	100
4	21PC4EE08	Control Systems	3	-	-	3	30	70	100
5	21PC4EC10	Elements of Bioelectronics	3	-	-	3	30	70	100
6	21HS4EG03	English for Employability	1	-	-	1	30	70	100
7	21HS4EG04	English for Employability-Lab	-	-	2	1	30	70	100
8	21PC4EC11	Communication Systems Laboratory	-	-	3	1.5	30	70	100
9	21PC4EC12	Linear and Digital IC Applications Laboratory	-	-	2	1	30	70	100
10	21PC4EC13	Signals and Systems Laboratory	-	-	2	1	30	70	100
11	21PR4EC01	**Doing Engineering-1**	-	1	1	1.5	30	70	100
TOTAL						**22**	**330**	**770**	**1100**

V – Semester (III – Year)									
S. No.	**Course code**	**Subject**	**Hours Per Week**			**Credits**	**Scheme of Evaluation**		
							Maximum Marks		
			L	**T**	**P**		**Int.**	**Ext.**	**Tot.**
1	21PC5EC14	Digital Communication	3	-	-	3	30	70	100
2	21PC5EC15	Antennas and Wave Propagation	3	1	-	4	30	70	100
3	21PC5EC16	Microcontrollers and its Applications	3	-	-	3	30	70	100
4		**Professional Elective-I**	3	-	-	3	30	70	100
5		**Open Elective-I**	3	-	-	3	30	70	100
6	21PC5EC17	Digital Communication Lab	-	-	3	1.5	30	70	100
7	21PC5EC18	Microcontrollers and its Applications Lab	-	-	2	1	30	70	100
8	21HS5EG05	Advanced English Communication Skills-Lab	-	-	2	1	30	70	100
9	21PR5EC02	**Doing Engineering-2**	-	1	1	1.5	30	70	100
10	21PR5IN02	Evaluation of Summer Internship-2	-	-	2	1	100	0	100
TOTAL						**22**	**370**	**630**	**1000**
Non Credit Courses									
11	21MC5HS03	Analytical Reasoning	2	-	-	0	100	0	**100**

VI – Semester (III – Year)									
S. No.	**Course code**	**Subject**	**Hours Per Week**			**Credits**	**Scheme of Evaluation**		
							Maximum Marks		
			L	**T**	**P**		**Int.**	**Ext.**	**Tot.**
1	21ES6CS03	Python Programming	3	-	-	3	30	70	100
2	21PC6EC19	Digital Signal Processing	3	1	-	4	30	70	100
3	21PC6EC20	VLSI Design	3	-	-	3	30	70	100
4	21HS6MB02	Fundamentals of Engineering Management	2	-	-	2	30	70	100
5		**Professional Elective-II**	3	-	-	3	30	70	100
6		**Open elective-II**	3	-	-	3	30	70	100
7	21PC6EC21	VLSI Design Laboratory	-	-	3	1.5	30	70	100
8	21ES6CS04	Python Programming Lab	-	-	3	1.5	30	70	100
9	21PC6CS22	Digital Signal Processing Laboratory	-	-	2	1	30	70	100
TOTAL						**22**	**270**	**630**	**900**
Non Credit Courses									
10	21MC6HS04	Quantitative Aptitude	2	-	-	0	100	0	**100**

VII – Semester (IV – Year)									
S. No.	**Course code**	**Subject**	**Hours Per Week**			**Credits**	**Scheme of Evaluation**		
							Maximum Marks		
			L	**T**	**P**		**Int.**	**Ext.**	**Tot.**
1	21PC7EC23	Microwave Engineering	3	-	-	3	30	70	100
2	21PC7EC24	Cellular and mobile communication	3	-	-	2	30	70	100
3		**Professional Elective-III**	3	-	-	3	30	70	100
4		**Professional Elective-IV**	3	-	-	3	30	70	100
5		**Open Elective- III**	3	-	-	3	30	70	100
6	21PC7EC25	Microwave Engineering Laboratory	-	-	3	1	30	70	100
7	21PR7PS01	**Project Stage-I**	-	-	6	3	100	0	100
8	21PR7IN03	**Doing Engineering-3(MINI PROJ/Internship)**	-	2	-	2	100	0	100
TOTAL						**20**	**380**	**420**	**800**
Non Credit Courses									
9	21MC7HS06	Intellectual Property Rights	2	-	-	0	100	0	**100**

VIII – Semester (IV – Year)									
S. No.	**Course code**	**Subject**	**Hours Per Week**			**Credits**	**Scheme of Evaluation**		
							Maximum Marks		
			L	**T**	**P**		**Int.**	**Ext.**	**Tot.**
1		**Professional Elective- V**	3	-	-	3	30	70	100
2		**Professional Elective- VI**	3	-	-	3	30	70	100
3		**Open Elective- IV**	3	-	-	3	30	70	100
4	21PR8PS02	**Project Stage-II**	-	-	14	7	30	70	100
TOTAL						**16**	**120**	**280**	**400**
Non Credit Courses									
5	21MC8HS05	Constitution of India	2	-	-	0	100	0	**100**
6	21AC8HS03	Foreign Languages(German/French/Japanese)	2	-	-	0	0	0	**0**

Subject Code	Professional Elective-I
21PE5EC11	Transmission lines and waveguides
21PE5EC12	Computer Architecture & Organization
21PE5EC13	Digital Integrated Circuits & Applications
21PE5EC14	Computer Networks

Subject Code	Professional Elective-II
21PE6EC21	ARM Microcontroller
21PE6EC22	Digital system design
21PE6EC23	Optical Communications
21PE6EC24	Electronic Gadgets functioning & Applications

Subject Code	Professional Elective-III
21PE7EC31	digital Image processing
21PE7EC32	CMOS digital and analog IC design
21PE7EC33	Speech & Video processing
21PE7EC34	Wireless Communications and Networks

Subject Code	Professional Elective-IV
21PE7EC41	Global Positioning Systems
21PE7EC42	4G- Long Term Evolution Networks
21PE7EC43	Signal Processing for Communication and Biomedical Applications
21PE7EC44	Digital Television Engineering

Subject Code	Professional Elective-V
21PE8EC51	Advanced Programmable Logic Device Architectures
21PE8EC52	Analog Integrated Circuit Design
21PE8EC53	Satellite Communication
21PE8EC54	Embedded system Design

Subject Code	Professional Elective-VI
21PE8EC61	Advanced Digital Signal Processing
21PE8EC62	Information Theory and Coding
21PE8EC63	RF and Mixed signal Circuits
21PE8EC64	Radar Systems

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MECH-COURSE STRUCTURE

w.e.f. from 2021-22

Updated on: 14 Sep 2022

HYDERABAD INSTITUTE OF TECHNOLOGY AND MANAGEMENT

B.TECH. HR-21 COURSE STRUCTURE

MECHANICALN ENGINEERING

(Applicable for the batch admitted from 2021-22 onwards)

Induction Program-2 Weeks

I – Semester (I – Year)

S. No.	Course code	Subject	Hours Per Week			Credits	Scheme of Evaluation		
			L	T	P		Maximum Marks		
							Int.	Ext.	Tot.
1	21BS1MT01	Matrix Algebra and Calculus	3	1	-	4	30	70	100
2	21BS1PH03	Engineering Physics	3	-	-	3	30	70	100
3	21HS1EG01	English	2	-	-	2	30	70	100
4	21ES1CS01	Problem Solving using C	3	-	-	3	30	70	100
5	21HS1MB01	Business Economics and Financial Analysis	2	-	-	2	30	70	100
6	21BS1PH04	Engineering Physics Lab	-	-	3	1.5	30	70	100
7	21HS1EG02	English Language Communication Skills Lab	-	-	2	1	30	70	100
8	21ES1CS02	Problem Solving using C-Lab	-	-	3	1.5	30	70	100
TOTAL						**18**	**240**	**560**	**800**
Non Credit Courses									
9	21AC1ME02	Engineering Projects in Community Services	-	-	2	0	0	0	**0**

II – Semester (I – Year)

S. No.	Course code	Subject	Hours Per Week			Credits	Scheme of Evaluation		
			L	T	P		Maximum Marks		
							Int.	Ext.	Tot.
1	21BS2MT02	Advanced Calculus for Engineers	3	1	-	4	30	70	100
2	21BS2CH01	Engineering-Chemistry	3	-	-	3	30	70	100
3	21ES2ME01	Engineering Graphics	2	-	2	3	30	70	100
4	21ES2ME03	Engineering Mechanics	3	-	-	3	30	70	100
5	21BS2CH02	Engineering Chemistry Lab	-	-	3	1.5	30	70	100
6	21ES2EE05	MATLAB & SIMULINK	-	-	3	1.5	30	70	100
7	21ES2ME02	Engineering Prototyping Lab	1	-	2	2	30	70	100
TOTAL						**18**	**210**	**490**	**700**
Non Credit Courses									
8	21MC2HS02	Environmental Science	2	-	-	0	100	0	**100**
9	21AC2HS01	Social and Health Consciousness	-	-	2	0	0	0	**0**

III – Semester (II – Year)									
S. No.	**Course code**	**Subject**	**Hours Per Week**			**Credits**	**Scheme of Evaluation**		
							Maximum Marks		
			L	**T**	**P**		**Int.**	**Ext.**	**Tot.**
1	21ES3EE01	Basic Electrical & Electronics Engineering	3	-	-	3	30	70	100
2	21PC3ME01	Mechanics of Solids	3	-	-	3	30	70	100
3	21PC3ME02	Thermodynamics	3	-	-	3	30	70	100
4	21PC3ME03	Material Science & Metallurgy	3	-	-	3	30	70	100
5	21PC3ME04	Production Technology	3	-	-	3	30	70	100
6	21HS3EG03	English for Employability	1	-	-	1	30	70	100
7	21HS3EG04	English for Employability-Lab	-	-	2	1	30	70	100
8	21PC3ME05	Material Science & Mechanics of Solids Lab	-	-	3	1.5	30	70	100
9	21PC3ME06	Production Technology Lab	-	-	2	1	30	70	100
10	21ES3EE02	Basic Electrical & Electronics Engineering Lab	-	-	3	1.5	30	70	100
11	21PR3IN01	Evaluation of Summer Internship -1	-	-	2	1	100	0	100
TOTAL						**22**	**400**	**700**	**1100**
Non Credit Courses									
12	21MC3HS01	Universal Human Values	2	-	-	0	100	0	**100**

IV – Semester (II – Year)									
S. No.	**Course code**	**Subject**	**Hours Per Week**			**Credits**	**Scheme of Evaluation**		
							Maximum Marks		
			L	**T**	**P**		**Int.**	**Ext.**	**Tot.**
1	21ES4MT07	Statistical Methods and Complex Variables	3	1	-	4	30	70	100
2	21PC4ME07	Kinematics of Machinery	3	1	-	4	30	70	100
3	21PC4ME08	Thermal Engineering-I	3	-	-	3	30	70	100
4	21ES4CS03	Python Programming	3	-	-	3	30	70	100
5	21PC4ME09	Fluid Mechanics & Hydraulic Machinery	3	-	-	3	30	70	100
6	21PC4ME10	Machine Drawing Practice	-	-	2	1	30	70	100
7	21PC4ME11	Fluid Mechanics & Hydraulic Machinery Lab	-	-	2	1	30	70	100
8	21ES4CS04	Python Programming Lab	-	-	3	1.5	30	70	100
9	21PR4ME01	**Doing Engineering-1**	-	1	1	1.5	30	70	100
TOTAL						**22**	**270**	**630**	**900**

V – Semester (III – Year)									
S. No.	Course code	Subject	Hours Per Week			Credits	Scheme of Evaluation		
			L	T	P		Maximum Marks		
							Int.	Ext.	Tot.
1	21PC5ME12	Dynamics of Machinery	3	-	-	3	30	70	100
2	21PC5ME13	Thermal Engineering-II	3	-	-	3	30	70	100
3	21PC5ME14	Metrology & Machine Tools	3	-	-	3	30	70	100
4	21PC5ME15	Design of Machine Members-I	3	-	-	3	30	70	100
5		**Professional Elective-1**	3	-	-	3	30	70	100
6		**Open Elective-1**	3	-	-	3	30	70	100
7	21PC5ME16	Metrology & Machine Tools Lab	-	-	2	1	30	70	100
8	21PC5ME17	Thermal Engineering Lab	-	-	2	1	30	70	100
9	21PC5ME18	Kinematics & Dynamics Lab	-	-	2	1	30	70	100
10	21PR5IN02	Evaluation of Summer Internship-2	-	-	2	1	100	0	100
TOTAL						**22**	**370**	**630**	**1000**
Non Credit Courses									
11	21MC5HS03	Analytical Reasoning	2	-	-	0	100	0	**100**

VI – Semester (III – Year)									
S. No.	Course code	Subject	Hours Per Week			Credits	Scheme of Evaluation		
			L	T	P		Maximum Marks		
							Int.	Ext.	Tot.
1	21PC6ME19	Design of Machine Members-II	3	-	-	3	30	70	100
2	21PC6ME20	Heat Transfer	3	1	-	3	30	70	100
3	21PC6ME21	CAD/CAM	3	-	-	3	30	70	100
4	21PC6ME22	Instrumentation & Control Systems	2	-	-	2	30	70	100
5		**Professional Elective-II**	3	-	-	3	30	70	100
6		**Open elective-2**	3	-	-	3	30	70	100
7	21PC6ME23	Heat Transfer Lab	-	-	2	1	30	70	100
8	21PC6ME24	Instrumentation & Control Systems Lab	-	-	3	1.5	30	70	100
9	21HS6EG05	Advanced English Communication Skills-Lab	-	-	2	1	30	70	100
10	21PR6ME02	**Doing Engineering-2**	-	1	1	1.5	30	70	100
TOTAL						**22**	**300**	**700**	**1000**
Non Credit Courses									
11	21MC6HS04	Quantitative Aptitude	2	-	-	0	100	0	**100**

VII – Semester (IV – Year)									
S. No.	**Course code**	**Subject**	**Hours Per Week**			**Credits**	**Scheme of Evaluation**		
							Maximum Marks		
			L	**T**	**P**		**Int.**	**Ext.**	**Tot.**
1		**Professional Elective-III**	3	-	-	3	30	70	100
2	21HS7MB02	Fundamentals of Engineering Management	2	-	-	2	30	70	100
3		**Professional Elective-IV**	3	-	-	3	30	70	100
4	21PC7ME25	Finite Element Methods	3	-	-	3	30	70	100
5		**Open Elective-3**	3	-	-	3	30	70	100
6	21PC7ME26	CAD/CAM Lab	-	-	2	1	30	70	100
7	21PR7IN03	**Doing Engineering-3(MINI PROJ/Internship)**	-	-	3	2	100	0	100
8	21PR7PS06	**Project Stage-I**	-	-	6	3	100	0	100
TOTAL						**20**	**380**	**420**	**800**
Non Credit Courses									
10	21MC7HS06	Intellectual Property Rights	2	-	-	0	100	0	**100**

VIII – Semester (IV – Year)									
S. No.	**Course code**	**Subject**	**Hours Per Week**			**Credits**	**Scheme of Evaluation**		
							Maximum Marks		
			L	**T**	**P**		**Int.**	**Ext.**	**Tot.**
1		**Professional Elective-5**	3	-	-	3	30	70	100
2		**Professional Elective-6**	3	-	-	3	30	70	100
3		**Open Elective-4**	3	-	-	3	30	70	100
4	21PR8PS07	**Project Stage-II**	-	-	14	7	30	70	100
TOTAL						**16**	**120**	**280**	**400**
Non-Credit Courses									
5	21AC8HS03	Foreign Languages(German/French/Japanese)	2	-	-	0	0	0	**0**
6	21MC8HS05	Constitution of India	2	-	-	0	100	0	**100**

PE-1 Code	Professional Elective-I
21PE5ME11	Operations Research
21PE5ME12	Industrial Robotics
21PE5ME13	Mechanical Vibrations
21PE5ME14	Machine Tool Design

PE-2 Code	Professional Elective-II
21PE6ME21	Un Conventional Machining Processes
21PE6ME22	Production Planning & Control
21PE6ME23	Machining Science
21PE6ME24	Composite Materials

PE-3 Code	Professional Elective-III
21PE7ME31	Additive Manufacturing Technology
21PE7ME32	Automation in Manufacturing
21PE7ME33	Micro Electro Mechanical Systems
21PE7ME34	Design for Manufacturing and Assembly

PE-4 Code	Professional Elective-IV
21PE7ME41	Power Plant Engineering
21PE7ME42	Hybrid Vehicles
21PE7ME43	Renewable Energy Sources
21PE7ME44	Automobile Engineering

PE-5 Code	Professional Elective-V
21PE8ME51	Computational Fluid Dynamics
21PE8ME52	Turbo Machinery
21PE8ME53	Refrigeration & Air Conditioning
21PE8ME54	Fuel Cell Technology

PE-6 Code	Professional Elective-VI
21PE8ME61	Production Operations and Management
21PE8ME62	Tribology
21PE8ME63	Total Quality Management
21PE8ME64	Green Manufacturing

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EEE-COURSE STRUCTURE

w.e.f. from 2021-22

Updated on: 14 Sep 2022

HYDERABAD INSTITUTE OF TECHNOLOGY AND MANAGEMENT									
B.TECH. HR-21 COURSE STRUCTURE									
ELECTRICAL AND ELECTRONICS ENGINEERING									
(Applicable for the batch admitted from 2021-22 onwards)									
Induction Program-2 Weeks									
I – Semester (I – Year)									
S. No.	Subject Code	Subject	Hours Per Week			Credits	Scheme of Evaluation		
							Maximum Marks		
			L	T	P		Int.	Ext.	Tot.
1	21BS1MT01	Matrix Algebra and Calculus	3	1	-	4	30	70	100
2	21BS1PH01	Applied Physics	3	-	-	3	30	70	100
3	21HS1EG01	English	2	-	-	2	30	70	100
4	21HS1MB01	Business Economics and Financial Analysis	2	-	-	2	30	70	100
5	21ES1CS01	Problem Solving using C	3	-	-	3	30	70	100
6	21BS1PH02	Applied Physics Lab	-	-	3	1.5	30	70	100
7	21HS1EG02	English Language Communication Skills Lab	-	-	2	1	30	70	100
8	21ES1CS02	Problem Solving using C - Lab	-	-	3	1.5	30	70	100
TOTAL						18	240	560	800
Non Credit Courses									
9	21AC1ME02	Engineering Projects in Community Services	2	-	-	0	0	0	0
II – Semester (I – Year)									
S. No.	Subject Code	Subject	Hours Per Week			Credits	Scheme of Evaluation		
							Maximum Marks		
			L	T	P		Int.	Ext.	Tot.
1	21BS2MT02	Advanced Calculus for Engineers	3	1	-	4	30	70	100
2	21BS2CH01	Engineering Chemistry	3	-	-	3	30	70	100
3	21ES2ME01	Engineering Graphics	2	-	2	3	30	70	100
4	21PC2EE01	Electric Circuit Analysis-I	3	-	-	3	30	70	100
5	21BS2CH02	Engineering Chemistry Lab	-	-	2	1.5	30	70	100
6	21PC2EE02	Electric Circuit Analysis-I Lab	-	-	3	1.5	30	70	100
7	21ES2ME02	Engineering Prototyping Lab	1	-	2	2	30	70	100
TOTAL						18	210	490	700
Non Credit Courses									
8	21MC2HS02	Environmental Science	2	-	-	0	100	0	100
9	21AC2HS01	Social and Health Consciousness	-	-	2	0	0	0	0

III – Semester (II – Year)									
S. No.	Subject Code	Subject	Hours Per Week			Credits	Scheme of Evaluation		
							Maximum Marks		
			L	T	P		Int.	Ext.	Tot.
1	21BS3MT06	Laplace Transforms, Numerical Methods & Complex variables	3	1	-	4	30	70	100
2	21PC3CS01	Data Structures using C	3	-	-	3	30	70	100
3	21PC3EE03	Electrical Circuit Analysis-II	3	-	-	3	30	70	100
4	21PC3EE04	Electrical Machines – I	3	-	-	4	30	70	100
5	21PC3EE05	Electromagnetic Fields	3	-	-	3	30	70	100
6	21PC3CS04	Data Structures using C Lab	-	-	3	1.5	30	70	100
7	21PC3EE06	Electrical Circuit Analysis-II Lab	-	-	2	1	30	70	100
8	21PC3EE07	Electrical Machines – I Lab	-	-	3	1.5	30	70	100
9	21PR3IN01	Evaluation of Summer Internship-1	-	-	2	1	100	0	100
TOTAL						**22**	**340**	**560**	**900**
Non Credit Courses									
10	21MC3HS01	Universal Human Values	2	-	-	0	100	0	**100**

IV – Semester (II – Year)									
S. No.	Subject Code	Subject	Hours Per Week			Credits	Scheme of Evaluation		
							Maximum Marks		
			L	T	P		Int.	Ext.	Tot.
1	21PC4EC03	Signals and Systems	3	-	-	3	30	70	100
2	21PC4EE08	Control Systems	3	-	-	3	30	70	100
3	21PC4EE09	Power Systems-I	3	-	-	3	30	70	100
4	21PC4EE10	Analog and Digital Electronics	3	-	-	3	30	70	100
5	21PC4EE11	Electrical Machines – II	3	-	-	3	30	70	100
6	21HS4EG03	English for Employability	1	-	-	1	30	70	100
7	21PC4EE12	Electrical Machines – II Lab	-	-	3	1.5	30	70	100
8	21PC4EE13	Analog and Digital Electronics Lab	-	-	2	1	30	70	100
9	21PC4EE14	Control Systems Lab	-	-	2	1	30	70	100
10	21HS4EG04	English for Employability Lab	-	-	2	1	30	70	100
11	21PR4EE01	Doing Engineering-1	-	1	1	1.5	30	70	100
TOTAL						**22**	**330**	**770**	**1100**

V – Semester (III – Year)									
S. No.	**Subject Code**	**Subject**	**Hours Per Week**			**Credits**	**Scheme of Evaluation**		
							Maximum Marks		
			L	**T**	**P**		**Int.**	**Ext.**	**Tot.**
1	21PC5EE15	Power systems II	3	-	-	3	30	70	100
2	21PC5EE16	Microprocessor & Microcontrollers	3	-	-	3	30	70	100
3	21PC5EE17	Power Electronics	3	-	-	3	30	70	100
4		**Professional Elective-I**	3	-	-	3	30	70	100
5		**Open Elective-1**	3	-	-	3	30	70	100
6	21PC5EE18	Microprocessor & Microcontrollers Lab	-	-	2	1	30	70	100
7	21PC5EE19	Power Electronics Lab	-	-	3	1.5	30	70	100
8	21PC5EE20	Electrical and Electronics Design Lab	-	-	2	1	30	70	100
9	21HS5EG05	Advanced English Communication Skills-Lab	-	-	2	1	30	70	100
10	21PR5EE02	**Doing Engineering-2**	-	1	1	1.5	30	70	100
11	21PR5IN02	Evaluation of Summer Internship-2	-	-	2	1	100	0	100
TOTAL						**22**	**400**	**700**	**1100**
Non Credit Courses									
12	21MC5HS03	Analytical Reasoning	2	-	-	0	100	0	**100**

VI – Semester (III – Year)									
S. No.	**Subject Code**	**Subject**	**Hours Per Week**			**Credits**	**Scheme of Evaluation**		
							Maximum Marks		
			L	**T**	**P**		**Int.**	**Ext.**	**Tot.**
1	21ES6CS03	Python Programming	3	-	-	3	30	70	100
2	21PC6EE21	Electrical Measurements	3	-	-	3	30	70	100
3	21PC6EE22	Power systems III	3	1	-	4	30	70	100
4	21HS6MB02	Fundamentals of Engineering Management	2	-	-	2	30	70	100
5		**Professional Elective-II**	3	-	-	3	30	70	100
6		**Open elective-II**	3	-	-	3	30	70	100
7	21ES6CS04	Python Programming Lab	-	-	3	1.5	30	70	100
8	21PC6EE23	Power Systems Lab	-	-	3	1.5	30	70	100
9	21PC6EE24	Electrical Measurements Lab	-	-	2	1	30	70	100
TOTAL						**22**	**270**	**630**	**900**
Non Credit Courses									
10	21MC6HS04	Quantitative Aptitude	2	-	-	0	100	0	**100**

VII – Semester (IV – Year)									
S. No.	**Subject Code**	**Subject**	**Hours Per Week**			**Credits**	**Scheme of Evaluation**		
							Maximum Marks		
			L	**T**	**P**		**Int.**	**Ext.**	**Tot.**
1	21PC7EE25	Power Semiconductor Drives	3	-	-	3	30	70	100
2	21PC7EE26	Power System Operation and Control	3	-	-	3	30	70	100
3		**Professional Elective-III**	3	-	-	3	30	70	100
4		**Professional Elective-IV**	3	-	-	3	30	70	100
5		**Open Elective-III**	3	-	-	3	30	70	100
6	21PR7PS01	**Project Stage-I**	-	-	6	3	100	0	100
7	21PR7IN03	**Doing Engineering-3(MINI PROJ/Internship)**	-	2	-	2	100	0	100
TOTAL						**20**	**350**	**350**	**700**
Non Credit Courses									
8	21MC7HS06	Intellectual Property Rights	2	-	-	0	100	0	**100**

VIII – Semester (IV – Year)									
S. No.	**Subject Code**	**Subject**	**Hours Per Week**			**Credits**	**Scheme of Evaluation**		
							Maximum Marks		
			L	**T**	**P**		**Int.**	**Ext.**	**Tot.**
1		**Professional Elective-V**	3	-	-	3	30	70	100
2		**Professional Elective-VI**	3	-	-	3	30	70	100
3		**Open Elective-IV**	3	-	-	3	30	70	100
4	21PR8PS02	**Project Stage-II**	-	-	14	7	30	70	100
TOTAL						**16**	**120**	**280**	**400**
Non Credit Courses									
5	21MC8HS05	Constitution of India	2	-	-	0	100	0	**100**
6	21AC8HS03	Foreign Languages(German/ French/Japanese)	2	-	-	0	0	0	**0**

Subject Code	Professional Elective-I
21PE5EE11	Computer Architecture
21PE5EE12	High Voltage Engineering
21PE5EE13	Digital Control Systems

Subject Code	Professional Elective-II
21PE6EE21	High Voltage Direct Current Transmission
21PE6EE22	VLSI Design
21PE6EE23	Neural Networks and Fuzzy Logic

Subject Code	Professional Elective-III
21PE7EE31	Digital Signal Processing
21PE7EE32	Electrical Distribution Systems
21PE7EE33	Data Communications and Networks

Subject Code	Professional Elective-IV
21PE7EE41	PQ & FACTS
21PE7EE42	Industrial Instrumentation
21PE7EE43	Utilization of Electrical Power

Subject Code	Professional Elective-V
21PE8EE51	Renewable Energy Systems
21PE8EE52	Electrical Hybrid Vehicles
21PE8EE53	Smart Appliances and Internet of Things

Subject Code	Professional Elective-VI
21PE8EE61	Smart Grid System
21PE8EE62	Data Science Applications in Power Engineering
21PE8EE63	Wide-Area Monitoring and Control

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CSM-COURSE STRUCTURE

w.e.f. from 2021-22

Updated on: 14 Sep 2022

HYDERABAD INSTITUTE OF TECHNOLOGY AND MANAGEMENT									
B.TECH. HR-21 COURSE STRUCTURE									
CSE-ARTIFICIAL INTELIGENCE & MACHINE LEARNING									
(Applicable for the batch admitted from 2021-22 onwards)									
Induction Program-2 Weeks									
I – Semester (I – Year)									
S. No.	Course code	Subject	Hours Per Week			Credits	Scheme of Evaluation		
							Maximum Marks		
			L	T	P		Int.	Ext.	Tot.
1	21BS1MT01	Matrix Algebra and Calculus	3	1	-	4	30	70	100
2	21BS1CH01	Engineering-Chemistry	3	-	-	3	30	70	100
3	21ES1ME01	Engineering Graphics	1	-	4	3	30	70	100
4	21ES1CS01	Problem Solving using C	3	-	-	3	30	70	100
5	21ES1CS02	Problem Solving using C Language-Lab	-	-	3	1.5	30	70	100
6	21ES1ME02	Engineering Prototyping Lab	-	-	4	2	30	70	100
7	21BS1CH02	Engineering Chemistry Lab	-	-	2	1.5	30	70	100
TOTAL						**18**	**210**	**490**	**700**
Non Credit Courses									
8	21AC1HS01	Social and Health Consciousness	-	-	2	0	0	0	**0**
II – Semester (I – Year)									
S. No.	Course code	Subject	Hours Per Week			Credits	Scheme of Evaluation		
							Maximum Marks		
			L	T	P		Int.	Ext.	Tot.
1	21BS2MT02	Advanced Calculus for Engineers	3	1	-	4	30	70	100
2	21BS2PH01	Applied Physics	3	-	-	3	30	70	100
3	21ES2EE01	Basic Electrical and Electronics Engineering	3	-	-	3	30	70	100
4	21HS2EG01	English	2	-	-	2	30	70	100
5	21BS2PH02	Applied Physics Lab	-	-	3	1.5	30	70	100
6	21ES2EE02	Basic Electrical and Electronics Engineering-Lab	-	-	3	1.5	30	70	100
7	21HS2EG02	English Language Communication Skills Lab	-	-	2	1	30	70	100
8	21HS2MB01	Business Economics and Financial Analysis	2	-	-	2	30	70	100
TOTAL						**18**	**240**	**560**	**800**
Non Credit Courses									
9	21MC2HS01	Universal Human Values	2	-	-	0	100	0	**100**
10	21AC2ME02	Engineering Projects in Community Services	-	-	2	0	0	0	**0**

III – Semester (II – Year)									
S. No.	Course code	Subject	Hours Per Week			Credits	Scheme of Evaluation		
							Maximum Marks		
			L	T	P		Int.	Ext.	Tot.
1	21BS3MT03	Mathematical & Statistical Foundations	3	1	-	4	30	70	100
2	21ES3CS03	Python Programming	3	1	-	3	30	70	100
3	21HS3EG03	English for Employability	1			1	30	70	100
4	21PC3CS01	Data Structures using C	3	1	-	4	30	70	100
5	21PC3CM01	Introduction to Artificial Intelligence	3		-	3	30	70	100
6	21ES3CS04	Python Programming-Lab	-	-	3	1.5	30	70	100
7	21HS3EG04	English for Employability-Lab	-		2	1	30	70	100
8	21PC3CM02	Artificial Intelligence-LAB	-	-	3	1.5	30	70	100
9	21PC3CS04	Data Structures using C-Lab	-	-	3	1.5	30	70	100
10	21PR3IN01	Evaluation of Summer Internship-I	-		2	1	100	0	100
TOTAL						**21.5**	**370**	**630**	**1000**
Non Credit Courses									
11	21MC3HS02	Environmental Science	2	-	-	0	100	0	**100**

IV – Semester (II – Year)									
S. No.	Course code	Subject	Hours Per Week			Credits	Scheme of Evaluation		
							Maximum Marks		
			L	T	P		Int.	Ext.	Tot.
1	21ES4MT04	Matrix Computations and it's Applications	3	-	-	3	30	70	100
2	21PC4CS09	Object Oriented Programming using Java	3	-	-	3	30	70	100
3	21PC4CS13	Operating Systems	3	-	-	3	30	70	100
4	21PC4CS03	Database Management Systems	3	-	-	3	30	70	100
5	21PC4CD02	Data Mining & Data Analytics	3	-	-	3	30	70	100
6	21PS4CS24	Operating Systems-Lab	-	-	3	1.5	30	70	100
7	21PC4CS11	Programming Using Java- Lab	-	-	3	1.5	30	70	100
8	21PC4CS05	Database Management Systems-Lab	-	-	3	1.5	30	70	100
9	21PC4CS20	Data Mining Lab	-		3	1.5	30	70	100
10	21PR4CD01	**Doing Engineering-1**	-	1	1	1.5	30	70	100
TOTAL						**22.5**	**300**	**700**	**1000**

V – Semester (III – Year)									
S. No.	**Course code**	**Subject**	**Hours Per Week**			**Credits**	**Scheme of Evaluation**		
							Maximum Marks		
			L	**T**	**P**		**Int.**	**Ext.**	**Tot.**
1	21PC5CD04	Software Engineering & Testing Methodologies	3	-	-	3	30	70	100
2	21PC5CS07	Design & Analysis of Algorithms	3	-	-	3	30	70	100
3	21PC5CM03	Machine Learning	3	1	-	4	30	70	100
4		**Professional Elective-I**	3	-	-	3	30	70	100
5		**Open Elective-I**	3	-	-	3	30	70	100
6	21PC5CS23	Design & Analysis of Algorithms-Lab	-	-	3	1.5	30	70	100
7	21PC5CD05	Software Engineering-LAB	-	-	3	1.5	30	70	100
8	21PC5CM04	Machine Learning-LAB	-	-	3	1.5	30	70	100
9	21PR5IN02	Evaluation of Summer Internship-II	-	-	2	1	100	0	100
TOTAL						**21.5**	**340**	**560**	**900**
Non Credit Courses									
10	21MC7HS03	Analytical Reasoning	2	-	-	0	100	0	**100**

VI – Semester (III – Year)									
S. No.	**Course code**	**Subject**	**Hours Per Week**			**Credits**	**Scheme of Evaluation**		
							Maximum Marks		
			L	**T**	**P**		**Int.**	**Ext.**	**Tot.**
1	21PC6CS08	Formal Languages and Automata Theory	3	-	-	3	30	70	100
2	21PC6CM05	Neural Networks and Deep Learning	3	1	-	4	30	70	100
3	21PC6CM06	Expert Systems	3	-	-	3	30	70	100
4	21ES6MT05	Descriptive Statistics-Lab	-	1	1	1.5	30	70	100
5		**Professional Elective-II**	3	-	-	3	30	70	100
6		**Open elective-II**	3	-	-	3	30	70	100
7	21PC6CM07	Expert Systems Lab	-	-	2	1	30	70	100
8	21PC6CM08	Neural Networks and Deep Learning - Lab	-	-	3	1.5	30	70	100
9	21HS6EG05	Advanced English Communication Skills-Lab	-	-	2	1	30	70	100
10	21PR6CD02	**Doing Engineering-2**	-	-	3	1.5	30	70	100
TOTAL						**22.5**	**300**	**700**	**1000**
Non Credit Courses									
11	21MC6HS04	Quantitative Aptitude	2	-	-	0	100	-	**100**

VII – Semester (IV – Year)									
S. No.	**Course code**	**Subject**	**Hours Per Week**			**Credits**	**Scheme of Evaluation**		
							Maximum Marks		
			L	**T**	**P**		**Int.**	**Ext.**	**Tot.**
1	21HS7MB02	Fundamentals of Engineering Management	3	-	-	2	30	70	100
2	21PC6CM09	Natural Language Processing	3	-	-	3	30	70	100
3		**Professional Elective-III**	3	-	-	3	30	70	100
4		**Professional Elective-IV**	3	-	-	3	30	70	100
5		**Open Electives-III**	3	-	-	3	30	70	100
6	21PC6CM10	Natural Language Processing-Lab	-	-	2	1	30	70	100
7	21PR7IN03	**Doing Engineering-3(MINI PROJ/Internship)**	-	2	-	2	30	70	100
8	21PR7PS01	**Project Stage-I**	-	-	6	3	100	0	100
TOTAL						**20**	**310**	**490**	**800**
Non Credit Courses									
9	21MC7HS05	Constitution of India	2	-	-	0	100	0	**100**

VIII – Semester (IV – Year)									
S. No.	**Course code**	**Subject**	**Hours Per Week**			**Credits**	**Scheme of Evaluation**		
							Maximum Marks		
			L	**T**	**P**		**Int.**	**Ext.**	**Tot.**
1		**Professional Elective-V**	3	-	-	3	30	70	100
2		**Professional Elective-VI**	3	-	-	3	30	70	100
3		**Open Elective-IV**	3	-	-	3	30	70	100
4	21PR8PS02	**Project Stage-II**	-	-	14	7	30	70	100
TOTAL						**16**	**120**	**280**	**400**
Non Credit Courses									
5	21MC8HS06	Intellectual Property Rights	2	-	-	0	100	0	**100**
6	21AC8HS03	Foreign Languages (German/French/Spanish)	2	-	-	0	0	0	0

Subject Code	Professional Elective-I
21PE5CM11	Big Data Analytics
21PE5CM12	Data Warehousing
21PE5CM13	Text Mining and Analytics
21PE5CM14	Design Thinking, dev ops, Agile

Subject Code	Professional Elective-II
21PE6CM21	Fundamental of Robotics
21PE6CM22	Predicative Analytics
21PE6CM23	Virtual Reality
21PE6CM24	Data Visualization

Subject Code	Professional Elective-III
21PE7CM31	Business Analytics
21PE7CM32	Health Care Data Analytics
21PE7CM33	Computer Vision
21PE7CM34	Cognitive Computing

Subject Code	Professional Elective-IV
21PE7CM41	Data Handling and Visualization
21PE7CM42	Information Retrieval Systems
21PE7CM43	Embedded Systems
21PE7CM44	Watson services & Business Decisions

Subject Code	Professional Elective-V
21PE8CM51	Social media Analytics
21PE8CM52	Information Visualization
21PE8CM53	Blockchain technology
21PE8CM54	Predictive Modelling

Subject Code	Professional Elective-VI
21PE8CM61	Digital Marketing
21PE8CM62	Cloud Computing
21PE8CM63	Pattern Recognition
21PE8CD64	AI Analytics

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CSD-COURSE STRUCTURE

w.e.f. from 2021-22

Updated on: 14 Sep 2022

HYDERABAD INSTITUTE OF TECHNOLOGY AND MANAGEMENT									
B.TECH. HR-21 COURSE STRUCTURE									
CSE-DATA SCIENCE									
(Applicable for the batch admitted from 2021-22 onwards)									
Induction Program-2 Weeks									
I-Semester (I Year)									
S. No.	Subject Code	Subject	Hours Per Week			Credits	Scheme of Evaluation		
							Maximum Marks		
			L	T	P		Int.	Ext.	Tot.
1	21BS1MT01	Matrix Algebra and Calculus	3	1	-	4	30	70	100
2	21BS1CH01	Engineering-Chemistry	3	-	-	3	30	70	100
3	21ES1ME01	Engineering Graphics	2	-	2	3	30	70	100
4	21ES1CS01	Problem Solving using C	3	-	-	3	30	70	100
5	21BS1CH02	Engineering Chemistry Lab	-	-	3	1.5	30	70	100
6	21ES1CS02	Problem Solving using C-Lab	-	-	3	1.5	30	70	100
7	21ES1ME02	Engineering Prototyping Lab	1	-	2	2	30	70	100
TOTAL						**18**	**210**	**490**	**700**
Non Credit Courses									
8	21AC1HS01	Social and Health Consciousness	-	2	-	0	0	0	**0**
II-Semester (I Year)									
S. No.	Subject Code	Subject	Hours Per Week			Credits	Scheme of Evaluation		
							Maximum Marks		
			L	T	P		Int.	Ext.	Tot.
1	21BS2MT02	Advanced Calculus for Engineers	3	1	-	4	30	70	100
2	21BS2PH01	Applied Physics	3	-	-	3	30	70	100
3	21HS2EG01	English	2	-	-	2	30	70	100
4	21HS2MB01	Business Economics and Financial Analysis	2	-	-	2	30	70	100
5	21ES2EE01	Basic Electrical and Electronics Engineering	3	-	-	3	30	70	100
6	21BS2PH02	Applied Physics Lab	-	-	3	1.5	30	70	100
7	21HS2EG02	English Language Communication Skills Lab	-	-	2	1	30	70	100
8	21ES2EE02	Basic Electrical and Electronics Engineering-Lab	-	-	3	1.5	30	70	100
TOTAL						**18**	**240**	**560**	**800**
Non Credit Courses									
9	21MC2HS01	Universal Human Values	2	-	-	0	100	0	**100**
10	21AC2ME02	Engineering Projects in Community Services	-	-	2	0	0	0	**0**

III – Semester (II – Year)									
S. No.	Subject Code	Subject	Hours Per Week			Credits	Scheme of Evaluation		
							Maximum Marks		
			L	T	P		Int.	Ext.	Tot.
1	21BS3MT03	Mathematical & Statistical Foundations	3	1	-	4	30	70	100
2	21HS3EG03	English for Employability	1			1	30	70	100
3	21PC3CS01	Data Structures using C	3	1	-	4	30	70	100
4	21PC3CS03	Data Base Management Systems	3		-	3	30	70	100
5	21PC3CS09	Object Oriented Programming using Java	3	-	-	3	30	70	100
6	21PC3CS04	Data Structures using C -Lab	-	-	3	1.5	30	70	100
7	21PC3CS05	Database Management Systems-Lab	-	-	3	1.5	30	70	100
8	21PC3CS11	Programming using Java- Lab	-	-	3	1.5	30	70	100
9	21HS3EG04	English for Employability-Lab	-		2	1	30	70	100
10	21PR3IN01	Evaluation of Summer Internship-I	-	-	2	1	100	0	100
TOTAL						**21.5**	**370**	**630**	**1000**
Non Credit Courses									
11	21MC3HS02	Environmental Science	2	-	-	0	100	0	**100**

IV – Semester (II – Year)									
S. No.	Subject Code	Subject	Hours Per Week			Credits	Scheme of Evaluation		
							Maximum Marks		
			L	T	P		Int.	Ext.	Tot.
1	21ES4MT04	Matrix Computations and Its Applications	3	-	-	3	30	70	100
2	21ES4CS03	Python Programming	3	-	-	3	30	70	100
3	21PC4CS07	Design & Analysis of Algorithms	3	-	-	3	30	70	100
4	21PC4CS13	Operating Systems	3	-	-	3	30	70	100
5	21PC4CS14	Computer Networks	3	-	-	3	30	70	100
6	21PC4CS23	Design & Analysis of Algorithms-Lab	-	-	3	1.5	30	70	100
7	21PS4CS24	Operating Systems-Lab	-	-	3	1.5	30	70	100
8	21ES4CS04	Python Programming-Lab	-	-	3	1.5	30	70	100
9	21PC4CS25	Computer Networks-Lab	-	-	3	1.5	30	70	100
10	21PR4CD01	**DS-Doing Engineering-1**	-	1	1	1.5	30	70	100
TOTAL						**22.5**	**300**	**700**	**1000**

V – Semester (III – Year)									
S. No.	Subject Code	Subject	Hours Per Week			Credits	Scheme of Evaluation		
							Maximum Marks		
			L	T	P		Int.	Ext.	Tot.
1	21PC5CD04	Software Engineering & Testing Methodologies	3	-	-	3	30	70	100
2	21PC5CD02	Data mining and Data Analytics	3	-	-	3	30	70	100
3	21PC5CS08	Formal Languages and Automata Theory	3	-	-	3	30	70	100
4		**Professional Elective-I**	3	-	-	3	30	70	100
5		**Open Elective-I**	3	-	-	3	30	70	100
6	21PC5CD05	Software Engineering-LAB	-	-	3	1.5	30	70	100
7	21PC5CD03	DMDA-LAB	-	-	3	1.5	30	70	100
8	21ES5MT05	Descriptive Statistics Lab	-	1	1	1.5	30	70	100
9	21PR5IN02	Evaluation of Summer Internship-II	-	-	2	1	100	0	100
10	21PR5CD02	**DS-Doing Engineering-2**	-	1	1	1.5	30	70	100
TOTAL						**22**	**370**	**630**	**1000**
Non Credit Courses									
11	21MC5HS03	Analytical Reasoning	-	2	-	-	100	-	**100**

VI – Semester (III – Year)									
S. No.	Subject Code	Subject	Hours Per Week			Credits	Scheme of Evaluation		
							Maximum Marks		
			L	T	P		Int.	Ext.	Tot.
1	21PC6CD06	Information Security	3	-	-	3	30	70	100
2	21PC6CS15	Compiler Design	3	-	-	3	30	70	100
3	21PC6CD07	Machine Learning and Data Science	3	-	-	3	30	70	100
4	21PC6CD08	Full Stack Web Development	3	-	-	3	30	70	100
5		**Professional Elective-II**	3	-	-	3	30	70	100
6		**Open elective-II**	3	-	-	3	30	70	100
7	21HS6EG05	Advanced English Communication Skills-Lab	-	-	2	1	30	70	100
8	21PC6CD09	Machine Learning and Data Science-Lab	-	-	3	1.5	30	70	100
9	21PC6CD10	Full Stack Web Development-Lab	-	-	3	1.5	30	70	100
TOTAL						**22**	**270**	**630**	**900**
Non Credit Courses									
10	21MC6HS04	Quantitative Aptitude	-	2	-	0	100	0	**100**

VII – Semester (IV – Year)									
S. No.	**Subject Code**	**Subject**	**Hours Per Week**			**Credits**	**Scheme of Evaluation**		
							Maximum Marks		
			L	**T**	**P**		**Int.**	**Ext.**	**Tot.**
1	21HS7MB02	Fundamentals of Engineering Management	2	-	-	2	30	70	100
2	21PC7CD11	Cyber Security	3	-	-	3	30	70	100
3		**Professional Elective-III**	3	-	-	3	30	70	100
4		**Professional Elective-IV**	3	-	-	3	30	70	100
5		**Open Electives-III**	3	-	-	3	30	70	100
6	21PC7CD12	Cyber Security-Lab	-	-	2	1	30	70	100
7	21PR7IN03	**Doing Engineering-3(MINI PROJ/Internship)**	-	2	-	2	100	-	100
8	21PR7PS01	**Project Stage-I**	-	-	6	3	100	-	100
TOTAL						**20**	**380**	**420**	**800**
Non Credit Courses									
9	21MC7HS05	Constitution of India	2	-	-	0	100	-	**100**

VIII – Semester (IV – Year)									
S. No.	**Subject Code**	**Subject**	**Hours Per Week**			**Credits**	**Scheme of Evaluation**		
							Maximum Marks		
			L	**T**	**P**		**Int.**	**Ext.**	**Tot.**
1		**Professional Elective-V**	3	-	-	3	30	70	100
2		**Professional Elective-VI**	3	-	-	3	30	70	100
3		**Open Elective-IV**	3	-	-	3	30	70	100
4	21PR8PS02	**Project Stage-II**	-	-	14	7	30	70	100
TOTAL						**16**	**120**	**280**	**400**
Non Credit Courses									
5	21MC8HS06	Intellectual Property Rights	2	-	-	0	100	-	**100**
6	21AC8HS03	Foreign Languages (German/French/Spanish)	2	-	-	0	-	-	**0**

Professional Elective-I		
1	21PE5CD11	Computer Organization & Architecture
2	21PE5CD12	Data Warehousing
3	21PE5CD13	Information Visualisation
4	21PE5CD14	Digital Marketing
5	21PE5CD15	Spark and Scala Fundamentals

Professional Elective-II		
1	21PE6CD21	Big Data Architecture
2	21PE6CD22	Blockchain Technology
3	21PE6CD23	Information Retrieval Systems
4	21PE6CD24	Data handling and Visualization
5	21PE6CD25	Statistical Foundations of Data Science

Professional Elective-III		
1	21PE7CD31	Object Oriented Analysis and Design
2	21PE7CD32	Data Streaming
3	21PE7CD33	Business Intelligence
4	21PE7CD34	Probability and Inferential Statistics
5	21PE7CD35	Computing for Data Science

Professional Elective-IV		
1	21PE7CD41	Data Compression
2	21PE7CD42	Virtual Reality
3	21PE7CD43	Data Science for Business
4	21PE7CD44	Big Data Analytics - AP Skills
5	21PE7CD45	Optimization for Data Science

Professional Elective-V		
1	21PE8CD51	Social Media Analytics
2	21PE8CD52	Text Mining and Analytics
3	21PE8CD53	Predictive Modelling
4	21PE8CD54	Healthcare Data Analytics
5	21PE8CD55	Image Processing

Professional Elective-VI		
1	21PE8CD61	Distributed Databases
2	21PE8CD62	Cyber Laws
3	21PE8CD63	Design Thinking , Devops, Agile
4	21PE8CD64	Data Visualization
5	21PE8CD65	Deep Learning

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CSO-COURSE STRUCTURE

w.e.f. from 2021-22

Updated on: 14 Sep 2022

HYDERABAD INSTITUTE OF TECHNOLOGY AND MANAGEMENT									
B.TECH. HR-21 COURSE STRUCTURE									
CSE-INTERNET OF THINGS									
(Applicable for the batch admitted from 2021-22 onwards)									
Induction Program-2 Weeks									
I – Semester (I – Year)									
S. No.	Course code	Subject	Hours Per Week			Credits	Scheme of Evaluation		
							Maximum Marks		
			L	T	P		Int.	Ext.	Tot.
1	21BS1MT01	Matrix Algebra and Calculus	3	1	-	4	30	70	100
2	21BS1CH01	Engineering-Chemistry	3	-	-	3	30	70	100
3	21ES1ME01	Engineering Graphics	1	-	4	3	30	70	100
4	21ES1CS01	Problem Solving using C	3	-	-	3	30	70	100
5	21ES1CS02	Problem Solving using C-Lab	-	-	3	1.5	30	70	100
6	21ES1ME02	Engineering Prototyping Lab	-	-	4	2	30	70	100
7	21BS1CH02	Engineering Chemistry Lab	-	-	3	1.5	30	70	100
TOTAL						18	210	490	700
Non Credit Courses									
8	21AC1HS01	Social and Health Consciousness	-	2	-	0	0	0	0
II – Semester (I – Year)									
S. No.	Course code	Subject	Hours Per Week			Credits	Scheme of Evaluation		
							Maximum Marks		
			L	T	P		Int.	Ext.	Tot.
1	21BS2MT02	Advanced Calculus for Engineers	3	1	-	4	30	70	100
2	21BS2PH01	Applied Physics	3	-	-	3	30	70	100
3	21ES2EE01	Basic Electrical and Electronics Engineering	3	-	-	3	30	70	100
4	21HS2EG01	English	2	-	-	2	30	70	100
5	21HS2MB01	Business Economics and Financial Analysis	2	-	-	2	30	70	100
6	21BS2PH02	Applied Physics Lab	-	-	3	1.5	30	70	100
7	21ES2EE02	Basic Electrical and Electronics Engineering-Lab	-	-	3	1.5	30	70	100
8	21HS2EG02	English Language Communication Skills Lab	-	-	2	1	30	70	100
TOTAL						18	240	560	800
Non Credit Courses									
9	21MC2HS01	Universal Human Values	2	-	-	0	100	-	100
10	21AC2ME02	Engineering Projects in Community Services	-	-	2	0	0	0	0

III – Semester (II – Year)									
S. No.	**Course code**	**Subject**	**Hours Per Week**			**Credits**	**Scheme of Evaluation**		
							Maximum Marks		
			L	**T**	**P**		**Int.**	**Ext.**	**Tot.**
1	21BS3MT03	Mathematical & Statistical Foundations	3	1	-	4	30	70	100
2	21ES3CO01	Introduction to IoT	3	-	-	3	30	70	100
3	21HS3EG03	English for Employability	1	-	-	1	30	70	100
4	21PC3CS01	Data Structures using C	3	1	-	4	30	70	100
5	21PC3CO02	Analog and Digital Electronics	3	-	-	3	30	70	100
6	21ES3CO03	IoT Lab	-	-	3	1.5	30	70	100
7	21HS3EG04	English for Employability-Lab	-	-	2	1	30	70	100
8	21PC3CS04	Data Structures using C -Lab	-	-	3	1.5	30	70	100
9	21PC3CO04	Analog and Digital Electronics Lab	-	-	3	1.5	30	70	100
10	21PR3IN01	Evaluation of Summer Internship-I	-	-	2	1	100	-	100
TOTAL						**21.5**	**370**	**630**	**1000**
Non Credit Courses									
9	21MC3HS02	Environmental Science	2	-	-	0	100	-	**100**

IV – Semester (II – Year)									
S. No.	**Course code**	**Subject**	**Hours Per Week**			**Credits**	**Scheme of Evaluation**		
							Maximum Marks		
			L	**T**	**P**		**Int.**	**Ext.**	**Tot.**
1	21ES4CS03	Python Programming	3	-	-	3	30	70	100
2	21PC4CO05	Sensors & Devices	3	-	-	3	30	70	100
3	21PC4CS13	Operating Systems	3	-	-	3	30	70	100
4	21PC4CS03	Database Management Systems	3	-	-	3	30	70	100
5	21PC4CS14	Computer Networks	3	-	-	3	30	70	100
6	21ES4CS04	Python Programming-Lab	-	-	3	1.5	30	70	100
7	21PC4CS24	Operating Systems-Lab	-	-	3	1.5	30	70	100
8	21PC4CS05	Database Management Systems-Lab	-	-	3	1.5	30	70	100
9	21PC4CO06	Sensor & Devices-Lab	-	-	3	1.5	30	70	100
10	21PR4CO01	**Doing Engineering-1**		1	1	1.5	30	70	100
TOTAL						**22.5**	**300**	**700**	**1000**
Non Credit Courses									
11	21MC4HS06	Intellectual Property Rights	2	-	-	0	100	-	**100**

V – Semester (III – Year)									
S. No.	**Course code**	**Subject**	**Hours Per Week**			**Credits**	**Scheme of Evaluation**		
							Maximum Marks		
			L	**T**	**P**		**Int.**	**Ext.**	**Tot.**
1	21PC5CS06	Computer Architecture & Organization	3	-	-	3	30	70	100
2	21PC5CS07	Design and Analysis of Algorithms	3	-	-	3	30	70	100
3	21PC5CO07	Microprocessors and Microcontrollers	3	-	-	3	30	70	100
4		**Professional Elective-I**	3	-	-	3	30	70	100
5		**Open Elective-I**	3	-	-	3	30	70	100
6	21PC5CS23	Design and Analysis of Algorithms Lab	-	-	3	1.5	30	70	100
7	21PC5CO08	MPMC Lab	-	-	3	1.5	30	70	100
8	21PR5IN02	Evaluation of Summer Internship-II	-	-	2	1	100	-	100
9	21PR5CO02	**Doing Engineering-2**	-	1	1	1.5	30	70	100
TOTAL						**20.5**	**340**	**560**	**900**
Non Credit Courses									
10	21MC5HS03	Analytical Reasoning	2	-	-	0	100	-	**100**

VI – Semester (III – Year)									
S. No.	**Course code**	**Subject**	**Hours Per Week**			**Credits**	**Scheme of Evaluation**		
							Maximum Marks		
			L	**T**	**P**		**Int.**	**Ext.**	**Tot.**
1	21PC6CO09	Fundamental of Cloud Computing	3	-	-	3	30	70	100
2	21PC6CO10	Embedded Systems	3	-	-	3	30	70	100
3	21PC6CO11	IoT Architecture and its Protocols	3	-	-	3	30	70	100
4	21PC6CO12	Virtual Reality	3	-	-	3	30	70	100
5		**Professional Elective-II**	3	-	-	3	30	70	100
6		**Open elective-II**	3	-	-	3	30	70	100
7	21HS6EG05	Advanced English Communication Skills-Lab	-	-	2	1	30	70	100
8	21PC6CO13	Embedded C Lab	-	-	3	1.5	30	70	100
9	21PC6CO14	Virtual Reality Lab	-	-	3	1.5	30	70	100
10	21PC6CO15	IoT with Cloud Computing-Lab	-	-	3	1.5	30	70	100
TOTAL						**23.5**	**300**	**700**	**1000**
Non Credit Courses									
11	21MC6HS04	Quantitative Aptitude	-	2	-	0	100	-	**100**

VII – Semester (IV – Year)									
S. No.	**Course code**	**Subject**	**Hours Per Week**			**Credits**	**Scheme of Evaluation**		
							Maximum Marks		
			L	**T**	**P**		**Int.**	**Ext.**	**Tot.**
1	21HS7MB02	Fundamentals of Engineering Management	2	-	-	2	30	70	100
2	21PC7CO16	IoT using RFID and microcontroller	3	-	-	3	30	70	100
3		**Professional Elective-III**	3	-	-	3	30	70	100
4		**Professional Elective-IV**	3	-	-	3	30	70	100
5		**Open Electives-III**	3	-	-	3	30	70	100
6	21PC7CO17	IoT security & Applications lab	-	-	2	1	30	70	100
7	21PR7PS01	Project Work-I	-	-	6	3	30	70	100
8	21PR7IN03	**Doing Engineering-3(MINI PROJ/Internship)**	-	2	-	2	30	70	100
TOTAL						**20**	**240**	**560**	**800**
Non Credit Courses									
9	21MC7HS05	Constitution of India	2	-	-	0	100	-	**100**

VIII – Semester (IV – Year)									
S. No.	**Course code**	**Subject**	**Hours Per Week**			**Credits**	**Scheme of Evaluation**		
							Maximum Marks		
			L	**T**	**P**		**Int.**	**Ext.**	**Tot.**
1		**Professional Elective-V**	3	-	-	3	30	70	100
2		**Professional Elective-VI**	3	-	-	3	30	70	100
3		**Open Elective-IV**	3	-	-	3	30	70	100
4	21PR8PS02	Project Work-II	-	-	14	7	30	70	100
TOTAL						**16**	**120**	**280**	**400**
GRAND TOTAL									
Non Credit Courses									
6	21AC8HS03	Foreign Languages (German/French/Spanish)	2	-	-	0	0	0	**0**

Professional Elective-I		
1	21PE5CO11	Introduction to IoT and Embedded Systems
2	21PE5CO12	Sensor Technology and Instrumentation
3	21PE5CO13	Information Visualisation
4	21PE5CO14	Digital Marketing

Professional Elective-II		
1	21PE6CO21	Information Retrieval Systems
2	21PE6CO22	Blockchain Technology
3	21PE6CO23	Information Retrieval Systems
4	21PE6CO24	Artificial Intelligence

Professional Elective-III		
1	21PE7CO31	Electric Vehicle Design
2	21PE7CO32	IoT Security
3	21PE7CO33	IoT for Health Care
4	21PE7CO34	Machine Learning

Professional Elective-IV		
1	21PE7CO41	Wireless Sensor Networks
2	21PE7CO42	Industrial IoT
3	21PE7CO43	Data Compression
4	21PE7CO44	Data Streaming

Professional Elective-V		
1	21PE8CO51	Social Media Analytics
2	21PE8CO52	Data Science in IoT
3	21PE8CO53	Real Time Analytics of Sensor Data
4	21PE8CO54	Deep Learning

Professional Elective-VI		
1	21PE8CO61	Cognitive Science
2	21PE8CO62	Information Retrieval Systems
3	21PE8CO63	Software Defined Networks
4	21PE8CO64	Multi Core Technologies

HYDERABAD INSTITUTE OF TECHNOLOGY AND MANAGEMENT

Gowdavelli (V), Medchal & Malkajgiri District, Telangana-501401

UGC-Autonomous, Accredited by NAAC (with A+) & NBA

Approved by AICTE, Affiliated by JNTUH

CSC-COURSE STRUCTURE

w.e.f. from 2021-22

Updated on: 14 Sep 2022

HYDERABAD INSTITUTE OF TECHNOLOGY AND MANAGEMENT									
B.TECH. HR-21 COURSE STRUCTURE									
CSE-CYBER SECURITY									
(Applicable for the batch admitted from 2021-22 onwards)									
Induction Program-2 Weeks									
I – Semester (I – Year)									
S. No.	Course code	Subject	Hours Per Week			Credits	Scheme of Evaluation		
							Maximum Marks		
			L	T	P		Int.	Ext.	Tot.
1	21BS1MT01	Matrix Algebra and Calculus	3	1	-	4	30	70	100
2	21BS1CH01	Engineering-Chemistry	3	-	-	3	30	70	100
3	21ES1ME01	Engineering Graphics	1	-	4	3	30	70	100
4	21ES1CS01	Problem Solving using C	3	-	-	3	30	70	100
5	21ES1CS02	Problem Solving using C Language-Lab	-	-	3	1.5	30	70	100
6	21BS1CH02	Engineering Chemistry Lab	-	-	3	1.5	30	70	100
7	21ES1ME02	Engineering Prototyping Lab	-	-	4	2	30	70	100
TOTAL						**18**	**210**	**490**	**700**
Non Credit Courses									
8	21AC1HS01	Social and Health Consciousness	0	0	2	0	0	0	**0**
II – Semester (I – Year)									
S. No.	Course code	Subject	Hours Per Week			Credits	Scheme of Evaluation		
							Maximum Marks		
			L	T	P		Int.	Ext.	Tot.
1	21BS2MT02	Advanced Calculus for Engineers	3	1	-	4	30	70	100
2	21BS2PH01	Applied Physics	3	-	-	3	30	70	100
3	21ES2EE01	Basic Electrical and Electronics Engineering	3	-	-	3	30	70	100
4	21HS2EG01	English	2	-	-	2	30	70	100
5	21BS2PH02	Applied Physics Lab	-	-	3	1.5	30	70	100
6	21ES2EE02	Basic Electrical and Electronics Engineering-Lab	-	-	3	1.5	30	70	100
7	21HS2EG02	English Language Communication Skills Lab	-	-	2	1	30	70	100
8	21HS2MB01	Business Economics and Financial Analysis	2	-	-	2	30	70	100
TOTAL						**18**	**240**	**560**	**800**
Non Credit Courses									
9	21MC2HS01	Universal Human Values	2	-	-	0	100	-	**100**
10	21AC2ME02	Engineering Projects in Community Services	-	-	2	0	0	0	**0**

III – Semester (II – Year)									
S. No.	**Course code**	**Subject**	**Hours Per Week**			**Credits**	**Scheme of Evaluation**		
							Maximum Marks		
			L	**T**	**P**		**Int.**	**Ext.**	**Tot.**
1	21BS3MT03	Mathematical & Statistical Foundations	3	1	-	4	30	70	100
2	21ES3CS03	Python Programming	3	-	-	3	30	70	100
3	21HS3EG03	English for Employability	1		-	1	30	70	100
4	21PC3CS01	Data Structures using C	3	1	-	4	30	70	100
5	21PC3CS09	Object Oriented Programming using Java	3	-	-	3	30	70	100
6	21PC3CS04	Data Structures using C -Lab	-	-	3	1.5	30	70	100
7	21ES3CS04	Python Programming-Lab	-	-	3	1.5	30	70	100
8	21HS3EG04	English for Employability-Lab	-	-	2	1	30	70	100
9	21PC3CS11	Programming using Java- Lab	-	-	3	1.5	30	70	100
10	21PR3IN01	Evaluation of Summer Internship-I	-	-	2	1	100	-	100
TOTAL						21.5	**370**	**630**	**1000**
Non Credit Courses									
11	21MC3HS02	Environmental Science	-	2	-	0	100	-	**100**

IV – Semester (II – Year)									
S. No.	**Course code**	**Subject**	**Hours Per Week**			**Credits**	**Scheme of Evaluation**		
							Maximum Marks		
			L	**T**	**P**		**Int.**	**Ext.**	**Tot.**
1	21PC4CS06	Computer Organization and Architecture	3	-	-	3	30	70	100
2	21PC4CS07	Design & Analysis of Algorithms	3	-	-	3	30	70	100
3	21PC4CS13	Operating Systems	3	-	-	3	30	70	100
4	21PC4CS03	Database Management Systems	3	-	-	3	30	70	100
5	21PC4CS14	Computer Networks	3	-	-	3	30	70	100
6	21PC4CS23	Design & Analysis of Algorithms Lab	-	-	3	1.5	30	70	100
7	21PC4CS24	Operating Systems-Lab	-	-	3	1.5	30	70	100
8	21PC4CS05	Database Management Systems-Lab	-	-	3	1.5	30	70	100
9	21PC4CS25	Computer Networks Lab	-	-	3	1.5	30	70	100
10	21PR4CC01	**Doing Engineering-1**	**-**	**1**	1	1.5	30	70	100
TOTAL						**22.5**	**300**	**700**	**1000**
Non Credit Courses									
11	21MC4HS06	Intellectual Property Rights (IPR)	2	-	-	0	100	-	**100**

V – Semester (III – Year)									
S. No.	Course code	Subject	Hours Per Week			Credits	Scheme of Evaluation		
							Maximum Marks		
			L	T	P		Int.	Ext.	Tot.
1	21PC5CD04	Software Engineering & Testing Methodologies	3	-	-	3	30	70	100
2	21PC5CS19	Data Mining	3	-	-	3	30	70	100
3	21PC5CC01	Data Security	3	1	-	4	30	70	100
4		**Professional Elective-I**	3	-	-	3	30	70	100
5		**Open Elective-I**	3	-	-	3	30	70	100
6	21PC5CS20	Data Mining Lab	-	-	3	1.5	30	70	100
7	21PC5CC02	Data Security Lab	-	-	3	1	30	70	100
8	21PR5IN02	Evaluation of Summer Internship-II	-	-	2	1	100	-	100
9	21PC5CD05	Software Engineering Lab	-	-	3	1.5	30	70	100
TOTAL						**21**	**340**	**560**	**900**
Non Credit Courses									
10	21MC5HS03	Analytical Reasoning	2	-	-	0	100	-	**100**

VI – Semester (III – Year)									
S. No.	Course code	Subject	Hours Per Week			Credits	Scheme of Evaluation		
							Maximum Marks		
			L	T	P		Int.	Ext.	Tot.
1	21PC6CC03	Ethical Hacking	3	1	-	4	30	70	100
2	21PC6CS15	Compiler Design	3	-	-	3	30	70	100
3	21PC6CM03	Machine Learning	3	-	-	3	30	70	100
4		**Professional Elective-II**	3	-	-	3	30	70	100
5		**Open elective-II**	3	-	-	3	30	70	100
6	21HS6EG05	Advanced English Communication Skills-Lab	-	-	2	1	30	70	100
7	21PC6CS26	Compiler Design Lab	-	-	3	1.5	30	70	100
8	21PC6CC04	Ethical Hacking -Lab	-	-	3	1.5	30	70	100
9	21PC6CM04	Machine Learning Lab	-	-	3	1.5	30	70	100
10	21PR6CD02	**Doing Engineering-2**	-	1	1	1.5	30	70	100
TOTAL						**23**	**300**	**700**	**1000**
Non Credit Courses									
11	21MC6HS04	Quantitative Aptitude	2	-	-	0	100	-	**100**

VII – Semester (IV – Year)									
S. No.	Course code	Subject	Hours Per Week			Credits	Scheme of Evaluation		
							Maximum Marks		
			L	T	P		Int.	Ext.	Tot.
1	21HS7MB02	Fundamentals of Engineering Management	2	-	-	2	30	70	100
2	21PC7CC05	Cloud Computing	3	-	-	3	30	70	100
3		**Professional Elective-III**	3	-	-	3	30	70	100
4		**Professional Elective-IV**	3	-	-	3	30	70	100
5		**Open Electives-III**	3	-	-	3	30	70	100
6	21PC7CC06	Cloud Computing-Lab	-	-	2	1	30	70	100
7	21PR7IN03	**Doing Engineering-3(MINI PROJ/Internship)**	-	-	3	2	30	70	100
8	21PR7PS01	Project Stage-I	-	-	6	3	100		100
TOTAL						**20**	**310**	**490**	**800**
Non Credit Courses									
9	21MC7HS05	Constitution of India	2	-	-	0	30	70	**100**

VIII – Semester (IV – Year)									
S. No.	Course code	Subject	Hours Per Week			Credits	Scheme of Evaluation		
							Maximum Marks		
			L	T	P		Int.	Ext.	Tot.
1		**Professional Elective-V**	3	-	-	3	30	70	100
2		**Professional Elective-VI**	3	-	-	3	30	70	100
3		**Open Elective-IV**	3	-	-	3	30	70	100
4	21PR8PS02	Project Stage-II	-	-	14	7	30	70	100
TOTAL						**16**	**120**	**280**	**400**
Non Credit Courses									
5	21AC8HS03	Foreign Languages (German/French/Spanish)	-	-	2	0	-	-	-

Professional Elective-I		
1	21PE5CC11	Spark and Scala Fundamentals
2	21PE5CC12	Fault Tolerance System
3	21PE5CC13	Software Security Engineering
4	21PE5CC14	Mobile Application Security

Professional Elective-II		
1	21PE6CC21	Information Retrieval Systems
2	21PE6CC22	Blockchain Technology
3	21PE6CC23	Virtual Reality
4	21PE6CC24	Computer Graphics

Professional Elective-III		
1	21PE7CC31	Edge Computing
2	21PE7CC32	Quantum Computing
3	21PE7CC33	Ubiquitous Computing
4	21PE7CC34	Pervasive Computing

Professional Elective-IV		
1	21PE7CC41	Cyber Physical System
2	21PE7CC42	Cyber Security and Digital Forensic
3	21PE7CC43	Cyber Security Governance
4	21PE7CC44	Security Testing

Professional Elective-V		
1	21PE8CC51	Advanced System Programming with UNIX
2	21PE8CC52	Principles of Computer System Design
3	21PE8CC53	Analytical Models of Computing System
4	21PE8CC54	Fuzzy Logic

Professional Elective-VI		
1	21PE8CC61	Advanced System Programming with UNIX
2	21PE8CC62	Principles of Computer System Design
3	21PE8CC63	Analytical Models of Computing System
4	21PE8CC64	Fuzzy Logic

Sl.no	SUBJECT CODE	Open Elective-I	Offering Department
1	21OE5CS01	Design Thinking-IBM Course	CSE
2	21OE5EC01	Electronics measurement & Instrumentation	ECE
3	21OE5ME01	Hybrid & Electric Vehicles	MECH
4	21OE5EE01	Fundamentals of Electric Circuit Analysis	EEE
5	21OE5HS01	Nanoscience and Technology	H&S
6	21OE5CM01	Artificial Intelligence	CSE-AI&ML
7	21OE5CD01	Statistics for Data Science	CSE-DS
8	21OE5CO01	Sensors & Actuators	CSE-IOT
9	21OE5CC01	Data Security	CSE-CS

Sl.no	SUBJECT CODE	Open Elective-II	Offering Department
1	21OE6CS02	Computer Organization and Architecture	CSE
2	21OE6EC02	Fundamentals of Digital Electronics	ECE
3	21OE6ME02	Total Quality Measurement & Six Sigma Applications	MECH
4	21OE6EE02	Fundamentals of Industrial Electronics	EEE
5	21OE6HS02	Medical Instrumentation	H&S
6	21OE6CM02	Introduction to AI	CSE-AI
7	21OE6CD02	Data Mining	CSE-DS
8	21OE6CO02	Fundamentals of IoT	CSE-IOT
9	21OE6CC02	Network Security	CSE-CS

Sl.no	SUBJECT CODE	Open Elective-III	Offering Department
1	21OE7CS03	Computer Organization and Architecture	CSE
2	21OE7EC03	Basics of communication systems	ECE
3	21OE7ME03	Smart Materials	MECH
4	21OE7EE03	PLC and SCADA	EEE
5	21OE7HS03	Entrepreneurship	MBA
6	21OE7CM03	Neural Networks	CSE-AIML
7	21OE7CD03	Distributed Computing	CSE-DS
8	21OE7CO03	IoT applications	CSE-IOT
9	21OE7CC03	Computer Networks and Security	CSE-CS

Sl.no	SUBJECT CODE	Open Elective-IV	Offering Department
1	21OE8CS04	Software Testing Methodologies	CSE
2	21OE8EC04	Introduction to Signal Processing	ECE
3	21OE8ME04	Fundamentals of Additive Manufacturing	MECH
4	21OE8EE04	Renewable Energy Systems	EEE
5	21OE8HS04	Enterprise Resource planning	MBA
6	21OE8CM04	Expert Systems	CSE-AIML
7	21OE8CD04	Full Stack Web Development	CSE-DS
8	21OE8CO04	Introduction to IoT and Embedded Systems	CSE-IOT
9	21OE8CC04	Computer Forensics	CSE-CS