BAPATLA ENGINEERING COLLEGE:: BAPATLA
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SCHEME OF INSTRUCTION & EXAMINATION (Semester System)
For
Computer Science & Engineering
First Year B.Tech (SEMESTER – I) structure as per APSCHE
for the Academic Year 2020-21

Code No.	Category Code	Subject	Scheme of Instruction (Hours per week)				Scheme of Examination (Maximum marks)			No. of Credits
			L	T	P	Total	CIE	SEE	Total Marks	
20CS101/MA01	BS	Linear algebra and differential equations	3	0	0	3	30	70	100	3
20CS102/CY01	BS	Engineering Chemistry	3	0	0	3	30	70	100	3
20CS103/HS01	HS	Communicative English	3	0	0	3	30	70	100	3
20CSL101/MEL01	ES	Engineering Graphics	1	0	4	5	30	70	100	3
20CSL102/CYL01	BS	Chemistry Lab	0	0	3	3	30	70	100	1.5
20CSL103/HSL01	HS	English Communication skills Lab	0	0	3	3	30	70	100	1.5
20CSL104/MEL2	ES	Workshop Practice Lab	0	0	3	3	30	70	100	1.5
20CS104/MC01	MC	Environmental Studies	2	0	0	2	30	0	30	0
INDUCTION PROGRAM	First Three Weeks (Physical activity, Creative Arts, Universal Human Values, Literary, Proficiency Modules, Lectures by Eminent People, Familiarization to Dept./Branch & Innovations)									
TOTAL			**12**	0	**13**	**25**	**240**	**490**	**730**	**16.5**

CIE: Continuous Internal Evaluation SEE: Semester End Examination
L: Lecture, T: Tutorial, P: Practical
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1 Hr. Lecture (L) per week - 1 credit
1 Hr. Tutorial (T) per week - 1 credit
1 Hr. Practical (P) per week - 0.5 credits
2 Hours Practical (Lab)/week - 1 credit

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SCHEME OF INSTRUCTION & EXAMINATION (Semester System)
For
Computer Science & Engineering
First Year B.Tech (SEMESTER – II)
for the Academic Year 2020-21

Code No.	Category Code	Subject	Scheme of Instruction (Periods per week)				Scheme of Examination (Maximum marks)			No. of Credits
			L	T	P	Total	CIE	SEE	Total Marks	
20CS201/MA02	BS	Numerical methods& Advanced Calculus	3	0	0	3	30	70	100	3
20CS202/PH03	BS	Semiconductor Physics	3	0	0	3	30	70	100	3
20CS203/EE01	ES	Basic Electronics & Electrical Engineering	3	0	0	3	30	70	100	3
20CS204/CS01	ES	Programming for Problem Solving	3	0	0	3	30	70	100	3
20CS205	ES	Digital Logic Design	3	0	0	3	30	70	100	3
20CS206	ES	Discrete Mathematics	3	0	0	3	30	70	100	3
20CSL201/ PHL02	BS	Semiconductor Physics Lab	0	0	3	3	30	70	100	1.5
20CSL202/ EEL01	ES	Basic Electronics & Electrical Engineering Lab	0	0	3	3	30	70	100	1.5
20CSL203/ CSL01	ES	Programming for Problem Solving Lab	0	0	3	3	30	70	100	1.5
TOTAL			**18**	**0**	12	**30**	**270**	**630**	**900**	**22.5**

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SCHEME OF INSTRUCTION & EXAMINATION (Semester System)
For
Computer Science & Engineering
Second Year B.Tech (SEMESTER – III)
for the Academic Year 2020-21

Code No.	Category Code	Subject	Scheme of Instruction (Periods per week)				Scheme of Examination (Maximum marks)			No. of Credits
			L	T	P	Total	CIE	SEE	Total Marks	
20CS301/MA03	BS	Probability & Statistics	3	0	0	3	30	70	100	3
20CS302	PC	Data Structures	3	0	0	3	30	70	100	3
20CS303	PC	Object Oriented Programming	3	0	0	3	30	70	100	3
20CS304	PC	Operating System	3	0	0	3	30	70	100	3
20CS305	PC	Computer Organization	3	0	0	3	30	70	100	3
20CSL301/ SO02	SO	Linux Essentials	2	0	3	5	30	70	100	3.5
20CSL302	PC	Data Structures Lab	0	0	3	3	30	70	100	1.5
20CSL303	PC	Object Oriented Programming Lab	0	0	3	3	30	70	100	1.5
20CS306/ MC03	MC	Professional Ethics & Human Values	2	0	0	2	30	0	30	0
NCC/NSS			0	0	3	3				0
TOTAL			**19**	**0**	9	**28**	**270**	560	**830**	**21.5**

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SCHEME OF INSTRUCTION & EXAMINATION (Semester System)
For
Computer Science & Engineering
Second Year B.Tech (SEMESTER – IV)
for the Academic Year 2020-21

Code No.	Category Code	Subject	Scheme of Instruction (Periods per week)				Scheme of Examination (Maximum marks)			No. of Credits
			L	T	P	Total	CIE	SEE	Total Marks	
20CS401	ES	Microprocessor & Microcontrollers	3	0	0	3	30	70	100	3
20CS402	PC	Web Technologies	3	0	0	3	30	70	100	3
20CS403	PC	Database Management System	3	0	0	3	30	70	100	3
20CS404	PC	Design and Analysis of Algorithms	3	0	0	3	30	70	100	3
20CS405 /HS02	HS	Technical English	3	0	0	3	30	70	100	3
20CSL401/ SO03	SO	Python	2	0	3	5	30	70	100	3.5
20CSL402	PC	Web Technologies Lab	0	0	3	3	30	70	100	1.5
20CSL403	PC	RDBMS Lab	0	0	3	3	30	70	100	1.5
TOTAL			**17**	**0**	9	**26**	**240**	**560**	**800**	**21.5**
Honors/Minor Course			**3**	**1**	0	**4**	**30**	**70**	**100**	**4**
Grand Total			**20**	**1**	9	**30**	**270**	**630**	**900**	**25.5**

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SCHEME OF INSTRUCTION & EXAMINATION (Semester System)
For
Computer Science & Engineering
Third Year B.Tech (SEMESTER – V)
for the Academic Year 2020-21

Code No.	Category Code	Subject	Scheme of Instruction (Periods per week)				Scheme of Examination (Maximum marks)			No. of Credits
			L	T	P	Total	CIE	SEE	Total Marks	
	PC	Automata Theory & Formal Languages	3	0	0	3	30	70	100	3
	PC	Computer Networks	3	0	0	3	30	70	100	3
	PC	Software Engineering	3	0	0	3	30	70	100	3
	JO	Job Oriented Elective - 1	3	0	0	3	30	70	100	3
	PE	Professional Elective - 1	3	0	0	3	30	70	100	3
	MC	Essence of Indian Traditional Knowledge	2	0	0	2	30	0	30	0
	PC	Software Engineering Lab	0	0	3	3	30	70	100	1.5
	JO	Job Oriented Elective Lab -1	0	0	3	3	30	70	100	1.5
	SO	Advanced Skill Oriented - 1	1	0	2	3	30	70	100	2
	INT	Summer Internship	0	0	0	0	0	0	0	1.5
TOTAL			**18**	**0**	8	**26**	**270**	**560**	**830**	**21.5**
Honors/Minor Course			**3**	**1**	0	**4**	**30**	**70**	**100**	**4**
Grand Total			**21**	**1**	8	**30**	**300**	**630**	**930**	**25.5**

CIE: Continuous Internal Evaluation SEE: Semester End Examination
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SCHEME OF INSTRUCTION & EXAMINATION (Semester System)
For
Computer Science & Engineering
Third Year B.Tech (SEMESTER – VI)
for the Academic Year 2020-21

Code No.	Category Code	Subject	Scheme of Instruction (Periods per week)				Scheme of Examination (Maximum marks)			No. of Credits
			L	T	P	Total	CIE	SEE	Total Marks	
	PC	Compiler Design	3	0	0	3	30	70	100	3
	PC	Machine Learning	3	0	0	3	30	70	100	3
	PC	Cryptography & Network Security	3	0	0	3	30	70	100	3
	PE	Professional Elective -2	3	0	0	3	30	70	100	3
	JO	Job Oriented Elective - 2	3	0	0	3	30	70	100	3
	MC	Constitution of India	2	0	0	2	30	0	30	0
	PC	Machine Learning Lab	0	0	3	3	30	70	100	1.5
	PC	Cryptography & Network Security Lab	0	0	3	3	30	70	100	1.5
	JO	Job Oriented Elective Lab - 2	0	0	3	3	30	70	100	1.5
	SO	Soft Skills	1	0	2	3	30	70	100	2
TOTAL			**18**	**0**	11	**29**	**300**	**630**	**930**	**21.5**
Honors/Minor Course			**3**	**1**	0	**4**	**30**	**70**	**100**	**4**
Grand Total			**20**	**1**	9	**30**	**270**	**630**	**900**	**25.5**

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SCHEME OF INSTRUCTION & EXAMINATION (Semester System)
For
Computer Science & Engineering
Fourth Year B.Tech (SEMESTER – VII)
for the Academic Year 2020-21

Code No.	Category Code	Subject	Scheme of Instruction (Periods per week)				Scheme of Examination (Maximum marks)			No. of Credits
			L	T	P	Total	CIE	SEE	Total Marks	
	PE	Professional Elective - 3	3	0	0	3	30	70	100	3
	PE	Professional Elective - 4	3	0	0	3	30	70	100	3
	JO	Job Oriented Elective - 3	3	0	0	3	30	70	100	3
	JO	Job Oriented Elective - 4	3	0	0	3	30	70	100	3
	HS	Industrial Management & Entrepreneurship Development	3	0	0	3	30	70	100	3
	JO	Job Oriented Elective – 3 Lab	0	0	3	3	30	70	100	1.5
	JO	Job Oriented Elective – 4 Lab	0	0	3	3	30	70	100	1.5
	SO	Advanced Skill Oriented - 2	1	0	2	3	30	70	100	2
	INT	Industrial/ Research Internship	0	0	0	0	0	0	0	3
TOTAL			**16**	**0**	8	**24**	**240**	**560**	**800**	**23**
Honors/Minor Course			**3**	**1**	0	**4**	**30**	**70**	**100**	**4**
Grand Total			**20**	**1**	9	**30**	**270**	**630**	**900**	**27**

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SCHEME OF INSTRUCTION & EXAMINATION (Semester System)
For
Computer Science & Engineering
Fourth Year B.Tech (SEMESTER – VIII)
for the Academic Year 2020-21

Code No.	Category Code	Subject	Scheme of Instruction (Periods per week)				Scheme of Examination (Maximum marks)			No. of Credits
			L	T	P	Total	CIE	SEE	Total Marks	
	PROJ	Project Work	0	0	0	0	50	100	150	12
Honors/Minor Courses (MOOCs - 1)			**0**	**0**	0	**0**	**0**	**0**	**0**	**2**
Honors/Minor Courses (MOOCs - 2)			**0**	**0**	0	**0**	**0**	**0**	**0**	**2**
Grand Total			**0**	**0**	0	**0**	**50**	**100**	**150**	**16**

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List of Professional Electives:-

1. Wireless Networks
2. Data Warehousing & Data Mining.
3. Distributed Systems.
4. Artificial Intelligence
5. Digital Image Processing.
6. Block chain Technologies.
7. Protocols for Secure Electronic Commerce.
8. Artificial Neural Networks and Deep Learning.
9. Natural Language Processing.

List of Job Oriented Electives:-

1. Enterprise Programming.
2. Middleware Technologies.
3. Mobile Application Development.
4. Cloud Programming.
5. Statistics with R.
6. Cyber Security.
7. Internet of Things.
8. Big Data Analytics.
9. Software Testing Methodologies.

List of Advanced Skill Oriented Elective:-

1. Data Visualization
2. Full Stack Development
3. DevOps
4. Robotic Process Automation

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List of Subjects offered under Honors in CSE

Note: - Students have to acquire 20 credits for the award of Honors in CSE.

i. 16 credits (04 courses@ 4 credits each) shall be earned through the following list of courses.

ii. 4 credits (02 courses@ 2 credits each) must be acquired through two MOOCs from the following list of courses with a minimum duration of 8/12weeks.

iii. Before choosing those courses, students must complete prerequisites

1. Advanced Data Structures.
2. Advanced Computer Architecture.
3. Graph Theory
4. Numerical Optimization.
5. Advanced Database Systems
6. Real Time Operating Systems.
7. Parallel Algorithms.
8. Embedded Systems
9. Design Patterns.
10. Storage Area Networks
11. Computational Complexity.
12. Competitive Programming.
13. Web Semantics.
14. Spatial Informatics.
15. Perception & Computer Vision.
16. Virtual Reality