ADAMAS UNIVERSITY

SCHOOL OF ENGINEERING

AND TECHNOLOGY

DEPARTMENT

OF

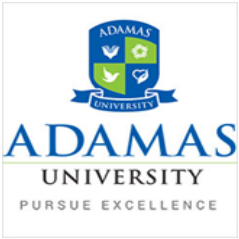
COMPUTER SCIENCE AND ENGINEERING

Bachelor of Technology (B.Tech)
In
Computer Science & Engineering Programme

&

Bachelor of Technology (B.Tech)
In
Computer Science & Engineering Programme
With Hons.
In
1. Artificial Intelligence and Machine Learning
2. Blockchain Technology
3. Cyber Security & Forensics

W.e.f. AY 2020-21
SoET 2.0 (Engineering +)



ADAMAS UNIVERSITY

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AND TECHNOLOGY

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COMPUTER SCIENCE AND ENGINEERING

Course Structure of

Bachelor of Technology (B.Tech)
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W.e.f. AY 2020-21

SoET 2.0 (Engineering +)

ADAMAS UNIVERSITY
SCHOOL OF ENGINEERING & TECHNOLOGY

SEMESTER -I								
Sl. No	**Type**	**Course Code**	**Course Title**	**L**	**T**	**P**	**Contact Hrs/wk**	**Credits**
1	Theory	MTH11501	Engineering Mathematics-I	3	1	0	4	4
2	Theory	PHY11201	Applied Science (Physics+Chemistry)	3	0	0	3	3
3	Theory	CSE11001 / GEE11001	Introduction to Programming / Electrical and Electronics Technology	3	0	0	3	3
4	Theory	ENG11053	HSSM –I (English Communication- I)	3	0	0	3	3
5	Theory	BIT11003	Life Sciences	3	0	0	3	3
6	Practical	PHY12202	Applied Science Lab	0	0	3	3	2
7	Practical	CSE12002 / GEE12002	Programming Lab / Electrical and Electronics Technology Lab	0	0	3	3	2
8	Practical	CEE12001/ MEE12001	Engineering Drawing and CAD/Engineering Workshop	0	0	3	3	2
9	Practical	ENG11043	Communication and Collaboration Skill -I	0	0	2	2	1
10	Practical	GEE14003	Capstone Project-I	0	0	2	2	1
11	Theory	DGS11001	Design Thinking	2	0	0	2	2
			Total	**17**	**1**	**13**	**31**	**26**

Credits (First Year): 49

SEMESTER -II								
Sl. No	**Type**	**Course Code**	**Course Title**	**L**	**T**	**P**	**Contact Hrs/wk**	**Credits**
1	Theory	MTH11502	Engineering Mathematics –II	3	1	0	4	4
2	Theory	GEE11001 / CSE11001	Electrical and Electronics Technology/ Introduction to Programming	3	0	0	3	3
3	Theory	MEE11002	Engineering Mechanics	3	1	0	4	4
4	Theory	EVS11107	Environmental Science	3	0	0	3	3
5	Practical	GEE12002 / CSE12002	Electrical and Electronics Technology Lab/ Programming Lab	0	0	3	3	2
6	Practical	MEE12001/ CEE12001	Engineering Workshop/Engineering Drawing and CAD	0	0	3	3	2
7	Practical	ENG11044	Communication and Collaboration Skill -II	0	0	2	2	1
8	Practical	GEE14004	Capstone Project-II	0	0	2	2	1
9	Practical	IDP14001	Interdisciplinary Project	0	0	5	5	3
			Total	**12**	**2**	**15**	**29**	**23**

 # CS will be taken up during the summer break after 2nd semester, and will be evaluated in the 3rd semester.

SEMESTER -III								
Sl. No	**Type**	**Course Code**	**Subject Name**	**L**	**T**	**P**	**Contact Hrs/week**	**Credits**
1	Theory	SMA42111	Engineering Mathematics –III (Probability, Statistics and Numerical Methods)	3	1	0	4	4
2	Theory	HEC42180	HSSM –IV (Economics for Engineers)	3	0	0	3	3
3	Theory	CSE11003	Data Structures and Algorithms (Prof. Core- I)	3	0	0	3	3
4	Theory	CSE11004	Switching Circuits and Logic Design (Prof. Core- II)	3	0	0	3	3
5	Theory	CSE11005	Formal Languages and Automata Theory (Prof Core- III)	3	0	0	3	3
6	Theory	CSE11006	Engineering Science Course (Introduction to Python)	3	0	0	3	3
7	Practical	CSE12007	Data Structures and Algorithms Lab (Prof. Core-I Lab)	0	0	3	3	2
8	Practical	GEE14005	Capstone Project-III	0	0	2	2	1
9	Practical	SOC14100	Community Service[#]	--	--	-	--	1
10	Theory	EIC11001	Venture Ideation	2	0	0	2	2
Total				**20**	**1**	**5**	**26**	**25**

SEMESTER-IV								
Sl. No	**Type**	**Course Code**	**Subject Name**	**L**	**T**	**P**	**Contact Hrs/week**	**Credits**
1.	Theory	SMA42112	Operations Research	3	0	0	3	3
2.	Theory	CSE11008	Design & Analysis of Algorithm (Prof. Core- IV)	3	0	0	3	3
3.	Theory	CSE11009	Object Oriented Programming (Prof. Core- V)	3	0	0	3	3
4.	Theory	CSE11010	Software Engineering (Prof. Core- VI)	3	0	0	3	3
5.	Theory	CSE11011	Computer Architecture (Prof. Core- VII)	3	0	0	3	3
6.	Theory	PSG11021	Human Values and Professional Ethics	2	0	0	2	2
7.	Practical	SMA42211	Numerical Techniques Lab	0	0	3	3	2
8.	Practical	CSE12012	Design & Analysis of Algorithm Lab (Prof. Core- IV Lab)	0	0	3	3	2
9.	Practical	CSE12013	Object Oriented Programming Lab (Prof. Core- V Lab)	0	0	3	3	2

10.	Practical	GEE14006	Capstone Project -IV	0	0	2	2	1
Total				**17**	**0**	**11**	**28**	**24**

Total Credits (Second Year): 49

SEMESTER -V								
S. No	**Type**	**Course Code**	**Subject Name**	**L**	**T**	**P**	**Contact Hrs/week**	**Credits**
1.	Theory	CSE11014	Compiler Design (Prof. Core- VIII)	3	0	0	3	3
2.	Theory	CSE11015	Database Management Systems (Prof. Core- IX)	3	0	0	3	3
3.	Theory	CSE11016	Operating Systems (Prof. Core- X)	3	0	0	3	3
4.	Theory		Prof. Elective -I	3	0	0	3	3
5.	Practical	CSE12020	Compiler Design Lab (Prof. Core- VIII Lab)	0	0	3	3	2
6.	Practical	CSE12021	Database Management Systems Lab (Prof. Core- IX Lab)	0	0	3	3	2
7.	Practical	CSE12022	Operating Systems Lab (Prof. Core- X Lab)	0	0	3	3	2
8.	Practical	GEE14007	Capstone Project -V	0	0	2	2	1
Total				**12**	**0**	**11**	**23**	**19**

 # CSR Activity will be taken up during the summer break after 4th semester, and will be evaluated in the 5th semester.

SEMESTER -VI								
S. No	**Type**	**Course Code**	**Subject Name**	**L**	**T**	**P**	**Contact Hrs/week**	**Credits**
1.	Theory	CSE11023	Computer Networks (Prof. Core- XI)	3	0	0	3	3
2.	Theory	CSE11024	Artificial Intelligence and Machine Learning (Prof. Core- XII)	3	0	0	3	3
3.	Theory		Prof. Elective -II	3	0	0	3	3
4.	Theory		Open Elective -I	2	0	0	2	2
5.	Practical	CSE12029	Computer Networks Lab (Prof. Core- XI Lab)	0	0	3	3	2
6.	Practical	CSE12030	Artificial Intelligence and Machine Learning Lab (Prof. Core- XII Lab)	0	0	3	3	2
7.	Practical		Prof. Elective -II Lab	0	0	3	3	2
8.	Seminar	CSE15034	Technical Seminar	0	0	2	2	1

Total	**11**	**0**	**11**	**22**	**18**

Total Credits (Third Year): 37

SEMESTER -VII								
S. No	**Type**	**Course Code**	**Subject Name**	**L**	**T**	**P**	**Contact Hrs/week**	**Credits**
1.	Theory	MBA43144	HSSM –V (Industrial Management)	3	0	0	3	3
2.	Theory		Prof. Elective –III	3	0	0	3	3
3.	Theory		Prof. Elective –IV	3	0	0	3	3
4.	Theory		Open Elective –II	3	0	0	3	3
5.	Theory		Open Elective –III	3	0	0	3	3
6.	Theory		Prof. Elective- III Lab	0	0	3	3	2
7.	Internship/Training	CSE14049	#Summer Internship	--	--	--	--	2
8.	Project	CSE14050	Minor Project	0	0	6	6	3
Total				**15**	**0**	**09**	**24**	**22**

 # Summer Internship for 30 days will be taken at the end of 6th semester, and will be evaluated in the 7th semester.

SEMESTER -VIII								
S. No	**Type**	**Course Code**	**Subject Name**	**L**	**T**	**P**	**Contact Hrs/week**	**Credits**
1.	Project	CSE14051	Industry Work Experience / SIRE* / Major Project	0	0	6	06	4
2.	Viva	CSE15052	Comprehensive Viva Voce	--- -	----	----	------	2

Total	**0**	**0**	**6**		**06**

***SIRE: Scientific Investigation & Research Experience**

Total Credits (Fourth Year): 28

Total Credits (Over four years): 49+49+37+28 = 163 (Regular)

List of Electives:-

PE I (Theory): **Applied Graph Theory (CSE11017)**
Communication Network (CSE11018)
Big Data Analytics (CSE11019)

PE II (Theory): **High Performance Computer Architecture (CSE11025)**
Pattern Recognition (CSE11026)
Computational Geometry (CSE11027)

PE II (Lab): **High Performance Computer Architecture Lab (CSE12031)**
Pattern Recognition Lab (CSE12032)
Computational Geometry Lab (CSE12033)

Prof. Elective -III (Theory):

Image Processing (CSE11035)
Cloud Computing (CSE11036)
Information Retrieval (CSE11037)
Computer Graphics (CSE11038)
Artificial Neural Network and Deep Learning (CSE11039)

Prof. Elective -III (Lab):

Image Processing Lab (CSE12044)
Cloud Computing Lab (CSE12045)
Information Retrieval Lab (CSE12046)
Computer Graphics Lab (CSE12047)
Artificial Neural Network and Deep Learning Lab (CSE12048)

Prof. Elective -IV (Theory):

Cryptography & Cyber Security (CSE11040)
Internet of Things (IoT) (CSE11041)
5G Wireless Communication Network (CSE11042)

Open Elective -I (Theory): **Artificial Intelligence (CSE11028)/ Computational Geometry (CSE11027)**

Open Elective -II (Theory): **Machine Learning (CSE11043)**

Open Elective -III (Theory): **Internet of Things (IoT) (CSE11041)**

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SoET 2.0

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SEMESTER-V								
S. No	**Type**	**Course Code**	**Subject Name**	**L**	**T**	**P**	**Contact Hrs/week**	**Credits**
1	Theory	CSE11053	Algorithm for Intelligent System and Robot	3	1	0	4	4
2	Practical	CSE12054	Algorithm for Intelligent System and Robot Lab	0	0	3	3	2
Total				**3**	**1**	**3**	**7**	**6**

SEMESTER-VI								
S. No	**Type**	**Course Code**	**Subject Name**	**L**	**T**	**P**	**Contact Hrs/week**	**Credits**
1	Theory	CSE11055	Application of machine learning in industries and Anomaly Detection	3	1	0	4	4
2	Theory	CSE11056	Data Analysis & Modelling Technique	3	0	0	3	3
3	Practical	CSE12057	Application of machine learning in industries and Anomaly Detection Lab	0	0	3	3	2
Total				**6**	**1**	**3**	**10**	**9**

SEMESTER -VII								
S. No	**Type**	**Course Code**	**Subject Name**	**L**	**T**	**P**	**Contact Hrs/week**	**Credits**
1	Theory	CSE11058	Neural Network and Deep Learning Fundamentals	3	0	0	3	3
2	Practical	CSE12059	Neural Network and Deep Learning Fundamentals Lab	0	0	3	3	2
Total				**3**	**0**	**3**	**6**	**5**

SEMESTER -VIII

S. No	Type	Course Code	Subject Name	L	T	P	Contact Hrs/week	Credits
1	Theory	CSE11060	Subject from other schools AI(Online) Overview of Recent Trends in AI/ML(Tentative Title)	3	0	0	3	3
2	Viva	CSE15061	Specialization Viva Voce	------			------	2
Total				**3**	**0**	**0**	**3**	**5**

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SEMESTER-V								
S. No	**Type**	**Course Code**	**Subject Name**	**L**	**T**	**P**	**Contact Hrs/week**	**Credits**
1	Theory	CSE11071	IT Application & Data Security (Specialization Course –I)	3	1	0	4	4
2	Practical	CSE12072	IT Application & Data Security Lab (Specialization Course –I Lab)	0	0	3	3	2
Total				**3**	**1**	**3**	**7**	**6**

SEMESTER-VI								
S. No	**Type**	**Course Code**	**Subject Name**	**L**	**T**	**P**	**Contact Hrs/week**	**Credits**
1	Theory	CSE11073	IT Network Security (Specialization Course –II)	3	1	0	4	4
2	Theory	CSE11074	Information Security Governance (Specialization Course -III)	3	0	0	3	3
3	Practical	CSE12077	IT Network Security Lab (Specialization Course –II Lab)	0	0	3	3	2
Total				**6**	**1**	**6**	**10**	**9**

SEMESTER-VII								
S. No	**Type**	**Course Code**	**Subject Name**	**L**	**T**	**P**	**Contact Hrs/week**	**Credits**
1	Theory	CSE11076	Ethical Hacking & Penetration Testing (Specialization Course –IV)	3	0	0	3	3
2	Practical	CSE12075	Ethical Hacking & Penetration Testing Lab (Specialization Course-IV Lab)	0	0	3	3	2
Total				**3**	**0**	**3**	**6**	**5**

SEMESTER-VIII								
S. No	**Type**	**Course Code**	**Subject Name**	**L**	**T**	**P**	**Contact Hrs/week**	**Credits**
1	Theory	CSE11078	Digital Forensics (Specialization Course –V) (Online/Offline mode)	3	0	0	3	3
2	Viva	CSE15079	Specialization Viva Voce	------			------	2
Total				**3**	**0**	**0**	**3**	**5**

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In
Blockchain Technology
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SEMESTER-V								
S. No	Type	Course Code	Subject Name	L	T	P	Contact Hrs/week	Credits

1	Theory	CSE11062	Block chain Components and Architecture (Specialization Course –I)	3	1	0	4	4
2	Practical	CSE12063	Block chain Components and Architecture Lab (Specialization Course –I Lab)	0	0	3	3	2
Total				**3**	**1**	**3**	**7**	**6**

SEMESTER-VI								
S. No	**Type**	**Course Code**	**Subject Name**	**L**	**T**	**P**	**Contact Hrs/week**	**Credits**
1	Theory	CSE11064	Permission Block chain-Ethereum (Specialization Course –II)	3	1	0	4	4
2	Theory	CSE11065	Block chain Applications for Cognitive (Specialization Course -III)	3	0	0	3	3
3	Practical	CSE12066	Permission Block chain-Ethereum Lab (Specialization Course –II Lab)	0	0	3	3	2
			Total	**6**	**1**	**3**	**10**	**9**

SEMESTER -VII								
S. No	**Type**	**Course Code**	**Subject Name**	**L**	**T**	**P**	**Contact Hrs/week**	**Credits**
1	Theory	CSE11067	Industry Use Cases using Block chain (Specialization Course –IV)	3	0	0	3	3
2	Practical	CSE12068	Industry Use Cases using Block chain Lab (Specialization Course-IV Lab)	0	0	3	3	2
Total				**3**	**0**	**3**	**6**	**5**

SEMESTER -VIII								
S. No	**Type**	**Course Code**	**Subject Name**	**L**	**T**	**P**	**Contact Hrs/week**	**Credits**
1	Theory	CSE11069	Emerging areas in Block chain (Specialization Course –V) (Online/Offline mode)	3	0	0	3	3
2	Viva	CSE15070	Specialization Viva Voce	------			------	2
			Total	**3**	**0**	**0**	**3**	**5**