

AMITY UNIVERSITY
— R A J A S T H A N —

Amity School of Engineering and Technology

Minutes of Board of Studies

2020-2021



AMITY UNIVERSITY

RAJASTHAN


No. : AUR/REG/5001

Dated : 02/12/2020

Board of Studies [BOS]
Amity School of Engineering & Technology (ASET)
Computer Science Engineering and Information Technology

For structuring, revision and updating of Academic Programmes, viz. framing of Curriculum, Syllabi and Scheme of Evaluation etc. the Board of Studies of Amity School of Engineering & Technology (ASET) - Computer Science Engineering and Information Technology is re-constituted as under :

1. Prof. Rajesh Shardanand Prasad Director - ASET : Convener
Internal Subject Expert
2. Dr. Sunil Pathak Associate Professor - ASET : Member
3. Dr. Kapil Kumar Nagwanshi Associate Professor - ASET : Member
- External Subject Experts**
4. Dr. Pilli Emmanuel Shubhakar Associate Professor & Head : Member
Deptt. of Computer Science & Engineering
MNIT, Jaipur
- Industry / R&D Organization Experts**
5. Mr. Tushar Srivastava Software Developer : Member
HCL Technologies, Noida


Dr. Nitin Bhardwaj
Registrar





AMITY UNIVERSITY

RAJASTHAN

No. : AUR/REG/5000

Dated : 02/12/2020

Board of Studies [BOS]
Amity School of Engineering & Technology (ASET)
Chemical Engineering

For structuring, revision and updating of Academic Programmes, viz. framing of Curriculum, Syllabi and Scheme of Evaluation etc. the Board of Studies of Amity School of Engineering & Technology (ASET) - Chemical Engineering is re-constituted as under :

1. Prof. Rajesh Shardanand Prasad Director - ASET : Convener

Internal Subject Experts

2. Dr. Pankaj Kumar Pandey Associate Professor - ASET : Member

3. Mr. Rajeev Sharma Assistant Professor - ASET : Member

External Subject Experts

4. Dr. Sushant Upadhyay Associate Professor : Member
Department of Chemical Engineering
MNIT, Jaipur

Industry / R&D Organization Experts

5. Er. Sohan Lal Arora Founder & CEO : Member
Aristo Chemicals Ltd., Jaipur



Dr. Nitin Bhardwaj
Registrar



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No. : AUR/REG/4999

Dated : 02/12/2020

Board of Studies [BOS]
Amity School of Engineering & Technology (ASET)
Civil Engineering

For structuring, revision and updating of Academic Programmes, viz. framing of Curriculum, Syllabi and Scheme of Evaluation etc. the Board of Studies of Amity School of Engineering & Technology (ASET) - Civil Engineering is re-constituted as under :

1. Prof. Rajesh Shardanand Prasad Director - ASET : Convener

Internal Subject Experts

2. Mr. Pankaj Sharma Assistant Professor - ASET : Member

3. Mr. Ronak Parikh Assistant Professor - ASET : Member

External Subject Experts

4. Prof. Pankaj Dhemia Head of the Department : Member
Department of Civil Engineering
Poornima Group of Institutions
Jaipur

Industry / R&D Organization Experts

5. Mr. N. K. Kumawat Senior Executive Engineer (Civil) : Member
BSNL, Jaipur

NR



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AMITY UNIVERSITY

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No. : AUR/REG/4998

Dated : 02/12/2020

Board of Studies [BOS]
Amity School of Engineering & Technology (ASET)
Mechanical Engineering

For structuring, revision and updating of Academic Programmes, viz. framing of Curriculum, Syllabi and Scheme of Evaluation etc. the Board of Studies of Amity School of Engineering & Technology (ASET) - Mechanical Engineering is re-constituted as under :

1. Prof. Rajesh Shardanand Parasad Director - ASET : Convener

Internal Subject Experts

2. Mr. Mangal Singh Sisodiya Assistant Professor - ASET : Member

3. Mr. Deepak Kachhot Assistant Professor - ASET : Member

External Subject Experts

4. Prof. D. N. Naresh Director : Member
Asian Institute of Technology
Jaipur

Industry / R&D Organization Experts

5. Mr. Ashish Lohar Manager Operation : Member
UltraTech Cement, Kotputli, Jaipur

NR



Dr. Nitin Bhardwaj
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AMITY UNIVERSITY

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No. : AUR/REG/4997

Dated : 02/12/2020

Board of Studies [BOS]

Amity School of Engineering & Technology (ASET) Electronics & Communication Engineering and Electrical Engineering

For structuring, revision and updating of Academic Programmes, viz. framing of Curriculum, Syllabi and Scheme of Evaluation etc. the Board of Studies of Amity School of Engineering & Technology (ASET) - Electronics & Communication Engineering and Electrical Engineering is re-constituted as under :

1. Prof. Rajesh Shardanand Prasad Director - ASET : Convener

Internal Subject Experts

2. Dr. Pramod Kumar Bhatt Associate Professor - ASET : Member

3. Dr. Ashutosh Tripathi Assistant Professor - ASET : Member

External Subject Experts

4. Dr. Praveen Jain Professor : Member
Department of ECE
SKIT, Jaipur

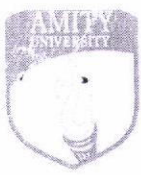
Industry / R&D Organization Experts

5. Er. Manas Manish Shukla Manager (Technical) : Member
Uttam Bharat Pvt. Ltd., Jaipur

MB



Dr. Nitin Bhardwaj
Registrar



AMITY SCHOOL OF ENGINEERING & TECHNOLOGY

Date-10th December 2020

Subject: Board of Studies (BOS) Meeting, 8th December 2020

The meeting of all members of Board of Studies of all engineering branches were conducted on 8th December 2020. All the agenda items were taken up for discussion and after considerable deliberations amongst the BOS members, the following decisions were taken:

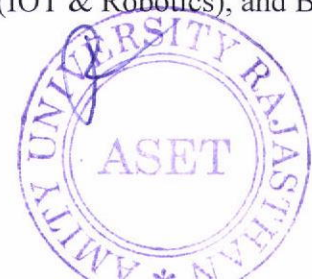
1. Introduction of new courses
 - i. BTech (Data Science Engineering) in CSE & IT,
 - ii. BTech (IOT & Robotics) in ECE & EEE, and
 - iii. BTech (Mechatronics & Automation) in Mechanical.
 2. Withdrawal of the courses having zero admissions since last 03-04 years:
 - i. BTech (CSE) +MBA,
 - ii. BTech (ECE)+MBA,
 - iii. BTech (ME)+MBA,
 - iv. BTech + MTech (ME),
 - v. BTech + MTech (MAE), and
 - vi. BTech + MTech (ECE).
 3. Proposal of stipend or scholarships to students of MTech students in view of attracting admissions – Members agreed to this point subject to approval from University.
 4. Introduction of programming courses with domain related assignments to non-IT branches (ECE & EEE, Mechanical, Civil and Chemical Engineering) in view of making non-IT students compatible for IT companies;
 - i. Web Development, Web Development Lab (Vth Semester)
 - ii. Programming with Python, Programming with Python lab (VIth Semester)
 - iii. Advanced Programming with Python, Advanced Programming with Python lab, (VIIth Semester)
- For implementation of above courses, following modifications in syllabus structure is agreed:
- i. Reduction of credit of course Practical Training Evaluation from 6 to 3 in Vth Semester
 - ii. Reduction of credit of core courses from 4 to 3 in VIth Semester
 - iii. Reduction of credit of course Industrial Training Evaluation from 6 to 3 in VIIth Semester

The meeting ended with thanks to all the members of the BOS.

Chairman BOS and Director (ASET)

Enclosures:

1. Minutes of meeting of all the BOS;
2. Updated program structure of BTech (ECE), BTech (Mechanical), BTech (Chemical), BTech (Civil); and
3. Detailing of new course -BTech (Data Science Engineering), BTech (IOT & Robotics), and BTech (Mechatronics).





AMITY UNIVERSITY
RAJASTHAN

**AMITY SCHOOL OF ENGINEERING AND TECHNOLOGY
(ASET)**

Bachelor of Technology

(Data Science & Engineering)

Programme Code: BDS

Duration – 4 Years Full Time

(Programme Structure)

Choice Based Credit System (CBCS)





Program Learning Outcomes – PLO

- Students will be able to demonstrate role of Computer Science in the following core knowledge areas
 - Algorithms, Data Structures and Databases
 - Programming Languages and Compilers
 - Software Engineering and Development
 - Computer Hardware and Architecture
 - Data Communication and Computer Networks
- Students will be able to analyze role of computer science and information technology, with mainstay in mathematics, basic sciences and engineering fundamentals.
- Students will apply problem solving strategies to a range of modern computing paradigms related to computer programming, data intensive technologies, distributed and cloud computing, computational techniques.
- Students will gain experiential learning on developing techno-commercially feasible and socially acceptable computing solutions to real world engineering problems through internship and projects, in industry.
- Students will recognize the role of technological advances impacting society and the social, legal, ethical, cultural and communicative implications of computer technology and their usage.

Evaluation Scheme: [50 +50]

Credits Summary

Semester	Core Courses (CC)	Domain Electives (DE)	Value Added Courses(VA)	Non-Teaching Credit Courses (NTCC)	Open Electives(OE)	Anandam	Total
1	22	-	04	-	-	02	28
2	24	-	04	01	03	02	34
3	18	04	04	-	03	02	31
4	14	04	04	-	03	02	27
5	12	04	04	05	03	02	30
6	14	04	04	-	03	02	27
7	07	04	04	04	03	02	24
8	11	-	-	15	-	-	26
Total	122	20	28	25	18	14	227

Total Credit=122+20+28+25+18+14=227

CC= Core Course, DE=Domain Elective, OE= Open Elective, VA=Value Added Course, NTCC=Non-Teaching Credit Courses





AMITY SCHOOL OF ENGINEERING AND TECHNOLOGY (ASET)

Program Name: B.Tech.(DSE)

FIRST SEMESTER

Code	Course	Category	L	T	P/FW	Credit Units
Core Courses						
AM101	Applied Mathematics - I	CC	3	1	-	4
AP 102	Applied Physics - I - Fields & Waves	CC	2	1	-	3
BME 103	Engineering Mechanics	CC	2	1	-	3
BDS 104	Introduction to Computers & Programming in C/C++	CC	2	1	-	3
BEE 105	Basic Electrical Engineering	CC	2	1	-	3
BME 106	Engineering Graphics	CC	1	-	-	1
Practical Courses						
AP 122	Applied Physics - I lab	CC	-	-	2	1
BME 123	Engineering Mechanics Lab	CC	-	-	2	1
BDS 124	Programming in C Lab	CC	-	-	2	1
BEE 125	Basic Electrical Engineering Lab	CC	-	-	2	1
BME 126	Engineering Graphics Lab	CC	-	-	2	1
Value Added Courses						
BCS 101	English	VA	1	-	-	1
BSS 104	Behavioral Science-I(Understanding Self for Effectiveness)	VA	1	-	-	1
FLT 101	Foreign Language - I	VA	2	-	-	2
FLG 101	French					
FLS 101	German					
FLC 101	Spanish					
FLC 101	Chinese					
Non-Teaching Credit Course (NTCC)						
AND001	Anandam-I	NTCC	-	-	-	2
Total						28





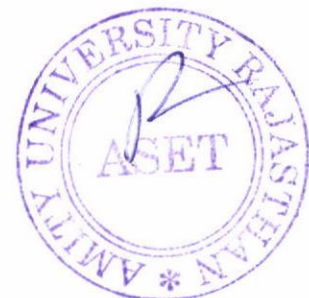
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AMITY SCHOOL OF ENGINEERING AND TECHNOLOGY (ASET)

Program Name: B.Tech.(DSE)
SECOND SEMESTER

Code	Course	Category	L	T	P/FW	Credit Units
Core Courses						
AM 201	Applied Mathematics – II	CC	3	1	-	4
AP 202	Applied Physics - II - Modern Physics	CC	2	1	-	3
AC 203	Applied Chemistry	CC	2	1	-	3
BDS 204	Programming in Python Language	CC	2	1	-	3
BME 205	Elements of Mechanical Engineering	CC	2	1	-	3
BCS 206	Domain Workshop/Seminar	NTCC	-	-	-	1
EVS 001	Environmental Studies	CC	4	-	-	4
Practical Courses						
AP 222	Applied Physics - II Lab	CC	-	-	2	1
AC 223	Applied Chemistry Lab	CC	-	-	2	1
BDS 224	Python Programming Laboratory	CC	-	-	2	1
BME 225	Elements of Mechanical Engineering Lab	CC	-	-	2	1
Open Elective						
	OPEN ELECTIVE- 1	OE	3	-	-	3
Value Added Courses						
BCS 201	English	VA	1	-	-	1
BSS 204	Behavioural Science – II (Problem solving and Creative Thinking)	VA	1	-	-	1
FLT 201	Foreign Language – II	VA	2	-	-	2
FLG 201	French					
FLS 201	German					
FLC 201	Spanish					
	Chinese					
Non-Teaching Credit Course (NTCC)						
AND002	Anandam-II	NTCC	-	-	-	2
Total						34

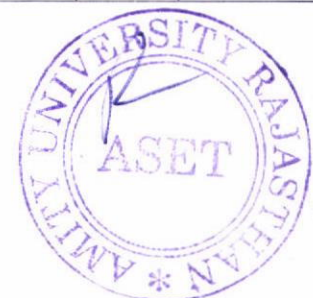




Program Name: B.Tech.(DSE)

THIRD SEMESTER

Code	Course	Category	L	T	P/FW	Credit Units
Core Courses						
AM 301	Statistics	CC	2	1	-	3
BDS 302	Data Structures and Algorithms	CC	2	1	-	3
BDS 303	Fundamentals of Operating Systems	CC	2	1	-	3
BDS 304	Database Management and SQL	CC	2	1	-	3
BDS 307	Introduction to Artificial Intelligence	CC	2	1	-	3
Practical Courses						
BDS 322	Data structures and Algorithms Lab	CC	-	-	2	1
BDS 323	Operating Systems with Unix lab	CC	-	-	2	1
BDS 324	Database Management Systems lab	CC	-	-	2	1
Domain Elective-I : Choose any ONE from the following courses along with corresponding labs						
BDS 305	Digital Electronics	DE	2	1	-	3
BDS 306	Website Design	DE				
BDS 325	Digital Electronics lab	DE	-	-	2	1
BDS 326	Website Design Lab	DE				
Open Elective Course						
	OPEN ELECTIVE- 2	OE	3	-	-	3
Value Added Courses						
BCS 301	Communication Skills - I	VA	1	-	-	1
BSS 304	Behavioral Science - III (Interpersonal Communication)	VA	1	-	-	1
	Foreign Language - III	VA	2	-	-	2
FLT 301	French					
FLG 301	German					
FLS 301	Spanish					
FLC 301	Chinese					
Non-Teaching Credit Course (NTCC)						
AND003	Anandam-III	NTCC	-	-	-	2
Total						31





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AMITY SCHOOL OF ENGINEERING AND TECHNOLOGY (ASET)

Program Name: B.Tech.(DSE)

FOURTH SEMESTER

Code	Course	Category	L	T	P/FW	Credit Units
Core Courses						
BDS 402	Probability and Random Variables	CC	3		-	3
BDS 403	Networking Methodologies	CC	2	1	-	3
BDS 404	Design and Analysis of Algorithms	CC	2	1	-	3
BDS 405	Knowledge Engineering	CC	2	1	-	3
Practical Courses						
BDS 424	Design and Analysis of Algorithms Lab	CC	-	-	2	1
BDS 425	Data Communication & Computer Networks Lab	CC	-	-	2	1
Domain Elective-II : Choose any one from the following courses						
BDS 406	Data warehousing and data mining	DE	2	1	-	3
BDS 407	Computer System Architecture and Organization	DE	4	-	-	4
BDS 426	Data mining Tools Lab	DE	-	-	2	1
Open Elective Courses						
	OPEN ELECTIVE- 3	OE	3	-	-	3
Value Added Courses						
BCS 401	Communication Skills 2- II	VA	1	-	-	1
BSS 404	Behavioural Science – IV (Relationship Management)	VA	1	-	-	1
FLT 401	Foreign Language – IV French	VA	2	-	-	2
FLG 401	German					
FLS 401	Spanish					
FLC 401	Chinese					
Non-Teaching Credit Course (NTCC)						
AND004	Anandam-IV	NTCC	-	-	-	2
Total						27

PRACTICAL TRAINING – I: 6 – 8 WEEKS





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AMITY SCHOOL OF ENGINEERING AND TECHNOLOGY (ASET)

Program Name: B.Tech.(DSE)
FIFTH SEMESTER

Code	Course	Category	L	T	P/FW	Credit Units
Core Courses						
BDS 502	Foundation of data science	CC	2	1	-	3
BDS 503	Artificial Neural Networks	CC	2	1	-	3
BDS 504	Data Visualization	CC	3	-	-	3
BDS 550	Internship - I (Evaluation)	NTCC	-	-	-	5
Practical Courses						
BDS 522	Artificial Neural Networks Lab	CC	-	1	1	1
BDS 523	Machine Learning Laboratory	CC	-	-	2	1
BDS 524	Data Visualization Laboratory	CC	-	-	2	1
Domain Elective-III : Choose any ONE from the following courses along with their corresponding labs						
BDS 505	Pattern Recognition	DE	2	1	-	3
BDS 506	Advance Networking	DE	2	1	-	3
BDS 525	Pattern Recognition in Python Programming Lab	DE	-	-	2	1
BDS 526	Advance Networking Lab	DE	-	-	2	1
Open Elective Courses						
	OPEN ELECTIVE- 4	OE	3	-	-	3
Value Added Courses						
BCS 501	Communication Skills - III	VA	1	-	-	1
BSS 504	Behavioural Science - V (Group Dynamics and Team Building)	VA	1	-	-	1
	Foreign Language - V	VA	2	-	-	2
FLT 501	French					
FLG 501	German					
FLS 501	Spanish					
FLC 501	Chinese					
Non-Teaching Credit Course (NTCC)						
AND005	Anandam-V	NTCC	-	-	-	2
Total						30





AMITY SCHOOL OF ENGINEERING AND TECHNOLOGY (ASET)

Program Name: B.Tech.(DSE)
SIXTH SEMESTER

Code	Course	Category	L	T	P/FW	Credit Units
Core Courses						
BDS 602	Statistical Methods for Data Engineering	CC	3	-	-	3
BDS 603	Data Analytics and Exploratory Data Analysis	CC	2	1	-	3
BDS 604	Fundamental concepts of IoT	CC	2	1	-	3
BDS 605	Intelligent Information Retrieval	CC	2	1	-	3
Practical Courses						
BDS 622	Data Analytics Laboratory	CC	-	-	2	1
BDS 624	Advanced SAS Programming Lab	CC	-	-	2	1
Domain Elective-IV : Choose any ONE from the following courses along with their corresponding labs						
BDS 606	Natural Language Processing	DE	2	1	-	3
BDS 607	Data Security	DE	2	1	-	3
BDS 608	Cloud Computing	DE	2	1	-	3
BDS 626	Natural Language Processing Lab	DE	-	-	2	1
BDS 627	Data Security Lab	DE	-	-	-	-
BDS 628	Cloud Computing Lab	DE	-	-	2	1
Open Elective Course						
	OPEN ELECTIVE- 5	OE	3	-	-	3
Value Added Courses						
BCS 601	Communication Skills – IV	VA	1	-	-	1
BSS 604	Behavioral Science – VI (Stress and Coping Strategies)	VA	1	-	-	1
FLT 601	Foreign Language – VI	VA	2	-	-	2
FLG 601	French					
FLS 601	German					
FLC 601	Spanish					
FLC 601	Chinese					
Non-Teaching Credit Course (NTCC)						
AND006	Anandam-VI	NTCC	-	-	-	2
Total						27

PRACTICAL TRAINING – II: 6 – 8 WEEKS





AMITY SCHOOL OF ENGINEERING AND TECHNOLOGY (ASET)

Program Name: B.Tech.(DSE)

SEVENTH SEMESTER

Code	Course	Category	L	T	P/FW	Credit Units
Core Courses						
BDS 702	Software Process and project	CC	2	1	-	3
BDS 703	Predictive Analytics	CC	3	-	-	3
BDS 750	Internship – II(Evaluation)	NTCC	-	-	-	4
Practical Courses						
BDS 722	Model Deployment Laboratory	CC	-	-	2	1
Domain Elective-V : Choose any ONE from the following courses along with their corresponding labs						
BDS 704	IoT Architecture and Protocol	DE	2	1	-	3
BDS 705	Statistics for Business Analytics	DE	2	1	-	3
BDS 706	Block Chain	DE	3	1	-	4
BDS 707	Deep Learning Algorithm and Architectures	DE	2	1	-	3
BDS 724	IoT Architecture and ProtocolLab	DE	-	-	2	1
BDS 725	Block Chain Lab	DE	-	-	2	1
BDS 727	Deep Learning Algorithm and ArchitecturesLab	DE	-	-	2	1
Open Elective Course						
	OPEN ELECTIVE- 6	OE	3	-	-	3
Value Added Courses						
BCS 701	Communication Skills – V	VA	1	-	-	1
BSS 704	Behavioural Science – VII (Individual, Society and Nation)	VA	1	-	-	1
	Foreign Language – VII	VA	2	-	-	2
FLT 701	French					
FLG 701	German					
FLS 701	Spanish					
FLC 701	Chinese					
Non-Teaching Credit Course (NTCC)						
AND007	Anandam-VII	NTCC	-	-	-	2
Total						24





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AMITY SCHOOL OF ENGINEERING AND TECHNOLOGY (ASET)

Program Name: B.Tech.(DSE)

EIGHTH SEMESTER

SEMESTER VIII

Code	Course	Category	L	T	P/FW	Credit Units
Core Courses						
BDS 801	Secure Cloud Computing	CC	2	1	-	3
BDS 802	Applied Machine Learning	CC	2	1	-	3
BDS 803	Digital Image Processing	CC	2	1	-	3
BDS 860	Project	NTCC	-	-	-	15
Practical Courses						
BDS 821	Soft Computing in MATLAB Lab	CC	-	-	2	1
BDS 823	Digital Image Processing Lab	CC	-	-	2	1
Total						26

Note:-

CC - Core Course,
VA - Value Added Course,
OE - Open Elective,
DE - Domain Elective,
FW - Field Work





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**AMITY SCHOOL OF ENGINEERING & TECHNOLOGY
(ASET)**

PROGRAM STRUCTURE & SYLLABUS

B. Tech. (Robotics & IoT)

Program Code: BRI

Duration - 4 Years Full Time



Program Outcomes (POs)

B.Tech. (Robotics & IoT)

PL0.1-An ability to apply and understand the knowledge of mathematics, science, and engineering.

PL0.2-Knowledge and understanding of mathematics through differential and integral calculus, and basic sciences and engineering topics (including computing science) necessary to analyze and design complex electrical and electronic devices, software, and systems containing embedded hardware and software components and their design.

PL0.3-Develop and deploy engineering/technological solutions using latest techniques & tools/Keil, Proteus, MPLAB, LabVIEW, MATLAB, Tensor flow imbining concern for eco-system, and an attitude to serve society & humanity at large.

PL0.4-Graduates will successfully engage themselves in practice of multidisciplinary engineering or relevant fields: They will pursue wide-spectrum careers appropriately as technologists, innovators, consultants, managers & entrepreneurs and will advance in their profession.

PL0.5-An ability to design and conduct experiments as well as to analyze and interpret data.

PL0.6-An ability to design a system, component, or process to meet desired needs within realistic constraints such as economic, environmental, health and safety.

PL0.7-An ability to identify, formulate, and solve engineering problems.

PL0.8-Knowledge of probability and statistics, including applications appropriate to the electrical engineering (Electronics, Communication, Processing and Embedded technology)

Credit Summary

Semester	Core course (CC)	Domain Electives (DE)	Values Added Course (VAC)	Open Electives	NTCC	Total
I	24	-	4	-	2	30
II	23	-	4	3	2	32
III	20	3	4	3	---	30
IV	16	3	4	3	---	26
V	12	3	4	3	6	28
VI	16	3	4	3	--	26
VII	12	-	4	3	-	19
VIII	24	-	--	--		24
Total	147	12	28	18	10	215



Semester I						
Code	Course	Category	L	T	P	Credits
Core Courses						
AM 101	Applied Mathematics - I	CC	3	1	-	4
AP 102	Applied Physics - I Fields & Waves	CC	2	1		3
AC 103	Applied Chemistry	CC	2	1		3
BME 104	Element of Mechanical Engineering	CC	2	1		3
BCS 105	Introduction to Computers & Programming in C	CC	2	1		3
BEE 106	Basic Electrical Engineering	CC	2	1		3
Practical Courses						
AP 122	Applied Physics lab	CC	-	-	2	1
AC 123	Applied Chemistry lab	CC	-	-	2	1
BME 124	Element of Mechanical Engineering lab	CC	-	-	2	1
BCS 125	Programming in C lab	CC	-	-	2	1
BEE 126	Basic Electrical Engineering Lab	CC	-	-	2	1
Value Added Courses						
BCS 101	English	VA	1	-	-	1
BSS 104	Behavioral Science-I Understanding Self For Effectiveness- I		1	-	-	1
FLT 101	Foreign Language I French		2	-	-	2
FLG 101	German					
FLS 101	Spanish					
FLC 101	Chinese					
Non-Teaching Credit Course (NTCC)						
AND001	Anandam-I	NTCC	-	-	-	2
Total						30



Semester II						
Code	Course	Category	L	T	P	Credits
Core Courses						
AM 201	Applied Mathematics - II	CC	3	1	-	4
AP 202	Applied Physics - II – Modern Physics	CC	2	1	-	3
BCS 203	Object Oriented Programming using C++	CC	2	1	-	3
BME 204	Engineering Mechanics	CC	2	1	-	3
BME 205	Engineering Graphics	CC	1	-	-	1
BME 206	Domain Workshop	CC	1	-	-	1
Practical Courses						
AP 222	Applied Physics - II – Modern Physics lab	CC	-	-	2	1
BCS 223	Object Oriented Programming using C++ lab	CC	-	-	2	1
BME 224	Engineering Mechanics lab	CC	-	-	2	1
BME 225	Engineering Graphics lab	CC	-	-	2	1
Open Elective						
	OPEN ELECTIVE - I	OE	3	-	-	3
Value Added Courses						
BCS 201	English	VA	1	-	-	1
BSS 204	Behavioral Science-II (Problem Solving & Creation thinking)	VA	1	-	-	1
FLF 201 FLG 201 FLS 201 FLC 201	Foreign Language - II French German Spanish Chinese	VA	2	-	-	2
EVS 001	Environmental Studies	VC	4	-	-	4
Non-Teaching Credit Course (NTCC)						
AND002	Anandan-II	NTCC	-	-	2	2
Total						32



Semester III							
Code	Course	Category	L	T	P	Credits	
Core Courses							
AM 301	Discrete Mathematics	CC	3	-	-	3	
BRI 301	Electronics Device and circuit	CC	3	1	-	4	
BEC 303	Circuits & Systems	CC	3	1	-	4	
BRI 302	Theory of automation and computation	CC	2	1	-	3	
BEC 305	Digital circuit system-I	CC	3	-	-	3	
Practical Courses							
BEC 321	Electronics Device and circuit Lab	CC	-	-	2	1	
BEC 323	Circuits & Systems Lab	CC	-	-	2	1	
BEC 325	Digital circuit system I LAB	CC	-	-	2	1	
Domain Elective-I: Student must select one course from the following courses							
BRI 303	Electrical and Electronic materials	DE	2	1		3	
BRI 304	Electronic measurement	DE	2	1		3	
Open Elective							
	OPEN ELECTIVE - II	OE	3		-	3	
Value Added Courses							
BCS 301	Communication Skills - I	VA	1	-	-	1	
BSS 304	Behavioral Science-III (Interpersonal Communication)	VA	1	-	-	1	
FLT 301	Foreign Language - III	VA	2	-	-	2	
FLG 301	French						
FLS 301	German						
FLC 301	Spanish						
	Chinese						
Non-Teaching Credit Course (NTCC)							
AND002	Anandan-II	NTCC	-	-	2	2	
Total						30	



Semester IV						
Code	Course	Category	L	T	P	Credits
Core Courses						
BRI 401	Computer aided design and Analysis	CC	3	-		3
BRI 402	Microprocessor and microcontroller system	CC	3	-		3
BRI 403	Sensor and Transducer	CC	3	-	-	3
BRI 404	Linear Integrated circuit	CC	3	-		3
Practical Courses						
BRI 421	Computer aided design and Analysis lab	CC			2	1
BRI 422	Microprocessor and microcontroller system lab	CC			2	1
BRI 423	Sensor and Transducer lab	CC			2	1
BRI 424	Linear Integrated circuit	CC			2	1
Domain Elective-II: Student has to select one course from the following courses						
BRI 405	Signal and System	DE	2	1		3
BRI 406	Virtual instruments	DE	2	1		3
Open Elective						
	OPEN ELECTIVE - III	OE	3			3
Value Added Courses						
BCS 401	Communication Skills - II	VA	1	-	-	1
BSS 404	Behavioral Science-IV (Relationship Management)	VA	1	-	-	1
FLT 401	Foreign Language - IV	VA	2	-	-	2
FLG 401	French					
FLS 401	German					
FLC 401	Spanish					
	Chinese					
Non-Teaching Credit Course (NTCC)						
AND003	Anandan-III	NTCC	-	-	2	2
Total						26



Semester V						
Code	Course	Category	L	T	P	Credits
Core Courses						
BRI 501	Arduino and Its Interfacing	CC	3	-		3
BRI 502	Robotics & Automation	CC	3	-	-	3
BRI 503	Control System/DSP	CC	3	-		3
BEC 550	Industrial Training (Evaluation)	CC	-	-	-	6
Practical Courses						
BRI 521	Arduino and Its Interfacing Lab	CC			2	1
BRI 522	Robotics & Automation lab	CC	-	-	2	1
BRI 523	Control System lab/DSP	CC			2	1
Domain Elective-III: Student has to select one course from the following courses						
BRI 504	Python for data science	DE	3			3
BRI 505	R for data science	DE	3			3
BRI 506	Industrial Automation	DE	3			3
Open Elective						
	OPEN ELECTIVE - IV	OE	3			3
Value Added Courses						
BCS 501	Communication Skills - III	VA	1	-	-	1
BSS 504	Behavioral Science-V (Understanding self for effectiveness)	VA	1	-	-	1
FLT 501	Foreign Language - V French	VA	2	-	-	2
FLG 501	German					
FLS 501	Spanish					
FLC 501	Chinese					
Non-Teaching Credit Course (NTCC)						
AND005	Anandan-V	NTCC	-	-	2	2
Total						28



Semester VI						
Code	Course	Category	L	T	P	Credits
Core Courses						
BRI 601	Robotics motor and drives	CC	3	-		3
BRI 602	Mechatronics and robotics application	CC	3	-		3
BRI 603	IoT and cloud computing	CC	3	-		3
BRI 604	Digital Communications	CC	3	-	-	3
Practical Courses						
BRI 621	Robotics motor and drives lab	CC			2	1
BRI 622	Mechatronics and robotics application lab	CC			2	1
BRI 623	IoT and cloud computing lab	CC			2	1
BRI 624	Digital Communications lab	CC		-	2	1
Domain Elective-IV: Student has to select one course from the following courses						
BRI 605	Tools and technique for data science	DE	3			3
BRI 606	Deep Learning	DE	3			3
BRI 607	Industrial IoT 4.0	DE	3			3
Open Elective						
	OPEN ELECTIVE - V	OE	3			3
Value Added Courses						
BCS 601	Communication Skills - IV	VA	1	-	-	1
BSS 604	Understanding self for Effectiveness - VI	VA	1	-	-	1
FLT 601	Foreign Language - VI	VA	2	-	-	2
FLG 601	French					
FLS 601	German					
FLC 601	Spanish					
	Chinese					
Non-Teaching Credit Course (NTCC)						
AND006	Anandan-IV	NTCC	-	-	2	2
Total						26



Semester VII						
Code	Course	Category	L	T	P	Credits
Core Courses						
BRI 701	Raspberry Pi and Its interfacing	CC	3	-		3
BRI 702	Cloud development IoT applications	CC	3	-		3
BRI 703	Advanced Robotics	CC	3	-		3
Practical Courses						
BRI 721	Raspberry Pi and Its interfacing lab	CC			2	1
BRI 722	Cloud development IoT applications lab	CC			2	1
BRI 723	Advanced Robotics lab	CC			2	1
Open Elective						
	OPEN ELECTIVE - VI	OE	3			3
Value Added Courses						
BCS 701	Communication Skills - V	VA	1	-	-	1
BSS 704	Understanding self for effectiveness - VII	VA	1	-	-	1
FLT 701	Foreign Language - VII	VA	2	-	-	2
FLG 701	French					
FLS 701	German					
FLC 701	Spanish					
	Chinese					
Non-Teaching Credit Course (NTCC)						
AND007	AnandanVII	NTCC	-	-	2	2
TOTAL						19



Semester VIII						
Code	Course	Category	L	T	P	Credits
Core Courses						
BRI 801	Project design based upon patent and copyright	CC	6	-	-	24
Total						24
Note: CC - Core Course, VA - Value Added Course, OE - Open Elective, DE - Domain Elective, FW - Field Work						
Total Credits						226





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Bachelor of Technology
in
Mechatronics Engineering
(BMT)

Programme Code: BMT

Duration – 4 Years Full Time

(Programme Structure)

Choice Based Credit System (CBCS)

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AMITY SCHOOL OF ENGINEERING TECHNOLOGY (ASET)

Program Name: B.Tech. – MECHATRONICS ENGINEERING

FIRST SEMESTER

Code	Title	Category	L	T	P	Credit
Core Courses						
AM101	Applied Mathematics - I	CC	3	1	-	4
AP 102	Applied Physics-I – Fields & Waves	CC	2	1	-	3
AC 203	Applied Chemistry	CC	2	1	-	3
BME 205	Elements of Mechanical Engineering	CC	2	1	-	3
BCS 104	Introduction to Computers & Programming in C	CC	2	1	-	3
BEE 105	Basics of Electrical and Electronics Engineering	CC	2	1	-	3
Practical Courses						
AP 122	Applied Physics-I – Fields & Waves Lab	PC	-	-	2	1
AC 223	Applied Chemistry Lab	PC	-	-	2	1
BME 225	Elements of Mechanical Engineering Lab	PC	-	-	2	1
BCS 124	Programming in C Lab	PC	-	-	2	1
BEE 125	Basics of Electrical and Electronics Engineering Lab	PC	-	-	2	1
Value Added Courses						
BCS 101	English	VA	1	-	-	1
BSS 104	Behavioral Science-I Understanding Self For Effectiveness- I	VA	1	-	-	1
	Foreign Language - I	VA	2	-	-	2
FLT 101	French					
FLG 101	German					
FLS 101	Spanish					
FLC 101	Chinese					
TOTAL						28



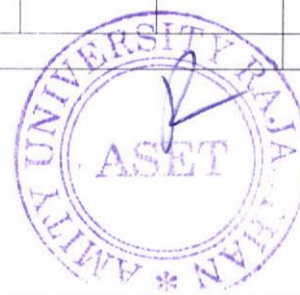


AMITY SCHOOL OF ENGINEERING TECHNOLOGY (ASET)

Program Name: B.Tech. – MECHATRONICS ENGINEERING

SECOND SEMESTER

Code	Title	Category	L	T	P	Credit
Core Courses						
AM 201	Applied Mathematics – II	CC	3	1	-	4
AP 202	Applied Physics-II – Modern Physics	CC	2	1	-	3
BCS 203	Object Oriented Programming using C++	CC	2	1	-	3
BME 204	Engineering Mechanics	CC	2	1	-	3
BME 205	Engineering Graphics	CC	1	-	-	1
BMT 205	Introduction to Engineering and Design	CC	2	-	-	2
EVS 001	Environment Studies	CC	3	1	-	4
BMT 206	Domain Workshop	CC	1	-	-	1
Practical Courses						
AP 222	Applied Physics-II – Modern Physics Lab	PC	-	-	2	1
BCS 223	Object Oriented Programming using C++ Lab	PC	-	-	2	1
BME 224	Engineering Mechanics Lab	PC	-	-	2	1
BME 225	Engineering Graphics Lab	PC	-	-	2	1
						25
Open Elective						
	Open Elective-I	OE	3	-	-	3
Value Added Courses						
BCS 201	English	VA	1	-	-	1
BSS 204	Behavioral Science – II Problem Solving & Creative Thinking	VA	1	-	-	1
	Foreign Language – II	VA	2	-	-	2
FLT 201	French					
FLG 201	German					
FLS 201	Spanish					
FLC 201	Chinese					
TOTAL						32





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AMITY SCHOOL OF ENGINEERING TECHNOLOGY (ASET)

Program Name: B.Tech. – MECHATRONICS ENGINEERING

THIRD SEMESTER

Code	Title	Category	L	T	P	Credit
Core Courses						
BMT 301	Numerical Analysis & Programming	CC	3	-	-	3
BMT 302	Mechanics of Machine	CC	2	1	-	3
BMT 303	Manufacturing Processes	CC	2	1	-	3
BMT 304	Introduction to Automation	CC	3	-	-	3
BMT 305	Microprocessor-I	CC	2	-	-	2
Practical Courses						
BMT 321	Numerical Analysis & Programming Lab	PC	-	-	2	1
BMT 322	Mechanics of Machine lab	PC	-	-	2	1
BMT 323	Manufacturing Processes Lab	PC	-	-	2	1
BMT 324	Computer Aided Drafting & Design Lab	PC	-	-	2	1
BMT 325	Microprocessor-I Lab	PC	-	-	2	1
						19
DE Electives 1: Student has to select 1 course from the list of following DE electives						
BMT 307	Alternative Source of Energy	DE	3	-	-	3
BMT 308	Computer Graphics	DE	3	-	-	
BMT 309	Electronic Devices and Circuits	DE	3	-	-	
Open Elective						
	OpenElective-2	OE	3	-	-	3
Value Added Courses						
BCS 301	Communication Skills - I	VA	1	-	-	1
BSS 304	Behavioral Science-III, Interpersonal Communication	VA	1	-	-	1
	Foreign Language - III	VA	2	-	-	2
FLT301	French					
FLG301	German					
FLS301	Spanish					
FLC301	Chinese					
TOTAL						29





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AMITY SCHOOL OF ENGINEERING TECHNOLOGY (ASET)

Program Name: B.Tech. – MECHATRONICS ENGINEERING FOURTH SEMESTER

Code	Title	Category	L	T	P	Credit
Core Courses						
BMT 401	Applied Thermodynamics	CC	3	-	-	3
BMT 402	Fluid Mechanics	CC	2	1	-	3
BMT 403	Metrology	CC	3	-	-	3
BMT 404	Introduction to Smart Materials	CC	2	-	-	2
BMT 405	Microprocessor-II	CC	2	-	-	2
Practical Courses						
BMT 421	Thermodynamics Lab	PC	-	-	2	1
BMT 422	Fluid Mechanics Lab	PC	-	-	2	1
BMT 423	Metrology Lab	PC	-	-	2	1
BMT 424	Measurement and Control Lab	PC	-	-	2	1
BMT 425	Microprocessor-II Lab	PC	-	-	2	1
						18
DE Electives 2: Student has to select 1 course from the list of following DE electives						
BMT 406	Materials Science and Metallurgy	DE	3	-	-	3
BMT 407	Quality Control & Quality Assurance	DE	3	-	-	
BMT 408	Artificial Intelligence & Robotics	DE	3	-	-	
Open Elective						
	OpenElective-3	OE	3	-	-	3
Value Added Courses						
BCS 401	Communication Skills - II	VA	1	-	-	1
BSS 404	Behavioral Science - IV, Relationship Management	VA	1	-	-	1
	Foreign Language - IV	VA	2	-	-	2
FLT 401	French					
FLG 401	German					
FLS 401	Spanish					
FLC 401	Chinese					
TOTAL						28

INDUSTRIAL TRAINING – I: 6-8 Weeks





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AMITY SCHOOL OF ENGINEERING TECHNOLOGY (ASET)

Program Name: B.Tech. – MECHATRONICS ENGINEERING FIFTH SEMESTER

Code	Title	Category	L	T	P	Credit
Core Courses						
BMT 501	Machine Design – I	CC	3	-	-	3
BMT 502	Design of Mechatronics System	CC	3	-	-	3
BMT 503	Heat & Mass Transfer	CC	2	-	-	2
Practical Courses						
BMT 521	Heat & Mass Transfer Lab	CC	-	-	2	1
BMT 522	Design of Mechatronics System Lab	CC	-	-	2	1
BMT 523	Practical Training (Evaluation)	NTCC	-	-	-	6
						16
DE Electives 3: Student has to select 1 course from the list of following DE electives						
BMT 505	Advanced Manufacturing Process	DE	3	-	-	3
BMT 506	Metal Cutting & Tool Design	DE	3	-	-	
BMT 507	Management of Manufacturing Systems	DE	3	-	-	
BMT 508	Embedded System	DE	3	-	-	
Open Elective						
	Open Elective-4	OE	3	-	-	3
Value Added Courses						
BCS 501	Communication Skills - III	VA	1	-	-	1
BSS 504	Behavioral Science –V Group Dynamics & Team Building	VA	1	-	-	1
	Foreign Language – V	VA	2	-	-	2
FLT 501	French					
FLG 501	German					
FLS 501	Spanish					
FLC 501	Chinese					
TOTAL						26





AMITY SCHOOL OF ENGINEERING TECHNOLOGY (ASET)

Program Name: B.Tech. – MECHATRONICS ENGINEERING SIXTH SEMESTER

Code	Title	Category	L	T	P	Credit
Core Courses						
BMT 601	<i>Modelling and Control of Mechatronics System</i>	CC	3	0	-	3
BMT 602	Electrical Machines	CC	3	0	-	3
BMT 603	Sensors and Motion Control	CC	2	1	-	3
BMT 604	Automotive Engineering	CC	3	0	-	3
BMT 605	Machine Learning and Computer vision	CC	3	0	-	3
Practical Courses						
BMT 621	<i>Modelling and Control of Mechatronics System Lab</i>	PC	-	-	2	1
BMT 622	Electrical Machines Lab	PC	-	-	2	1
BMT 623	Sensors and Motion Control Lab	PC	-	-	2	1
BMT 624	Automotive Engineering Lab	PC	-	-	2	1
						19
DE Electives 4: Student has to select 1 course from the list of following DE electives						
BMT 607	Aerial Robots	DE	3	-	-	3
BMT 608	Industrial Instrumentation	DE	3	-	-	
BMT 609	Industrial Electronics	DE	3	-	-	
Open Elective						
	Open Elective-5	OE	3	-	-	3
Value Added Courses						
BCS 601	Communication Skill – IV	VA	1	-	-	1
BSS 604	Behavioral Science – VI, Stress & Coping Strategies	VA	1	-	-	1
	Foreign Language – VI	VA	2	-	-	2
FLT601	French					
FLG601	German					
FLS601	Spanish					
FLC601	Chinese					
TOTAL						29

INDUSTRIAL TRAINING – II: 6-8 Weeks





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AMITY SCHOOL OF ENGINEERING TECHNOLOGY (ASET)

Program Name: B.Tech. – MECHATRONICS ENGINEERING SEVENTH SEMESTER

Code	Title	Category	L	T	P	Credit
Core Courses						
BMT 701	Hydraulics and Pneumatics	CC	2	-	-	2
BMT 702	Computer Aided Manufacturing	CC	2	-	-	2
Practical Courses						
BMT 721	Hydraulics and Pneumatics Lab	PC	-	-	2	1
BMT 722	Computer Aided Manufacturing Lab	PC	-	-	2	1
BMT 723	Industrial Training (Evaluation)	NTCC	-	-	-	6
BMT 724	Seminar/Minor Project Stage- I	CC	-	-	-	3
						15
DE Electives 5: Student has to select 1 course from the list of following DE electives						
BMT 705	Automation in Industries	DE	3	-	-	3
BMT 706	Marketing Management	DE	3	-	-	
BMT 707	Electric and Hybrid Vehicles	DE	3	-	-	
BMT 708	<i>Mechatronics Systems and Applications</i>	DE	3	-	-	
		DE	3	-	-	
Value Added Courses						
BCS 701	Communication Skills - V	VA	1	-	-	1
BSS 704	Behavioral Science - VII, Individual Society & Nation	VA	1	-	-	1
		VA	2	-	-	2
FLT 701	French					
FLG 701	German					
FLS 701	Spanish					
FLC 701	Chinese					
TOTAL						22





AMITY SCHOOL OF ENGINEERING TECHNOLOGY (ASET)

Program Name: B.Tech. – MECHATRONICS ENGINEERING EIGHTH

SEMESTER

Code	Title	Category	L	T	P	Credit
Core Courses						
BMT 801	Robotic Process Automation	CC	3	-	-	3
Practical Courses						
BMT 811	Project Stage II	CC	-	-	-	12
DE Electives 6: Student has to select 1 course from the list of following DE electives						
BMT 805	Fuel Cells and Applications	DE	3	-	-	3
BMT 806	Entrepreneurship Development	DE	3	-	-	
BMT 807	Flexible Manufacturing Systems	DE	3	-	-	
BMT 808	Fundamentals of Signal Processing	DE	3	-	-	
BMT 809	Automotive Sensors and Applications	DE	3	-	-	
TOTAL						18

$$28+32+29+28+26+29+22+18=212$$





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AMITY SCHOOL OF ENGINEERING AND TECHNOLOGY (ASET)

Course Name	Course Code	L T P	Credit	Semester
WEB DEVELOPMENT	BCS 510	3 0 0	3	V

Syllabus:

Module I: Overview of Internet

Introduction to Internet and WWW, Concept of Networking and Layers of OSI Model, Internet protocols like TCP/IP, http, telnet and ftp, URL, email, domain name, Web Browsers.

Module II: Principles of Web Design

Key issues to be considered in web site design. Structure of a Web Page: Introduction to HTML, Elements of HTML syntax, Head and Body sections, Building HTML documents, Inserting text, images, hyperlinks, Backgrounds and Color Control, HTML Editors & Tools: Use of different HTML editors and tools like Netscape Communicator and Microsoft Front Page etc

Module III: HTML Tags

Use of Different HTML tags in web pages. Table Handling: Table layout & presentation, constructing tables in a web page, developing a web page in a table. Ordered and unordered lists. Frames: Developing Web pages using frames. Advantages and disadvantages of frames. Creating forms, Role of Databases in web applications. Use of at least one graphical and animation tools like Adobe Fireworks, Adobe Photoshop, Gif Animator, Gimp etc.

Module IV: Cascading style-sheet (CSS) in HTML

Introduction to Cascading Style Sheets (CSS), Types of Style Sheets (Inline, Internal and External), CSS for Website Layout and Print Layout.

Types of various CSS Selectors, CSS properties: Type Properties, Background Properties, Block Properties, Box Model Properties, List Properties, Border Properties, Positioning Properties.

Module V: Introduction to Java Script

Role of java script in a web page, Script writing basics, Adding interactivity to a web page, creating dynamic web pages, Similarities to java, embedding JavaScript code, embedding java applets in a web page, Form validation using java script

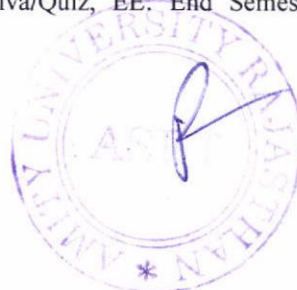
Projects:

Creating a discussion form, creating an online store, creating a job site.

A. Examination Scheme:

Components	A	CT	S/V/Q	HA	EE
Weightage (%)	5	15	15	15	50

CT: Class Test, HA: Home Assignment, S/V/Q: Seminar/Viva/Quiz, EE: End Semester Examination; Att: Attendance



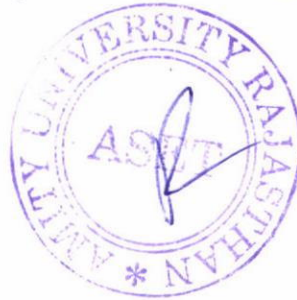
B. Text & References:

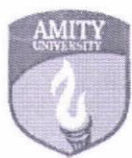
Text:

- Ramesh Bangia, "Web Technology", Firewall media
- C. Xavier, "World Wide Web Design with HTML", Tata McGraw Hill.
- Unleashed ASP, Techmedia

References:

- Rick Dranell, "HTML4 unleashed", Techmedia Publication.
- Shelly Powers, "Dynamic Web Publishing Unleashed", Techmedia.
- Don Gosselin, "JavaScript", Vikas Publication
- **Mark Swank & Drew Kittel, "World Wide Web Database", Sams net**





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— R A J A S T H A N —

AMITY SCHOOL OF ENGINEERING AND TECHNOLOGY (ASET)

WEB WEVELOPMENT LAB

Course Code: BCS 530

Credit Units: 01

Software Required: Java

List of Assignment:

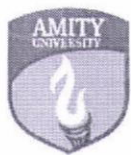
1. Design a HTML page using all the basic tags.
2. Design a page containing your educational qualification in a table.
3. Design a page containing an ordered list/unordered list.
4. Design a HTML page for your resume.
5. Design a form in HTML to enter different attribute of student information.
6. Design a home page for ASE using Frame.
7. Design another page and connect these to the home page.
8. Write a function in Javascript for input validation.
9. Write a function in Javascript to calculate monthly installation of the loan.
10. Write an input form and save its data in a database using ASP.
11. Display the data stored in database in tabular form on the page.

Examination Scheme:

IA				EE	
A	PR	LR	V	PR	V
5	20	20	5	25	25

Note: IA –Internal Assessment, EE- External Exam, PR- Performance, LR – Lab Record, V – Viva.





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AMITY SCHOOL OF ENGINEERING AND TECHNOLOGY (ASET)

Course Name	Course Code	L T P	Credit	Semester
Programming with Python	BCS 610	3 0 0	3	VI

A. Syllabus:

Module I: Basic of Python Programming

The concept of data types; variables, assignments; immutable variables; numerical types; arithmetic operators and expressions; comments in the program; understanding error messages.

Module II: Conditioning and looping in python

Conditions, Boolean logic, logical operators; ranges; Control statements: if-else, loops (for, while); lambda function in python.

Module III: String, List, Tuple, Set, Dictionary data structure

String manipulations: subscript operator, indexing, slicing a string; strings and number system: converting strings to numbers and vice versa. Lists, tuples, and dictionaries; basic list operators, replacing, inserting, removing an element; searching and sorting lists; dictionary literals, adding and removing keys, accessing and replacing values, traversing dictionaries.

Module IV: Function

Design with functions: hiding redundancy, complexity; arguments and return values; formal vs actual arguments, named arguments. Program structure and design. Recursive functions.

Module V: Basic Python Libraries

Pandas: creation of dataframe, Manipulation of dataframe, generation of series, iloc and loc function etc. NumPy: creation of arrays (1-D, 2-D and n-D array), random matrix, one's matrix, zero's matrix and all other operation over arrays, matplotlib: plotting of line graph, pi chart and box plot etc.

Projects:

Creating a discussion form, creating an online store, creating a job site.



B. Examination Scheme:

Components	A	CT	S/V/Q	HA	EE
Weightage (%)	5	15	20	10	50

CT: Class Test, HA: Home Assignment, S/V/Q: Seminar/Viva/Quiz, EE: End Semester Examination; Att: Attendance

C. Text & References:

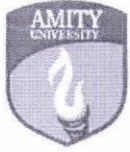
Text:

- Ramesh Bangia, "Web Technology", Firewall media
- C. Xavier, "World Wide Web Design with HTML", Tata McGraw Hill.
- Unleashed ASP, Techmedia

References:

- Rick Dranell, "HTML4 unleashed", Techmedia Publication.
- Shelly Powers, "Dynamic Web Publishing Unleashed", Techmedia.
- Don Gosselin, "JavaScript", Vikas Publication
- Mark Swank & Drew Kittel, "World Wide Web Database", Sams net.





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AMITY SCHOOL OF ENGINEERING AND TECHNOLOGY (ASET)

PROGRAMMING WITH PYTHON LAB

Course Code: BCS630

Credit Units: 01

Software Required: Java

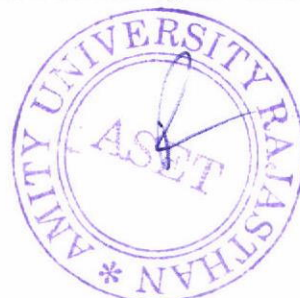
List of Assignment:

1. Write a program to demonstrate basic data type in python.
2. Write a program to compute distance between two points taking input from the user.
3. Write a program add.py that takes 2 numbers as command line arguments and prints its sum.
4. Write a Program for checking whether the given number is an even number or not. Using a for loop, write a program that prints out the decimal equivalents of $1/2$, $1/3$, $1/4$, . . . , $1/10$.
5. Write a Program to demonstrate list and tuple in python.
6. Write a program using for loop that loops over a sequence.
7. Write a program using a while loop that asks the user for a number, and print countdown from that number to zero
8. WAP to find the sum of the even-valued terms.
9. Write a program to count the numbers of characters in the string and store them in a dictionary data structure.
10. Write a program to use split and join methods in the string and trace a birthday of a person with a dictionary data structure.
11. Write a program to print each line of a file in reverse order.
12. Write a program to compute the number of characters, words and lines in a file.
13. Write a function nearly equal to test whether two strings are nearly equal. Two strings a and b are nearly equal when a can be generated by a single mutation.
14. Write function to compute gcd, lcm of two numbers. Each function shouldn't exceed one line

Examination Scheme:

IA				EE	
A	PR	LR	V	PR	V
5	15	20	10	40	10

Note: IA –Internal Assessment, EE- External Exam, PR- Performance, LR – Lab Record, V – Viva.





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AMITY SCHOOL OF ENGINEERING AND TECHNOLOGY (ASET)

Course Name	Course Code	L T P	Credit	Semester
Advanced Programming with Python	BCS-710	3 0 0	3	VII

Syllabus:

Module-I:

Introduction to Python, use IDLE to develop programs, Basic coding skills, working with data types and variables, working with numeric data, working with string data, Python functions, Boolean expressions, selection structure, iteration structure, working with lists, work with a list of lists, work with tuples, work with dates and times, get started with dictionaries

Module-II

Classes in Python: OOPS Concepts, Classes and objects, Classes in Python, Constructors, Data hiding, Creating Classes, Instance Methods, Special Methods, Class Variables, Inheritance, Polymorphism, Type Identification, Custom Exception Classes, Iterators, generators and decorators.

Module-III

I/O and Error Handling In Python :Introduction, Data Streams, Creating Your Own Data Streams, Access Modes, Writing Data to a File, Reading Data From a File, Additional File Methods, Handling IO Exceptions, Errors, Run Time Errors, The Exception Model, Exception Hierarchy, Handling Multiple Exceptions, Working with Directories.

Module-IV

Implement Machine Learning algorithms: Usage of Numpy for numerical Data, Usage of Pandas for Data Analysis, Matplotlib for Python plotting, Seaborn for Statically plots, interactive Dynamic visualizations, SciKit for Machine learning.

A. Evaluation:

Components	Internal Assessment	Attendance	MTE	ESE
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Weightage (%)	30	5	15	50
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B. Text & References:

1. Michael Urban and Joel Murach, Python Programming, Shroff/Murach, 2016.
2. Haltermanpython.
3. Mark Lutz, Programming Python, O`Reilly, 4th Edition, 2010ONLINE





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ADVANCED PROGRAMMING WITH PYTHON LAB

Course Code: BCS730

Credit Units: 01

List of Assignment:

- Practice Assignment based on string data, Python functions, and Boolean expressions.
- Practical based on iteration, working with lists, tuples and dictionaries.
- Practical based on class, objects, constructor, method in side class.
- Practical questions based on Inheritance, Polymorphism, Type Identification, Custom Exception Classes.
- Handling Errors using Python.
- Practical Assignment based on Usage of Numpy for numerical Data,
- Practical Assignment based on Usage of Usage of Pandas for Data Analysis.
- Practical Assignment based on Usage of Matplotlib for Python plotting.
- Practical Assignment based on Usage of Seaborn for Statically plots.
- Practical Assignment based on Usage of Interactive Dynamic visualizations.
- Practical Assignment based on Usage of SciKit for Machine learning.

Examination Scheme:

IA				EE	
A	PR	LR	V	PR	V
5	15	20	10	40	10

Note: IA –Internal Assessment, EE- External Exam, PR- Performance, LR – Lab Record, V – Viva.





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AMITY SCHOOL OF ENGINEERING TECHNOLOGY (ASET)

Program Name: B.Tech. – MECHANICAL ENGINEERING

FIFTH SEMESTER

Code	Title	Category	L	T	P	Credit
Core Courses						
BME 501	Machine Design - I	CC	3	-	-	3
BME 502	Advanced Manufacturing Process	CC	3	-	-	3
BME 503	Heat & Mass Transfer	CC	2	-	-	2
BCS-	Web Development	CC	2	-	-	2
Practical Courses						
BME 521	Machine Design - I Lab	CC	-	-	2	1
BME 522	Advanced Manufacturing Process Lab	CC	-	-	2	1
BME 550	Practical Training (Evaluation)	NTCC	-	-	-	3 *
BCS-	Web Development Lab	CC	-	-	2	1
						16
DE Electives 3: Student has to select 1 course from the list of following DE electives						
BME 504	Product Design and Development	DE	3	-	-	3
BME 505	MIS, ERP and Business	DE	3	-	-	
BME 506	Fuel Cells	DE	3	-	-	
BME 507	Management of Manufacturing Systems	DE	3	-	-	
Open Elective						
	Open Elective-4	OE	3	-	-	3
Value Added Courses						
BCS 501	Communication Skills - III	VA	1	-	-	1
BSS 504	Behavioral Science -V Group Dynamics & Team Building	VA	1	-	-	1
	Foreign Language - V	VA	2	-	-	2
FLT 501	French					
FLG 501	German					
FLS 501	Spanish					
FLC 501	Chinese					
TOTAL						26

* For all B.Tech Programme
sample as CME)





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AMITY SCHOOL OF ENGINEERING TECHNOLOGY (ASET)

Program Name: B.Tech. – MECHANICAL ENGINEERING

SEVENTH SEMESTER

Code	Title	Category	L	T	P	Credit
Core Courses						
BME 701	Refrigeration & Air-conditioning	CC	2	-	-	2
BME 702	Computer Integrated Manufacturing	CC	2	-	-	2
BCS-	Advanced Programming with Python	CC	2	-	-	2
Practical Courses						
BME 721	Refrigeration & Air-conditioning Lab	PC	-	-	2	1
BME 722	Computer Integrated Manufacturing Lab	PC	-	-	2	1
BCS-	Advanced Programming with Python Lab	CC	-	-	2	1
BME 750	Industrial Training (Evaluation)	NTCC	-	-	-	3 *
BME 760	Seminar/Minor Project Stage- I	CC	-	-	-	3
						15
DE Electives 5: Student has to select 1 course from the list of following DE electives						
BME 703	Automation in Industries	DE	3	-	-	3
BME 704	Quality Engineering & Management Systems	DE	3	-	-	
BME 705	Rapid Prototyping	DE	3	-	-	
BME 706	Disaster Management	DE	3	-	-	
BME 707	Electric and Hybrid Vehicles	DE	3	-	-	
Value Added Courses						
BCS 701	Communication Skills - V	VA	1	-	-	1
BSS 704	Behavioral Science - VII, Individual Society & Nation	VA	1	-	-	1
Foreign Language – VII		VA	2	-	-	2
FLT 701	French					
FLG 701	German					
FLS 701	Spanish					
FLC 701	Chinese					
TOTAL						22

* For all stream (sample as ME)





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AMITY SCHOOL OF ENGINEERING TECHNOLOGY (ASET)

Program Name: B.Tech. – MECHANICAL ENGINEERING

SIXTH SEMESTER

Code	Title	Category	L	T	P	Credit
Core Courses						
BME 601	Machine Design – II	CC	3	0	-	3
BME 602	Industrial Engineering & Operational Research	CC	3	0	-	3
BME 603	Fluid Power System	CC	2	1	-	3
BME 604	Automotive Engineering	CC	3	0	-	3
BME 605	Internal Combustion Engines	CC	3	-	-	3
Practical Courses						
BME 621	Machine Design – II Lab	PC	-	-	2	1
BME 622	Industrial Engineering & Operational Research Lab	PC	-	-	2	1
BME 623	Fluid Power System Lab	PC	-	-	2	1
BME 624	Automotive Engineering Lab	PC	-	-	2	1
						19
DE Electives 4: Student has to select 1 course from the list of following DE electives						
BME 606	Power Plant Engineering	DE	3	-	-	3
BME 607	Total Quality Management	DE	3	-	-	
BME 608	Creativity and Entrepreneurship Development	DE	3	-	-	
BME 609	Finite Element Analysis	DE	3	-	-	
Open Elective						
	Open Elective-5	OE	3	-	-	3
Value Added Courses						
BCS 601	Communication Skill – IV	VA	1	-	-	1
BSS 604	Behavioral Science – VI, Stress & Coping Strategies	VA	1	-	-	1
	Foreign Language - VI	VA	2	-	-	2
FLT 601	French					
FLG 601	German					
FLS 601	Spanish					
FLC 601	Chinese					
TOTAL						29

INDUSTRIAL TRAINING – II: 6-8 Weeks





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AMITY SCHOOL OF ENGINEERING AND TECHNOLOGY (ASET)

Program Name: B.Tech.(IT)

SIXTH SEMESTER

Code	Course	Category	L	T	P/FW	Credit Units
Core Courses						
BCS 602	Software Testing & Quality Assurance	CC	3	-	-	3
BCS 603	Analysis and Design of Algorithm	CC	2	1	-	3
BCS 604	Microprocessor	CC	2	1	-	3
BIT605	Computer Oriented Numerical Methods	CC	2	1	-	3
Practical Courses						
BCS 622	Software Testing and Quality Assurance Lab	CC	-	-	2	1
BCS 624	Microprocessor Lab	CC	-	-	2	1
Domain Elective-IV : Choose any ONE from the following courses along with their corresponding labs						
BCS 606	Advanced Java Programming	DE	2	1	-	3
BCS 607	Software Project Management	DE	2	1	-	3
BCS 608	Cloud Computing	DE	2	1	-	3
BCS 626	Advanced Java Programming Lab	DE	-	-	2	1
BCS 627	Software Project Management Lab	DE	-	-	2	1
BCS 628	Cloud Computing Lab	DE	-	-	2	1
Open Elective Course						
	OPEN ELECTIVE- 5	OE	3	-	-	3
Value Added Courses						
BCS 601	Communication Skills - IV	VA	1	-	-	1
BSS 604	Behavioral Science - VI (Stress and Coping Strategies)	VA	1	-	-	1
	Foreign Language - VI	VA	2	-	-	2
FLT 601	French					
FLG 601	German					
FLS 601	Spanish					
FLC 601	Chinese					
Non-Teaching Credit Course (NTCC)						
AND006	Anandam-VI	NTCC	-	-	-	2
Total						27

PRACTICAL TRAINING - II: 6 - 8 WEEKS



SEMESTER VI

Code	Course	Category	L	T	P	Credit Units
Core Courses						
BEE 601	Power Electronics	CC	3	-	-	3
BEE 602	Power System Analysis	CC	2	1	-	3
BEE 603	Transmission and Distribution System	CC	2	1	-	3
BEE 604	Utilization of Electric Power	CC	3	-	-	3
BCS 610	Programming with Python	CC	2	-	-	2
Practical Courses						
BEE 621	Power Electronics Lab	CC	-	-	2	1
BEE 622	Power System Lab	CC	-	-	2	1
BCS 630	Programming with Python Lab	CC	-	-	2	1
Domain Electives: Student must select 1 course from following DE electives						
BEC 606	Data Structures and IT	DE	3	-	-	3
BEE 606	Switch Mode Power Supplies					
BEE 607	Electrical Machine Design					
Open elective 5		OE	-	-	-	3
Value Added Courses						
BCS 601	Communication Skills – IV	VA	1	-	-	1
BSS 604	Understanding self for effectiveness - VI	VA	1	-	-	1
	Foreign Language – VI	VA	2	-	-	2
FLT 601	French					
FLG 601	German					
FLS 601	Spanish					
FLC 601	Chinese					
Non-Teaching Credit Course(NTCC)						
AND006	ANANDAM-VI	NTCC	-	-	2	2
Total						27



Semester VI						
Code	Course	Category	L	T	P	Credits
Core Courses						
BEC 601	VLSI Design	CC	3	-		3
BEC 602	Digital Signal Processing	CC	3	-		3
BEC 603	Microwave Engineering	CC	3	-		3
BEE 601	Power Electronics	CC	3	-	-	3
BCS 610	Programming with Python	CC	2	-	-	2
Practical Courses						
BEC 621	VLSI Design lab	CC			2	1
BEC 622	Digital Signal Processing lab	CC			2	1
BEC 623	Microwave Engineering lab	CC			2	1
BEE 621	Power Electronics Lab	CC		-	2	1
BCS 630	Programming with Python Lab	CC	-	-	2	1
Domain Elective-IV: Student has to select one course from the following courses						
BEC 605	Measurement & Measuring Instruments	DE	3			3
BEC 606	Data Structures and IT	DE	3			3
BEC 607	Information Theory & Coding	DE	3			3
Open Elective						
	OPEN ELECTIVE - V	OE	3			3
Value Added Courses						
BCS 601	Communication Skills - IV	VA	1	-	-	1
BSS 604	Understanding self for Effectiveness - VI	VA	1	-	-	1
FLT 601	Foreign Language - VI	VA	2	-	-	2
FLG 601	French					
FLS 601	German					
FLC 601	Spanish					
	Chinese					
AND006	Anandan-VI	NTCC	-	-	2	2
Total						31





AMITY SCHOOL OF ENGINEERING AND TECHNOLOGY (ASET)

Program Name: B.Tech.(CSE)
SIXTH SEMESTER

Code	Course	Category	L	T	P/FW	Credit Units
Core Courses						
BCS 602	Software Testing & Quality Assurance	CC	3	-	-	3
BCS 603	Analysis and Design of Algorithm	CC	2	1	-	3
BCS 604	Microprocessor	CC	2	1	-	3
BCS 605	System Programming	CC	2	1	-	3
Practical Courses						
BCS 622	Software Testing and Quality Assurance Lab	CC	-	-	2	1
BCS 624	Microprocessor Lab	CC	-	-	2	1
Domain Elective-IV : Choose any ONE from the following courses along with their corresponding labs						
BCS 606	Advanced Java Programming	DE	2	1	-	3
BCS 607	Software Project Management	DE	2	1	-	3
BCS 608	Cloud Computing	DE	2	1	-	3
BCS 626	Advanced Java Programming Lab	DE	-	-	2	1
BCS 627	Software Project Management Lab	DE	-	-	-	-
BCS 628	Cloud Computing Lab	DE	-	-	2	1
Open Elective Course						
	OPEN ELECTIVE- 5	OE	3	-	-	3
Value Added Courses						
BCS 601	Communication Skills - IV	VA	1	-	-	1
BSS 604	Behavioral Science - VI (Stress and Coping Strategies)	VA	1	-	-	1
FLT 601	Foreign Language - VI	VA	2	-	-	2
FLG 601	French					
FLS 601	German					
FLC 601	Spanish					
	Chinese					
Non-Teaching Credit Course (NTCC)						
AND006	Anandam-VI	NTCC	-	-	-	2
Total						27

PRACTICAL TRAINING - II: 6 - 8 WEEKS





SIXTH SEMESTER

Course Code	Course Title	Category	Lecture (L) Hours Per Week	Tutorial (T) Hours Per Week	Practical (P) Hours Per Week	Total Credits
Core Courses						
BCE 601	Environmental Engineering - I	CC	3	-	-	3
BCE 602	Structural Concrete Design-II(SCD)	CC	2	1	-	3
BCE 603	Structural Steel Design-II	CC	2	1	-	3
BCE 604	Concrete Technology	CC	3	-	-	3
BCS 610	Programming with Python	CC	2	-	-	2
Practical Courses						
BCE 621	Environmental Engineering Lab	CC	-	-	2	1
BCE 622	Structural Detailing Lab	CC	-	-	2	1
BCE 624	Concrete Technology Lab	CC	-	-	2	1
BCS 630	Programming with Python Lab	CC	-	-	2	1
Domain Elective-IV : Choose any one from the following courses						
BCE 605	Geotechnical Engineering – II	DE	3	-	-	3
BCE 606	Traffic Engineering & Management	DE	3	-	-	
BCE 607	Computer Application in Hydro Engineering	DE	3	-	-	
BCE 608	Water Resources Systems Planning & Design	DE	3	-	-	
BCE 609	Advanced Concrete Design	DE	3	-	-	
Open Elective						
	OE-V	-	3	-	-	3
Value Added Courses						
BCS 601	Communication Skills - IV	VA	1	-	-	1
BSS 604	Behavioural Science – VI	VA	1	-	-	1
	Foreign Language – VI	VA	2	-	-	2
FLF 601	French					
FLG 601	German					
FLS 601	Spanish					
FLC 601	Chinese					
Non-Teaching Credit Course (NTCC)						
AND006	Anandam-VI	NTCC	-	-	-	2
	TOTAL					30

SUMMER TRAINING-II (6-8WEEKS)



AMITY SCHOOL OF ENGINEERING & TECHNOLOGY (ASET)

Program Name: B.Tech –Chemical Engineering

SIXTH SEMESTER

Course Code	Course Title	Category	Lecture (L) Hours Per week	Tutorial (T) Hours Per week	Practical (P) Hours Per week	Total Credits
Core Courses						
BTH- 601	Process Dynamics and Control	CC	3	1	-	3
BTH- 602	Chemical Reaction Engineering-II	CC	3	1	-	3
BTH- 603	Mass Transfer-II	CC	3	1	-	4
BTH- 604	Equipment Design	CC	3	1	-	3
BTH- 605	Environmental Pollution and Control	CC	2		-	2
BTH- 621	Process Dynamics and Control Lab	CC			2	1
BTH- 623	Mass Transfer Lab	CC			2	1
BTH- 625	Environmental Pollution and Control Lab	CC			2	1
BCS-610	Programming with Python	CC	2	-	-	2
BCS-630	Programming with Python Lab	CC	-	-	2	1
Domain Elective-IV : Choose any one from the following courses						
BTH- 606	Energy Management	DE	3	--	--	3
BTH-607	Energy Resources &Utilization	DE	3	-	-	3
	Open Elective –V	OE				3
Value Added Courses						
BCS 601	Communication Skills -IV	VA	1	-	-	1
BSS 604	Behavioral Science VI, Stress & Coping Strategies	VA	1	-	-	1
FLT 601	Foreign Language – VI	VA	2	-	-	2
FLG 601	French					
FLG 601	German					
FLS 601	Spanish					
FLC 601	Chinese					
	TOTAL	OE				31

Note: -Industrial Training completed during summer vacations and will be evaluated in seventh Semester.





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AMITY SCHOOL OF ENGINEERING & TECHNOLOGY

Subject: BOS Meeting, 28th May 2021

The agenda items were taken up and after considerable deliberations amongst the BOS members, the following decisions were taken:

1. Teaching Scheme for New Undergraduate Program in B. Tech (Data Science & Engineering).
2. Introduction of new non-credit course titled DATA ANALYTICS WITH EXCEL of total duration 30 hrs.
3. The proposed scheme will be implemented as per AUR guidelines.

The meeting ends with thanks to all the members of the BOS.





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ATTENDANCE SHEET FOR BOS MEETING

Dated: 28th May 2021

S.No.	Name	Designation	Details	Signature
1	Prof.(Dr.) Rajesh Prasad	Director- ASET & Chairperson	Chairperson	
2	Dr. Pilli Emmanuel Shubhakar	Associate Professor & Head, Dept. of Computer Science and Engineering, MNIT, Jaipur	External Member	
3	Dr. Sunil Pathak	Associate Professor, AUR	Member	
4	Dr. Kapil Kr. Nagwanshi	Associate Professor, AUR	Member	

