CHAITANYA BHARATHI INSTITUTE OF TECHNOLOGY (AUTONOMOUS), HYDERABAD-75

Department of Computer Science and Engineering

Stake Holder Feedback For 2019-2020

Professor and Head Department
Department of Computer Science & Engineering
Chaitanya Bharathi Institute of Technology (A)
Gandipet, Hyderabad-500 075.(T.S.)

CHAITANYA BHARATHI INSTITUTE OF TECHNOLOGY (AUTONOMOUS), HYDERABAD-75

Stakeholders Feedback Analysis and Action Taken Report-(AY:2019-2020)

1. Students Feedback Analysis

Table 1: Responses related to Student Feedback (**No. of Responses: 76**)

S. No	Parameters	Avg Rating	%
1	Association-	3.82	76
2	Internships	1.96	39
3	Infrastructure-Common->Laboratory facilities	3.39	68
4	Infrastructure-Common->Computing facilities	3.57	71
5	Infrastructure-Common->Library facilities	3.66	73
6	Infrastructure-Common->Internet and Wi-Fi facilities	2.92	58
7	Infrastructure-Common->Games and Sports facilities	3.28	66
8	Infrastructure-Common->Admin. and Accounts Section Services	3.25	65
9	Infrastructure-Common->Academics & Examination Cell(AEC)	3.26	65
10	Infrastructure-Common->Controller of Examinations(CoE)	3.37	67
11	Infrastructure-Common->Transport facilities(if applicable)	3.25	65
12	Infrastructure-Common->Canteen facilities	3.11	62
13	Infrastructure-Common->Health Center facilities	3.18	64
14	Infrastructure-Common->Basic amenities including washrooms	2.50	50
15	Infrastructure-Common->Hostel facilities(if applicable)	2.91	58
16	Infrastructure-Common->Overall facilities	3.04	61
17	Placement and Training Cell->Training provided for placements.	2.80	56
18	Placement and Training Cell->Training and Placement Office provided on/off campus placement opportunities.	3.50	70

19	Placement and Training Cell->Career Counselling & Guidance for higher studies provided.	2.92	58
20	Placement and Training Cell->Co and Extra Curricular opportunities provided.	3.11	62
21	Placement and Training Cell->Motivation towards Research & Development(R&D)	3.01	60
22	Curriculum and Syllabus->	3.28	66
23	Suggestions-Curriculum Courses on Devops, Data Science		

Action Taken: Many students suggested to upgrade the equipment in IoT Labs and add **New** Courses in curriculum, new courses like ML with Python, Fundamentals of VR, and courses were introduced in the syllabus and upgraded the IoT Lab.

2. Teachers Feedback Analysis

Table 3: Average Response of Faculty from all the departments (**No. of Responses: 20**)

S. No	Parameters	Avg. Rating	%
1	The design of the curriculum addresses the holistic development of student.	4.56	91
2	The curriculum is well balanced with knowledge, skills and employability.	4.63	93
3	The syllabus suitable to the course.	4.56	91
4	The course/courses are relevant to the present scenario.	4.69	94
5	Course objectives and outcomes are well defined.	4.69	94
6	Prescribed books/suggested readings and other references appropriate.	4.69	94
7	BoS members from Academia and Industry constructive in updating the syllabi according to the changing educational challenges and requirements in line with regulating bodies like AICTE, UGC etc.	4.69	94
8	The scheme and evaluation schedules satisfy the Teaching Learning Process.	4.50	90
9	Freedom to suggest/propose/modify/incorporate new topics in the syllabus during the revision of curriculum?	4.69	94
10	Institute/Department gives the freedom to adopt new technologies/strategies of innovative teaching?	4.56	91

11	The environment in the department is conductive to learning, teaching, and research.	4.56	91
12	Provisions for professional development are non-discriminatory and fair.	4.50	90
13	Adequacy of infrastructure (class/staff rooms, labs, library, and ICT facilities) in the institute.	4.69	94

Action Taken: Teachers recommended to introduce case studies as part of the syllabus of courses like FOSS and Cyber Security. FOSS and Cyber Security were introduced in the syllabus.

1. Parent Feedback Analysis

Table 4: Responses related to Theory Courses **(No. of Responses: 11)**

S. No	Parameters	Avg. Rating	%
1	The Teaching-Learning Environment	4.18	
2	Infrastructure Facilities (Laboratories and Class rooms)	3.64	
3	Library, Internet, Computer, Wi-Fi etc.	3.55	
4	Monitoring of Student's Progress	4.09	
5	Participation by your wards in technical events (workshops and conferences).	4	
6	Participation in personality development activities by your ward.	3.91	
7	Response and communication with the college authorities.	3.73	
8	Support Services like Bank and Post office	3.27	
9	Canteen facility in the campus.	3	
10	Student activity centres in the college (clubs and fests)	3.73	
11	Facility for sports, games and transport facility for the students.	3.45	
12	Training and placement activities in the campus.	4.18	
13	Quality of Curriculum	4.18	

Action Taken: Parents recommended to encourage the Students to take up the courses of NPTEL, Coursera. MOOC's were included in the curriculum.

1. Employer Feedback Analysis

Table 5: Responses related to Theory Courses **(No. of Responses: 05)**

S. No	Parameters	Avg. Rating	%
1	Domain Knowledge and Aptitude Levels	1.8	84
2	Problem analysis and design of appropriate solutions	2	73
3	Attitude towards Research based approach	2	71
4	Adaptability to new technology/tools and zeal to be a constant learner	2.2	82
5	Commitment to work, managerial skills and ability to meet deadlines	2	80
6	Work towards sustainable development, Societal improvements and Environmental Benefits	1.4	78
7	Professional ethics	1.8	75
8	Communication Skills	2.2	65
9	Team spirit, interpersonal relations and leadership skills	1.6	60
10	How do you rate capability to analyze, synthesize, design, develop and test systems/processes	2	75
11	Overall Job performance	2	69

Action Taken: Employer recommended to include courses on social networking. Included a course on Social Networking in the R18 syllabus.

1. ALUMNI Feedback Analysis

Table 6: Summary of Alumni Feedback Report (No. of Responses: 15)

S. No	Parameters	Avg. Rating	%
1	Do you think our vision statement captures where we are heading as a Department to produce competent, skillful, social responsible, professionals who can contribute significantly to industry and research ?	2	67
2	Does our mission statements reflect our fundamental and unique purpose?	2	67
3	Whether the current statements of vision, mission and PEOs is as per current need.	1.75	58
4	Whether the department is moving towards right path as per vision & mission statements.	1.583333	53
5	Do you want to suggest changes in Mission Statements?	No	
6	Do you want to suggest changes in PEOs Statements?	No	
7	Do you want to suggest changes in PSOs Statements?	No	
8	Do you think our vision statement captures where we are heading as a Department to produce competent, skillful, social responsible, professionals who can contribute significantly to industry and research ?	Yes	
9	Does our mission statements reflect our fundamental and unique purpose?	Yes	
10	Whether the current statements of vision, mission and PEOs is as per current need.	Yes	
11	Whether the department is moving towards right path as per vision & mission statements.	Yes	

Action Taken: Alumni recommended to include Industry 4.O, Engineering Exploration, DevOps in the syllabus. They were included in the curriculum.

Chaitanya Bharathi Institute of Technology (Autonomous)
Gandipet, Hyderabad – 500075
Department of Computer Science and Engineering
Consolidated Action taken report on the Feedback obtained from Stake Holders AY : 2019-2020

S.No	Suggestions from	Suggestions	Action Taken	Remarks
1	Student	Upgradation of equipment in IoT labs	Equipment is upgraded in IoT Labs	IoT Lab
2	Student	Dedicate a session for doubts	Tutorial Classes are conducted for computational and mathematical courses. Included in time table	Time Table
3	Student	More practical approach , new subjects	New courses on latest technologies are offered like Machine learning using python, Fundamentals of Virtual reality as open electives	BOS 2020, Machine learning using Python, Virtual Reality
4	Alumnus	Case studies to be taken up	Case study lab for V students under R20 and VI Sem students under R18 regulations	R18, R20
5	Alumnus	More industry oriented courses with practical approach	Industry 4.O and Engineering Exploration courses are offered for the students under R20 regulations	Industry 4.O, Engineering Exploration
6	Alumnus	Introduce devops course	Devops course is offered in R18 curriculum	Devops
7	Faculty	Case Studies to be included in the syllabus	Case studies are made part of the syllabus of courses like FOSS, Cyber Security	FOSS, Cyber Security
8	Employer	Course on Social computing may be effective	Courses on Social Networking and its Impact course offered in R18 syllabus	Social Networking and its Impact, BOS 2020
9	Parent	Encourage students to participate in NPTEL/MOOC Courses for enhancing of their knowledge	Students are encouraged to take up the courses of NPTEL/Coursera and given facility to waive open elective and professional elective courses.	BOS 2020, MOOC's

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HOD, CSE Dept.

20CSE16

INTERNET OF THINGS LAB
(Professional Elective – II)

Instruction	2 Hours per week
Duration of End Examination	3 Hours
Semester End Examination	50 Marks
Continuous Internal Evaluation	50 Marks
Credits	1

Pre-requisites: Computer architecture and microprocessor, Programming for problem solving.

Course Objectives: The objectives of this course are,

1. To understand the basics of IoT and its components.
2. To impart practical knowledge on IoT applications.
3. To develop skills required for building real-time IoT based projects.

Course Outcomes: On successful completion of the course, students will be able to,

1. Use of various hardware and software IoT components.
2. Perform experiments by Interfacing I/O devices, sensors to Raspberry Pi/Arduino.
3. Understand and analyze communication protocols in IoT.
4. Monitor data and controlling of devices.
5. Develop Real time IoT based projects.

List of Experiments:

1. Introduction to IoT equipments and perform necessary software installation.
2. Write a program to interface LED/Buzzer with Arduino and to turn ON LED for 1sec after every 2 seconds.
3. Write a program to interface Digital sensor PIR with Arduino and to turn ON LED when motion detected.
4. Write a program to interface DHT22 sensor with Arduino and display temperature and humidity readings.
5. Write a program to interface motor using relay with Raspberry Pi. Turn ON motor when the temperature is high.
6. Write a program to interface LCD with Raspberry Pi and print temperature and humidity readings on it.
7. Write a program to interface flame/smoke sensor with Arduino /Raspberry Pi and give an alert message when flame/smoke is detected.
8. Implement any case study using Arduino/Raspberry Pi.

Text Books:

1. Arshdeep Bahga and Vijay Madisetti, "Internet of Things: A Hands-on Approach", Universities Press, 2014.

Suggested Reading:

1. Dr. SRN Reddy, Rachit Tirnkral and Manasi Mishra, "Introduction to Internet of Things: A practical Approach", ETI Labs, 2018.
2. Adrian McEwen, "Designing the Internet of Things", Wiley, 2013.
3. Raj Kamal, "Internet of Things:Architecture and Design", McGraw Hill, 2017.
4. Cuno Pfister, "Getting Started with the Internet of Things", 0 Reilly Media, 2011.
5. O. Vermesan, P. Friess, "Internet of Things – Converging Technologies for Smart Environments and Integrated Ecosystems", River Publishers, Series in Communications, 2013.

Online Resources / Weblinks / NPTEL Courses:

1. Li Da Xu, Wu He, and Shancang Li, "Internet of Things in Industries: A Survey ", IEEE Transactions on Industrial Informatics, Vol. 10, No. 4, Nov. 2014.
2. T. Winter, P. Thubert, A. Brandt, J. Hui, R. Kelsey, P. Levis, K. Pister, R. Struik, JP. Vasseur, R. Alexander, "RPL: IPv6 Routing Protocol for Low-Power and Lossy Networks", IETF, Standards Track, Mar. 2012.
3. Z. Shelby, K. Hartke, C. Bormann, "The Constrained Application Protocol (CoAP)", Internet Engineering Task Force (IETF), Standards Track, 2014.

CHAITANYA BHARATHI INSTITUTE OF TECHNOLOGY (A)
DEPARTMENT OF COMPUTER SCIENCE AND ENGINEERING
SEMESTER-III, 2019-20
TENTATIVE TIME TABLE

Class: BE CSE1 III SEM w.e.f.:01-07-2019 Room No: 209

Period Day	I 9:10-10:10	II 10:10-11:10	III 11:15-12:15	12:151:15	IV 1:15-2:15	V 2:15-3:15	VI 3:20-4:20
MON	Discrete	BEE	DELD	L U N C H	POM	LAB(B1-DS@CSELAB1/B2DELD@CSELAB9/B3-SS)	
TUE	BEE	Discrete	POM		DELD	LAB(B2-DS@LAB8/B3-DELD@CSELAB9/B1-SS)	
WED	DELD	POM	DS		ES	LAB(B3-DS@CSELAB6/B1DELD@CSELAB9/B2-SS)	
THU	LAB (BEE)		BEE-T		Discrete	Discrete-T	DS
FRI	ES	BEE	DS				
SAT							

Code	Subject	Faculty	Mobile No.
18EEC01	Basic Electrical Engineering	Sri. M. Nagaraju	7013526685
18CSC07	Data Structures	Sri G.Vivek	9490119715
18CSC08	Discrete Mathematics	Smt.G.Mamatha	9491870706
18CSC09	Digital Electronics and Logic Design	Dr. K.Sagar	9849400136
18MEC09	Principles of Management	Dr. N. V.Srinivasulu	9848592815
18CEM01	Environmental Science	Dr. K. Tirumala Reddy	9849068023
18EEC02	Basic Electrical Engineering Lab	Sri. M. Nagaraju	7013526685
18CSC10	Data Structures Lab	Sri G.Vivek	9490119715
18CSC11	Digital Electronics and Logic Design Lab	Smt. G. Kavita/ Dr. K.Sagar	9885117207 9849400136
18EGC03	Soft Skills	Dr. Shirisha Deshpande	9866008345
Class In-charge		Sri G.Vivek	9490119715
Attendance/Sessional marks In-charge		Smt.G.Mamatha	9491870706

TimeTable In-charges

Smt.P. Vimala Manohara Ruth

Smt.Kavita Agrawal

Head, Dept. of CSE

CHAITANYA BHARATHI INSTITUTE OF TECHNOLOGY (A)
DEPARTMENT OF COMPUTER SCIENCE AND ENGINEERING
SEMESTER-III, 2019-20
TENTATIVE TIME TABLE

Class: BE CSE2 III SEM w. e. f.: 01-07-2019 Room No: 210

Period Day	I 9:10-10:10	II 10:10-11:10	III 11:15-12:15	12:151:15	IV 1:15-2:15	V 2:15-3:15	VI 3:20-4:20
MON	ES	DS	POM		Discrete	LAB(B1-DS@CSELAB5/B2DELD@CSELAB2/B3-SS)	
TUE	DS	DELD	BEE		ES	LAB(B2-DS@CSELAB5/B3DELD@TPOLAB1/B1-SS)	
WED	Discrete	BEE	POM	L U N C H	DELD	LAB(B3-DS@CSELAB5/B1DELD@CSELAB7/B2-SS)	
THU	DELD	Discrete	Discrete-T		LAB(BEE)		BEE-T
FRI	POM	BEE	DS				
SAT							

Code	Subject	Faculty	Mobile No.
18EEC01	Basic Electrical Engineering	Sri. Ch. Venkata Krishna Reddy	8885550805
18CSC07	Data Structures	Sri V. Madhusudhan Rao	9885096285
18CSC08	Discrete Mathematics	Prof. N. Rama Devi	9492529745
18CSC09	Digital Electronics and Logic Design	Sri. K.Kiran Prakash	8885843916
18MEC09	Principles of Management	Sri. B. Suryanarayana	9441959924
18CEM01	Environmental Science	Dr. K. Tirumala Reddy	9849068023
18EEC02	Basic Electrical Engineering Lab	Sri. Ch. Venkata Krishna Reddy	8885550805
18CSC10	Data Structures Lab	Sri V. Madhusudhan Rao	9885096285

18CSC11	Digital Electronics and Logic Design Lab	Sri. K. Kiran Prakash	8885843916
18EGC03	Soft Skills	Mr. Sreenivas Andoju	9000356111
Class In-charge		Prof. N. Rama Devi	9492529745
Attendance/Sessional marks In-charge		Sri. K. Kiran Prakash	8885843916

TimeTable In-charges

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DEPARTMENT OF COMPUTER SCIENCE AND ENGINEERING
SEMESTER-III, 2019-20
TENTATIVE TIME TABLE

Class: BE CSE3 III SEM w. e. f.: 01-07-2019 Room No: 213

Period Day	I 9:10-10:10	II 10:10-11:10	III 11:15-12:15	12:151:15	IV 1:15-2:15	V 2:15-3:15	VI 3:20-4:20
MON	LAB(B1-DS@CSELAB5/B2DELD@CSELAB9/B3-SS)		Discrete	L U N C H	ES	DELD	BEE
TUE	LAB(B2-DS@CSELAB5/B3DELD@CSELAB9/B1-SS)		Discrete		DS	BEE	POM
WED	LAB(B3-DS@CSELAB5/B1DELD@CSELAB9/B2-SS)		DELD		Discrete	POM	DS
THU	DS	BEE	POM		Discrete-T	DELD	ES
FRI	LAB (BEE)		BEE-T				
SAT							

Code	Subject	Faculty	Mobile No.
18EEC01	Basic Electrical Engineering	Dr. Krishnaveni	9703411220
18CSC07	Data Structures	Smt. Sathi Durga Devi	9440698267
18CSC08	Discrete Mathematics	Dr. Y.Rama Devi	9441286660
18CSC09	Digital Electronics and Logic Design	Smt. G. Shanmukhi Rama	9949438284
18MEC09	Principles of Management	Dr. P.Prabhakar Reddy	9885468253

18CEM01	Environmental Science	Dr. K. Tirumala Reddy	9849068023
18EEC02	Basic Electrical Engineering Lab	Dr. Krishnaveni	9703411220
18CSC10	Data Structures Lab	Smt. Sathi Durga Devi	9440698267
18CSC11	Digital Electronics and Logic Design Lab	Smt. G. Shanmukhi Rama	9949438284
18EGC03	Soft Skills	Dr CH. Suvarna Ragini	9885707771
Class In-charge		Smt. Sathi Durga Devi	9440698267
Attendance/Sessional marks In-charge		Smt. G. Shanmukhi Rama	9949438284

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CHAITANYA BHARATHI INSTITUTE OF TECHNOLOGY (A)
DEPARTMENT OF COMPUTER SCIENCE AND ENGINEERING
SEMESTER-VII, 2019-20
TENTATIVE TIME TABLE

Class: BE CSE1 VII SEM w. e. f.: 01-07-2019 Room No: 201

Period Day	I 9:10-10:10	II 10:10-11:10	III 11:15-12:15		IV 1:15-2:15	V 2:15-3:15	VI 3:20-4:20
MON	ML	DSBDA	DCC	L U N C H	B2-DSBDA@CSELAB7,B1-ML@CSELAB6		
TUE	DCC	DSBDA	ML		B1-DSBDA@CSELAB7,B2-ML@CSELAB6		
WED	DSBDA	FOSS	ML		Elec-IV	Elec-V	
THU	PROJECT/SEMINARS				FOSS	Elec-IV	Elec-V
FRI	FOSS	Elec-IV	Elec-V		ML-T	DCC	
SAT							

Theory			
Code	Subject	Faculty	Mobile No.
16CSC 33	Data science and big data analytics	Smt. K. Spandana	8008205212
16CSC 34	Free and Open Source Software	Dr .M. Swamy Das	9490475959
16CSC 35	Distributed and Cloud Computing	Prof. N. Rama Devi	9492529745
16CSC 36	Machine Learning	Smt. G. Vanitha	9959959585
Elective-IV			
16CSE 10	Deep Learning	Dr. K.Sagar/ Dr.R.Ravinder Reddy	9849400136/ 9959900011
16CSE 11	Design Patterns	Smt. K.Mary Sudha Rani	9553404801

16CSE 12	Nature Inspired Algorithm	Ms. K Dharani Tejaswini	9989296765
16CSE 13	System & Network Administration	Sri. R. Srikanth	8978259394
Elective-V(OE1)			
16CEO 02	Disaster Mitigation and Management	Mr. M. Kalyan/ Mr. Shekhar Saxena	9030144407/ 939549666
16MEO 01	Entrepreneurship	Sri. B.Suryanarayana	9441959924
16MEO 06	Research Methodologies	Dr. N.V.Srinivasulu	9848592815
16CSC 37	Data science and big data analytics Lab	Smt. K. Spandana	8008205212
16CSC 38	Machine Learning Lab	Smt. G.Vanitha	9959959585
16CSC 39	Project Seminars	Dr. K.Sagar/Sri A.Mohan	9849400136/ 9948289684
Class Incharge		Smt. G.Vanitha	9959959585
Attendance/Sessional marks Incharge		Smt. K. Spandana	8008205212
Project Seminars Incharge		Sri.A.Mohan	9948289684

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DEPARTMENT OF COMPUTER SCIENCE AND ENGINEERING
SEMESTER-VII, 2019-20
TENTATIVE TIME TABLE

Class: BE CSE2 VII SEM w. e. f.: 01-07-2019 Room No: 202

Period Day	I 9:10-10:10	II 10:10-11:10	III 11:15-12:15		IV 1:15- 2:15	V 2:15- 3:15	VI 3:20- 4:20
MON	DCC	FOSS	DSBDA	L	ROJECT/SEMINARS		
TUE	DSBDA	FOSS	DCC	U	ML	ML-T	
WED	B2-DSBDA@CSELAB7,B1-ML@CSELAB6			N	Elec-IV	Elec-V	ML
THU	B1-DSBDA@CSELAB7,B2-ML@CSELAB6			C	DCC	Elec-IV	Elec-V
FRI	ML	Elec-IV	Elec-V	H	FOSS	DSBDA	
SAT							

Theory			
Code	Subject	Faculty	Mobile No.
16CSC 33	Data science and big data analytics	Dr. M. Venugopalachari	8790543298

16CSC 34	Free and Open Source Software	Smt. G R Rama Devi	8978259394
16CSC 35	Distributed and Cloud Computing	Smt. Ch. MadhaviSudha	9642104301
16CSC 36	Machine Learning	Smt. I.Srujana	9989166622
Elective-IV			
16CSE 10	Deep Learning	Dr. K.Sagar/ Dr.R.Ravinder Reddy	9849400136/ 9959900011
16CSE 11	Design Patterns	Smt. K. Mary Sudha Rani	9553404801
16CSE 12	Nature Inspired Algorithm	Ms. K Dharani Tejaswini	9989296765
16CSE 13	System & Network Administration	Sri. R. Srikanth	8978259394
Elective-V(OE1)			
16CEO 02	Disaster Mitigation and Management	Mr. M. Kalyan/ Mr. Shekhar Saxena	9030144407/ 939549666
16MEO 01	Entrepreneurship	Sri.P. Radha Krishna Prasad	
16MEO 06	Research Methodologies	Dr. N.V.Srinivasulu	9848592815
16CSC 37	Data science and big data analytics Lab	Dr.M. Venugopalachari	8790543298
16CSC 38	Machine Learning Lab	Smt. I.Srujana	9989166622
16CSC 39	Project Seminars	Dr.Y.Ramadevi/Dr.T.Sridevi	9441286660/ 9703406001
Class Incharge		Dr.M. Venugopalachari	8790543298
Attendance/Sessional marks Incharge		Smt. I.Srujana	9989166622
Project Seminars Incharge		Dr.T.Sridevi	9703406001

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DEPARTMENT OF COMPUTER SCIENCE AND ENGINEERING
SEMESTER-VII, 2019-20
TENTATIVE TIME TABLE

Class: BE CSE3 VII SEM w. e. f.: 01-07-2019 Room No: 204

Period Day	I 9:10-10:10	II 10:10-11:10	III 11:15-12:15	LUNCH	IV 1:15-2:15	V 2:15-3:15	VI 3:20-4:20
MON	B2-DSBDA@CSELAB7,B1-ML@CSELAB6				ROJECT/SEMINARS		
TUE	B1-DSBDA@CSELAB7,B2-ML@CSELAB6				DSBDA	ML-T	
WED	DSBDA	ML	DCC		Elec-IV	Elec-V	FOSS
THU	DCC	ML	FOSS		DSBDA	Elec-IV	Elec-V
FRI	ML	Elec-IV	Elec-V		FOSS	DCC	

SAT							

Theory			
Code	Subject	Faculty	Mobile No.
16CSC 33	Data science and big data analytics	Smt. Ch. Vijaya Lakshmi	
16CSC 34	Free and Open Source Software	Sri. R. Srikanth	9986575652
16CSC 35	Distributed and Cloud Computing	Sri. B. Ramana Reddy	9441441810
16CSC 36	Machine Learning	Dr. E.Padmalatha	9912233687
Elective-IV			
16CSE 10	Deep Learning	Dr. K.Sagar/ Dr.R.Ravinder Reddy	9849400136/ 9959900011
16CSE 11	Design Patterns	Smt. K.Mary Sudha Rani	9553404801
16CSE 12	Nature Inspired Algorithm	Ms. K Dharani Tejaswini	9989296765
16CSE 13	System & Network Administration	Sri. R. Srikanth	8978259394
Elective-V(OE1)			
16CEO 02	Disaster Mitigation and Management	Mr. M. Kalyan/ Mr. Shekhar Saxena	9030144407/ 939549666
16MEO 01	Entrepreneurship	Sri.P. Radha Krishna Prasad	9848223473
16MEO 06	Research Methodologies	Dr. N.V.Srinivasulu	9848592815
16CSC 37	Data science and big data analytics Lab	Smt. Ch. Vijaya Lakshmi	
16CSC 38	Machine Learning Lab	Dr. E.Padmalatha	9912233687
16CSC 39	Project Seminars	Dr.S.ChinaRamu/Dr.R.RavinderReddy	/9959900011
Class Incharge		Dr. E.Padmalatha	9912233687
Attendance/Sessional marks Incharge		Smt. Ch. Vijaya Lakshmi	
Project Seminars Incharge		Dr.R.Ravinder Reddy	9959900011

TimeTable In-charges

Smt.P. Vimala Manohara Ruth

Smt.Kavita Agrawal

Head, Dept. of CSE

CHAITANYA BHARATHI INSTITUTE OF TECHNOLOGY (A)
DEPARTMENT OF COMPUTER SCIENCE AND ENGINEERING
SEMESTER-V, 2019-20
TENTATIVE TIME TABLE

Class: BE CSE1 V SEM w. e. f.: 01-07-2019 Room No: 205

Period Day	I 9:10-10:10	II 10:10-11:10	III 11:15-12:15	L U N C	IV 1:15-2:15	V 2:15-3:15	VI 3:20-4:20
MON	SE	DCCN	ALC		DAA	ELECTIVE-2	
TUE	ALC	OS	DAA		DCCN	SE	

WED	B1-DCCN@CSELAB2,B2-OS@CSELAB3,B3-SE@CSELAB1			H	SE	ALC	ALC-T
THU	DAA	DCCN	OS		B2-DCCN@CSELAB2,B3-OS@CSELAB3,B1-SE@CSELAB1		
FRI	B3-DCCN@CSELAB2,B1-OS@CSELAB3,B2-SE@CSELAB1				DAA -T	OS	ELECTIVE-2
SAT							

Theory			
Code	Subject	Faculty	Mobile No.
16CSC17	Design and Analysis of Algorithms	Sri V. Madhusudhan Rao	9885096285
16CSC18	Automata Languages and Computation	Smt. Ch. MadhaviSudha	9642104301
16CSC19	Operating Systems	Smt.Kavita Agrawal	9704305615
16CSC20	Data Communication and Computer Networks	Smt.D.Naga Jyothi	8008023453
16CSC21	Software Engineering	Smt.T.SuvarnaKumari	9493015349
Elective-2			
16CSE04	Mobile Application Development	Smt E.Kalpana/ Smt.T.SuvarnaKumari/ Smt.SathiDurga Devi	9989843690/ 9493015349/ 9440698267
16CSE05	Computer Graphics	Sri. J.Shiva Sai	9700750020
16CSC22	Operating Systems LAB	Smt.Kavita Agrawal	9704305615
16CSC23	Data Communication and Computer Networks LAB	Smt.D.Naga Jyothi	8008023453
16CSC24	Software Engineering LAB	Smt.T.SuvarnaKumari	9493015349
Class Incharge		Smt.T.SuvarnaKumari	9493015349
Attendance/Sessional marks Incharge		Smt. Ch. MadhaviSudha	9642104301

TimeTable In-charge

Smt.P. Vimala Manohara Ruth

Smt.Kavita Agrawal

Head, Dept. of CSE

CHAITANYA BHARATHI INSTITUTE OF TECHNOLOGY (A)

DEPARTMENT OF COMPUTER SCIENCE AND ENGINEERING

SEMESTER-V, 2019-20

TENTATIVE TIME TABLE

Class: BE CSE2 V SEM w. e. f.: 01-07-2019 Room No: 206

Period Day	I 9:10-10:10	II 10:100-11:10	III 11:15-12:15		IV 1:15-2:15	V 2:15-3:15	VI 3:20-4:20
MON	B1-DCCN@CSELAB2,B2-OS@CSELAB3,B3-SE@CSELAB1			L	ALC	ELECTIVE-2	
TUE	B3-DCCN@CSELAB2,B1-OS@CSELAB3,B2SE@CSELAB1			U	ALC	OS	DAA-T
WED	DAA	SE	DCCN	N	B2-DCCN@CSELAB2,B3-OS@CSELAB3,B1-SE @CSELAB1		
THU	SE	DAA	OS	C	DCCN	ALC-T	
FRI	ALC	SE	OS	H	DCCN	DAA	ELECTIVE-2
SAT							

Theory			
Code	Subject	Faculty	Mobile No.
16CSC17	Design and Analysis of Algorithms	Ms. Madhurima Rana	9641594817
16CSC18	Automata Languages and Computation	Smt. Isha Padhy	8125125891
16CSC19	Operating Systems	Dr .M.Swamy Das	9490475959
16CSC20	Data Communication and Computer Networks	Sri. A. Mohan	9948289684
16CSC21	Software Engineering	Dr S.China Ramu	
Elective-2			
16CSE04	Mobile Application Development	Smt E.Kalpana/ Smt.T.SuvarnaKumari/ Smt.SathiDurga Devi	9989843690/ 9493015349/ 9440698267
16CSE05	Computer Graphics	Sri. J.Shiva Sai	9700750020
16CSC22	Operating Systems LAB	Ms. Madhurima Rana/ Dr .M.Swamy Das	9641594817/ 9490475959
16CSC23	Data Communication and Computer Networks LAB	Sri. A. Mohan	9948289684
16CSC24	Software Engineering LAB	Smt. Poonguzhar Selvi/ Dr S.China Ramu	9092442647
Class In charge		Sri. A. Mohan	9948289684
Attendance/Sessional marks Incharge		Smt. Isha Padhy	8125125891

TimeTable In-charge

Smt.P. Vimala Manohara Ruth

Smt.Kavita Agrawal

Head, Dept. of CSE

3. CHAITANYA BHARATHI INSTITUTE OF TECHNOLOGY (A) DEPARTMENT OF COMPUTER SCIENCE AND ENGINEERING SEMESTER-V, 2019-20

TENTATIVE TIME TABLE

Class: BE CSE3 V SEM w. e. f.: 01-07-2019 Room No: 208

Period Day	I 9:10-10:10	II 10:100-11:10	III 11:15-12:15	LUNCH	IV 1:15-2:15	V 2:15-3:15	VI 3:20-4:20
MON	DCCN	SE	ALC		OS	ELECTIVE-2	
TUE	DAA	ALC	SE		B2-DCCN@CSELAB2,B3-OS@CSELAB3,B1-SE@ CSELAB1)		
WED	B1-DCCN@TPOLAB2,B2-OS@TPOLAB1,B3-SE@CSELAB8				DAA	DCCN	
THU	B3-DCCN@CSELAB2,B1-OS@CSELAB3,B2-SE @CSELAB1				OS	ALC-T	DAA-T
FRI	ALC	DCCN	OS		SE	DAA	ELECTIVE-2
SAT							

Theory			
Code	Subject	Faculty	Mobile No.
16CSC17	Design and Analysis of Algorithms	Smt. A.Sangeetha	9949997684
16CSC18	Automata Languages and Computation	Sri. B. Ramana Reddy	9441441810
16CSC19	Operating Systems	Smt. G R Rama Devi	9986575652
16CSC20	Data Communication and Computer Networks	Smt. E. Swathi	8143369095
16CSC21	Software Engineering	Smt. K. Mary Sudha Rani	9553404801
Elective-2			
16CSE04	Mobile Application Development	Smt E.Kalpana/ Smt.T.SuvarnaKumari/ Smt.SathiDurga Devi	9989843690/ 9493015349/ 9440698267
16CSE05	Computer Graphics	Sri. J.Shiva Sai	9700750020
16CSC22	Operating Systems LAB	Smt. G R Rama Devi	9986575652
16CSC23	Data Communication and Computer Networks LAB	Smt. E. Swathi	8143369095
16CSC24	Software Engineering LAB	Smt. K. Mary Sudha Rani	9553404801
Class Incharge		Smt. A.Sangeetha	9949997684
Attendance/Sessional marks Incharge		Smt. K. Mary Sudha Rani	9553404801

TimeTable In-charge Head, Dept. of CSE

Smt.P. Vimala Manohara Ruth

Smt.Kavita Agrawal

CHAITANYA BHARATHI INSTITUTE OF TECHNOLOGY (A)
Department of Computer Science and Engineering

MINUTES OF BOS-MEETING

CSE Department BOS meeting (Online) was conducted on **25-07-2020** at 2.00 PM.

Agenda

1. To Confirm the minutes of BOS meeting held on 19-03-2019
2. Revising of Department Vision,Mission, PEOs and PSOs
3. Defining PEOs and PSOs for new programmes BE-CSE (AI & ML), BE-CSE (IoT and CS including Blockchain)
4. Finalization of BE(CSE) R18 syllabus (V,VI,VII,VIII)
5. Revising Course Outcomes for PG R19 Syllabus.
6. R20 structure and finalization of syllabus of PPS and OOPs syllabus under R20 scheme
7. Identification of Courses for Award of Degrees MINOR and HONOURS
8. Any other items with the permission of chair

The following members were present:

Sno	Name	Organization	Designation	
1	Dr. P Ravinder Reddy	Principal, CBIT	Member	Present
2	Dr. Y Ramadevi	Head, CSE Dept., CBIT	Chairperson	Present
3	Dr. Sameen Fathima	Prof(Rtd), OUCE	Nominee, OU	Present
4	Dr. P Shyamala	Prof, CSE Dept., OUCE	University Expert	Present
5	Dr. Vineeth Balasubramanian	IIT Hyderabad	University Expert	Absent
6	Mr. P Shaymsunder	MD, GGK Technologies	Member, Corporate	Absent
7	M. V Kasireddy	Center Head, ThoughtWorks	Member, Industry	Present
8	Mr. Praveen Ch	Tech Lead, Newsclick, Hyd	Member, Industry	Present
9	Dr. M A Wajeed	Professor, KMIT	Alumni	Present
10	Prof. M Swamy Das	Professor, CSE Dept.	Member	Present
11	Prof. K Sagar	Professor, CSE Dept.	Member	Present
12	Prof. S China Ramu	Professor, CSE Dept.	Member	Present
13	Prof. N Ramadevi	Professor, CSE Dept.	Member	Present
14	Dr. T.Sridevi	Assoc. Professor, CSE Dept.	Member	Present
15	Dr. R.Ravinder Reddy	Assoc. Professor, CSE Dept.	Special Invitee	Present
16	Mr. G. Vivek	Asst. Professor, CSE Dept.	Member	Present
17	Dr.SriramBirudavolu	DSCI- Chair person	Special Invitee	Present
18	Dr. Sangeeta Gupta	Assoc. Professor, CSE Dept.	Special Invitee	Present
19	I. Srujana	Asst. Professor, CSE Dept.	Special Invitee	Present
20	A. Sangeetha	Asst. Professor, CSE Dept.	Special Invitee	Present
21	Ch.Madhavi Sudha	Asst. Professor, CSE Dept.	Special Invitee	Present
22	K.DharaniTejaswini	Asst. Professor, CSE Dept.	Special Invitee	Present
23	Mr. ViharKurama	Caravel AI Technologies	Special Invitee	Present

The Chairperson welcomed all the BoS members and informed about the sanction of two new UG Programmes under CSE Department for the Academic Year 2020-21
The new programmes are a) BE CSE with Artificial Intelligence and Machine Learning
b) BE CSE with IoT and Cybersecurity including Blockchain

The Committee has resolved for following modifications

1. **To confirm the minutes of BOS meeting held on 19/03/2019.**
   Minutes of BOS meeting held on **19/03/2019**were confirmed.

2. **Revision of Department Vision, Department Mission, PEOsand PSOs**
   a. Revised Department Vision and Mission were approved.
   b. BE CSE Program Educational Objectives and Program Specific Outcomes were revised.

3. **Defining PEOs and PSOs for new programmes BE-CSE (AI & ML), BE-CSE (IoT and CS including Blockchain)**
   a. PEOs and PSOs for BE (CSE with Artificial Intelligence and Machine Learning) were defined.
   b. PEOs and PSOs for BE (CSE with IoT and Cybersecurity including Blockchain) were defined.

4. **Finalization of BE(CSE) R18 syllabus (V,VI,VII,VIII)**
   a. Gender Sensitization course to be studied as mandatory course
   b. Introduce Social Media Analytics, Devops as courses.
   c. NPTEL/MOOCs or equivalent course to be identified to enable students to do internship.

5. **Course outcomes were revised for PG R19 Syllabus**

6. **R20 structure and finalization of syllabus of PPS and OOPs syllabus under R20 scheme**
   a. R20 structure and scheme were presented for all the three programs.
   b. Since I and II semester were common for all the three programs, the scheme was accepted.
   c. Prof. K. Shyamala suggested to take inputs from Industry personnel and alumini for courses in professional electives/open electives
   d. Prof. M.Swamydas briefed about Engineering Exploration and Industry 4.0 Syllabus

7. **NPTEL / SWAYAM Courses were identified for the award of Degrees of MINOR and HONOURS.**

8. **Any other item with the permission of chair.**
   a. Rectification of Open Elective titles of :
   16CS O10 -Basics of Machine Learning Using Python to **Machine Learning Using Python**
   16CS O05Principles of Virtual Reality to **Fundamentals of Virtual Reality**

b. Dr.SriRam has suggested to go through the structure given by NASCOM-Boston Consulting group - Employability Skills Course and also NASSCOM QP LEVELS.
   i. Ref: https://futureskills.nasscom.in/
c. Virtual Labs to be encouraged.
d. Encourage students for NPTEL / any other certification courses.
e. Case studies to be included / encouraged in labs

Chairperson, BOS, CSE

18C.SO 16

MACHINE LEARNING USING PYTHON
(Open Elective)

Instruction	3 Hours per week
Duration of End Examination	3 Hours
Semester End Examination	70 Marks
CIE	30 Marks
Credits	3

Course Objectives: The main objectives of this course are:

1. Get an idea of Machine Learning algorithms to solve real world problems.
2. Study various machine learning algorithms.
3. Analyze data using machine learning techniques.

Course Outcomes: On Successful completion of this course, student will be able to

1. Define the basic concepts related to Python and Machine Learning.
2. Describe the feature engineering methods, regression techniques and classification methods.
3. Apply Python packages for data visualization. text and time series data analysis using NLP toolkit.
4. Evaluate and interpret the results of the various machine learning techniques.
5. Identify different clustering algorithms.
6. Solve real world problems using deep learning framework.

UNIT - I

Introduction to Machine Learning: Introduction, Machine Learning process. Introduction to Python: Features, sources and installation of Python, IDEs, Basics of Python, Data Structures and loops.

UNIT - II

Feature Engineering: Introduction to Features and need of feature Engineering, Feature extraction and selection, Feature Engineering Methods, Feature Engineering with Python. Data Visualization: Various charts, histograms, plots.

UNIT - III

Regression: Simple and multiple regressions, Model assessment, various types of errors, errors, ridge regression, Lasso regression, non-parameter regression. Classification: Linear classification, logistic regression, Decision Trees, Random Forest, Naïve Bayes.

UNIT - IV

Unsupervised Learning: Clustering, K-Means clustering, Hierarchical clustering. Text Analysis: Basic text analysis with Python, regular expressions, NLP, text classification. Time Series Analysis: Date and time handling, window functions, correlation, time series forecasting.

UNIT - V

Neural Network and Deep Learning: Neural network- gradient descent, activation functions, parameter initialization, optimizer, loss function, deep learning, deep learning architecture, memory, deep learning framework. Recommender System: Recommendation engines, collaborative filtering.

Text Books:

1. Abhishek Vijavargia "Machine Learning using Python", BPB Publications, 1st Edition, 2018
2. Tom Mitchel "Machine Learning", Tata McGraWHill, 2017
3. Reema Thareja "Python Programming", Oxford Press, 2017.

Suggested Reading:

1. Yuxi Liu, "Python Machine Learning by Example", 2nd Edition, PACT, 2017

Online Resources:

1. https://www.guru99.com/machine-learning-tutorial.html
2. https://www.tutorialspoint.com/machine_learning_with_python/index.htm
3. https://www.tutorialspoint.com/python/
4. https://docs.python.org/3/tutorial/
5. https://www.geeksforgeeks.org/machine-learning/

8CSC27

CASE STUDY

Instruction	2 Hours per week
Duration of End Examination	2 Hours
Semester End Examination	35 Marks
Continuous Internal Evaluation	15 Marks
Credits	1

Case studies are common in engineering where we analyse (study) situations. Case study exercise is a realistic simulation of a real life situation or strategic problem we are likely to encounter in our workplace or surroundings. A case study is actually "analysing, applying engineering and science knowledge, reasoning and drawing conclusions" to solve a real situation. Case studies are different types including historical, real life, problem oriented etc.

Course Objectives: The objectives of this course are

1. To expose students to real life problems/events/situations and technologies
2. To promote individual study, critical thinking and group discussions to build team work
3. To inculcate the culture of self-learning, professional ethics communication

Course Outcomes: On successful completion of the case study, students will be able to

1. Understand real life situations, problems, developments of technologies in Computer science
2. Interpret, analyse, and think critically about the events, situations and gather information from varioussources for formulating solutions
3. Apply learned knowledge and commit to decisions
4. Evaluate the approach and solution to the event/problem by considering efficiency and optimization
5. Communicate efficiently both in written and orally to discuss the recommendations

Suggestions to select case studies

- For a real situation case study, you can choose an event at your workplace to analyse.
- For a historical case study, you can take a recent collapse/development of a company /technology /project (Cambridge Analytica, Google, Facebook, AI, ML, IoT, GitHub, GNU, LibreOffice, FOSS etc.) and analyse what went wrong or gave raise.
- For a problem oriented case study, choose a problem where they need to (Situation-- Problem-Solution(s)-- Evaluation):
    - understand the situation faced (significance),
    - analyse the specific problem to be tackled,
    - create, analyse, and refine a solution and
    - further evaluate, improve and implement

Instructions:

- Students need to choose a case in consultation with any one of their class teachers and mentor
- The topic should be confined to the areas/courses of AI, SE, IoT,
- Submit an abstract consisting of the significance, objectives, methodology and work plan by the end of 3rd week
- Every week they need to show progress to the concerned teacher and mentor
- Shall present/demonstrate and submit a report(read the Case Study guide lines)

Assessment: The main focus of case studies are to assess the approach and the solution arrived. In fact, case studies are usually designed not to have one 'correct' answer. As long as the students justify their recommendation, and stand up to interrogation from the assessor, they are likely to score marks. Students will be monitored by an internal teacher along with their mentors and evaluated by the external examiner at end.

ENGINEERING EXPLORATION
(PRACTICAL)

Instruction	4 Hours per week
Duration of SEE	Nil
SEE	Nil
CIE	50Marks
Credits	1.5

Prerequisites: Nil

Course Outcomes: At the end of the course, the students are able to

1. Understand the role of an engineer as a problem solver.
2. Identify multi-disciplinary approaches in solving an engineering problem.
3. Build simple systems using engineering design process.
4. Analyze engineering solutions from ethical and sustainability perspectives.
5. Use basics of engineering project management skills in doing projects.

UNIT- I

Role of Engineers: Introduction, science, engineering, technology, engineer, scientist, role of engineer, various disciplines of engineering, misconception of engineering, expectations for the 21st century engineer and NBA graduate attributes.

Engineering problems and Design: Multidisciplinary facet of design, pair wise comparison chart, introduction to econometrics system, generation of multiple solution, Pugh chart, motor and battery sizing concepts, introduction to PCB design.

UNIT- II

Mechanisms: Basic components of a mechanism, degrees of freedom or mobility of a mechanism, 4-bar chain, crank rocker mechanism, slider crank mechanism, simple robotic arm building.

Platform-based development: Introduction to programming platforms (Arduino) and its essentials, sensors, transducers and actuators and their interfacing with Arduino.

UNIT- III

Data Acquisition and Analysis: Types of data, descriptive statistics techniques as applicable to different types of data, types of graphs and their applicability, usage of tools (MS-Office /Open Office/ Libre Office / Scilab) for descriptive statistics, data acquisition (temperature and humidity) using sensors interfaced with Arduino, exporting acquired data to spreadsheets, and analysis using representation.

UNIT- IV

Process Management: Introduction to Agile practice, significance of team work, importance of communication in engineering profession, project management tools, checklist, timeline, Gantt chart, significance of documentation.

UNIT -V

Engineering Ethics & Sustainability in Engineering: Identifying Engineering as a profession, significance of professional ethics, code of conduct for engineers, identifying ethical dimensions in different tasks of engineering, applying moral theories and codes of conduct for resolution of ethical dilemmas.

Sustainability in Engineering: Introduction, sustainability leadership, life cycle assessment, carbon foot print.

Text Books:

1. Clive L. Dym, Patric Little, Elizabeth J Orwin, "Engineering Design: A project-based introduction", 4th edition, Willey.
2. Matthew Python, "Arduino programming for beginners", Independently published, 2020.
3. Patrick F. Dunn , "Measurement and data Analysis for engineering and science" , thirdedition, 2014.
4. Andrew Stellman, Jennifer Greene, "Head First Agile: A brain-friendly guide to Agile principles, ideas, and real-world practices", Kindle Edition.

DEVOPS
(PROFESSIONAL ELECTIVE-V)

Instruction	3 Hours per week
Duration of End Examination	3 Hours
Semester End Examination	70 Marks
CIE	30 Marks
Credits	3

Course Objectives: The main objectives of this course are to

1. Describe the agile relationship between development and IT operations.
2. Understand the skill sets and high-functioning teams involved in DevOps and related methods to reach a continuous delivery capability
3. Implement automated system update and DevOps lifecycle

Course Outcomes: On successful completion of this course, students will be able to:

4. Identify components of Devops environment
5. Describe Software development models and architectures of DevOps
6. Apply different project management, integration, testing and code deployment tool
7. Investigate different DevOps Software development models
8. Assess various Devops practices
9. Collaborate and adopt Devops in real-time projects

UNIT-I

Introduction: Introduction, Agile development model, DevOps, and ITIL. DevOps process and Continuous Delivery, Release management, Scrum, Kanban, delivery pipeline, bottlenecks, examples

UNIT-II

Software development models and DevOps: Waterfall, Spiral, RAD model, Agile Development, 7 C's of DevOps Lifecycle for Business Agility, DevOps, and Continuous Testing.
DevOps influence on Architecture: Introducing software architecture, The monolithic scenario, Architecture rules of thumb, The separation of concerns, Handling database migrations, Microservices, and the data tier, DevOps, architecture, and resilience.

UNIT-III

Introduction to project management: The need for source code control, The history of source codemanagement, Roles and code, source code management system and migrations, Shared authentication, HostedGit servers, Different Git server implementations, Docker intermission, Gerrit, The pull request model, GitLab. **Integrating the system:** Build systems, Jenkins build server, Managing build dependencies, Jenkins plugins,and file system layout, The host server, Build slaves, Software on the host, Triggers, Job chaining and buildpipelines, Build servers and infrastructure as code, Building by dependency order, Build phases, Alternativebuild servers, Collating quality measures.

UNIT-IV

Testing Tools and automation: Various types of testing, Automation of testing Pros and cons, Selenium - Introduction, Selenium features, JavaScript testing, Testing backend integration points, Test-driven development, REPL-driven development
Deployment of the system: Deployment systems, Virtualization stacks, code execution at the client, Puppet master and agents, Ansible, Deployment tools: Chef, SaltStackand Docker

UNIT-V

Code monitoring and Issue Tracking: Code monitoring tools: Nagios, Munin, Ganglia, Log handling. Introduction to issue trackers, Need of issue tracker: Workflows and issues, Problems with issue tracker proliferation, Trackers tools: Bugzilla, GitLab tracker, andJira

Textbooks

1. Joakim Verona. Practical Devops, Second Edition. Ingram short title; 2nd edition (2018). ISBN-10: 1788392574
2. Deepak Gaikwad, Viral Thakkar. DevOps Tools from Practitioner's Viewpoint. Wiley publications. ISBN: 9788126579952

Reference books

1. Len Bass, Ingo Weber, Liming Zhu. DevOps: A Software Architect's Perspective. Addison Wesley;ISBN-10: 9780134049847

18CSO 08

OPEN SOURCE TECHNOLOGIES
(Open Elective)

Instruction	3 Hours per week
Duration of End Examination	3 Hours
Semester End Examination	70 Marks
CIE	30 Marks
Credits	3

Course Objectives: The main objectives of this course are:

1. Familiarity with Open Source Technologies.
2. Examples of OSS Projects, Advantages of Open Source.
3. Understand the principles, methodologies of OSS.
4. Understand the policies, licensing procedures and ethics of OSS.

Course Outcomes: On Successful completion of this course, student will be able to

1. Able to differentiate between Open Source and Proprietary software and Licensing.
2. Recognize the applications, benefits and features of Open Source Technologies.
3. Understand and demonstrate Version Control System along with its commands.
4. Gain knowledge to start, manage open source projects.
5. Understand and practice the Open Source Ethics.

UNIT I –

Introduction to Open Source: Open Source, need of Open Source, Open Source Principles, Open Source Standards Requirements for Software, OSS success, Free Software, Examples, Licensing, Free Software Vs. Proprietary Software, Public Domain software, History of free software, Proprietary Vs Open Source Licensing Model, use of Open Source Software.

UNIT II –

Fault Tolerant Design: Principles and Open Source Methodology- History, Open Source Initiatives, Open Standards Principles, Methodologies, Philosophy, Software freedom, Open Source Software Development, Licenses, Copyright vs. Copyleft, Patents, zero marginal cost, income-generation Opportunities, Internationalization.

UNIT III –

Case Studies: Apache, BSD, Linux, Mozilla Firefox, Wikipedia, Git, GNU CC, Libre Office.

UNIT IV –

Open Source Project: Starting and Maintaining an Open Source Project, Open Source Hardware, Open Source Design, Open Source Teaching (OST), Open Source Media, What Is A License, How to create your own Licenses. Important FOSS Licenses (Apache, BSD, PL, LGPL), copyrights and copy lefts, Patent.

UNIT V –

Open Source Ethics- Open Source Vs. Closed Source, Open Source Government, Ethics of Open Source, Social and Financial Impact of Open Source Technology, Shared Software, Shared Source, Open Source as a Business Strategy.

Text Books:

1. Kailash Vadera, Bjhavesh Gandhi "Open Source Technology", University Science Press, 1st Edition, 2009.
2. Fadi P. Deek and James A. M. McHugh, "Open Source Technology and Policy", Cambridge University Press.

Suggested Reading:

1. Wale Soyinka, "Linux Administration- A beginner's Guide", Tata McGraw Hills.
2. Andrew M. St. Laurent, "Understanding Open Source and Free Software Licensing", O'Reilly Media.
3. Dan Woods, Gautam Guliani, "Open Source for the Enterprise", O'Reilly Media.
4. Bernard Golden, "Succeeding with Open Source", Addison-Wesley Professional.
5. Clay Shirky and Michael Cusumano, "Perspectives on Free and Open Source Software", MIT press.

CYBER SECURITY
(PROFESSIONAL ELECTIVE-IV)

Instruction	3 Hours per week
Duration of End Examination	3 Hours
Semester End Examination	70 Marks
CIE	30 Marks
Credits	3

Pre-requisites: Operating System, Computer Network, Cryptography

Course Objectives: The objectives of this course are

1. To Identify and present indicators that a cybercrime has occurred and understand methods and tools used in cybercrimes.
2. To collect, Process, Analyze and Present Computer Forensics Evidence.
3. To understand the legal perspectives and Organizational implications of Cyber Security

Course Outcomes: On Successful completion of this course, student will be able to

1. List the different types of cybercrimes and analyze legal frameworks to handle cybercrimes.
2. Identify the Tools and Methods used in cybercrimes.
3. Analyze and resolve cyber security issues and laws governing Cyberspace.
4. Describe the need of Digital Forensics and the importance of digital evidence in prosecution.
5. Interpret the commercial activities in the event of significant information security incidents in the Organization.
6. Discuss the vulnerabilities in networking protocols and their mitigation techniques.

UNIT - I

Introduction to Cyber Crime: Cyber Crime: Definition and Origins of the Word, Cyber crime and Information Security, Classification of Cyber Crimes, Cyber Crime: The Legal Perspective, Cyber Crime: An Indian Perspective, A Global Perspective of Cyber Crime.

UNIT - II

Cyber Offenses: Introduction, How Criminals plan the Attacks, Social Engineering, Cyber stalking, Cyber cafe and Cybercrimes, Botnets: The Fuel for Cybercrime, Attack Vector. **Tools and Methods Used in Cybercrime:** Introduction, Proxy Servers and Anonymizers, Phishing, Password Cracking, Keyloggers and Spywares, Virus and Worms, Trojan Horse and Backdoors, Steganography, DoS and DDoS attacks, SQL Injection, Buffer Overflow.

UNIT - III

Cyber Security: The Legal Perspectives**:** Cyber Crime and the Legal Landscape around the World, Need of Cyber laws: the Indian Context, The Indian IT Act, Challenges to Indian Law and Cyber Crime Scenario in India, Digital Signatures and the Indian IT Act, Cyber Crime and Punishment, Cyber Law, Technology and Students: The Indian Scenario.

UNIT - IV

Understanding Cyber Forensics: Introduction ,Digital Forensics Science, Need for Computer Forensics, Cyber Forensics and Digital Evidence, Forensics Analysis of Email, Digital Forensics Life Cycle, Chain of Custody Concept, Network Forensics, Approaching a Cyber Forensics Investigation, Challenges in Computer Forensics.

UNIT - V

Cyber security: Organizational Implications: Introduction, Cost of Cybercrimes and IPR issues, Web threats for Organizations, Security and Privacy Implications, Social media marketing: Security Risks and Perils for Organizations, Social Computing and the associated challenges for Organizations.

Text Books:

1. Sunit Belpre and Nina Godbole, "Cyber Security: Understanding Cyber Crimes, Computer Forensics And Legal Perspectives", Wiley India Pvt,Ltd,2011
2. Kevin Mandia, Chris Prosise, "Incident Response and computer forensics", Tata McGraw Hill, 2006.

Suggested Reading:

1. Alfred Basta, Nadine Basta, Mary Brown, Ravinder Kumar, "Cyber Security and Cyber Laws", Paperback – 2018.
2. Mark F Grady, Fransesco Parisi, "The Law and Economics of Cyber Security", Cambridge university press, 2006.

Online Resources:

1. https://www.edx.org/learn/cybersecurity
2. https://www.coursera.org/courses?query=cyber%20security
3. https://swayam.gov.in/course/4002-cyber-law

18CSE32

SOCIAL NETWORKING AND ITS IMPACT
(PROFESSIONAL ELECTIVE-VI)

Instruction	3 Hours per week
Duration of End Examination	3 Hours
Semester End Examination	70 Marks
CIE	30 Marks
Credits	3

Course Objectives: The objectives of this course are

1. Familiarize the students with social networks and their representation.
2. Understand the impact of social networks on society.
3. Study and Analyze the social network search models.

Course Outcomes: On Successful completion of this course, student will be able to

1. Identify the significance of social networks, representation, ranking techniques and challenges.
2. Understand a broad range of social networks concepts and theories.
3. Ascertain the network analysis knowledge in a diversified aspect of society.
4. Analyze social network links and web search.
5. Differentiate between centralized and decentralized search models.
6. Generate and Communicate the analysis results and impact of social networks.

UNIT - I

Introduction: to Social Networks: Introduction to Social Networks, Challenges, Google page rank, Searching on network, link prediction, contagious, marketing on social networks.

Graphs: Basic definitions, paths and connectivity, distance and breadth first search, network datasets. **Strong and Weak Ties**: Triadic closure, strength of weak Ties, Tie strength and network structure in large-scale data, Tie strength, social media and passive engagement, closure, structured holes and social capital.

UNIT - II

Networks in surrounding contexts: Homophily, selection and social influence, affiliation, tracking link formation in online data, spatial model of segregation. **Positive and negative relationships**: Structural balance, characterizing the structure of balanced networks, applications of structured balance.

UNIT - III

Link analysis and Web search: Searching the web, ranking, link analysis using hubs and authorities, page rank, link analysis in modern web search, applications beyond web.

Cascading behavior in networks: Diffusion in networks, modeling diffusion, cascades and clusters, diffusion, thresholds and role of weak Ties, extensions of cascade model, knowledge, thresholds and collective actions.

UNIT - IV

Power Laws and Rich-get-Richer Phenomena: Popularity as a network phenomenon, power laws, rich-get-richer models, unpredictability of rich-get-richer effects, effects of search tools and recommender systems, analysis of rich-get-richer processes. Pseudo core- how to go viral on the web.

UNIT - V

Small world phenomenon: Six degrees of separation, structured and randomness, decentralized search, modeling the process of decentralization search, empirical analysis and generalized models, core-peiphery structures and difficulties in decentralized search, analysis of decentralized search.

Text Books :

1. David Eas ley, Jon Kleinberg, "Networks, Crowds and Markets", Cambridge Press, 2010 (available for free download).
2. Mathew O Jackson "Social and Economic Networks", Princeton University, 2010.

Suggested Reading:

1. Stephen P Borgatti, Martin G. Everett , Jeffrey C. Johnson, "Analyzing Social Networks", 2018, Second edition, SAGE Publications Ltd.
2. Krishna Raj P.M., Ankith Mohan, K.G. Srinivasa, "Practical Social Network Analysis with Python", Computer Communications and Networks, Springer; 1st ed. 2018 edition, ISBN-10: 9783319967455.

Online Resources:

1. https://nptel.ac.in/downloads/106106169/

INDUSTRY 4.0

Instruction	3 Hours per week
Duration of End Examination	3Hours
SEE	60 Marks
CIE	40Marks
Credits	3

Prerequisite: Nil. No prior technical background is required

Course Objectives: The main objectives of this course are to:

1. Offer the students an introduction to Industry 4.0 and its applications to in the business world
2. Give deep insights into how smartness is being harnessed from data and appreciate what needs to be done in order to overcome some of the challenges

Course Outcomes: On successful completion of this course, students will be able to:

1. Identify the key drivers and enablers of Industry4.0
2. Describe the smartness in smart factories, smart cities, smart products, ad smart services
3. Determine various systems used in manufacturing plants, and their role in an Industry 4.0world
4. Illustrate the power of Cloud Computing in a networked economy
5. Understand the opportunities, challenges, brought about by Industry 4.0 and how organizations and individuals should prepare to reap the benefits

UNIT-1

Introduction to Industry 4.0: Various Industrial revolutions, Digitalization and the networked economy, drivers, enablers, compelling forces and challenges for Industry 4.0,Mega trends, Tipping points, comparison of Industry 4.0 Factory and Today's Factory, trends of industrial Big Data and predictive analytics for business transformation

UNIT-2

Road to Industry 4.0: Internet of Things(IoT) and Industrial Internet of Things (IIoT) and Internet of Services, smart manufacturing, smart devices and products, smart logistics, smart cities, predictive analytics

UNIT-3

Related disciplines, systems, technologies for enabling Industry 4.0: Cyber physical systems, robotic automation and collaborative robots, support system for Industry 4.0, mobile computing, related disciplines, Cyber security, Augmented Reality and Virtual Reality, Artificial Intelligence

UNIT-4

Role of data, information, knowledge and collaboration: Resource-based view of a firm, data as a new resource for organizations, harnessing and sharing knowledge in organizations, cloud computing basics, cloud computing and Industry 4.0

UNIT-5

Other Applications and Case Studies: Industry 4.0 laboratories, IIoT case studies, Opportunities and challenges, future of works and skills for workers in the Industry 4.0 era, strategies for competing in an Industry world

Text Book:

1. Klaus Schwab. The Fourth Industrial Revolution. 2017. Portfolio Penguin.
2. Pranjal Sharma. India Automated: How the Fourth Industrial Revolution is Transforming India. 2019. Macmillan; 1edition
3. https://swayam.gov.in/nd1_noc20_cs69/preview

Suggested Reading:

1. Bruno S. Sergi, Elena G. Popkova, Aleksei V. Bogoviz, Tatiana N. Litvinova. Understanding Industry 4.0: AI, the Internet of Things, and the Future of Work. 2019. Emerald Publishing Limited. ISBN: 9781789733129
2. Dominik T. Matt, Vladimír Modrák, Helmut Zsifkovits. Industry 4.0 for SMEs: Challenges, Opportunities and Requirements. Palgravemacmillan

CHAITANYA BHARATHI INSTITUTE OF TECHNOLOGY (A)
Department of Computer Science and Engineering

MINUTES OF BOS-MEETING

CSE Department BOS meeting (Online) was conducted on **25-07-2020** at 2.00 PM.

Agenda

1. To Confirm the minutes of BOS meeting held on 19-03-2019
2. Revising of Department Vision,Mission, PEOs and PSOs
3. Defining PEOs and PSOs for new programmes BE-CSE (AI & ML), BE-CSE (IoT and CS including Blockchain)
4. Finalization of BE(CSE) R18 syllabus (V,VI,VII,VIII)
5. Revising Course Outcomes for PG R19 Syllabus.
6. R20 structure and finalization of syllabus of PPS and OOPs syllabus under R20 scheme
7. Identification of Courses for Award of Degrees MINOR and HONOURS
8. Any other items with the permission of chair

The following members were present:

Sno	Name	Organization	Designation	
1	Dr. P Ravinder Reddy	Principal, CBIT	Member	Present
2	Dr. Y Ramadevi	Head, CSE Dept., CBIT	Chairperson	Present
3	Dr. Sameen Fathima	Prof(Rtd), OUCE	Nominee, OU	Present
4	Dr. P Shyamala	Prof, CSE Dept., OUCE	University Expert	Present
5	Dr. Vineeth Balasubramanian	IIT Hyderabad	University Expert	Absent
6	Mr. P Shaymsunder	MD, GGK Technologies	Member, Corporate	Absent
7	M. V Kasireddy	Center Head, ThoughtWorks	Member, Industry	Present
8	Mr. Praveen Ch	Tech Lead, Newsclick, Hyd	Member, Industry	Present
9	Dr. M A Wajeed	Professor, KMIT	Alumni	Present
10	Prof. M Swamy Das	Professor, CSE Dept.	Member	Present
11	Prof. K Sagar	Professor, CSE Dept.	Member	Present
12	Prof. S China Ramu	Professor, CSE Dept.	Member	Present
13	Prof. N Ramadevi	Professor, CSE Dept.	Member	Present
14	Dr. T.Sridevi	Assoc. Professor, CSE Dept.	Member	Present
15	Dr. R.Ravinder Reddy	Assoc. Professor, CSE Dept.	Special Invitee	Present
16	Mr. G. Vivek	Asst. Professor, CSE Dept.	Member	Present
17	Dr.SriramBirudavolu	DSCI- Chair person	Special Invitee	Present
18	Dr. Sangeeta Gupta	Assoc. Professor, CSE Dept.	Special Invitee	Present
19	I. Srujana	Asst. Professor, CSE Dept.	Special Invitee	Present
20	A. Sangeetha	Asst. Professor, CSE Dept.	Special Invitee	Present
21	Ch.Madhavi Sudha	Asst. Professor, CSE Dept.	Special Invitee	Present
22	K.DharaniTejaswini	Asst. Professor, CSE Dept.	Special Invitee	Present
23	Mr. ViharKurama	Caravel AI Technologies	Special Invitee	Present

The Chairperson welcomed all the BoS members and informed about the sanction of two new UG Programmes under CSE Department for the Academic Year 2020-21
The new programmes are a) BE CSE with Artificial Intelligence and Machine Learning
b) BE CSE with IoT and Cybersecurity including Blockchain

The Committee has resolved for following modifications

1. **To confirm the minutes of BOS meeting held on 19/03/2019.**
   Minutes of BOS meeting held on **19/03/2019**were confirmed.

2. **Revision of Department Vision, Department Mission, PEOsand PSOs**
   a. Revised Department Vision and Mission were approved.
   b. BE CSE Program Educational Objectives and Program Specific Outcomes were revised.

3. **Defining PEOs and PSOs for new programmes BE-CSE (AI & ML), BE-CSE (IoT and CS including Blockchain)**
   a. PEOs and PSOs for BE (CSE with Artificial Intelligence and Machine Learning) were defined.
   b. PEOs and PSOs for BE (CSE with IoT and Cybersecurity including Blockchain) were defined.

4. **Finalization of BE(CSE) R18 syllabus (V,VI,VII,VIII)**
   a. Gender Sensitization course to be studied as mandatory course
   b. Introduce Social Media Analytics, Devops as courses.
   c. NPTEL/MOOCs or equivalent course to be identified to enable students to do internship.

5. **Course outcomes were revised for PG R19 Syllabus**

6. **R20 structure and finalization of syllabus of PPS and OOPs syllabus under R20 scheme**
   a. R20 structure and scheme were presented for all the three programs.
   b. Since I and II semester were common for all the three programs, the scheme was accepted.
   c. Prof. K. Shyamala suggested to take inputs from Industry personnel and alumini for courses in professional electives/open electives
   d. Prof. M.Swamydas briefed about Engineering Exploration and Industry 4.0 Syllabus

7. **NPTEL / SWAYAM Courses were identified for the award of Degrees of MINOR and HONOURS.**

8. **Any other item with the permission of chair.**
   a. Rectification of Open Elective titles of :
   16CS O10 -Basics of Machine Learning Using Python to **Machine Learning Using Python**
   16CS O05Principles of Virtual Reality to **Fundamentals of Virtual Reality**

b. Dr.SriRam has suggested to go through the structure given by NASCOM-Boston Consulting group - Employability Skills Course and also NASSCOM QP LEVELS.
    i. Ref: https://futureskills.nasscom.in/
c. Virtual Labs to be encouraged.
d. Encourage students for NPTEL / any other certification courses.
e. Case studies to be included / encouraged in labs

Chairperson, BOS, CSE