List of New Course(s) Introduced

Department	: *Computer Science and Engineering*
Programme Name	: *B.Tech.*

Academic Year : 2021-22

List of New Course(s) Introduced

Sr. No.	Course Code	Name of the Course
01.	CS08PPE01	Network Security Lab
02.	CS08PPE02	Mobile Application Development Lab
03.	CS08PPE03	Cloud Computing Lab
04.	CS08PPE04	Big Data Analysis Lab
05	CS204THS02	MANAGEMENT I- MANAGEMENT PROCESS AND ORGANIZATIONAL BEHAVIOUR
06.	CS8LPC01	Network Security Lab
07.	CSE7105	Machine Learning
08.	CSE7104	Computer Vision

Minutes of Meetings (MoM) of Board of Studies (BoS)

Academic Year : 2021-22	
School : *School of Studies of Engineering and Technology*	
Department : *Computer Science and Engineering*	
Date and Time : 1. *15 December 2021-11:00 AM*	
2. *10 July 2020– 11:00 AM*	
Venue : **Department of CSE**	

Today, on 15 December 2021, the board of studies (BOS) meeting held through online platform google meet from 04:00 pm. The following members attended this online meeting.

1. Dr. Alok Kumar Singh Kushwaha, Head and Chairman of BOS
2. Mr. Amit Sharma, External Member, BOS
3. Dr. Sanjay Kumar, External Member, BOS
4. Dr. Manish Shrivastava, Assistant Prof., CSE: Invited Members
5. Mrs. Raksha Pandey, Assistant Prof., CSE: Invited Members
6. Dr. Princy Matlani, Assistant Prof., CSE: Invited Members

In this online meeting the following point has been concluded
1. Finalize the Scheme and Syllabus of PhD Pre-Course work from Session 2021-22.
2. B.Tech 2nd year (3rd semester and 4th semester) course code is revised and will be effected from Session 2021-22.
3. The subject "System Software" is replaced with the Subject **Management-1" in the B.Tech 4th semester.

New Introduced Subjects (will be effected from session 2021-22):
1. In PhD.:
    i.   **Computer Vision(Elective)   [CSE7104]**
    ii. **Machine Learning   [CSE7105]**
2. In B.Tech. 4th Semester:
    i.   **MANAGEMENT I- MANAGEMENT PROCESS AND ORGANIZATIONAL BEHAVIOUR [CS204THS02]**

The Meeting ended with a vote of thanks by the Head of the Department.

विभागाध्यक्ष
Head
संगणक विज्ञान एवं अभियांत्रिकी
अभियांत्रिकी एवं प्रौ. अध्ययन शाला
SOS, Engg. & Technology
गु.घा. विश्वविद्यालय, बिलासपुर (छ.ग.)
G.G.Vishwavidyalaya, Bilaspur (C.G.

Dr. Alok Kumar Singh Kushwaha
(Chairman of BOS)

Mr. Amit Sharma   Dr. Sanjay Kumar
(External Member, BOS)   (External Member, BOS)
(Consent through e-mail)   (Consent through e-mail)

Dr. Manish Shrivastava   Mrs. Raksha Pandey

Dr. Princy Matlani

Minutes of Meetings (MoM) of Board of Studies (BoS)

Academic Year :	*2021-22*
School :	*School of Studies of Engineering and Technology*
Department :	*Computer Science and Engineering*
Date and Time : 1	*10 July 2020– 11:00 AM*
Venue :	**Department of CSE**

Today, on 10 July 2020, the Board of Studies (BOS) meeting was held through online platform ZOOM from 11:00 am onwards. The following members attended this onlinemeeting.

1. Dr. Alok Kumar Singh Kushwaha, **(Chairman of BOS)**
2. Mrs Nishi Yadav   **(Member of BOS)**
3. Mr. Amit Sharma   **(External Member, BOS)**
4. Dr. Sanjay Kumar   **(External Member, BOS)**
5. Dr. Manish Srivastava   **(Invitee Member)**
6. Mr. Devendra Kumar Singh   **(Invitee Member)**
7. Mr. Nishant Behar   **(Invitee Member)**
8. Mr. Vaibhav Kant Singh   **(Invitee Member)**
9. Mrs. Raksha Pandey   **(Invitee Member)**
10. Mr. Amit Kumar Baghel   **(Invitee Member)**
11. Mr. Satish Kumar Negi   **(Invitee Member)**
12. Mr. Pushpendra Kumar Chandra **(Invitee Member)**
13. Mr. Manjit Jaiswal   **(Invitee Member)**
14. Mrs. Princy Matalani   **(Invitee Member)**

In this online meeting the following points have been concluded:

1. In B.Tech 7th semester following changes have been done and will apply with effect from upcoming Session 2021-22.:
   i. Web Science & Technology (theory) have been replaced by Compiler Design (theory).
   ii. Data Mining Lab have been replaced by Compiler Design Lab.

   In Professional Electives:
   i. TCP/IP subject have been renamed as TCP/IP Internetworking.
   ii. Pattern Recognition and Digital Signal Processing have been replaced with Web Technology and Cyber Crime & Security respectively.

   In Open Electives subject:
   i. Java has been replaced with Distributed System.
   ii. VB.Net subject is renamed as Visual Basic.Net

2. In B.Tech 8th semester following changes has been done and will apply with effectfrom upcoming Session 2021-22:

New Introduced Subjects (will be effected from session 2021-22):

- **Network Security Lab   [CS08PPE01]**
- **Mobile Application Development Lab [CS08PPE02]**
- **Cloud Computing Lab [CS08PPE03]**
- **Big Data Analysis Lab [CS08PPE04]**
- **Network Security Lab   [CS8LPC01]**

-

  i. In Professional Elective-I, subjects (Grid Computing, Multimedia System Design and Cyber Crime Security) has been replaced by subjects of (Mobile Application Development, Cloud Computing, and Big Data Analysis) respectively.

  ii. In Open Electives-I & II, subjects Principle of Management and Nano Technology has been replaced by Information Retrieval Systems and Machine Learning respectively.

  iii. B.Tech 4th year (7th semester and 8th semester) course code is also revised and will apply with effect from upcoming session 2021-22.

  iv. B.Tech 4th year (7th semester and 8th semester) lab and project credit has been revised and will apply with effect from upcoming session 2021-22.

3. B.Tech 4th semester practical subject codes have been rectified for the session 2019 - 20.
4. In B.Tech 3rd semester course Computer Organization Architecture is renamed as Computer Organization & Architecture and will apply with effect from upcoming Session 2020-21.
5. B.Tech 2nd year (3rd semester and 4th semester) Theory and lab credit has been revised and will apply with effect from upcoming session 2020-21.
6. B.Tech 2nd year (3rd semester and 4th semester) course code is also revised and will apply with effect from upcoming Session 2020-21.
7. In B.Tech 5th semester following changes has been done and will apply with effect from upcoming Session 2020-21:

   i. Microprocessor and Data Base Management System subject has been renamed as Microprocessor and Interfaces and Relational Data Base Management System respectively.

8. In B.Tech 6th semester following changes has been done & will apply with effect from upcoming Session 2020-21:

   i. Compiler Design Subject (theory and lab) replaced with Java Subject (theory and lab).

   ii. In Professional Elective-I & II, Advance Operating System Subject replaced with Software Testing and Quality Assurance Subject.

   iii. In Open Elective -I, in place of these subjects (1. Computer Graphics, 2. Geo-Informatics and GIS Applications, 3. Cloud Computing, 4. Distributed Systems.

New Subjects Introduced as (will be effective from session 2020-21)

- **E- Commerce [CS06TOE02]**
- **Human Resource Management. [CS06TOE03]**
- **Business Intelligence [CS06TOE04]**

   iv. The Computer Graphics subject have included in the compulsory subject.

   v. The Management Information System Subject is removed from the category of Humanity Science and added in Open Elective category

9. B.Tech 3rd year (5th semester and 6th semester) lab and project credit has been revised and will apply with effect from upcoming session 2020-21.

10. B.Tech 3rd year (5th semester and 6th semester) course code is also revised and will apply with effect from upcoming session 2020-21.

11. Finalization of the PEO, PSO, and POS also has been done.

12. Course objective and Course outcomes has been introduced in B. Tech (2nd, 3rd, and 4th year) syllabus(theory and lab).

13. Syllabus of entrance examination VRET for PhD admission has been finalized.

All the valuable suggestions made by Internal and External members are incorporated in the Syllabus and Scheme which are enclosed here with. External Member has joined the meeting through Video-Conferencing and has given his valuable suggestions which are incorporated in the Syllabus and Scheme. Invited Members has joined the meeting through Video-Conferencing and has given his valuable suggestions which are incorporated in the Syllabus and Scheme.

It was agreed that the approval of external experts and invitee members on MoM along with the related documents will be seeked through email, due to the present pandemic situation.

The meeting ended with vote of Thanks.

विभागाध्यक्ष
Head
संगणक विज्ञान एवं अभियांत्रिकी
Computer Science & Engg
अभियांत्रिकी एवं प्रौ. अध्ययन शाला
SOS. Engg. & Technology
गु.घा. विश्वविद्यालय, बिलासपुर (छ.ग.)
I.G.Vishwavidyalaya, Bilaspur (C.G)

Dr. Alok Kumar Singh Kushwaha
(Chairman of BOS)

Mr. Amit Sharma,   Dr. Sanjay Kumar
(External Member, BOS)   **(External Member, BOS)**
(Consent through e-mail)   **(Consent through e-mail)**

Invited Members	
Dr. Manish Srivastava	Consent through e-mail
Mr. Devendra Kumar Singh	Consent through e-mail
Mr. Nishant Behar	Consent through e-mail
Mr. Vaibhav Kant Singh	Consent through e-mail
Mrs. Raksha Pandey	Consent through e-mail
Mr. Amit Kumar Baghel	Consent through e-mail
Mr. Satish Kumar Negi	Consent through e-mail
Mr. Pushpendra Kumar Chandra	Consent through e-mail
Mr. Manjit Jaiswal	Consent through e-mail
Mrs. Princy Matalani	Consent through e-mail

SCHEME FOR EXAMINATION
B.TECH (FOUR YEAR) DEGREE COURSE
COMPUTER SCIENCE AND ENGINEERING

SCHOOL OF STUDIES IN ENGINEERING & TECHNOLOGY
GURU GHASIDAS VISHWAVIDYALAYA
FOURTH YEAR, SEMESTER - VIII

W.E.F. SESSION 2021-22

Branch :- Computer Science & Engg.   **Year : IV**   **Sem- VIII**

S.No.	Code No.	Subject	Periods			Evaluation Scheme			Credits
			L	T	P	IA	ESE	Total	
1	CS08TPEX	Professional Elective-I	3	0	0	30	70	100	3
2	CS08TOEX	Open Elective-I	3	0	0	30	70	100	3
3	CS08TOEX	Open Elective-II	3	0	0	30	70	100	3
	PRACTICAL								
1	CS08PPEX	Professional Elective-I Lab	0	0	3	30	20	50	1.5
2	CS08PPR04	Major Project -II	0	0	12	120	80	200	6
						Total			**16.5**

Professional Elective-I Subject VIII Sem.			Open Elective-I & II Subject VIII Sem.			
S.No	Subject Code	Subject	Credits	S.No.	Subject Code	Subject	Credits
1	CS08TPE13	Network Security	3	1	CS08TOE09	Enterprise Resource Management	3
2	CS08TPE14	Mobile Application Development	3	2	CS08TOE10	Information Retrieval Systems	3
3	CS08TPE15	Cloud Computing	3	3	CS08TOE11	Wireless Sensor Network	3
4	CS08TPE16	Big Data Analysis	3	4	CS08TOE12	Machine Learning	3

Professional Elective Subject Lab VIII Sem			
S.No	Subject code	Subject	Credits
1	CS08PPE01	Network Security Lab	1.5
2	CS08PPE02	Mobile Application Development Lab	1.5
3	CS08PPE03	Cloud Computing Lab	1.5
4	CS08PPE04	Big Data Analysis Lab	1.5

Sub Title: <mark>NETWORKSECURITY LAB</mark>	
Sub Code: <mark>CS08PPE01</mark>	No. of Credits : 1.5=0: 0: 1.5(L-T-P)
Exam Duration : 3 hours	IA+ESE =30+20

Lab OBJECTIVE:

1. To train more professional in the area of Network Security
2. To support in developing vulnerability free web applications
3. To support industry in Cyber security research

Unit No.	Content	Teaching Hours
I, II, III, IV and V	• Implement Caesar cipher encryption-decryption. • Implement Monoalphabetic cipher encryption-decryption. • Implement Playfair cipher encryption-decryption. • Implement Polyalphabetic cipher encryption-decryption. • Implement Hill cipher encryption-decryption. • To implement Simple DES or AES. • Implement Diffi-Hellmen Key exchange Method. • Implement RSA encryption-decryption algorithm. • Write a program to generate SHA-1 hash. • Implement a digital signaturealgorithm. • Perform various encryption-decryption techniques with cryptool. • Study and use the Wireshark for the various network protocols.	18

LAB OUTCOMES: The students would have learnt

CO1: Define the concepts of Information security and their use.
CO2: Describe the principles of symmetric and asymmetric cryptography.
CO3: Understand and apply the various symmetric key algorithms.
CO4: Understand and apply the various asymmetric key algorithms.
CO5: Understand the concepts of hashing with algorithms and apply them

Text Books:

1. Cryptography And Network Security, Principles And Practice Sixth Edition, William Stallings, Pearson
2. Information Security Principles and Practice By Mark Stamp, Willy India Edition
3. Cryptography & Network Security, Forouzan, Mukhopadhyay, McGrawHill

Reference Books:

1. Fundamentals of computer Algorithms, Horowitz, Sahani, Galgotia. 2nd Edition, 1998.ISBN 81-

7515-257-5

2. Cryptography and Network Security Atul Kahate, TMH
3. Cryptography and Security, C K Shyamala, N Harini, T R Padmanabhan, Wiley-India
4. Information Systems Security, Godbole, Wiley-India
5. Information Security Principles and Practice, Deven Shah, Wiley-India
6. Security in Computing by Pfleeger and Pfleeger, PHI
7. Build Your Own Security Lab : A Field Guide for network testing, Michael Gregg, Wiley India

Sub Title: MOBILEAPPLICATIONDEVELOPMENT LAB	
Sub Code: CS08PPE02	No. of Credits : 1.5=0: 0: 1.5(L-T-P)
Exam Duration : 3 hours	IA+ESE =30+20

Lab OBJECTIVE:

1. To understand the components and structure of mobile application development frameworks for Android and windows OS based mobiles.
2. To understand how to work with various mobile application development frameworks.
3. To learn the basic and important design concepts and issues of development of mobile applications.
4. To understand the capabilities and limitations of mobile devices.

Unit No.	Content	Teaching Hours
I, II, III, IV and V	• Develop an application that uses GUI components, Font and Colours • Develop an application that uses Layout Managers and event listeners. • Write an application that draws basic graphical primitives on the screen. • Develop an application that makes use of databases. • Develop an application that makes use of Notication Manager • Implement an application that usesMulti-threading • Develop a native application that uses GPS location information • Implement an application that writes data to the SD card. • Implement an application that creates an alert upon receiving a message • Write a mobile application that makes use ofRSS feed • Develop a mobile application to send anemail. • Develop a Mobile application for simple needs (Mini Project)	18

LAB OUTCOMES: The students would have learnt

CO1: Develop mobile applications using GUI and Layouts
CO2: Develop mobile applications using Event Listener.
CO3: Develop mobile applications using Databases.
CO4: Develop mobile applications using RSS Feed, Internal/External Storage, SMS, Multi-threading and GPS.
CO5: Analyze and discover own mobile app for simple needs

Text Books:

    1. Build Your Own Security Lab, Michael Gregg, Wiley India.

Reference Books:

    1. Build Your Own Security Lab, Michael Gregg, Wiley India.

Sub Title: CLOUDCOMPUTING LAB	
Sub Code: CS08PPE03	No. of Credits : 1.5=0: 0: 1.5(L-T-P)
Exam Duration : 3 hours	IA+ESE =30+20

Lab OBJECTIVE:

1. To discuss the fundamental concepts of Cloud Computing
2. To learn how to use install and configure Hadoop/MapReduce/HDFS
3. To learn how to create application using Hadoop/MapReduce
4. To learn Various Cloud services provided by Amazon Web Service etc.

Unit No.	Content	Teaching Hours
I, II, III, IV and V	• Installation and configuration of Hadoop/MapReduce/HDFS • Service deployment and usage over cloud. • Create an application using Hadoop/MapReduce • Case Study: Google App Engine/ Microsoft Azure/ Amazon Web Services	18

LAB OUTCOMES: The students would have learnt

CO1: Examine the installation and configuration of Hadoop/Map Reduce
CO2: Describe the functioning of Platform as a Service
CO3: Create application using Hadoop/MapReduce
CO4: Analyze and understand the functioning of different components involved in Amazon web services cloud platform.

Text Books:

1. Cloud Computing: Principles and Paradigms by Rajkumar Buyya,James Broberg, Andrzej M. Goscinski, Wiley.
2. Cloud Computing" by M. N. Rao, PHI.
3. Cloud Computing: A Practical Approach" by Toby Velte, Anthony Vote and Robert Elsenpeter, McGraw Hill.

Reference Books:

1. Cloud Computing Bible", Barrie Sosinsky, Wiley India Edition.
2. Cloud Security: A Comprehensive Guide to Secure Cloud Computing", Ronald L. Krutz, Russell Dean Vines, Wiley- India,2010

Sub Title: BIGDATA ANALYSIS LAB	
Sub Code: CS08PPE04	No. of Credits : 1.5=0: 0: 1.5(L-T-P)
Exam Duration : 3 hours	IA+ESE =30+20

Lab OBJECTIVE:

1. Learn Injecting data into Hadoop
2. Learn to build and maintain reliable, scalable, distributed systems with Hadooop
3. Able to apply Hadoop ecosystem components.
4. To teach the fundamental techniques and principles in achieving big data analytics with scalability and streaming capability.
5. To enable students to have skills that will help them to solve complex real-world problems in for decision support.

Unit No.	Content	Teaching Hours
I, II, III, IV and V	• Study of Hadoop ecosystem • Programming exercises on Hadoop • Programming exercises in No SQL • Implementing simple algorithms in Map- Reduce (3) - Matrix multiplication, Aggregates, joins, sorting, searching etc. • Implementing any one Frequent Itemset algorithm using Map-Reduce • Implementing any one Clustering algorithm using Map-Reduce • Implementing any one data streaming algorithm using Map-Reduce • Mini Project: One real life large data application to be implemented (Use standard Datasets available on the web) a) Twitter data analysis b) Fraud Detection c) Text Mining etc.	18

LAB OUTCOMES: The students would have learnt

CO1: Preparing for data summarization, query, and analysis.
CO2: Applying data modelling techniques to large data sets
CO3: Creating applications for Big Data analytics
CO4: Building a complete business data analytic solution

Text Books:

1. Intelligent Data Analysis, Michael Berthold, David J. Hand, Springer, 2007.
2. Hadoop: The Definitive Guide, Tom White, Third Edition, O'reilly Media, 2012.
3. Understanding Big Data: Analytics for Enterprise Class Hadoop and Streaming Data, Chris Eaton,

गुरु घासीदास विश्वविद्यालय
(केन्द्रीय विश्वविद्यालय अधिनियम 2009 क्र. 25 के अंतर्गत स्थापित केन्द्रीय विश्वविद्यालय)
कोनी, बिलासपुर – 495009 (छ.ग.)

Guru Ghasidas Vishwavidyalaya
(A Central University Established by the Central Universities Act 2009 No. 25 of 2009)
Koni, Bilaspur – 495009 (C.G.)

Dirk DeRoos, Tom Deutsch, George Lapis, Paul Zikopoulos,, McGrawHillPublishing, 2012.

4. Mining of Massive Datasets, Anand Rajaraman and Jeffrey DavidUllman, CUP, 2012.
5. Taming the Big Data Tidal Wave: Finding Opportunities in Huge Data Streams with AdvancedAnalytics, Bill Franks, JohnWiley& sons, 2012.
6. Making Sense of Data, Glenn J. Myatt, John Wiley & Sons, 2007.
7. Big Data Glossary, Pete Warden, O'Reilly, 2011.

Reference Books:

1. Data Mining Concepts and Techniques, Jiawei Han,Micheline Kamber, 2nd Edition, Elsevier,Reprinted 2008.
2. Intelligent Data Mining, Da Ruan, Guoquing Chen, Etienne E.Kerre, Geert Wets, Springer, 2007.
3. Harness the Power of Big Data The IBM Big Data Platform Paul Zikopoulos, Dirkde Roos, Krishnan Parasuraman, Thomas Deutsch, James, Giles , David Corrigan, Tata McGraw Hill Publications, 2012.
4. Big Data Science & Analytics: A HandsOn Approach, Arshdeep Bahga, Vijay Madisetti, VPT, 2016

Analytics in a Big Data World: The Essential Guide to Data Science and its Applications (WILEY Big Data Ser

गुरु घासीदास विश्वविद्यालय
(केन्द्रीय विश्वविद्यालय अधिनियम 2009 क्र. 25 के अंतर्गत स्थापित केन्द्रीय विश्वविद्यालय)
कोनी, बिलासपुर – 495009 (छ.ग.)

Guru Ghasidas Vishwavidyalaya
(A Central University Established by the Central Universities Act 2009 No. 25 of 2009)
Koni, Bilaspur – 495009 (C.G.)

Department of Computer Science & Engineering
School of Studies in Engineering & Technology
Guru Ghasidas Vishwavidyalaya, Bilaspur (C.G.)

Minutes of Meeting

Today, on 15 December 2021, the board of studies (BOS) meeting held through online platform google meet from 04:00 pm. The following members attended this online meeting.

1. Dr. Alok Kumar Singh Kushwaha, **Head and Chairman of BOS**
2. Mr. Amit Sharma, **External Member, BOS**
3. Dr. Sanjay Kumar, **External Member, BOS**
4. Dr. Manish Shrivastava, Assistant Prof., CSE: Invited Members
5. Mrs. Raksha Pandey, Assistant Prof., CSE: Invited Members
6. Dr. Princy Matlani, Assistant Prof., CSE: Invited Members

In this online meeting the following point has been concluded

1. Finalize the Scheme and Syllabus of PhD Pre-Course work from Session 2021-22.
2. B.Tech 2nd year (3rd semester and 4th semester) course code is revised and will be effected from Session 2021-22.
3. The subject "System Software" is replaced with the Subject "Management-1" in the B.Tech 4th semester.

The Meeting ended with a vote of thanks by the Head of the Department.

Mr. Amit Sharma   Dr. Sanjay Kumar
(External Member, BOS)   **(External Member, BOS)**
(Consent through e-mail)   (Consent through e-mail)

Dr. Alok Kumar Singh Kushwaha   Dr. Manish Shrivastava   Mrs. Raksha Pandey

Dr. Princy Matlani

SCHEME FOR EXAMINATION B.TECH (FOUR YEAR) DEGREE COURSE COMPUTER SCIENCE AND ENGINEERING
SCHOOL OF STUDIES IN ENGINEERING & TECHNOLOGY
GURU GHASIDAS VISHWAVIDYALAYA
SECOND YEAR, SEMESTER - III & IV
W.E.F. SESSION 2021-22

Branch:- Computer Science & Engg.   **Year: II**   **Sem:- III**

S.No	Code no.	Subject	Periods			Evaluation Scheme			Credits
			L	T	P	IA	ESE	Total	
1	CS203TES06	Digital logic & Design	3	1	0	30	70	100	4
2	CS203TPC01	IT workshop (C++ / python)	3	1	0	30	70	100	4
3	CS203TPC02	Computer Network	3	1	0	30	70	100	4
4	CS203TPC03	Computer Organization & Architecture	3	1	0	30	70	100	4
5	CS203TBS05	Mathematics III (Numerical Methods)	3	1	0	30	70	100	4
	PRACTICAL								
1	CS203PPC01	IT workshop (C++ / python) Lab	0	0	3	30	20	50	1.5
2	CS203PPC02	Computer Network Lab	0	0	3	30	20	50	1.5
3	CS203PES06	Digital Logic & Design Lab	0	0	3	30	20	50	1.5
		Total							**24.5**

Branch:- Computer Science & Engg.   **Year: II**   **Sem:- IV**

S.No	Code no.	Subject	Periods			Evaluation Scheme			Credits
			L	T	P	IA	ESE	Total	
1	CS204TPC04	Discrete Mathematics	3	1	0	30	70	100	4
2	CS204TES07	Electronic Device & Circuits	3	0	0	30	70	100	3
3	CS204TPC05	Operating System	3	1	0	30	70	100	4
4	CS204TPC06	Data Structure & Algorithms	3	1	0	30	70	100	4
5	CS204THS02	MANAGEMENT I- MANAGEMENT PROCESS AND ORGANIZATIONAL BEHAVIOUR	3	0	0	30	70	100	3
	PRACTICAL								
1	CS204PPC03	Operating System Lab	0	0	3	30	20	50	1.5
2	CS204PPC04	Data Structure & Algorithms Lab	0	0	3	30	20	50	1.5
3	CS204PES07	Electronic Device &	0	0	3	30	20	50	1.5

		Circuits Lab		5					
							Total		**22.5**

गुरु घासीदास विश्वविद्यालय
(केन्द्रीय विश्वविद्यालय अधिनियम 2009 क्र. 25 के अंतर्गत स्थापित केन्द्रीय विश्वविद्यालय)
कोनी, बिलासपुर – 495009 (छ.ग.)

Guru Ghasidas Vishwavidyalaya
(A Central University Established by the Central Universities Act 2009 No. 25 of 2009)
Koni, Bilaspur – 495009 (C.G.)

Sub Title: **MANAGEMENT PROCESS AND ORGANIZATIONAL BEHAVIOUR**		
Sub Code: CS204THS02	No. of Credits : 3=3: 0: 0(L-T-P)	No of lecture hours/week :03
Exam Duration : 3 hours	IA+ESE=30+70	Total no of contact hours:23

COURSE OBJECTIVES:

1. To help the students to develop cognizance of the importance of Management processes.
2. To enable students to describe how people behave under different conditions and understand why people behave as they do.
3. To provide the students to analyses specific strategic human resources demands for future action.
4. To enable students to synthesize related information and evaluate options for the most logical and optimal solution such that they would be able to predict and control

UNIT No	Syllabus Content	No of Hours
1	School of Management Thought: Evolution of Management thought, Systems and Contingency approach of management, Decision Theory School.	10
2	Managerial processes, functions, skills and roles in an organization. Nature, process and technique of planning, Organizing, Staffing, Directing, Coordinating, Control.	10
3	Behaviour: Concept, Significance, Understanding and Managing individual behavior – Personality, Perceptions, Values, Attitudes, Learning, Work-motivation, Individual Decision Making and Problem solving.	10
4	Understanding and Managing Group Processes: Interpersonal and Group dynamics. Applications of emotional intelligence in organizations.Group decision making. Leadership and Influence Process : Concept, styles and Theories.	8
5	Managing Organizational Systems, Organizational Conflict – sources, pattern levels and types of conflict. Organizational design and structure. Work stress.	7

COURSE OUTCOMES: On completion of this course, the students will be able toCO1 : To understand the concept of Management.
CO2 : Demonstrate the applicability of the concept of Management processes to understand the functioning of the organization.
CO3 : Demonstrate the applicability of the concept of organizational behavior to understand thebehavior of people in the organization.
CO4: Analyze the complexities associated with management of the group behavior in theorganization.
CO5 : Demonstrate the applicability to manage the organization.

Suggested Readings

1. Koontz, Harold, Cyril O'Donnell, and Heinz, Whelrich. Essentials of Management. New Delhi:Tata Mc Graw Hill.

2. Robbins, S.P. Organizational Behaviour. New Delhi: PHI.

Luthans, F. Organisational Behaviour. NewYork: Mc Graw H

DEPARTMENT OF COMPUTER SCIENCE AND ENGINEERING

SCHOOL OF STUDIES (ENGINEERING AND TECHNOLOGY)

GURU GHASIDAS VISHWAVIDYALAYA, BILASPUR (C.G)

EVALUATION SCHEME FOR Pre- Ph.D. COURSE WORK

EFFECTIVE FROM SESSION 2021-2022

S. No.	Name of Subject	Subject Code	Periods /Week L-T-P	ESE Duration	ESE MARKS Max	Min	Credits
1	Research Methodology in Engineering	IT7100	3-1-0	3Hrs	100	50	4
2	Elective -I	CSE71XX	3-1-0	3Hrs	100	50	4
3	Elective -II	CSE71XX	3-1-0	3Hrs	100	50	4
4	Seminar	IT7101	-	-	Qualified/ Not Qualified		0
	Total		9-3-0		300	150*	12
	LIST OF ELECTIVES	**	Duration of Semester will be 6 months				
S.N.	**Name of the Subject**	**Subject Code**	● Candidate has to score minimum 60% of the aggregate marks to qualify in ESE. ● Two core subjects as Electives (4 Credits each) to be decided by the DRC.				
1	Network Security	CSE7102					
2	Simulation & Modeling	CSE7103					
3	Computer Vision	CSE7104					
4	Machine Learning	CSE7105					

ESE: End Semester Examination L: Lecture T: Theory P:
PracticalMax: Maximum marks in ESE;
Min: Minimum pass Marks in each subject as 50%

COMPUTER VISION

UNIT- I

Fundamentals of Image Formation, Transformation: Orthogonal, Euclidean, Affine, Projective, etc; Fourier Transform, Convolution and Filtering, Image Enhancement, Restoration, Histogram Processing.

UNIT- II

Edges , Canny, LOG, DOG; Line detectors (Hough Transform), Corners , Harris and Hessian Affine, Orientation Histogram, SIFT, SURF, HOG, GLOH, Scale,Space Analysis, Image Pyramids and Gaussian derivative filters, Gabor Filters and DWT.

UNIT -III

Region Growing, Edge Based approaches to segmentation, Graph,Cut, Mean,Shift, Texture Segmentation; Object detection.

UNIT- IV

Clustering: K,Means, K,Medoids, Mixture of Gaussians, Classification: Discriminate Function, Supervised, Un,supervised, Semi,supervised; Classifiers: Bayes, KNN, ANN models; Dimensionality Reduction: PCA, LDA, ICA; Non,parametric methods.

UNIT- V

Methods for 3D vision – projection schemes , shape from shading, photometric stereo ,shape from texture , shape from focus , active range finding , surface representations , point,based representation , volumetric representations, 3D object recognition , 3D reconstruction , introduction to motion , triangulation , bundle adjustment , translational alignment , parametric motion – spline,based motion ,optical flow , layered motion.

REFERENCES:

1. Richard Szeliski, Computer Vision: Algorithms and Application, Springer,Verlag LondonLimited 2011.

2. Computer Vision : A Modern Approach, D.A. Forsyth, J. Ponce, Pearson education , 2003.

3. Richard Hartley and Andrew Zisserman, Multiple View Geometry in Computer Vision,Second Edition, Cambridge University Press, March 2004.

4. R.C. Gonzalez and R.E. Woods, Digital Image Processing, Addison, Wesley, 1992.

MACHINE LEARNING

UNIT - I

Introduction - Well-posed learning problems, Designing a learning system, Perspectives and issues in machine learning Concept learning and the general to specific ordering–Introduction, A concept learning task, Concept learning as search, Find-S: finding a maximally specific hypothesis, Version spaces and the candidate elimination algorithm, Remarks on version spaces and candidate elimination, Inductive bias.

UNIT - II

Decision Tree learning – Introduction, Decision tree representation, Appropriate problems for decision tree learning, The basic decision tree learning algorithm, Hypothesis space search in decision tree learning, Inductive bias in decision tree learning, Issues in decision tree learning **Artificial Neural Networks –** Introduction, Neural network representation, Appropriate problems for neural network learning, Perceptions, Multilayer networks and the back propagation algorithm, Remarks on the back propagation algorithm, An illustrative example face recognition

Advanced topics in artificial neural networks

Evaluation Hypotheses – Motivation, Estimation hypothesis accuracy, Basics of sampling theory, A general approach for deriving confidence intervals, Difference in error of two hypotheses, Comparing learning algorithms

UNIT - III

Bayesian learning – Introduction, Bayes theorem, Bayes theorem and concept learning, Maximum likelihood and least squared error hypotheses, Maximum likelihood hypotheses for predicting probabilities, Minimum description length principle, Bayes optimal classifier, Gibs algorithm, Naïve Bayes classifier, An example learning to classify text, Bayesian belief networks The EM algorithm **Computational learning theory –** Introduction, Probability learning an approximately correct hypothesis, Sample complexity for Finite Hypothesis Space, Sample Complexity for infinite Hypothesis Spaces, The mistake bound model of learning - **Instance-Based Learning**- Introduction, k -Nearest Neighbour Learning, Locally Weighted Regression, Radial Basis Functions, Case-Based Reasoning, Remarks on Lazy and Eager Learning

Genetic Algorithms – Motivation, Genetic Algorithms, An illustrative Example, Hypothesis Space Search, Genetic Programming, Models of Evolution and Learning, Parallelizing Genetic Algorithms

UNIT - IV

Learning Sets of Rules – Introduction, Sequential Covering Algorithms, Learning Rule Sets: Summary, Learning First Order Rules, Learning Sets of First Order Rules: FOIL, Induction as Inverted

Deduction, InvertingResolution

AnalyticalLearning-Introduction,LearningwithPerfectDomainTheories:Prolog-EBGRemarkson Explanation-BasedLearning, Explanation-BasedLearning of SearchControlKnowledge.

UNIT - V

Combining Inductive and Analytical Learning – Motivation, Inductive-Analytical Approaches to Learning, Using Prior Knowledge to Initialize the Hypothesis, Using Prior Knowledge to Alter the Search Objective, Using Prior Knowledge to Augment Search Operators,

Reinforcement Learning – Introduction, The Learning Task, Q Learning, Non-Deterministic,Rewards and Actions, Temporal Difference Learning, Generalizing from Examples, Relationship to Dynamic Programming

TEXT BOOKS:

1. Machine Learning – Tom M. Mitchell, - MGH
2. Machine Learning: An Algorithmic Perspective, Stephen Marsland, Taylor &Francis(CRC)

REFERENCE BOOKS:

1. Machine Learning Methods in the Environmental Sciences, Neural Networks, WilliamW Hsieh, Cambridge Univ Press.
2. Richard o. Duda, Peter E. Hart and David G. Stork, pattern classification, John Wiley &Sons Inc., 2001
3. Chris Bishop, Neural Networks for Pattern Recognition, Oxford UniversityPress, 1995.
4. Machine Learning by Peter Flach ,Cambridge.