Maulana Abul Kalam Azad University of Technology, West Bengal
(Formerly West Bengal University of Technology)
Syllabus for B. Tech in Computer Science and Engineering
(Internet of Things,Cyber Security including Block Chain Technology)
(Applicable from the academic session 2020-2021)

SEMESTER – VI

Database Management Systems
Code: PCCCS 601
Contact: 3L

Name of the Course:	**Database Management Systems**	
Course Code: **PCCCS 601**	Semester: VI	
Duration:6 months	Maximum Marks:100	
Teaching Scheme		**Examination Scheme**
Theory:3 hrs./week		Mid Semester exam: 15
Tutorial: NIL		Assignment and Quiz: 10 marks
		Attendance: 5 marks
Practical: hrs./week		End Semester Exam:70 Marks
Credit Points:	3	

Unit	Content	Hrs/Unit	Marks/Unit
1	**Database system architecture:**Data Abstraction, Data Independence,Data Definition Language(DDL),Data ManipulationLanguage(DML). **Data models:** Entity-relationshipmodel, network model, relational and object oriented data models, integrity constraints, data manipulation operations.	9	
2	**Relational query languages:** Relational algebra, Tuple and domain relational calculus, SQL3, DDL and DML constructs, Open source and Commercial DBMS - MYSQL, ORACLE, DB2, SQLserver. **Relational database design:** Domain and data dependency, Armstrong's axioms, Normal forms, Dependency preservation, Losslessdesign. **Query processing and optimization:** Evaluation of relational algebra expressions,Query equivalence, Join strategies, Query optimization algorithms.	13	
3	**Storage strategies**: Indices, B-trees, hashing.	3	
4.	**Transaction processing:** Concurrencycontrol, ACID property, Serializability of scheduling, Locking and timestamp based schedulers, Multi-version and optimistic Concurrency Control schemes, Database recovery.	5	

5	**Database Security:** Authentication, Authorization and access control, DAC,MAC and RBAC models, Intrusion detection, SQL injection.	3	
6	**Advanced topics:** Object oriented and object relational databases, Logical databases, Web databases, Distributed databases, Data warehousing and data mining.	3	

Text book and Reference books:

1. "Database System Concepts" , 6th Edition by Abraham Silberschatz, Henry F. Korth, S. Sudarshan,McGraw-Hill.
2. "Principles of Database and Knowledge – Base Systems", Vol 1 by J. D.Ullman, Computer Science Press.
3. Database Management Systems, R.P. Mahapatra, Khanna Publishing House,New Delhi (AICTE Recommended Textbook – 2018)
4. "Fundamentals of Database Systems" , 5th Edition by R. Elmasri and S.Navathe,
5. PearsonEducation "Foundations of Databases", Reprint by SergeAbiteboul, Richard Hull, Victor Vianu,Addison-Wesley

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Name of the Course:	**Cryptography & Network Security**	
Course Code: PCCICB-601	**Semester: VI**	
Duration: 6 months	Maximum Marks: 100	
Teaching Scheme		**Examination Scheme**
Theory: 2 hrs./week		Mid Semester exam: 15
Tutorial: NIL		Assignment and Quiz: 10 marks
		Attendance: 5 marks
Practical: NIL		End Semester Exam : 70 Marks
Credit Points:	2	

Computer Security Concepts, The OSI Security Architecture, Security Attacks, Security Services, Security Mechanisms , A Model for Network Security, Classical Encryption Techniques, Symmetric Cipher Model, Substitution Techniques, Transposition Techniques, Rotor Machines, Steganography, Cryptographic Tools, Confidentiality with Symmetric Encryption, Message Authentication and Hash Functions, Public-Key Encryption, Digital Signatures and Key Management, Random and Pseudorandom Numbers, Practical Application: Encryption of Stored Data, User Authentication, Means of Authentication, Password-Based Authentication, Token-Based Authentication, Biometric Authentication, Remote User Authentication, Security Issues for User Authentication, Malicious Software, Types of MaliciousSoftware (Malware), Propagation—Infected Content—Viruses, Propagation—Vulnerability Exploit—Worms, Propagation—Social Engineering—SPAM Email, Trojans, Payload—System Corruption, Payload—Attack Agent—Zombie, Bots, Payload—Information Theft—Key loggers,Phishing, Spyware, Payload—Stealthing— Backdoors, Rootkits, Countermeasures, Firewalls and Intrusion Prevention Systems, the Need for Firewalls, Firewall Characteristic, Types of Firewalls, Firewall Basing, Firewall Location and Configurations, Intrusion Prevention Systems.

Text Books:

1. Cryptography and Network Security: Principles and Practice by William Stalings 6th Edition published by PHI (2011)
2. Computer security principles and practice, William Stallings, Lawrie Brown, thirdedition, Prentice-Hall, 2011
3. Cryptography and Network Security, V.K. Jain, Khanna Publishing House

Database Management System Lab
Code: PCC-CS691
Contacts: 4P

Name of the Course:	**Database Management System Lab**
Course Code: **PCC-CS691**	Semester: VI
Duration:6 months	Maximum Marks:100
Teaching Scheme:	
Theory: hrs./week	Continuous Internal Assessment
Tutorial: NIL	External Assesement:60
Practical: 4 hrs./week	Distribution of marks:40
Credit Points:	2

Laboratory Experiments:
Structured Query Language

1. Creating Database

- Creating a Database
- Creating a Table
- Specifying Relational Data Types
- Specifying Constraints
- Creating Indexes

2. Table and Record Handling

- INSERT statement
- Using SELECT and INSERT together
- DELETE, UPDATE, TRUNCATE statements
- DROP, ALTER statements

3. Retrieving Data from a Database

1. The SELECT statement
2. Using the WHERE clause
3. Using Logical Operators in the WHERE clause
4. Using IN, BETWEEN, LIKE , ORDER BY, GROUP BY and HAVING **Clause**
5. Using Aggregate Functions
6. Combining Tables Using JOINS
7. Subqueries

4. Database Management

- Creating Views
- Creating Column Aliases
- Creating Database Users
- Using GRANT and REVOKE

Cursors in Oracle PL / SQL
Writing Oracle PL / SQL Stored Procedures

Any experiment specially designed by the college

(Detailed instructions for Laboratory Manual to be followed for further guidance)

❖ Ethical Hacking (PCCCS602) [3 0 0 3]

Unit 1	**Introduction to Ethical Hacking**
A	Security Fundamental, Security testing, Hacker and Cracker, Descriptions
B	Test Plans-keeping It legal, Ethical and Legality
C	The Attacker's Process, The Ethical Hacker's Process, Security and the Stack
Unit 2	**Malware Threats**
A	Viruses and Worms, Trojans, Covert Communication
B	Keystroke Logging and Spyware, Malware Counter measures
C	Sniffers, Session Hijacking, Denial of Service and Distributed, Denial of Service
Unit 3	**Web Server Hacking**
A	Web Server Hacking, Web Application Hacking
B	Database Hacking
C	Wireless Technologies, Mobile Device Operation and Security, Wireless LANs
Unit 4	**Understanding Penetration Testing**
A	Defining penetration testing, proliferation of Viruses and worm, Wireless LANs.
B	Complexity of networks today, frequency of software updates, availability of hacking tools, the nature of open source
C	Unmonitored mobile users and telecommuters, marketing demands, industry regulation, administrator trust, Hacktivism, Attack Stages
Unit 5	**Legal and ethical consideration**
A	Ethics of penetration testing, Laws: US Law, Computer Fraud and abuse act (CFAA), State Laws
B	Regulatory Laws: Health Insurance Portability and Accountability Act (HIPAA), Graham-Leach-Bliley (GLB)
C	Federal Information Security Management Act (FISMA), Sarbanes-Oxley Act (SOX)

Digital Forensic (PECICB601E) [3 0 0 3]

INTRODUCTION TO COMPUTER FORENSICS
History of Forensics – Computer Forensic Flaws and Risks
Rules of Computer Forensics – Legal issues – Digital Forensic Principles
Digital Environments – Digital Forensic Methodologies
AN OVERVIEW OF DIGITAL FORENSICS INVESTIGATION
Live forensics and investigation –digital evidence
seizure methodology factors limiting the whole sale seizure of hardware- Demystifying computer/ cyber crime
explosion of networking – explosion of wireless networks – interpersonal communication
DATA FORENSICS
Recovering deleted files and deleted partitions – deleted file recovery tools –

deleted partitioned recovery tools – data acquisition and duplication
data acquisition tools – hardware tools – backing up and duplicating data.
ROUTER FORENSICS AND NETWORK FORENSICS
overview of Routers – Hacking Routers – Investigating Routers
Investigating Wireless Attacks – Basics of wireless -Wireless Penetration Testing
Direct Connections to Wireless Access Point – Wireless Connect to a Wireless Access Point.
E-MAIL FORENSICS AND STEGANOGRAPHY
Forensics Acquisition – Processing Local mail archives –
Processing server level archives – classification of steganography
categories of steganography in Forensics – Types of password cracking.

Reference Books:

1. Anthony Reyes, Jack Wiles, "Cybercrime and Digital Forenscis", Syngress Publishers, Elsevier 2007.
2. John Sammons, "The Basics of Digital Forensics", Elsevier 2012
3. Linda Volonins, ReynaldsAnzaldua, "Computer Forensics for dummies", Wiley Publishing 2008.

Digital Forensic Lab (PECICB691E) [0 0 3 1]

Unit 1	Introduction to computer forensics
A	Learn to install wine / virtual box or any other equivalent software on the host os
B	Perform an experiment to grab a banner with telnet and perform the task using netcat utility
Unit 2	An overview of digital forensics investigation
A	Perform an experiment for port scanning with nmap, superscan or any other software.
B	Using nmap 1)find open ports on a system 2) find the machines which are active 3)find the version of remote os on other systems 4)find the version of s/w installed on other system
Unit 3	Data forensics
A	Perform an experiment on active and passive finger printing using xprobe2 and nmap.
B	Performa an experiment to demonstrate how to sniff for router traffic by using the tool wireshark
Unit 4	Router forensics and network forensics
A	Perform an experiment how to use dumpsec.
B	Perform an wireless audit of an access point / router and decrypt wep and wpa.
C	Perform an experiment to sniff traffic using arp poisoning.
Unit 5	E-mail forensics and steganography
A	Install ipcop on a linux system and learn all the function available on the software.
B	Install jcrypt tool (or any other equivalent) and demonstrate asymmetric, symmetric crypto algorithm, hash and digital/pki signatures

Reference Books:

1. Anthony Reyes, Jack Wiles, "Cybercrime and Digital Forenscis", Syngress Publishers, Elsevier 2007.
2. John Sammons, "The Basics of Digital Forensics", Elsevier 2012
3. Linda Volonins, ReynaldsAnzaldua, "Computer Forensics for dummies", Wiley Publishing 2008.

Software Engineering
Code:PECICB601D
Contact: 3L

Name of the Course:	**Software Engineering**	
Course Code: **PECICB601D**	Semester: VI	
Duration:6 months	Maximum Marks:100	
Teaching Scheme		**Examination Scheme**
Theory:3 hrs./week		Mid Semester exam: 15
Tutorial: NIL		Assignment and Quiz: 10 marks
		Attendance: 5 marks
Practical: hrs./week		End Semester Exam:70 Marks
Credit Points:	3	

Unit	Content	Hrs/Unit
1	Overview of System Analysis & Design , Business System Concept, System Development Life Cycle,Waterfall Model , Spiral Model, Feasibility Analysis, Technical Feasibility, Cost-Benefit Analysis, COCOMO model. **[10L]**	10
2	System Design – Context diagram and DFD, Problem Partitioning, Top-Down And Bottom-Updesign; Decision tree, decision table and structured English; Functional vs.Object- Oriented approach. **[5L]**	5
3	Coding & Documentation – Structured Programming, OO Programming, InformationHiding, Reuse, System Documentation. **[4L]** Testing – Levels of Testing, Integration Testing, Test case Specification, Reliability Assessment,Validation & Verification	12
	Metrics, Monitoring & Control. **[8L]**	
4.	Software Project Management – Project Scheduling,Staffing, Software Configuration Management, Quality Assurance, Project Monitoring. **[7L]**	7
5	Static and dynamic models, why modeling, UMLdiagrams: Class diagram, interaction diagram: collaboration diagram, sequence diagram, state chart diagram,activity diagram, implementation diagram. **[10 L]**	10

Text book and Reference books:

1. Pressman, Software Engineering : A practitioner's approach– (TMH)
2. Pankaj Jalote, Software Engineering- (Wiley-India)

3. N.S. Gill, Software Engineering – (Khanna Publishing House)
4. Rajib Mall, Software Engineering- (PHI)
5. Agarwal and Agarwal, Software Engineering – (PHI)
6. Sommerville, Software Engineering – Pearson
7. Martin L. Shooman, Software Engineering – TMH

Software Engineering Lab
Code: PECICB691D
Contact: 4P

Name of the Course:	**Software Engineering Lab**
Course Code: **PECICB691D**	Semester: VI
Duration:6 months	Maximum Marks:100
Teaching Scheme:	
Theory: hrs./week	Continuous Internal Assessment
Tutorial: NIL	External Assesement:60
Practical: 4 hrs./week	Distribution of marks:40
Credit Points:	2

Laboratory Experiments:

- Problem Analysis and Project Planning -Thorough study of the problem – Identify Project scope, Objectives and Infrastructure.
- Software Requirement Analysis – Describe the individual Phases/modules of the project and Identify deliverables. Identify functional and non-functional requirements.
- Data Modeling – Use work products – data dictionary.
- Software Designing - Develop use case diagrams and activity diagrams, build and test class diagrams, sequence diagrams and add interface to class diagrams.
- Prototype model – Develop the prototype of the product.

The SRS and prototype model should be submitted for end semester examination.

Any experiment specially designed by the college
(Detailed instructions for Laboratory Manual to be followed for further guidance)

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Cloud Computing

Code: PECICB601A
Contact: 3L

Name of the Course:	**Cloud Computing**
Course Code: PECICB601A & PECICB691A	Semester: VI
Duration: 6 months	Maximum Marks: 100+100
Teaching Scheme	**Examination Scheme**
Theory: 3 hrs./week	Mid Semester exam: 15
Tutorial: NIL	Assignment and Quiz: 10 marks
Practical:4 hrs./week	Attendance: 5 marks
Credit Points: 3+2	End Semester Exam: 70 Marks
	Practical Sessional internal continuous evaluation: 40
	Practical Sessional external examination: 60

Unit	Content	Hrs/Unit	Marks/Unit
1	**Definition of Cloud Computing and its Basics (Lectures)**. Defining a Cloud, Cloud Types – NIST model, Cloud Cube	9	
	model, Deployment models (Public , Private, Hybrid and Community Clouds), Service Platform as a Service, Software as a Service with examples of services/ service providers, models – Infrastructure as a Service, Cloud Reference model, Characteristics of Cloud Computing – a shift in paradigm Benefits and advantages of Cloud Computing, A brief introduction on Composability, Infrastructure, Platforms, Virtual Appliances, Communication Protocols, Applications, Connecting to the Cloud by Clients, IaaS – Basic concept, Workload, partitioning of virtual private server instances, Pods, aggregations, silos PaaS – Basic concept, tools and development environment with examples SaaS - Basic concept and characteristics, Open SaaS and SOA, examples of SaaS platform Identity as a Service (IDaaS) Compliance as a Service (CaaS)		

2	**Use of Platforms in Cloud Computing** Concepts of Abstraction and Virtualization Virtualization technologies : Types of virtualization (access, application, CPU, storage), Mobility patterns (P2V, V2V, V2P, P2P, D2C, C2C, C2D, D2D) Load Balancing and Virtualization: Basic Concepts, Network resources for load balancing, Advanced load balancing (including ApplicationDelivery Controller and Application Delivery Network), Mention of The Google Cloud as an example of use of load balancing Hypervisors: Virtual machine technology and types, VMware vSphere Machine Imaging (including mention of Open Virtualization Format – OVF) Porting of applications in the Cloud: The simple Cloud API and AppZero Virtual Application appliance, Concepts of Platform as a Service, Definition of services, Distinction between SaaS and PaaS (knowledge of Salesforce.com and Force.com), Application development Use of PaaS Application frameworks,	12	
	Discussion of Google Applications Portfolio – Indexed search, Dark Web, Aggregation and disintermediation, Productivity applications and service, Adwords, Google Analytics, Google Translate, a brief discussion on Google Toolkit (including introduction of Google APIs in brief), major features of Google App Engine service., Discussion of Google Applications Portfolio – Indexed search, Dark Web, Aggregation and disintermediation, Productivity applications and service, Adwords, Google Analytics, Google Translate, a brief discussion on Google Toolkit (including introduction of Google APIs in brief), major features of Google App Engine service, Windows Azure platform: Microsoft's approach, architecture, and main elements, overview of Windows Azure AppFabric, Content Delivery Network, SQL Azure, and Windows Live services,		

3	**Cloud Infrastructure**: Cloud Management: An overview of the features of network management systems and a brief introduction of related products from large cloud vendors, Monitoring of an entire cloud computing deployment stack – an overview with mention of some products, Lifecycle management of cloud services (six stages of lifecycle). Concepts of Cloud Security: Cloud security concerns, Security boundary, Security service boundary Overview of security mapping Security of data: Brokered cloud storage access, Storage location and tenancy, encryption, and auditing and compliance Identity management (awareness of Identity protocol standards)	7	
4.	**Concepts of Services and Applications :** Service Oriented Architecture: Basic concepts of message-based transactions, Protocol stack for an SOA architecture, Event-driven SOA, Enterprise Service Bus, Service catalogs, Applications in the Cloud: Concepts of cloud transactions, functionality mapping,	8	
	Application attributes, Cloud service attributes, System abstraction and Cloud Bursting, Applications and Cloud APIs Cloud-based Storage: Cloud storage definition – Manned and Unmanned Webmail Services: Cloud mail services including Google Gmail, Mail2Web, Windows Live Hotmail, Yahoo mail, concepts of Syndication services		

Text book and Reference books:

1. Cloud Computing Bible by Barrie Sosinsky, Wiley India Pvt. Ltd, 2013
2. Mastering Cloud Computing by Rajkumar Buyya, Christian Vecchiola, S. Thamarai Selvi, McGraw Hill Education (India) Private Limited,2013
3. Cloud computing: A practical approach, Anthony T. Velte, Tata Mcgraw-Hill
4. Cloud Computing, Miller, Pearson
5. Building applications in cloud:Concept, Patterns and Projects, Moyer, Pearson
6. Cloud Computing – Second Edition by Dr. Kumar Saurabh, Wiley India

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Subject: Steganography & Watermarking			
Course Code: PECICB601C & PECICB691C		**Semester: 6**	
Duration: 36 Hrs.		**Maximum Marks: 100+100**	
Teaching Scheme		**Examination Scheme**	
Theory: 3 hrs./week		**End Semester Exam: 70**	
Tutorial:		**Attendance : 5**	
Practical: 4		**Continuous Assessment: 25**	
Credit: 3+2		**Practical Sessional internal continuous evaluation: 40**	
		Practical Sessional external examination: 60	
Aim:			
Sl. No.			
1.	Know the History and importance of watermarking and steganography		
2.	Analyze Applications and properties of watermarking and steganography		
3.	Demonstrate Models and algorithms of watermarking		
4.	**Possess the passion for acquiring knowledge and skill in preserving authentication of Information**		
Objective:			
Sl. No.			
1.	To learn about the watermarking models and message coding		
2.	To learn about watermark security and authentication.		
3.	To learn about stegnography. Perceptual models		
Pre-Requisite:			
Sl. No.			
1.	Cryptography		
Contents		**4 Hrs./week**	
Chapter	**Name of the Topic**	**Hours**	**Marks**
01	**INTRODUCTION** Information Hiding, Steganography and Watermarking – History of watermarking – Importance of digital watermarking – Applications – Properties – Evaluating watermarking systems. WATERMARKING MODELS & MESSAGE CODING: Notation – Communications – Communication based models – Geometric models – Mapping messages into message vectors – Error correction coding – Detecting multi-symbol watermarks.	**7**	**14**

02	**WATERMARKING WITH SIDE INFORMATION & ANALYZING ERRORS:** Informed Embedding – Informed Coding – Structured dirty-paper codes – Message errors – False positive errors – False negative errors – ROC curves – Effect of whitening on error rates	**7**	**14**
03	**PERCEPTUAL MODELS:** Evaluating perceptual impact – General form of a perceptual model – Examples of perceptual models – Robust watermarking approaches – Redundant Embedding, Spread Spectrum Coding, Embedding in Perceptually significant coefficients	**7**	**14**
04	**WATERMARK SECURITY & AUTHENTICATION:** Security requirements – Watermark security and cryptography – Attacks – Exact authentication – Selective authentication – Localization – Restoration.	**8**	**14**
05	**STEGANOGRAPHY:** Steganography communication – Notation and terminology – Information theoretic foundations of steganography – Practical steganographic methods – Minimizing the embedding impact – Steganalysis	**7**	**14**
	Sub Total:	**36**	**70**
	Internal Assessment Examination & Preparation of Semester Examination	**4**	**30**
	Total:	**40**	**100**

Assignments:

Adhered to theory curriculum as conducted by the subject teacher.

List of BooksText Books:

Name of Author	Title of the Book	Edition/ISSN/ISBN	Name of the Publisher
Ingemar J. Cox, Matthew L. Miller, Jeffrey A. Bloom, Jessica Fridrich, Ton Kalker	Digital Watermarking and Steganography		Margan Kaufmann Publishers, New York

Ingemar J. Cox, Matthew L. Miller, Jeffrey A. Bloom	Digital Watermarking		Margan Kaufman nPublishers, New York
Reference Books:			
Michael Arnold, Martin Schmucker, Stephen D. Wolthusen	Techniques and Applications of Digital Watermarking and Contest Protection		Artech House, London

End Semester Examination Scheme. Maximum Marks-70. Time allotted-3hrs.

Group	**Unit**	**Objective Questions** (MCQ only with thecorrect answer)		**Subjective Questions**			
		No of question to be set	Total Marks	No of question to be set	To answer	Marks per question	Total Marks
A	**1 to 5**	**10**	**10**				
B	**1 to 5**			**5**	**3**	**5**	**60**
C	**1 to 5**			**5**	**3**	**15**	

- Only multiple choice type questions (MCQ) with one correct answer are to be set in the objective part.
- Specific instruction to the students to maintain the order in answering objective questions should be given on top of the question paper.

Examination Scheme for end semester examination:

Group	**Chapter**	**Marks of each question**	**Question to be set**	**Question to be answered**
A	**All**	**1**	**10**	**10**
B	**All**	**5**	**5**	**3**
C	**All**	**15**	**5**	**3**

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Subject: Cyber Law & Cyber Crime Investigation	
Course Code: PECICB601B & PECICB691B	**Semester: VI**
Duration: 36 Hrs.	**Maximum Marks: 100 +100**
Teaching Scheme	**Examination Scheme**
Theory: 3 hrs./week	**End Semester Exam: 70**
Tutorial: 0 hr./week	**Attendance : 5**
Practical:4 hrs./week	**Continuous Assessment: 25**
Credit: 3+2	**Practical Sessional internal continuous evaluation: 40**
	Practical Sessional external examination: 60

Aim:	
Sl. No.	
1.	To provide knowledge related to auditing of computer systems, managing and mitigatingrisk situations in the organization and techniques for investigating financial frauds.
2.	To create awareness on cybercrime & IT law.
3.	Provide the assistance to handle cybercrime.
4.	To protect the girls against the cybercrime.

Objective:	
Sl. No.	
1.	This course will look at the emerging legal, policy and regulatory issues pertaining to cyberspace and cybercrimes
2.	To cover all the topics from fundamental knowledge of Information Technology and Computer Architecture so that the participant can use to understand various aspects of working of a computer.
3.	To enable the participants appreciate, evaluate and interpret the case laws with reference to the IT Act and other Laws associated with the cyberspace.
4.	To identify the emerging Cyberlaws, Cybercrime & Cyber security trends and jurisprudence impacting cyberspace in today's scenario.

Contents		**4 Hrs./week**	
Chapter	**Name of the Topic**	**Hours**	**Marks**
01	**Introduction to Cyberspace, Cybercrime and Cyber Law** The World Wide Web, Web Centric Business, e-Business Architecture, Models of e-Business, e-Commerce, Threats to virtual world. IT Act 2000 - Objectives, Applicability, Non-applicability, Definitions, Amendments and Limitations. Cyber Crimes- Cyber Squatting, Cyber Espionage, Cyber Warfare, Cyber Terrorism, Cyber Defamation. Social Media-Online Safety for women and children, Misuse of Private information.	**9**	**17**
02	**Regulatory Framework of Information and Technology Act 2000** Information Technology Act 2000, Digital Signature, E-Signature, Electronic Records, Electronic Evidence and Electronic Governance. Controller, Certifying Authority and Cyber Appellate Tribunal. (Rules announced under the Act), Network and Network Security, Access and Unauthorized Access, Data Security, E Contracts and E Forms.	**9**	**17**
03	**Offences and Penalties**	**9**	**18**

	Information Technology (Amendment) Act 2008 – Objective, Applicability and Jurisdiction; Various cyber-crimes under Sections 43 (a) to (j), 43A, 65, 66, 66A to 66F, 67, 67A, 67B, 70, 70A, 70B, 80 etc. along with respective penalties, punishment and fines, Penal Provisions for Phishing, Spam, Virus, Worms, Malware, Hacking, Trespass and Stalking; Human rights in cyberspace, International Co-operation in investigating cybercrimes.		
04	**Indian Evidence Act Classification – civil, criminal cases. Essential elements of criminal law. Constitution and hierarchy of criminal courts. Criminal Procedure Code. Cognizable and non-cognizable offences. Bailable and non-bailable offences. Sentences which the court of Chief Judicial Magistrate may pass. Indian Evidence Act – Evidence and rules of relevancy in brief. Expert witness. Cross examination and re- examination of witnesses. Sections 32, 45, 46, 47, 57, 58, 60, 73, 135, 136, 137, 138, 141. Section 293 in the code of criminal procedure. Secondary EvidenceSection 65-B.**	**9**	**18**
	Sub Total:	**36**	**70**
	Internal Assessment Examination & Preparation of Semester Examination	**4**	**30**
	Total:	**40**	**100**

List of BooksText Books:

Name of Author	**Title of the Book**	**Edition/ISSN/ISBN**	**Name of the Publisher**
Karnika Seth	Computers, Internet and New Technology Laws		Lexis NexisButtersworthWadhwa, 2012
Jonathan Rosenoer	Cyber Law: The Law of Internet		Springer- Verlag, New York, 1997
Reference Books:			
Sreenivasulu N.S	Law Relating to Intellectual Property		Patridge Publishing ,2013
PavanDuggal	Cyber Law – The Indian Perspective		Saakshar Law Publications
Harish Chander	Cyber Laws and ITProtection		PHI Learning Pvt. Ltd, 2012

End Semester Examination Scheme. Maximum Marks-70. Time allotted-3hrs.

Group	**Unit**	**Objective Questions**(MCQ only with the correct answer)		**Subjective Questions**			
		No of question to be set	Total Marks	No of question to be set	To answer	Marks per question	Total Marks

A **B**	**1,2,3,4** **1,2,3,4,**	**10**	**10**	**5**	**3**	**5**	**60**
C	**1,2,3,4**			5	3	15	

- Only multiple choice type questions (MCQ) with one correct answer are to be set in the objective part.
- Specific instruction to the students to maintain the order in answering objective questions should be given on top of the question paper.

Examination Scheme for end semester examination:

Group	**Chapter**	**Marks of eachquestion**	**Question to be set**	**Question to be answered**
A	**All**	**1**	**10**	**10**
B	**All**	**5**	**5**	**3**
C	**All**	**15**	**5**	**3**

Human Resource Development and Organizational Behavior
Code: OECICB601A
Contact: 3L

Name of the Course:	**Human Resource Development and OrganizationalBehavior**
Course Code: **OECICB601A**	Semester: VI
Duration:6 months	Maximum Marks:100

Teaching Scheme	**Examination Scheme**
Theory:3 hrs./week	Mid Semester exam: 15
Tutorial: NIL	Assignment and Quiz: 10 marks
	Attendance: 5 marks
Practical: NIL	End Semester Exam:70 Marks
Credit Points: 3	

Unit	Content	Hrs/Unit	Marks/Unit
1	Organizational Behaviour: Definition, Importance, Historical Background, Fundamental Concepts of OB, Challenges and Opportunities for OB. **[2]** Personality and Attitudes: Meaning of personality, Personality Determinants and Traits, Development of Personality, Types of Attitudes, Job Satisfaction.	4	

2	Perception: Definition, Nature and Importance, Factors influencing Perception, Perceptual Selectivity, Link between Perception and Decision Making. **[2]** 4. Motivation: Definition, Theories of Motivation - Maslow's Hierarchy of Needs Theory, McGregor's Theory X & Y, Herzberg's Motivation-Hygiene Theory, Alderfer's ERG Theory, McClelland's Theory of Needs, Vroom's Expectancy Theory.	8	
3	Group Behaviour: Characteristics of Group, Types of Groups, Stages of Group Development, Group Decision Making. **[2]** Communication: Communication Process, Direction of Communication, Barriers to Effective Communication. **[2]** Leadership: Definition, Importance, Theories of Leadership Styles.	4	
4.	Organizational Politics: Definition, Factors contributing to Political Behaviour. **[2]** Conflict Management: Traditional vis-a-vis Modern View of Conflict, Functional and Dysfunctional Conflict, Conflict Process, Negotiation – Bargaining Strategies, Negotiation Process. **[2]** Organizational Design: Various Organizational Structures and their Effects on Human Behaviour, Concepts of Organizational Climate and Organizational Culture.	8	

Text book and Reference books:

1. Robbins, S. P. & Judge, T.A.: Organizational Behavior, Pearson Education, 15th Edn.
2. Luthans, Fred: Organizational Behavior, McGraw Hill, 12th Edn.
3. Shukla, Madhukar: Understanding Organizations – Organizational Theory & Practice inIndia, PHI
4. Fincham, R. & Rhodes, P.: Principles of Organizational Behaviour, OUP, 4th Edn.
5. Hersey, P., Blanchard, K.H., Johnson, D.E.- Management of Organizational BehaviorLeading Human Resources,
PHI, 10th Edn.

Economic Policies in India
Code: OECICB601C
Contacts: 3L

Economic Development and its Determinants
Approaches to economic development and its measurement – sustainable development; Role of State, market and other institutions; Indicators of development – PQLI, Human Development Index (HDI), genderdevelopment indices.

Planning in India
Objectives and strategy of planning; Failures and achievements of Plans; Developing grass-root organizations for development – Panchayats, NGOs and pressure groups.

Demographic Features, Poverty and Inequality

Broad demographic features of Indian population; rural-urban migration; Urbanizationand civic amenities; Poverty and Inequality.

Resource Base and Infrastructure
Energy; social infrastructure – education and health; Environment; Regionalimbalance; Issues and policies in financing infrastructure development.

The Agricultural Sector
Institutional Structure – land reforms in India; Technological change in agriculture –pricing of agricultural inputs and output;
industry; Agricultural finance policy; Agricultural Marketing and Warehousing; IssuesTerms of trade between agriculture and in food security – policies for sustainable agriculture.

Section – II
Industrial policy; Public Sector enterprises and their performance; Problem of sick units inIndia; Privatization and disinvestment debate; Growth and pattern of industrialization; Small-scale sector; Productivity in industrial sector; Exit policy – issues in labour market reforms; approaches for employment generation.

Public Finances
Fiscal federalism – Centre-State financial relations; Finances of central government;
Finances of state governments; Parallel
economy; Problems relating to fiscal policy; Fiscal sector reforms in India.

Money, Banking and Prices
Analysis of price behaviour in India; Financial sector reforms; Interest rate policy;
Review of monetary policy of RBI; Money and capital markets;
Working of SEBI in India. **External Sector**
Structure and direction of foreign trade; Balance of payments; Issues in export-importpolicy and FEMA; Exchange rate
policy; Foreign capital and MNCs in India; The progress of trade reforms in India.

Economic Reforms
Rationale of internal and external reforms; Globalization of Indian economy;
WTO and its impact on the different sectors of
the economy; Need for and issues in good governance; Issues in competition andsafety nets in Indian economy.

BASIC READING LIST
1. Ahluwalia, I. J. and I. M. D Little (Eds.) (1999), India's Economic Reforms andDevelopment (Essays in honour of Manmohan

Singh), Oxford University Press, New Delhi.

2. Bardhan, P. K. (9th Edition) (1999), The Political Economy of Development inIndia, Oxford University Press, New Delhi.
3. Bawa, R. s. and P. S. Raikhy (Ed.) (1997), Structural Changes in IndianEconomy, Guru Nanak Dev University Press,

Amritsar.

4. Brahmananda, P. R. and V. R. Panchmukhi (Eds.) (2001), DevelopmentExperience in the Indian Economy: Inter-State

Perspectives, Book well, Delhi.

5. Chakravarty, S. (1987), Development Planning : The Indian Experience, OxfordUniversity Press, New Delhi.
6. Dantwala, M. L. (1996), Dilemmas of Growth : The Indian Experience, SagePublications, New Delhi.
7. Datt, R. (Ed.) (2001), Second Generation Economic Reforms in India, Deep& Deep Publications, New Delhi.
8. Government of India, Economic Survey (Annual), Ministry of Finance, New Delhi.
9. Jain, a. K. (1986), Economic Planning in India, Ashish Publishing House, New Delhi.
10. Jalan, B. (1992), The Indian Economy – Problems and Prospects, Viking, New Delhi.