RKDF UNIVERSITY, BHOPAL

Bachelor of Computer Applications (BCA)

SCHEME

Fifth Semester

AcademicSession:2024-25

S.No	Groups	Subject Code	Subject Name	Marks Distribution					Credits
				CAA (Continuous Assessment & Assignment)	Theory Marks	Practical Marks		Total Marks	
						Internal	External		
1	Group-A	**Major BCA-501/M1T- G- A**	.Computer Graphics	40	60	40	60	200	06 = 4T+2P
		(DSE-I) BCA-502/DSE-I- G- A	Cloud Computing	40	60	--	--	100	04
		(SEC) BCA -503/SEC- G- A	Cyber Security	40	60	-	-	100	04
		BCA-504-G-A	Field Project/Internship	40	60	-	-	100	06
OR		**Grand Total G-A**		**160**	**240**	**-**	**-**	**500**	**20**
2	Group-B	**Major BCA-501/M1T- G- B**	Data Warehousing and Mining	40	60	40	60	200	06 = 4T+2P
		(DSE-I) BCA-502/DSE-I- G- B	My SQL	40	60	--	--	100	04
		(SEC) BCA -503/SEC- G- B	Computer Ethics	40	60	-	-	100	04
		BCA-504-G-B	Field Project/Internship	40	60	-	-	100	06
		Grand Total G-B		**160**	**240**	**-**	**-**	**500**	**20**

Note: The Students may opt for any one Group. They will continue with the same Group in Semester VI.

RKDF UNIVERSITY, BHOPAL

Bachelor of Computer Application
Fifth Semester

Course	Category	Subject	Subject Code
BCA	Major Group-A	Computer Graphics	BCA-501/1 M1T - G- A
Total Credit: 4		Max.Marks:100 (Internal:40+External:60)	

Course Outcomes:

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

CO 1 Understand the basics of computer graphics, different graphics systems and applications of computer graphics.
CO 2 Discuss various algorithms for scan conversion and filling of basic objects and their comparative analysis.
CO 3. Use of geometric transformations on graphics objects and their application in composite form.
CO 4. Extract scene with different clipping methods and its transformation to graphics display device.
CO 5. Explore projections and visible surface detection techniques for display of 3D scene on 2D screen.

Syllabus

Unit	Topics	Duration (In Hours)
I	**Introduction to Computer Graphics:** Application of Computer Graphics. Interactive and Passive Graphics. **Graphic Systems:** Display Processor. Cathode Ray Tube (CRT). Random Scan vs Raster Scan, Color CRT Monitors. Direct View Storage Tubes, Flat Panel Display. **Input-Output Devices:** Input Devices, Trackball. Light Pen. Image Scanner, Output Devices, Plotters.	12
II	**Scan Conversion a line:** Scan Conversion Definition, Scan Converting a Point, Scan Converting a Straight Line, DDA Algorithm. **Scan Conversion Circle:** Defining a Circle, Defining a Circle using Polynomial Method. Defining a Circle using Polar Coordinates Method, Bresenham's Circle Algorithm, Midpoint Circle Algorithm. **Scan Converting Ellipse:** Scan converting a Ellipse, Polynomial Method, Trigonometric Method, Midpoint Ellipse Algorithm	12
III	**Filled Area Primitives:** Boundary Fill Algorithm. Flood Fill Algorithm. Scan Line Polygon Fill Algorithm. **2D Transformations:** Introduction of Transformation, Translation, Scaling. Rotation, Reflection, Shearing, Matrix Representation. Homogeneous Coordinates, Composite Transformation, Pivot Point Rotation. **2D-Viewing:** Window, Window to Viewport Co-ordinate Transformation, Zooming. Panning.	12
IV	**Clipping Techniques:** Clipping. Point Clipping. Line Clipping. Midpoint Subdivision Algorithm, Text Clipping. Polygon, Sutherland- Hodgeman Polygon Clipping. Wailer-Atherton Polygon Clipping . **Pointing & Positioning:** Pointing & Positioning Techniques. Elastic or Rubber Band Techniques. Dragging. **Shading:** Introduction of Shading, Constant Intensity Shading. Gouraud shading. Phong Shading.	12
V	**Animation:** Animation, Application Areas of Animation, Animation Functions. **3D Computer Graphics:** Three Dimensional Graphics, Three Dimensional Transformations, Scaling, Rotation. Rotation about Arbitrary Axis Inverse Transformations, Reflection, Shearing. **Hidden Surfaces:** Hidden Surface Removal, Back Face Removal Algorithm, Z-Buffer Algorithm, Painter's Algorithm, Scan Line Algorithm, Subdivision Algorithm.	12
Keywords/Tags: Graphic Systems, Input-Output Devices, Sean Conversion, 20 Tafo rationa 2D-Viewing, Clipping Techniques, Shading, Aniinstion, 3D Computer Graphics, Hidden Surfaces.		

Recommended Text Books:

1. Hearn: Computer Graphics C Version, Pearson Education India, 2nd edition. 2002.
2. John Hughes. Andries van Dam, Morgan McGuire, David Sklar, James Foley: Computer Graphics: Principles and Practice, Addison-Wesley Professional, 3rd edition, 2013.
3. Zhigang Xiang, Roy Plastock: Computer Graphics, McGraw Hill Education, 2nd edition, 2006

4. मध्य प्रदेश हिन्दी ग्रंथ अकादमी की पुस्तकें।

Reference Book

1. James D. Foley. Andries van Dam, Steven K. Feiner, John F. Hughes: Introduction to Computer Graphics, Addison Wesley, 1993.
2. Chopra Dr. Rajiv: Computer Graphics, S Chand & Co Ltd.
3. Desai : Computer Graphics, PHI, 2008.
4. Asthana, R.G.S.: Computer Graphics for Scientists and Engineers, New Age International Pvt Ltd.

Recommended Web Reference:

https://www.eshiksha.mp.gov.in/mpdhe
https ://epgp.inflibnet.ac.in

RKDF UNIVERSITY, BHOPAL

Bachelor of Computer Application

Fifth Semester

Course	Category	Subject	Subject Code
BCA	Major Group-A	Computer Graphics Lab	BCA-501/1 M1P - G- A
Total Credit: 2		Max.Marks:100 (Internal:40+External:60)	

Course Outcomes:

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

CO 1. Understand the basics of computer graphics, different graphics systems and application of computer graphics.
CO 2. Discuss various algorithms for scan conversion and and their comparative analysis. filling of basic objects.
CO 3. Use of geometric transformations on graphics objects and their application in composite form.
CO 4. Extract scene with different clipping methods and its transformation to graphics display device.
CO 5. Explore projections and visible surface detection techniques for display of 3D scene on 2D screen.

Syllabus

Unit	Topics	Duration (2 Hours Each)
	1. Write a Program to draw basic graphics construction like line, circle, arc, ellipse and rectangle. 2. Write a program of Translation, Rotation, and Scaling using Composite Transformation. 3. Write a program to draw a Circle using midpoint implementation Method. 4. Write a program to draw Bezier curve. 5. Program to rotate a rectangle about its midpoint. 6. Program to clip a line using Liang Barsky Method. 7. Program to implement Standard Perspective Projection in 3-Dimensions. 8. Program to implement Parallel Projection in 3- Dimensions. 9. Write a Program to implement Digital Clock. 10. Write a Program to draw animation using increasing circles filled with different colors and patterns. 11. Write a Program control a ball using arrow keys. 12. Write a Program to implement Bouncing Ball in vertical direction.	30

Recommended Text Books:

1. Hearn: Computer Graphics C Version, Pearson Education India: 2nd edition, 2002.
2. John Hughes, Andries van Dam, Morgan McGuire, David Sklar, James Foley: Computer Graphics: Principles and Practice, Addison-Wesley Professional, 3rd edition, 2013.
3.. Zhigang Xiang, Roy Plastock: Computer Graphics, McGraw Hill Education, 2nd edition, 2006.
4. मध्य प्रदेश हिन्दी ग्रंथ अकादमी की पुस्तकें।

Recommended Web Reference:

https://www.eshiksha.mp.gov.in/mpdhe
https://epgp.inflibnet.ac.in

RKDF UNIVERSITY, BHOPAL

Bachelor of Computer Application

Fifth Semester

Course	Category	Subject	Subject Code
BCA	DSE-I Group-A	Cloud Computing	BCA-502/DSE-I- G- A
Total Credit: 4		Max.Marks:100 (Internal:40+External:60)	

Course Outcomes:

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

CO 1. Learn fundamentals of cloud computing

CO 2. Understand cloud architecture, types and services.

CO 3. Apply concepts of cloud computing in real applications

CO 4. Gain deep insight of security in cloud computing

CO 5. Have knowledge of market Based management of Clouds

Syllabus

Unit	Topics	Duration (In Hours)
I	Cloud Computing Fundamental: Cloud Computing definition, private, public and hybrid cloud. Cloud types: laaS, PaaS, SaaS. Benefits and challenges of cloud computing, public vs private clouds	18
II	Basics Of Service Management in Cloud Computing. Data Management in Cloud Computing. Data Management in Cloud Computing. Cloud Computing Architecture: Cloud Reference Model, Layer and Types of Clouds, Architectural design of Compute and Storage Clouds	18
III	Overview Of cloud management & Virtualization: Fundamental concepts of compute storage, networking. desktop and application virtualization, role of virtualization in enabling the cloud Virtualization benefits, server virtualization, Block and file level storage virtualization.	188
IV	Cloud Security: Cloud Information security. fundamentals, Cloud security services, Design principles, Secure Cloud Software Requirements, Policy Implementation, Cloud Computing Security Challenges. Virtualization security Management. Cloud Computing Security Architecture	18
V	Market Based Management of Clouds Federated Clouds Inter Cloud Characterization & Definition Cloud Federation Stack, Third Party Cloud Services Case study: Google App Engine, Microsoft Azure. Hadoop. Amazon, Aneka	18

Recommended Text Books:

1. A. Srinivasan, J.Suresh, Cloud Computing A Practical approach for learning and implementation, Pearson India, [ISBN-978131776513]
2. GautamShroff, Enterprise Cloud Computing Technology Architecture Applications [ISBN 978-0521137355]
3. Kumar Saurabh "Cloud Computing insights in to New-Era Infrastructure". Wiley India, 2011
4. Dimitris N. Chorafas, Cloud Computing Strategies [ISBN: 1439834539]
5. Buyya, Selvi, Mastering Cloud Computing TMH Pub
6. Krutz. Vnes, Cloud Security, Wiley Pub
7. मध्य प्रदेश हिन्दी ग्रंथ अकादमी की पुस्तकें।

Recommended Web Reference:

1. https://onlinecourses.nptel.ac.in/noc22 cs20/preview
2. https://uptel.ac.in/courses/106105223 3. https://nptel.ac.in/courses/106104182
4. https://www.tutorialspoint.com/cloud computing/index.htm
5. https://www.classcentral.com/course/swayam-cloud-computing-10027

RKDF UNIVERSITY, BHOPAL

Bachelor of Computer Application
Fifth Semester

Course	Category	Subject	Subject Code
BCA	Skill Enhancement Course (SEC) Group-A	Cyber Security	BCA-503/SEC- G- A Skill Enhancement Course
Total Credit: 4		Max.Marks:100 (Internal:40+External:60)	

Course Outcomes:

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

CO 1. Identify the key components of cyber security network architecture.

CO 2. Employ, design and implement appropriate security technologies and policies to protect computers and digital information .

CO 3. Analyze threats and risks within context of the cyber security architecture.

CO 4. Apply cyber security architecture principles.

CO 5. Gain familiarity with prevalent network and distributed system attacks.

Syllabus

Unit	Topics	Duration (In Hours)
I	Cyber Security Introduction, Need for security. Basies of Cryptography: Plain text and Cipher Text, Substitution techniques. Caesar Cipher, Mono-alphabetic Cipher. Polygram, Polyalphabetic Substitution, Playfair, Hill Cipher, Transposition Cipher.	18
II	Encryption and Decryption Symmetric Key Algorithms and AES: Brief history of Asymmetric Key Cryptography, Overview of Asymmetric Key Cryptography, RSA algorithm. Overview of Symmetric key Cryptography, Data Encryption Standard (DES)	18
III	Network Security, Types of Attacks, Firewalls and Virtual Private Networks: Brief Introduction to TCP/IP. Firewalls, Virtual Private Networks (VPN). Secure Socket Layer (SSL). Transport Layer Security (TLS). Secure Hyper Text Transfer Protocol (SHTTP), Time Stamping Protocol (TSP), Secure Electronic Transaction (SET), Secure Sockets Layer (SSL), E-mail Security	18
IV	Introduction to information systems. Types of information Systems, Development of Information Systems, Need for Information security. Threats to Information Systems, Information Assurance, Cyber Security and Security Risk Analysis	18
V	Security Policies, Why Policies should be developed. WWW policies, Email Security policies, Policy Review Process-Corporate policies-Sample Security Policies. Publishing and Notification Requirement of the Policies Information Security Standards-ISO, IT Act Copyright Act, Patent Law, IPR	18

Recommended Text Books:

1. Bernard Menezes, "Network Security and Cryptography", CEGAGE Learning. ISBN-10:81- 315-1349-1, ISBN-13: 978-81-315-1349-1, 2014.
2. Charles Pfleeger, "Security in Computing", Prentice Hall, 4 th Edition, ISBN-10: 0132390779 ISBN-13: 978-01323907744, 2006.
3. Ulysess Black, "Internet Security Protocols: Protecting IP Traffic", Prentice Hall PTR. Ist edition. ISBN-10: 0130142492, ISBN-13: 978-0130142498, 2000.
4.William Stallings. "Cryptography and Network Security", Pearson Education, 6th Edition, ISBN 10: 0133354695, 2013.
5.Jonathan Rosenoer. "Cyber Law: The law of the Internet", Springer-Verlag, 1997
6. Mark F Grady, Fransesco Parisi, "The Law and Economics of Cyber Security". Cambridge University Press, 2006.
7. मध्य प्रदेश हिन्दी ग्रंथ अकादमी की पुस्तकें

Recommended Web Reference:

1. https://onlinecourses swayam2.ac.in/nou19 cs08/preview
2. https://onlinecourses swavam2.ac.in/cec20 cs15/preview
3. https://nptel ac in/courses/106106129
4. InipsAmptel.ac.in/courses/106105031

RKDF UNIVERSITY, BHOPAL

Bachelor of Computer Application

Fifth Semester

Course	Category	Subject	Subject Code
BCA	**Major Group-B**	**Data Warehousing and Mining**	**BCA-501/1 M1T - G- B**
Total Credit: 4		**Max.Marks:100 (Internal:40+External:60)**	

Course Outcomes:

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

CO 1. Understand the basics of data warehouse, it's storage fundamentals and knowledge discovery in databases

CO 2. Apply datasets. data mining techniques over different

CO 3. Implement clustering algorithms and build classification models

CO 4. Select appropriate DM tools and apply the concepts of Data Warehouse and DM techniques for clustering, association, and classification

CO 5. Explore recent trends in data mining such as web mining, spatial-temporal mining.

Syllabus

Unit	Topics	Duration (In Hours)
I	Data Warehouse Basic: Data ware housing Definition, usage and trends, DBMS vs. data warehouse, statistical databases vs. data warehouses. Data marts, Metadata. Multidimensional data model. Data cubes, Schemas for Multidimensional Database: stars, snowflakes and fact constellations	12
II	Storage and Architecture of Data Warehouse: Data warehouse process & architecture, OLTP vs. OLAP. ROLAP vs. MOLAP types of OLAP, servers, 3-Tier data warehouse architecture, distributed and virtual data warehouses, data warehouse manager. data consolidation, ware house internals, storage and indexing. Operations, materialized, online analytical processing (OLAP) system.	12
III	Data Mining Basic: Data mining definition & task. KDD versus data mining, tools and applications. Data mining query languages, Preprocessing, pattern presentation & visualization specification, data mining techniques, tools and applications. Data mining techniques: Statistical perspective. Regression, Bayes Theorem, Hypothetical testing.	12
IV	Classification and Clustering: Issues in classification. Statistical -Based Algorithms. Distance-Based Algorithms. Decision Tree-Based Algorithms. ID3.C4.5. Evaluating the performance. Clustering: Basic concepts. Partition algorithms. Agglomerative Hierarchical algorithms, DBSCAN, BIRCH, CURE algorithm. Clustering with categorical attributes, Comparison.	12
V	Association Rules: Frequent Itemset generation, Apriori Algorithm. Rule generation, Compact representation of frequent Itemset.. Advanced Topics: Dimensionality Reduction, overview of Principle Component Analysis and SVD. Spatial mining, Web mining, Temporal mining.	12

Recommended Text Books:

1. Data Mining: Concepts and Techniques, Han and Kamber, Morgan Kaufmann Publications.
2. Data Mining Techniques, A. K. Pujari, Universities Press Pvt. Lid
3. Data Warehousing" by Amitesh Sinha
4. Data Warehousing in the real world" by Sam Anakory & Dennis Murray
5. Jiawei Han & Micheline Kambe: Data Mining-Concepts & Techniques;
6. Margaret H. Dunham, S. Sridhar:Data Mining Introductory and Advanced Topics

Recommended Web Reference:

1. https://nptel.ac.in/courses/106105174
2. https://onlinecourses.swayam2.ac.in/cec20 cs12/preview

RKDF UNIVERSITY, BHOPAL

Bachelor of Computer Application

Fifth Semester

Course	Category	Subject	Subject Code
BCA	**Major Group-B**	**Data Warehousing and Mining (Lab)**	**BCA-501/1 M1P - G- B**
Total Credit: 2		**Max.Marks:100 (Internal:40+External:60)**	

Course Outcomes:

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

CO 1: Understand the basics of data warehouse, it's storage fundamentals and knowledge discovery in databases

CO 2:. Apply data mining techniques over different datasets.

CO 3: Implement clustering algorithms and build classification models

CO 4: Select appropriate DM tools and apply the concepts of Data Warehouse and DM techniques for clustering, association, and classification

CO 5: Explore recent trends in data mining such as web mining, spatial-temporal mining.

Syllabus

Unit	Topics	Duration (2 Hours Each)
	1. Installing Weka and understanding Weka environment using inbuilt functions 2. Loading and importing different types of datasets in Weka. 3. Implement attribute selection and visualization in Weka 4. Perform ETL operation over data set. 5. Apply various data pre-processing techniques over the data sets. 6. Create a data mart from a data warehouse and apply data cleaning operations 7. Build a classification model to classify data using Naive Bayes algorithm 8. Build a classification Model using different decision tree algorithm 9. Apply regression to make marketing forecasts over sales data 10.Implement clustering algorithm over different data sets. 11. Apply Apriori algorithm to find out association rules in data set. 12.Evaluate the performance of different classifier 13.Analyse the performance of various clustering algorithms. 14.Build a classifier to identify diabetic and non diabetic patients 15. Analyze the IRIS dataset in Weka and apply suitable data mining technique	

Recommended Text Books:

1. Data Mining: Concepts and Techniques, Han and Kamber, Morgan Kaufmann Publications.
2. Data Mining Techniques, A. K. Pujari, Universities Press Pvt. Ltd
3. Data Warehousing" by Amitesh Sinha
4. Data Warehousing in the real world" by Sam Anahory & Dennis Murray
5. Jiawel Han & Micheline Kambe: Data Mining - Concepts & Techniques;

Recommended Web Reference:

1. https://nptel.ac.in/courses/106105174
2. https://onlinecourses.swayam2.ac.in/cec20 cs12/preview
3. https://www.tutorialspoint.com/data mining/index.htm
4. https://www.javatpoint.com/data-warehouse

RKDF UNIVERSITY, BHOPAL

Bachelor of Computer Application

Fifth Semester

Course	Category	Subject	Subject Code
BCA	DSE-I Group-B	My SQL	BCA-502/DSE -I- G- B
Total Credit: 4		Max.Marks:100 (Internal:40+External:60)	

Course Outcomes:

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

CO 1. Understand basic concepts of how a database stores information.

CO 2. Gain knowledge Of SQL syntax with MySQL.

CO 3. Design database for an organization and apply various SQL Queries and constructs.

CO 4. Apply queries to retrieve and manipulate data from one or more tables.

CO 5. Learn how to filter data based upon multiple conditions

Syllabus

Unit	Topics	Duration (In Hours)
I	Introduction to Database and related terms. Introduction to MySQL. need Of SQL, features, Data Types, Types of SQL statements, Concept Of Keys, Null values and Not Null Values.	12
II	**Handling database with MySQL Using Query:** Create Save edit execute Query for different SQL Statements Use the Where clause, Conditional statements, Multiple conditions, Comparison Operators, Logic Values, Null Values. Wildcard characters, Compare Column Values. Distinct Values, Top Values.	12
III	**Data Wrangling:** Group Data, Filtering Grouped Data Summarize Group Data Pivot and Un pivot Operators Importing and Exporting Data, Update Data.	12
IV	**Joins:** Inner Join, Left Join, Full Outer Join. Self-Join. 12 Unions, Except and Intersect, Saving the Query Results and Exporting, Generating Reports.	12
V	**MySQL Functions:** Date Functions, Date Calculations Aggregate Functions, String Functions Sort Data Rank Data, Views in Mysql Overview Of Transactions Triggers, Stored Procedures and User Defined Functions.	12

Recommended Text Books:

1. "MySQL Workbench: Data Modeling & Development" by Michael McLaughlin
2. "MySQL Stored Procedure Programming: Building High-Performance Web Applications in MySQL" by Guy Harrison and Steven Feuerstein
3. "MySQL Administrator's Bible" by Sheeri K Cabral and Keith Murphy
4. "MySQL Cookbook: Solutions for Database Developers and Administrators" by Paul DuBois
5. "MySQL Database Design and Tuning" by Robert D Schneider
6. MySQL: The Complete Reference Vikram Vaswani

Recommended Web Reference:

1. https://www.tutorialspoint.com/mysql/index.htm
2. https://www.javatpoint.com/mysql-tutorial
3. https://www.w3schools.com/MySQL/default.asp
4. https://www.mysqltutorial.org/

RKDF UNIVERSITY, BHOPAL

Bachelor of Computer Application
Fifth Semester

Course	Category	Subject	Subject Code
BCA	Skill Enhancement Course (SEC) Group-B	Computer Ethics	BCA-503/SEC - G- B
Total Credit: 4		Max.Marks:100 (Internal:40+External:60)	

Course Outcomes:

CO1: Describe1 and distinguish2 between the various ethical theories.

CO2: Identify4 traditional and current Issues related to Computers, Information Systems, Ethics, Society and Human Values.

CO3: Identify4 and define1 the components of a structured plan for solving ethical problems.

CO4: Compare5 and contrast5 given examples of professional codes, discussing their commonalties, differences, and implications.

CO5: Develop6 skills of critical analysis and applying ethical principles to situations and dialectical thinking.

Syllabus

Unit	Topics	Duration (In Hours)
I	An Overview of Ethics, Ethics for IT Workers and IT Users: Ethics, Ethics in the Business World; Corporate Social Responsibility; Fostering Corporate Social Responsibility and Good Business Ethics; Improving Business Ethics; Ethical Considerations in Decision Making; Ethics in Information Technology; Managing IT Worker, Relationship; Encouraging Professionalism of IT Workers — Professional Codes of Ethics, Professional Organizations, Certifications and Licensing; Encouraging Ethical Use of IT Resources among Users	12
II	Fields of Computer Ethics : The Need for Computer Ethics Training and Historical Milestones, Defining the Field of Computer Ethics, Computer ethics codes, Sample Topics in Computer Ethics, Computer crime and computer security, Software theft and intellectual property rights, Computer hacking and the creation of viruses, Computer and information system failure, Invasion of privacy, Privacy in the Workplace and on the Internet, Social implications of artificial intelligence and expert systems, 10 Commandments of Computer Ethics	12
III	Privacy and Freedom of Expression: Privacy Protection and the Law – Information Privacy, Privacy Laws, Applications, and Court Rulings; Key Privacy and Anonymity Issues Consumer Profiling, Electronic Discovery, Workplace Monitoring, Surveillance; First Amendment Rights; Freedom Expressions: Key Issues; Social Networking Ethical Issues, Developing the Ethical Analysis Skills and Professional Values, Privacy, Accountability, Government Surveillance	12
IV	Intellectual Property: Intellectual Property, Copyright; Patient; Trade Secrets; Intellectual Property Issues: Plagiarism, Reverse Engineering, Open- Source Code, Competitive Intelligence, Trademark Infringement, and Cybersquatting	12
V	Ethical Decision in Software Development and Ethics of IT Organizations: Software Quality and its Importance; Strategies for Developing Quality Software; Use of Contingent Workers; H-IB Workers; Outsourcing; Whistle-Blowing; Green Computing Boundaries of Trust, Trust Management, Wikipedia, Virtual Trust, Plagiarism in Online Environment, Intellectual Property, Net neutrality.	12

Recommended Text Books:

1. Deborah J, Nisenbaum H, “Computing, Ethics & Social Values”, Prentice Hall, 1995

2. Spinello R, Tavani H T, “Readings in Cyberethics”, Jones and Bartlett Publishers, 2001.

3. Bynum T W, Rogerson S, “Computer Ethics and Professional Responsibility”, Blackwell, 2004

Recommended Web Reference:

1. https://www.cs.uct.ac.za/mit_notes/ethics/pdfs/ethics_top.pdf
2. https://ayyucekizrak.gitbook.io/computers-and-ethics-lecturenotes/computers And ethics/computers-and-ethics-lecture-note