

U.G.

Vocational Courses

(Library & Information Science)

1. Applied Ethics - Cyber Ethics
2. Data Analysis using Spreadsheets
3. Office Automation Tools

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Applied Ethics-Cyber Ethics

Introduction:

This course on cyber ethics will introduce as well as examine the ethical principles, values, and responsibilities that guide individuals, organizations, and societies in the use of digital technologies and online platforms. Students will surely have an understanding of the ethical principles, values, and responsibilities relevant to the use of digital technologies and online platforms. They would be equipped with the knowledge and skills needed to navigate ethical dilemmas, promote ethical behavior, and contribute to the responsible use of technology in society.

Course Outcome:

Cyber Ethics course generally aims to equip students with the knowledge and skills to understand, analyze, and navigate ethical issues in the digital realm. understanding Ethical Frameworks applicable to cyberspace, Identifying Ethical Issues, Ethical Decision Making, etc.

Learning Outcomes:

- **Unit 1.** This Cyber Ethics Course will help develop Ethical Awareness and Critical Thinking.
- **Unit 2.** It will help with ethical Decision Making, with awareness of Legal and Regulatory Compliances.
- **Unit 3.** It may amplify the capability for Risk Assessment and Management with AI
- **Unit 4.** It may help in tackling Digital Citizenship, Ethical Leadership

Unit 1

Introduction to Ethics and Cyber Ethics: Overview of General Ethics: utilitarianism, deontology, virtue ethics, etc., Overview of Cyber Ethics, Historical Context and Development, Importance of Ethical Behavior in Cyberspace; Ethical Foundations in Cyberspace, Moral and Legal Frameworks, Principles of Cyber Ethics (e.g., Privacy, Security, Transparency, Accountability); Privacy and Data Protection: Understanding Privacy in the Digital Age, Data Collection, Consent, and Control, Ethical Issues in Data Handling and Sharing, Ethical Decision-Making in Digital Environments

Unit 2

Cybersecurity and Risk Management: Ethical and non-Ethical Hacking and Responsible Disclosure; Balancing Security Needs with Ethical Considerations; Digital Citizenship and Online Behavior; Rights and Responsibilities of Digital Citizens- Cyberbullying and Online Harassment, Maintaining Civility and Respect in Online Interactions; Intellectual Property and Copyright, Understanding Intellectual Property Rights, Ethical Use of Digital Content, Fair Use, Creative Commons, and Open Access

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Unit 3

Cybercrime and Law Enforcement: Types of Cybercrime (e.g., Hacking, Fraud, Identity Theft), Ethical Considerations in Law Enforcement and Prosecution, Legal and Ethical Implications of Cybercrime Investigations; Social Media and Digital Influence, Ethics of Social Media Use, Manipulation and Persuasion Techniques, Addressing Issues of Fake News and Misinformation; Emerging Technologies and Ethical Challenges, Artificial Intelligence and Machine Learning Ethics, Internet of Things (IoT) and Privacy Concerns.

Unit 4:

Digital Divide and Access Equity: Ethical Considerations in Bridging the Digital Divide; Ensuring Equitable Access to Technology and Information; Addressing Socioeconomic Disparities in Digital Literacy; Professional Ethics in Technology, Ethical Codes of Conduct for IT Professionals, Responsibilities of Tech Companies and Developers, Ethical Considerations in Tech Innovation and Entrepreneurship; Future Directions in Cyber Ethics, Ethical Challenges of Emerging Technologies, Ethical Leadership and Advocacy in Cyberspace, Hacking: Legal vs. Moral. Personal Reflections and Action Plans.

Recommended Textbook:

- ✓ *"Understanding Cyber Ethics: From Personal Responsibility to Public Policy" by Kenneth Einar Himma.*
- ✓ *"Cyber Ethics: Morality and Law in Cyberspace" by Richard A. Spinello.*
- ✓ *"Cyber Ethics: Principles for Navigating the Ethical Minefield of the Digital Age" by H. T. Wilson.*
- ✓ *"Ethics in a Digital World: Guiding Students Through Society's Complexities" Author: Richard M. Luechtefeld Publisher: Rowman & Littlefield Publishers ISBN-13: 978-1475805731*

Reference Books:

- ✓ *"The Cyber Effect: A Pioneering Cyberpsychologist Explains How Human Behavior Changes Online" by Mary Aiken.*
- ✓ *"The Digital Person: Technology and Privacy in the Information Age" by Daniel J. Solove.*
- ✓ *"Digital Ethics: Rethinking Responsibility in the Technological Age" by Deborah G. Johnson.*

E-Resources:

- ✓ *Ethics in Tech - Online Resource Center: Website: ethicsintech.com*
- ✓ *CyberEthics Lab - Online Platform: Website: cyberethicslab.org*
- ✓ *Cyber Ethics Toolkit - Online Resource: Website: cyberethics.gmu.edu*
- ✓ *Cybersecurity and Ethics - Webinar Series: Platform: YouTube Channel: Cybersecurity and Ethics Initiative*

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**Sample Questions: 1 for Part- I Objective; Part- II Very Short Type (in 50 Words);
Par-III Short Type (in 250 Words); Par-IV Long Type (in 800 Words);**

Unit I

1. Cyber ethics deals with ____.
2. What is utilitarianism?
3. What are the three maxims of Kant?
- 4 Elaborate on Cyberethics.

Unit II

1. Write down one demerit in cyber ethics.
2. Difference between ethical & non-ethical hacking.
3. What are the rights and responsibilities of online harassment?
4. Elaborate the ethical use of digital content and fair use.

Unit III

1. Hacking is related to ____ crime.
2. Explain types of cyber crimes.
3. Explain the legal and ethical implications of cybercrime investigations.
4. Elaborate on AI and machine learning ethics.

Unit IV

1. Professional ethics comes under ____ ethics.
2. Write two responsibilities of an IT company.
3. What are the ethical challenges of emerging technology?
4. How ethics can be practiced in the professional field?

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Data Analysis using Spread sheet

Course Objectives:

The objective is to enhance the knowledge of statistics and enable students to make sense of data by analyzing and visualizing it using spreadsheets, interpreting the results and gaining insights.

Learning Outcomes:

Upon completion of this course, students will be able to:

- Learn the use different functions in spreadsheets
- Do data analysis using basic and advanced statistical functions
- Learn the use of tools for visualization
- Do complex level data analysis

UNIT-1:

Data Handling: Spreadsheet concepts, Managing worksheets, Formatting cells, Entering data, Handling operators in formula, Cell referencing and naming of cells and cell ranges, Sorting, Multilayer sorting, Data validation, Find and Replace, Paste special, Filter and advanced filter, Formatting as table, Pivot tables, Formulae vs functions, Cell formulae vs Array formulae. Mathematical functions, Statistical functions, Logical functions, Date and Time functions, Lookup and reference: Hlookup, and Vlookup, Index and Match functions, Text functions. What-if-analysis: Goal-seek, Data tables, Scenario manager.

UNIT-2:

Data Analysis: Explore a data model: its content, and its structure, using the Power Pivot add-in. Learning DAX formula language. Create calculated fields and calculated measure for each cell, filter context for calculation, and explore several advanced DAX functions. Cube formulas to retrieve data from data model.

UNIT-3:

Data Visualization: Different types of charts including Pivot charts: Column, Line, Pie, Bar, Scatter charts. Fine tuning of charts: Chart Elements, Chart Styles, Chart Filters, Box Plot.

UNIT-4:

Utilities and Protection: What-if scenarios, goal-seek, solver, data validation, creating a dropdown list from a range of cells, data filtering and sorting, calculations using linked sheets, detective tools. Passwords and digital signatures in Spreadsheets

Books:

- ✓ Mali, L., *Libre Office 5.1 Writer, Calc: Math Formula Book - Vol 1*. Notion Press
- ✓ *Libre Office 7.0 Calc Guide*.
- ✓ Goldmeier, J., *Advanced Excel Essentials*, Apress, 2014

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✓ Schmuller, J., *Statistical Analysis with Excel for Dummies, 4th Edition*, Wiley India

Lab: Data Analysis using Spread sheet

1. You are given a dataset containing sales data for a retail company. Perform the following tasks using spreadsheet software: Format the cells in the "Sales Amount" column as currency with two decimal places. Use the SUM function to calculate the total sales amount for the dataset.
2. You are managing inventory data for a retail store. Use mathematical functions to calculate the total value of the inventory based on the unit price and quantity of each item in stock.
3. Analyze the sales performance data for a company over the past year. Use statistical functions to calculate the mean, median, and standard deviation of monthly sales figures to identify trends and fluctuations.
4. Create a spreadsheet to track student attendance. Use logical functions to automatically mark students as "Present" or "Absent" based on their attendance record, considering specific criteria such as late arrivals or early departures.
5. Develop a project timeline for a software development project. Use date and time functions to calculate project milestones, deadlines, and durations based on the start date and estimated completion times for each task.
6. Analyze student performance data. Use the provided dataset and perform the following actions: Create a pivot table to summarize the average scores for each subject across different classes. Apply data validation to restrict entries in the "Grade" column to only A, B, C, D, or F.
7. Utilize DAX formula language to calculate the total revenue generated by each product category. Apply filter context to analyze revenue trends over different time periods.
8. Create a pivot chart to visualize the sales performance of different product categories over the last quarter. Customize the chart elements and styles to enhance clarity and visual appeal.
9. Use the provided dataset to create a column, line, pie, box plot chart to analyze the distribution of student scores across multiple subjects.
10. Implement what-if scenarios to analyze the impact of changes in interest rates on loan repayments. Use the solver tool to find the optimal solution for minimizing loan payments.
11. Set up data validation to create a dropdown list of employee names from a range of cells. Apply password protection to restrict access to sensitive financial data stored in the spread sheet.

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Office Automation Tools

Course Objectives:

The course introduces the students to document processing, presentation software and data handling. The basic features and skills of creating, editing, inserting tables, graphics as well as presentation tools along with spreadsheet data handling are covered.

Learning Outcomes:

Upon completion of this course, students will be able to:

- Create and refine documents using text formatting, tables and graphics.
- Use mail merge.
- Create macros and templates in documents.
- Create presentations with transitions, animations and other advanced presentation features

UNIT-1:

Document Processing Basics: Creating, opening and saving a document, text formatting, header and footer, creating and editing of tables, importing graphics, insert picture, using word processor's drawing features, text in drawing.

UNIT-2:

Advanced Features: Creating macros, watermarks, templates, reviewing documents, comparing and combining documents, protection of documents-using passwords. Mail merge concept, main document, data sources, merging data source and main document.

UNIT-3:

Presentation Tools: Creating presentations, using blank presentation option, using design template option, adding slides, deleting a slide, importing images from the outside world, deleting a slide, numbering a slide, saving presentation transition and animations, adding notes to slides, customize slideshows.

UNIT-4:

Data Handling using spreadsheets: Working with spreadsheets, formatting the sheets, Relative, Absolute and mixed referencing, mathematical and statistical functions, nested functions. **Charts:** Data visualization using built-in charts.

Text Book:

- ✓ LibreOffice 6.0 Writer Guide. Friends of OpenDocument, Inc., 2018.

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Lab: Office Automation Tools

1. Create a professional resume using a word processor. Include the following elements in your resume: Your personal information (name, contact details, Photo), A section for your education background, A section for your work experience, Proper text formatting (e.g., font type, size, bold, italics), Utilize headers and footers to include your name and page numbers
2. Create a report for a company's quarterly sales performance. Use a word processor to: Insert a table to organize the sales data (e.g., sales figures by region), Format the table with appropriate borders and shading, Include a header with the report title, Insert a footer with the current date and page numbers, Import a company logo or relevant graphics to enhance the report's visual appeal.
3. As part of a project presentation, you need to create a slide deck using a presentation software. Your presentation should include: Text slides summarizing key project milestones and objectives, Use of bullet points to highlight important information, Incorporate relevant graphics or images to complement your content, Utilize the software's drawing features to annotate diagrams or charts, Ensure consistent formatting and design throughout the presentation.
4. Prepare a newsletter for your organization using a word processor. Your newsletter should feature: Multiple columns for easier readability, Insertion of images or clipart to accompany articles, Incorporate text boxes for quotes or side notes, Include hyperlinks to external websites or email addresses for more information, Utilize header and footer sections for consistency and branding.
5. Create a standardized template for project proposals in your organization. Develop a template using a word processor that includes: Customized headers and footers with organization logo and document title, Watermark feature to indicate the document status (e.g., draft, final), Protection of the document using a password to prevent unauthorized editing, Reviewing feature enabled to track changes and comments from multiple reviewers, Utilize macros to automate repetitive tasks (e.g., inserting common sections or formatting).
6. Create a presentation for an upcoming sales of a company. Use presentation software to: Choose a suitable design template from the software's library, Add slides to cover key topics such as company overview, product/service offerings, and client testimonials, Import images or graphics from external sources to enhance the visual appeal of the presentation, Customize slide numbering to maintain a coherent structure throughout the presentation, Save the presentation with transition effects and animations to make it engaging for the audience.
7. Prepare a training presentation for new employees on company policies and procedures. Use presentation software to: Start with a blank presentation and organize


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slides to cover various policy topics such as code of conduct, safety protocols, and HR guidelines, Utilize a design template that reflects the professional and informative nature of the training material, Import relevant images or diagrams to illustrate key points and make the presentation visually engaging, Customize slide transitions to ensure smooth progression between topics and maintain audience interest, Add speaker notes to each slide to provide trainers with additional information and guidance during the presentation.

8. Organize sales data for the past quarter into a spreadsheet and create a summary report for management. Use spreadsheet software to: Create a new spreadsheet and format the sheet to include relevant column headers for sales data categories such as date, product name, quantity sold, and total revenue, Enter the sales data for each day of the quarter and use relative referencing to calculate the total revenue for each product, Apply appropriate formatting to the cells to enhance readability and make important data stand out, Use mathematical functions such as SUM and AVERAGE to calculate the total revenue and average sales quantity for the quarter, Create a nested function to identify the best-selling product based on total revenue, and present the summary report using built-in charts for visual representation of sales trends.
9. Analyze sales data for a marketing campaign and identify the most effective advertising channels for driving sales. Use spreadsheet software to: Import sales data into a new spreadsheet and format the sheet to include columns for advertising channel, sales revenue, and conversion rate, Use relative referencing to calculate the conversion rate for each advertising channel based on the number of sales and leads generated, Apply conditional formatting to highlight advertising channels with high conversion rates or low sales revenue for further analysis, Utilize nested functions to calculate the total sales revenue and average conversion rate across all advertising channels, Generate charts such as line graphs or scatter plots to visualize the relationship between advertising spend, conversion rate, and sales revenue, helping you identify the most cost-effective advertising channels for the marketing campaign.


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