CURRICULUM FRAMEWORK FOR THREE YEAR UG DEGREE / FOUR YEAR UG DEGREE (HONOURS) / FOUR YEAR UG DEGREE (HONOURS WITH RESEARCH)

Multidisciplinary (MDC) for UG Programme

Department of Computer Science

North Lakhimpur University

(As approved by Board of Studies in Computer Science held on 18th June 2026 and passed by Academic Council held on .....)

Semester-I

Course Code : **MDC–3-CSC-101**
Course Title : **Office Automation**
Nature of the Course : **MDC**
Total Credit assigned : **3**
Component of the Course : **Lecture: 1 Practical: 2 Tutorial: 0**
Distribution of Marks : **End Semester: 28 Practical: 40 In Semester: 12**

Course Objectives

The main objectives of this course are:

Objective-1. To introduce the concept, advantages and applications of Open Source Software in office automation.

Objective-2. To develop skill in preparing formatted documents using open-source word processing tools.

Objective-3. To enable students to develop spreadsheets using formulas, functions, charts and graphs.

Objective-4. To develop the ability to design presentations using text, images, multimedia and animations.

Course Content

Unit	Content	Marks	L	P	T
I	Introduction to Open Source Software for Office Automation • Definition of Open Source Software • Advantages of using Open Source Software for office automation • Examples of Open Source Software for office automation	4	3	16	0
II	Word Processing using Open Source Software • Introduction to Open Source Software for word processing • Creating, editing and formatting text documents • Inserting tables, pictures, and other objects in documents • Mail Merge	8	4	16	0
III	Spreadsheet using Open Source Software • Introduction to Open Source Software for spreadsheets • Creating, editing and formatting spreadsheets • Using formulas and functions in spreadsheets • Creating charts and graphs	8	5	16	0
IV	Presentations using Open Source Software	8	3	12	0

	• Introduction to Open Source Software for presentations • Creating, editing and formatting presentations • Adding multimedia and animations to presentations				
Total		28	15	60	0

Mode of In-Semester assessment (12 Marks):

A. Sessional Activity

B. Sessional Tests: (two Sessional Tests)

Sessional activity:

Students will complete the following tasks:

1. Word Processing Task:
   - Create a well-formatted document with text formatting, tables, images, and implement Mail Merge.
2. Spreadsheet Task:
   - Develop a spreadsheet with data entry, calculations using formulas, and visualization through a chart or graph.
3. Presentation Task:
   - Design a 5-slide presentation using an OSS presentation tool, incorporating text, images, multimedia, and animations.

Evaluation Criteria:

- Accuracy and completeness of tasks.
- Proper use of formatting, formulas, and design elements.
- Creativity and clarity in the final output.

Laboratory Work: The laboratory work will cover hands-on exercises related to the course topics. Students will be required to use Open Source Software applications for office automation and complete assignments and projects that demonstrate their understanding of the software.

Course Outcomes:

By the end of the course, students will be able to:

CLO-1. Explain the concept, advantages and applications of Open Source Software in office automation.

CLO-2. Prepare well-formatted documents using open-source word processing tools with text formatting, tables, images, objects and Mail Merge.

CLO-3. Prepare spreadsheets using data entry, formatting, formulas, functions, charts and graphs in open-source spreadsheet software.

CLO-4. Prepare effective presentations using open-source presentation software by incorporating text, images, multimedia and animations.

Cognitive Map of Course Learning Outcomes based on Revised Bloom's Taxonomy

Knowledge Dimension	Remember	Understand	Apply	Analyse	Evaluate	Create
Factual Knowledge	CLO1	CLO1				
Conceptual Knowledge		CLO1, CLO2	CLO2			
Procedural Knowledge			CLO2, CLO3			
Metacognitive Knowledge						

Mapping of CLO with Programme Specific Outcomes (PSOs)

CLO / PSO	PSO1	PSO2	PSO3	PSO4	PSO5	PSO6	PSO7	PSO8	PSO9	PSO10
CLO1	1			1					1	
CLO2				2		2				
CLO3	1			2						
CLO4				2		2		1		
Average Contribution	**0.5**			**1.75**		**1**		**0.25**	**0.25**	

Scale: 3 = High contribution, 2 = Moderate contribution, 1 = Low contribution; blank = No direct mapping.

Suggested readings:

1. Bain, M. A. (2006). *Learn OpenOffice. orgSpreadsheet Macro Programming: OOoBasic and Calc Automation: a Fast and Friendly Tutorial to Writing Macros and Spreadsheet Applications*. Packt Publishing Ltd.
2. Bazzell, M. (2016). *Open source intelligence techniques: resources for searching and analyzing online information*. CreateSpace Independent Publishing Platform.

Semester-II

Course Code : **MDC –3-CSC-201**
Course Title : **Working with Multimedia**
Nature of the Course : **MDC**
Total Credit assigned : **3**
Component of the Course : **Lecture: 1 Practical: 2 Tutorial: 0**
Distribution of Marks : **End Semester: 28 Practical: 40 In Semester: 12**

Course Objectives

Objective-1. To introduce multimedia types and the significance of open-source software in multimedia production.
Objective-2. To develop skill in designing and optimizing graphics and images using open-source graphic design tools.
Objective-3. To develop ability to produce audio and video content using open-source audio and video tools.
Objective-4. To enable students to create basic 2D/3D animations and integrate multimedia outputs using open-source tools.

Course Content

Unit	Content	Marks	L	P	T
I	Introduction to Multimedia and Open-Source Software • Definition and types of multimedia • Overview of open-source software for multimedia production • Importance of open-source software in modern society	4	3	8	0
II	Graphic Design with Open-Source Software • Introduction to graphic design principles • Designing graphics for multimedia projects with open-source software such as GIMP and Inkscape • Image optimization and preparation for web use	6	3	12	0
III	Audio Production with Open-Source Software • Introduction to audio production tools and techniques with open-source software such as Audacity and Ardour • Recording and editing audio for multimedia projects • Mixing, mastering and file management	6	3	12	0
IV	Video Production with Open-Source Software • Introduction to video production tools and techniques with open-source software such as Blender, OpenShot, and Shotcut	6	3	16	0

	• Capturing and editing video for multimedia projects • Video formats, codecs, and rendering				
V	Animation with Open-Source Software • Introduction to animation tools and techniques with open-source software such as Synfig and Blender • Creating 2D and 3D animations • Animated graphics and motion graphics	6	3	12	0
Total		28	15	60	0

Mode of In-Semester assessment (12 Marks):

A. Sessional Activity

B. Sessional Tests: (two Sessional Tests)

Sessional activity:

1. Graphic Design with Open-Source Software

- Create a logo or banner design using GIMP or Inkscape.
- Optimize images for web use by adjusting resolution, compression, and file formats.

2. Audio Production with Open-Source Software

- Record and edit a short audio clip using Audacity or Ardour, applying effects like noise reduction and equalization.
- Mix and master an audio track for a multimedia project.

3. Video Production with Open-Source Software

- Capture and edit a short video clip using OpenShot or Shotcut, adding transitions and effects.
- Convert the video into different formats and codecs for web or mobile compatibility.

4. Animation with Open-Source Software

5. Create a simple 2D animation using Synfig with keyframes and motion effects.

- Develop a basic 3D animation in Blender, applying textures and simple movements.

Evaluation Criteria:

- **Creativity and originality** in multimedia projects.
- **Technical proficiency** in using open-source tools.
- **Quality and optimization** of multimedia content.
- **Proper workflow documentation** and project explanation.

Laboratory Work:

1. Explore different types of multimedia, such as images, audio, video, and animation, and their applications in various fields.
2. Design a logo or a poster for a local event or a student club. Apply design principles such as colour theory, typography, and layout to create a visually appealing and effective design.
3. Create a series of graphics for a social media campaign. Experiment with different styles and formats, such as infographics, memes, or GIFs, and optimize them for web use.

4. Record and edit a short podcast episode. Apply editing techniques such as noise reduction, equalization, and compression to enhance the audio quality and clarity.
5. Mix and master a song or a sound effect. Use effects such as reverb, delay, and chorus to create a desired sonic atmosphere, and export the file in a suitable format for distribution.
6. Create a sound design for a short film or a video game. Experiment with different sounds and layers to convey a mood or a narrative, and synchronize them with the visuals using a video editing software.
7. Plan and shoot a short film or a documentary using a smartphone or a camera. Apply editing techniques such as trimming, cutting, and crossfading to create a coherent and engaging story.
8. Create a motion graphics sequence. Use keyframe animation, particle effects, or other features to illustrate a concept or a message, and export the sequence as a video or an image sequence.
9. Create a 2D character animation. Use bone rigs, vector shapes, and tweening to create a lively and expressive animation, and export it as a video or an image sequence.
10. Create a 3D model and animation. Use modeling tools, materials, and lighting to create a realistic or stylized 3D object or environment, and animate it using keyframes or physics simulation.

Course Outcomes:

By the end of the course, students will be able to:

CLO-1. Explain the types of multimedia and the significance of open-source software in multimedia production.
CLO-2. Design and optimize digital graphics and images for multimedia and web use using open-source graphic design tools.
CLO-3. Produce and edit audio and video content through recording, mixing, mastering, rendering and file management using open-source tools.
CLO-4. Prepare basic multimedia outputs, including 2D and 3D animations, using open-source tools with suitable motion and visual effects.

Cognitive Map of Course Learning Outcomes based on Revised Bloom's Taxonomy

Knowledge Dimension	Remember	Understand	Apply	Analyse	Evaluate	Create
Factual Knowledge	CLO1	CLO1				
Conceptual Knowledge		CLO1, CLO2	CLO2			
Procedural Knowledge			CLO2, CLO3			
Metacognitive Knowledge						

Mapping of CLO with Programme Specific Outcomes (PSOs)

CLO / PSO	PSO1	PSO2	PSO3	PSO4	PSO5	PSO6	PSO7	PSO8	PSO9	PSO10
CLO1	1								1	
CLO2			2	2						
CLO3			2	2						
CLO4			3	2		1				
Average Contribution	**0.25**		**1.75**	**1.5**		**0.25**			**0.25**	

Scale: 3 = High contribution, 2 = Moderate contribution, 1 = Low contribution; blank = No direct mapping.

Suggested readings:

1. Li, Q., & Shih, T. K. (Eds.). (2009). *Ubiquitous multimedia computing*. CRC Press.
2. Lecarme, O., &Delvare, K. (2013). *The book of GIMP: A complete guide to nearly everything*. No Starch Press.
3. Caudron, R., Nicq, P. A., &Valenza, E. (2016). *Blender 3D: Designing Objects*. Packt Publishing Ltd.
4. Parekh, R. (2006). *Principles of multimedia* (p. 727). Tata McGraw-Hill.
5. Vaughan, T. (2014). *Multimedia: Making it work*. McGraw-Hill Education Group.

Semester-III

Course Code : MDC –3-CSC-301
Course Title : Digital Literacy and Cyber Safety
Nature of the Course : MDC
Total Credit assigned : 3
Component of the Course : Lecture: 2 Practical: 1 Tutorial: 0
Distribution of Marks : End Semester: 28 Practical: 40 In Semester: 12

Course Objectives:

Objective-1. To introduce basic digital literacy concepts related to devices, operating systems, file management and safe use of devices.

Objective-2. To develop responsible use of e-mail, cloud storage, online meetings and collaboration tools.

Objective-3. To develop awareness of common cyber threats and safe practices for privacy, passwords, authentication and data protection.

Objective-4. To enable students to use digital services, online forms, digital records and safe digital payment practices responsibly.

Course Content

Unit	Content	Marks	L	P	T
I	Fundamentals of Digital Literacy • Digital devices, operating systems, and basic settings • File and folder management; document formats and storage • Digital accessibility, keyboard shortcuts, and safe use of devices	6	8	6	0
II	Digital Communication and Collaboration • E-mail writing, online etiquette, and responsible communication • Cloud storage, file sharing, permissions, and backup • Online meeting tools and collaborative document practices	6	6	8	0
III	Cyber Safety and Privacy • Common cyber threats: phishing, malware, OTP fraud, and social engineering • Strong passwords, two-factor authentication, antivirus use, and backup habits • Privacy settings, data protection, and reporting cyber incidents	8	8	8	0
IV	Digital Services and Responsible Use • Use of e-governance services, online forms, DigiLocker, and digital records • Digital payment awareness and safe UPI practices without real transactions	8	8	8	0

	• Digital footprint, copyright, plagiarism, and ethical use of online resources				
	Total	**28**	**45**	**30**	**0**

Mode of In-Semester assessment (12 Marks):

A. Sessional Activity
B. Sessional Tests: (two Sessional Tests)

Sessional activity:

1. Digital Literacy Task

• Create a well-organized folder structure for academic files and apply meaningful file naming conventions.
• Prepare, save, convert, and share a document in suitable digital formats such as DOCX and PDF.

2. Digital Communication and Collaboration Task

• Write a professional e-mail with an attachment and appropriate subject line, salutation, and signature.
• Share a file through cloud storage by applying suitable view/edit permissions and backup practices.

3. Cyber Safety Task

• Identify phishing messages, suspicious links, and unsafe online behaviour from sample cases.
• Prepare a cyber-safety checklist covering passwords, two-factor authentication, privacy settings, and backups.

4. Digital Services Task

• Demonstrate the steps for filling an online form and uploading required documents in a simulated environment.
• Explain safe digital payment practices, including PIN safety, QR-code caution, and transaction verification.

Evaluation Criteria:

• Correctness and completeness of digital tasks.
• Safe and responsible use of online tools and digital services.
• Ability to identify cyber risks and suggest preventive measures.
• Clarity, neatness, and proper documentation of practical work.

Laboratory Work:

1. Identify basic computer and mobile device settings related to storage, security, updates, and accessibility.
2. Create, rename, copy, move, compress, and organize files and folders for academic use.
3. Prepare an academic document, convert it to PDF, and store it in a clearly named folder structure.
4. Compose professional e-mails, attach files, and follow digital communication etiquette.
5. Use cloud storage to upload, share, restrict access, and maintain backup copies of files.
6. Analyze sample phishing e-mails, fake links, QR-code fraud cases, and unsafe social media practices.

7. Configure strong passwords, two-factor authentication, privacy settings, and basic device security options.
8. Simulate online form filling, document upload, and digital payment safety checks without making real payments.

Course Outcomes:

By the end of the course, students will be able to:

CLO-1. Explain basic digital literacy concepts related to digital devices, operating systems, file management, accessibility, storage and safe use of devices.
CLO-2. Use e-mail, cloud storage, online meeting platforms and collaborative tools responsibly for academic and professional communication.
CLO-3. Explore common cyber threats and apply safe practices related to passwords, authentication, privacy, backups and cyber incident reporting.
CLO-4. Demonstrate responsible use of e-governance services, online forms, digital records and safe digital payment practices.

Cognitive Map of Course Learning Outcomes based on Revised Bloom's Taxonomy

Knowledge Dimension	Remember	Understand	Apply	Analyse	Evaluate	Create
Factual Knowledge	CLO1	CLO1				
Conceptual Knowledge		CLO1, CLO2	CLO2	CLO3		
Procedural Knowledge			CLO2, CLO3	CLO3, CLO4		
Metacognitive Knowledge						

Mapping of CLO with Programme Specific Outcomes (PSOs)

CLO / PSO	PSO1	PSO2	PSO3	PSO4	PSO5	PSO6	PSO7	PSO8	PSO9	PSO10
CLO1	1			1					1	
CLO2				2		2				
CLO3		2		2	2					
CLO4				2	2					1
Average Contribution	**0.25**	**0.5**		**1.75**	**1**	**0.5**			**0.25**	**0.25**

Scale: 3 = High contribution, 2 = Moderate contribution, 1 = Low contribution; blank = No direct mapping.

Suggested readings:

1. Gilster, P. (1997). *Digital literacy*. Wiley.
2. Stallings, W., & Brown, L. (2018). *Computer security: Principles and practice* (4th ed.). Pearson.
3. Schneier, B. (2015). *Data and Goliath: The hidden battles to collect your data and control your world*. W. W. Norton & Company.
4. Hadnagy, C. (2018). *Social engineering: The science of human hacking* (2nd ed.). Wiley.