



ہائیر ایجو کیشن کمیشن

## HIGHER EDUCATION COMMISSION Government of Pakistan, Islamabad (Curriculum Division)

### ENDORSEMENT OF THE COURSE DESIGN COMMITTEE

A meeting of a course design committee was held on 10 August 2023 in the Higher Education Commission, Lahore (Regional Office) to design a three-credits course of "**Applications of Information and Communication Technologies**" as part of the general education component of the HEC Undergraduate Education Policy (V 1.1).

Following members of the committee attended the meeting and developed the draft of the course:

1. Dr. Aasia Khanum, Professor, Department of Computer Science, Forman Christian College, Lahore
2. Dr. Faisal Riaz, Professor, Department of Computer Science & Information Technology, Mirpur University of Science & Technology, Mirpur
3. Dr. Humaira Afzal, Professor, Department of Computer Science, Bahauddin Zakariya University, Multan
4. Dr. Samina Rajper, Professor, Institute of Computer Science, Shah Abdul Latif University, Khairpur
5. Dr. Shahzad Sarwar, Professor & Chairperson, Department of Computer Science, University of the Punjab, Lahore
6. Dr. Huma Javed, Associate Professor, Department of Computer Science, University of Peshawar, Peshawar
7. Dr. Muhammad Rafi, Associate Professor & Head, Department of Artificial Intelligence and Data Science, National University of Computer and Emerging Sciences, Karachi
8. Dr. Munam Ali Shah, Associate Professor, Department of Computer Science, COMSATS University Islamabad
9. Dr. Nadeem Mahmood, Associate Professor & Chairperson, Department of Computer Science, University of Karachi, Karachi
10. Dr. Seemab Latif, Associate Professor, School of Electrical Engineering and Computer Science, National University of Sciences & Technology, Islamabad
11. Dr. Shahid Hussain, Associate Professor & Chairperson, Department of Computer Science, Institute of Business Administration, Karachi
12. Mr. Muhammad Ali Baig, Deputy Director, Higher Education Commission, Islamabad

Following members of the committee could not attend the meeting due to official / other commitments:

1. Dr. Muddasir Shabbir, Associate Professor & Chairperson, Department of Computer Science, Information Technology University, Lahore
2. Dr. Syed Sajjad Hussain Rizvi, Associate Professor & Head, Robotics and Artificial Intelligence, Shaheed Zulfiqar Ali Bhutto Institute of Science & Technology, Karachi
3. Dr. Bushra Naeem, Associate Professor & Chairperson, Balochistan University of Information Technology, Engineering and Management Sciences, Quetta
4. Dr. Muhammad Hamad Alizai, Associate Professor, Syed Babar Ali School of Science and Engineering, Lahore University of Management Sciences, Lahore

That after consultation and endorsement of the committee, the final draft of the course is hereby submitted to the office of the Director Curriculum Division, HEC, Islamabad by us / the undersigned on behalf of the committee for consideration of HEC.

Dr. Shahzad Sarwar  
(Convener)

Dr. Muhammad Rafi  
(Co-Convenor)

Mr. Muhammad Ali Baig  
(Secretary)

#### PLEASE NOTE:

1. The Curriculum Division, HEC may conduct an internal review of the draft submitted by the committee and make necessary amendments as and when needed, with or without sharing reasons of the same with the committee.
2. The Curriculum Division, HEC may refer the draft submitted by the committee to other experts or a new committee for review who may propose revisions / additional recommendations in the said draft.

# APPLICATIONS OF INFORMATION AND COMMUNICATION TECHNOLOGIES

## UGE Policy V 1.1 : General Education Course

**Credits:** 03 (Class Credits: 02; Lab Credits: 01)

**Pre-Requisite:** Nil

**Offering:** Undergraduate Degrees (including Associate Degrees)

**Placement:** 1 - 4 Semesters

**Type:** General Education

**Fields:** All

### DESCRIPTION

This course is designed to provide students with an exploration of the practical applications of Information and Communication Technologies (ICT) and software tools in various domains. Students will gain hands-on experience with a range of software applications, learning how to leverage ICT to solve daily life problems, enhance productivity and innovate in different fields. Through individual and interactive exercises and discussions, students will develop proficiency in utilizing software for communication, creativity, and more.

### COURSE LEARNING OUTCOMES

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

1. Explain the fundamental concepts, components, and scope of Information and Communication Technologies (ICT).
2. Identify uses of various ICT platforms and tools for different purposes.
3. Apply ICT platforms and tools for different purposes to address basic needs in different domains of daily, academic, and professional life.
4. Understand the ethical and legal considerations in use of ICT platforms and tools.

### SYLLABUS

#### 1. Introduction to Information and Communication Technologies:

- Components of Information and Communication Technologies (basics of hardware, software, ICT platforms, networks, local and cloud data storage etc.).
- Scope of Information and Communication Technologies (use of ICT in education, business, governance, healthcare, digital media and entertainment, etc.).
- Emerging technologies and future trends.

#### 2. Basic ICT Productivity Tools:

- Effective use of popular search engines (e.g., Google, Bing, etc.) to explore World Wide Web.
- Formal communication tools and etiquettes (Gmail, Microsoft Outlook, etc.).
- Microsoft Office Suites (Word, Excel, PowerPoint).
- Google Workspace (Google Docs, Sheets, Slides).
- Dropbox (Cloud storage and file sharing), Google Drive (Cloud storage with Google Docs integration) and Microsoft OneDrive (Cloud storage with Microsoft Office integration).
- Evernote (Note-taking and organization applications) and OneNote (Microsoft's digital notebook for capturing and organizing ideas).
- Video conferencing (Google Meet, Microsoft Teams, Zoom, etc.).
- Social media applications (LinkedIn, Facebook, Instagram, etc.).

#### 3. ICT in Education:

- Working with learning management systems (Moodle, Canvas, Google Classrooms, etc.).
- Sources of online education courses (Coursera, edX, Udemy, Khan Academy, etc.).
- Interactive multimedia and virtual classrooms.

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**4. ICT in Health and Well-being:**

- Health and fitness tracking devices and applications (Google Fit, Samsung Health, Apple Health, Xiaomi Mi Band, Runkeeper, etc.).
- Telemedicine and online health consultations (OLADOC, Sehat Kahani, Marham, etc.).

**5. ICT in Personal Finance and Shopping:**

- Online banking and financial management tools (JazzCash, Easypaisa, Zong PayMax, ILINK and MNET, Keenu Wallet, etc.).
- E-commerce platforms (Daraz.pk, Telemart, Shophive, etc.)

**6. Digital Citizenship and Online Etiquette:**

- Digital identity and online reputation.
- Netiquette and respectful online communication.
- Cyberbullying and online harassment.

**7. Ethical Considerations in Use of ICT Platforms and Tools:**

- Intellectual property and copyright issues.
- Ensuring originality in content creation by avoiding plagiarism and unauthorized use of information sources.
- Content accuracy and integrity (ensuring that the content shared through ICT platforms is free from misinformation, fake news, and manipulation).

## **PRACTICAL REQUIREMENTS**

As part of the overall learning requirements, the course will include:

1. Guided tutorials and exercises to ensure that students are proficient in commonly used software applications such as word processing software (e.g., Microsoft Word), presentation software (e.g., Microsoft PowerPoint), spreadsheet software (e.g., Microsoft Excel) among such other tools. Students may be assigned practical tasks that require them to create documents, presentations, and spreadsheets etc.
2. Assigning of tasks that involve creating, managing, and organizing files and folders on both local and cloud storage systems. Students will practice file naming conventions, creating directories, and using cloud storage solutions (e.g., Google Drive, OneDrive).
3. The use of online learning management systems (LMS) where students can access course materials, submit assignments, participate in discussion forums, and take quizzes or tests. This will provide students with the practical experience with online platforms commonly used in education and the workplace.

## **SUGGESTED INSTRUCTIONAL/ READING MATERIALS**

1. "Discovering Computers" by Vermaat, Shaffer, and Freund.
2. "GO! with Microsoft Office" Series by Gaskin, Vargas, and McLellan.
3. "Exploring Microsoft Office" Series by Grauer and Poatsy.
4. "Computing Essentials" by Morley and Parker.
5. "Technology in Action" by Evans, Martin, and Poatsy.

*Mahmud*

*(Signature)*