

Introduction to Information and Communication Technologies (ICT)

SUBJECT : Introduction to Information and Communication Technologies

COURSE CODE : IT-1502

BATCH : 2025/fall

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BOOKS

Recommended Books:

1. Discovering Computers by Vermaat, Shaffer, and Freund, latest Edition (17th, Published in 2023).
2. GO! with Microsoft Office series by Gaskin, Vargas, and ~~McLellan~~, latest Edition (5th, Published in 2019).
3. Exploring Microsoft Office series by ~~Grauer~~ and ~~Poatsy~~, latest Edition (1st, Published in 2021).
4. Computing Essentials by Morley and parker, latest Edition (29th, Published in 2024).
5. Technology in Action by Evans, Martin, and ~~Poatsy~~, latest Edition (17th, Published in 2020).

Course Contents:

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.)
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 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 (Cousera, edX, Udemy, Khan Academy, etc.)
 - Interactive multimedia and virtual classrooms.
4. ICT in Health and Well-being:
 - Health and fitness tracking devices and applications (Google Fit, Samsung Health, Apple Health, Xiaomi Mi, Run keeper, 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, 1Link 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 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).

WHAT IS COMPUTER ?

- A computer is a device that can be instructed to carry out sequences of arithmetic or logical operations automatically.
- Modern computers have the ability to follow generalized sets of operations, called programs. These programs enable computers to perform an extremely wide range of tasks.



PROS & CONS OF COMPUTER

Pros

Speed

Reliability

Consistency

Storage

Communications

Cons

Health Risks

Violation of Privacy

Public Safety

Impact on Labor Force

Impact on Environment

WHAT IS ICT?

- **Information and Communication Technologies (ICT)** refer to the broad range of technologies used to handle information and facilitate communication.
- This includes everything from computers, smartphones, and software to the internet, email, and cloud services.
- ICT is the integration of computing technology and communication technology that allows people, organizations, and governments to process, store, and share information efficiently.



ICT - KEY COMPONENTS

ICT combines two key components:

- **Information Technology (IT)**: The use of computers and software to manage data.
- **Communication Technology**: The tools and systems used to transmit information from one place to another.



KEY COMPONENTS OF ICT

ICT can be broken down into several core components:

- **Hardware:** Physical devices like computers, smartphones, routers, servers, storage devices , printers, etc.
- **Software:** Programs and applications that process and manage data (e.g., Microsoft Office, databases, web browsers, cloud platforms).



KEY COMPONENTS OF ICT

- **Networks:** Systems that connect computers and devices, such as the internet, Wi-Fi, and LANs (Local Area Networks).
- **Data:** Raw facts and figures that can be processed into useful information. Collection , processing , analysis & management of digital information.
- **People:** Users who interact with ICT systems—ranging from IT professionals to everyday users.

IMPORTANCE OF ICT

- **Improved Communication:** Email, instant messaging, video conferencing, and social media allow real-time global communication.
- **Access to Information:** The internet provides vast knowledge resources for learning, business, and decision-making.
- **Education:** ICT tools like e-learning platforms, online courses, and digital classrooms, virtual classrooms.

IMPORTANCE OF ICT

- **Business and Economy:** ICT enhances productivity, enables e-commerce, and supports digital marketing.
- **Healthcare:** Telemedicine, electronic health records, and health information systems improve medical services.
- **Governance:** E-Government portal services, digital tax systems, online voting offer transparency and make public services more accessible.
- **Social Communication:** Social networking sites, video conferencing , instant messaging , collaborative work platforms.

EXAMPLES OF ICT TOOLS

- **Devices:** Smartphones, laptops, tablets, servers
- **Applications:** Google Workspace, Zoom, Microsoft Teams
- **Platforms:** Social media (Facebook), Learning Management Systems (Moodle, blackboard Learn)
- **Infrastructure:** Fiber optic cables, 5G networks, cloud computing

ICT PRODUCTIVITY TOOLS

These are software applications that help users **increase efficiency and productivity**:

- **Word Processing** (e.g., MS Word, Google Docs) – for creating text documents.
- **Spreadsheets** (e.g., MS Excel, Google Sheets) – for data analysis and calculations.
- **Presentation Tools** (e.g., MS PowerPoint, Canva,) – for professional presentations.
- **Database Systems** (e.g., MS Access, Oracle, MySQL) – for managing structured data.
- **Collaboration Tools** (e.g., Zoom, Slack, Microsoft Teams, Google Meet) – for teamwork and communication.

CONCLUSION

- ICT plays a critical role in modern life by enabling fast, efficient, and global communication and information management.
- As technology evolves, ICT continues to transform how we live, learn, work, and interact with the world.