

प्रो. पी. हैंगसिंग

अध्यक्ष

पुस्तकालय एवं सूचना विज्ञान विभाग

पूर्वोत्तर पर्वतीय विश्वविद्यालय

जिला: पूर्वी खासी हिल्स, शिलांग - 793022
मेघालय, भारत



Prof. P. HANGSING

Head

Department of Library & Information Science

North-Eastern Hill University

District: East Khasi Hills, Shillong - 793022
Meghalaya, India

F.No.53-1/DLIS/2026- 178

Date: 14th August, 2026

NOTICE

It is for the information of the 1st semester Students that the Department of Library and Information Science is offering **LIS-GEC-504 - Foundations of Computer and Communication Technologies** as *Generic Elective Course (GEC) - Multidisciplinary* (Syllabus pertaining the course is appended herewith)

All interested student are welcome to apply for the course to the Department of Library and Information Science in enclosed format on or before **10th September, 2026**.

Enrollment to the course will be on the first-come-first serve basis.

Any clarification about the course could be sought from Dr. J. Khongtim, Dept. Library and Information Science who is the students' advisor.

(P. HANGSING)

Head,

Library and Information Science,

NEHU, Shillong-22

Head of Department

Library & Information Science

North-Eastern Hill University, Shillong

Copy to:

1. Controller of Examinations, NEHU, Shillong .
2. All Dean/HOD NEHU, Shillong
3. NDVN, NEHU, Shillong with a request to upload on the University Website for wider publicity.

NORTH – EASTERN HILL UNIVERSITY



Permanent Campus : Shillong – 793022 (Meghalaya)

**Application form for Registration of students for General Elective Course in
Foundations of Computer and Communication Technologies (LIS GEC - 504)**

(to be submitted in triplicate)

1. **Name of the Student in full** : _____
2. **Name of Department / Centre** : _____
3. **Roll No.** : _____
4. **NEHU Registration No.** : _____
5. **Phone Number** : _____

Signature of Student

Signature of the Student Counsellor

Signature of the Head of the Department with seal

Office Seal

.....
For OFFICE USE only

Accepted/Not accepted

Signature of HOD servicing the Open Course

Signature & Seal of the Dean of School

LIS – GEC- 504: Foundations of Computer and Communication Technologies

Objective: This paper is to introduce the basic knowledge of information technology. To familiarize and equip the students with the operational knowledge of both the general purpose system software and application software. To impart the basic concept, functions, and applications of cloud computing, programming language and artificial intelligence.

Learning Outcomes

After studying this paper, the students will be able to:

1. Understand the basic concepts of computer and communication technologies
2. Carry out the basic computer operations
3. Understand the need for computer and communication technologies in managing libraries
4. Grasp the fundamentals of Content Management System (CMS) and Learning Management System (LMS)

Unit – I

Basics of Information Technology: Concept, Components and Development;
Computer: History and Generations, Types, Components: hardware and software, Input and Output devices, storage devices, Memory, Computer Architecture, Cloud Computing;
Data representation in computer: Binary Number System, Character coding standards: ASCII, ISCII, UNICODE and Data Types.

Unit – II

Computer Software: System Software and Application Software;
System Software (Operating Software): Concept, Types and Functions, DOS, Windows and Linux;
Application Software: Word Processor, Spreadsheet, Presentation Tools, MS-Access;
Practical: Operating Systems: DOS, Windows, Linux; Application Software: Word Processor, Spreadsheet, Presentation Tools, MS-Access.

Unit - III

Introduction to Programming Language using C, Introduction to Markup using HTML;
Computer Networks: Physical Network Topologies, Types of Networks: LAN, MAN, WAN, Mobile Network and Bluetooth;
Internet: Web browsers, WWW, E-mail, Search Engines;
Internet Protocols and Standards: HTTP, FTP, SMTP, TCP/IP, URI, URL;
Artificial Intelligence: History and Development, Application of Artificial Intelligence in Libraries.

Unit - IV

Introduction to Open Source Software (OSS): Overview, Philosophy, Characteristics and Movement; Proprietary Software, Overview of Commercial Software, Free Software and Freeware;

Software Licensing Policy: GNU, Open Source Licenses and Free Software; Metadata: Types and Standards

Introduction to Content Management System (CMS) and Learning Management System (LMS)

Core Readings

Arora, A. & Bansal, S. (2000). *Computer fundamentals*. New Delhi: Excel Books. Boiko, B. (2005).

Content Management Bible. USA: Wiley Publishing, Inc.

Busbee, K. L. & Braunschweig, D. (n. d.). *Programming fundamentals: A modular structure approach*.
<https://press.rebus.community/programmingfundamentals/>

Clark, N. (2018). *Computer programming for beginners: Fundamentals of programming terms and concepts*. Nathan Clark.

Damien, J. (2011). *Introduction to computers and application software*. Jones & Bartlett Learning. Erl, T.

(2013). *Cloud computing: concepts, technology & architecture*. Pearson.

Frick, E. (2019). *Information technology essentials: Introduction to information systems*.

Goel, L. (2021). *Artificial intelligence: concepts and applications*, Noida: Wiley. ISBN - 978-8126519934

Goldstein. (2001). *CMS Made Simple Development Cookbook*. UK: Packt Publishing, Ltd. Hauschildt, S.

(2010). *CMS Made Simple 1.6*. UK: Packt Publishing, Ltd.

Maharishi, M.; Hiran, K. K.; Doshi, R & Temitayo, F. (2019). *Cloud computing: master the concepts, architecture, and applications with real world examples and case studies*. New Delhi: BPB Publications. ISBN - 978-9388511407

Oberg, S. (2003). "Open Source Software: An Introduction from a Serialist's Perspective." *Serials Review* 29.

Open Source Initiative OSI: Welcome <http://www.opensource.org> oss4lib—Open Source Systems for Libraries <http://www.oss4lib.org>

Patnaik, S. (2001). *First textbook on information technology*. New Delhi, Dhanpat Rai

Pillai, V. & Jain, S. (2007). *Basic of OS, Unix Shell Programming*. New Delhi: BPB Publication.

Russel, S. & Norvig, P. (2022). *Artificial intelligence: a modern approach*, 4h ed., Uttar Pradesh: Pearson Education. ISBN - 978-9356063570

Sinha, P. K. & Sinha, P. (2009). *Foundation of computing*. New Delhi: BPB Publication. Sybex (2007).

Linux complete. New Delhi: BPB Publications.

Additional Readings

Basandra, S. K. (1999). *Computer today*. Galgotia Publications. Bernstein, J. (2018). *Computers made easy: from dummy to geek*.

Bharihoke, D. (2007). *Fundamentals of information technology*. Excel Books Breeding, M. (2002) "An Update on Open Source ILS." *Information Today*, 19 (9), 42. Carter, R. (1993). *Students' guide to Information technology*. Elsevier

ITL Education Solutions Limited (2011). *Introduction to computer science*. Pearson Education

India Kumar, P. S. G. (2004). *Information and communication*. B. R. Publication.

Ludwig, S. (2011). *Starting from scratch: Building a teen library program (libraries unlimited professional guides for young adult librarians series)*. ABC-CLIO

Reynolds, G. (2011). *Ethics in information technology*. Cengage Learning India Pvt. Ltd.

Shelly, G. B. & Vermaat, E. M. (2011). *Discovering computers and microsoft office 2010: A fundamental combined approach*. Cengage Learning