Addis Ababa University
College of Natural Sciences
Department of Computer Science

Course Title *Introduction to computer Application*
Course Code CoSc1201
Program Bachelor of Arts in Economics
Lecturer **Solomon T.**

<table>
<tr><td>Credits</td><td colspan="5">5 EtCTS</td></tr>
<tr><td rowspan="2">Credit hours</td><td rowspan="2">3</td><td>Lecture</td><td>Laboratory</td><td colspan="2">Tutorial</td></tr>
<tr><td>2</td><td>3</td><td colspan="2">0</td></tr>
<tr><td rowspan="2">Student workload in hrs</td><td>Lectures</td><td>Tutorials</td><td>Laboratory</td><td>Home Study</td><td>Total</td></tr>
<tr><td>32</td><td>0</td><td>48</td><td>55</td><td>135</td></tr>
<tr><td>Course Type</td><td colspan="5">Service course</td></tr>
<tr><td>Teaching & Learning Methods</td><td colspan="5">Lectures , practical laboratory classes, Individual and group Assignments</td></tr>
<tr><td>Assessment/Evaluation & Grading System</td><td colspan="5">➢ Continuous Assessment ----------60%
➢ Final Exam ----------40%</td></tr>
<tr><td>Attendance Requirements</td><td colspan="5">75%</td></tr>
<tr><td>Expectations</td><td colspan="5">Students are expected to attend all lectures and laboratory sessions with serious discipline and complete the required assessments. Thus, intensive reading of course texts and frequent practice of laboratory activities are expected from students. Students are strongly encouraged to collaborate with one another in studying the textbook and the lecture material, while they are not permitted to collaborate on exams.</td></tr>
<tr><td>Instructor Qualification:</td><td colspan="5">A minimum of M.Sc Degree in Computer Science, Computer engineering, Information Science or IT</td></tr>
<tr><td>Course Objectives and Competences</td><td colspan="5">Up on successful completion of this course, students will be able to:
▪ Find out what computer science is about and explore its applications and impact in other disciplines
▪ Explain how the computer understands words, numbers, and how data</td></tr>
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	and instructions are stored, retrieved and processed ▪ Describe basic characteristics of components of a computer system, Illustrate and analyze basics of Computer architecture ▪ Demonstrate basics of networking. explain what the Internet is , browse and use the Internet for information and communication purpose , ▪ Discuss and explain importance of securing computer-based resources (including hardware, software, and information)
Course Description	This course is intended to equip students with theoretical and practical aspects of fundamentals of Computer Science by furnishing them with a broad oversight of the discipline of formal computer science: ▪ Introduces students to the definition of computer science, algorithms and computer science as a discipline ▪ significantly Introduces students to the computer system ▪ Introduces students to data representation in computer system ▪ Introduces students to data communication and computer networks ▪ Introduces students to potential security threats to computers and methods to safeguard computer system.
Course Outline	**Chapter 1 - Overview of Computer Science (4 hrs)** 1.1 Introduction to Information and Communication Technology 1.2 Definition of Computer and Computer Science 1.3 Characteristics of computers 1.4 Types of computers - Analog, digital, special purpose, general purpose - Super computers, mainframe computers, minicomputers, microcomputers (desktop,laptop or notebook, PDA or palmtop, handheld) 1.5 Applications of computers - Learning aid - Entertainment - Commercial and business applications - Information utility

	- Engineering and research applications - Public service **Chapter 2 - Development of computers (4 hrs)** 2.1. History of computing - Abacus - Pascal's Calculator - The difference engine and the analytical engine - Herman Hollerith's tabulating machine - Mark I - ENIAC - Electronic Numerical Integrator And Computer - The Von Neumann Machine - Commercial computers 2.2. Generations of computers - First, second, third, and fourth generations - Current Trends **Chapter 3 - Organization of a computer system (10 hrs)** 3.1. Introduction to Computer Systems 3.2. Computer hardware - The Central Processing Unit (CPU) - Control Unit - Arithmetic and Logic Unit (ALU) - Main Memory Unit - The bus system (address bus, data bus, and control bus) - Input/Output units - Input units (pointing devices, game controllers, keyboard, scanner, camera,microphone) - Output units (monitor, printer, speaker)

	- Storage (Auxiliary Memory) units - Sequential access media (tape) - Random access media (magnetic disk, optical storage media, flash memory cards) 3.3. Computer software - System software - Operating systems - Functions of an operating system (controlling operations, input/output management, command processing) - Types of operating systems (single/multi-tasking, single/multi user, real-time, command driven vs GUI-based) - Language software - Translators and editors - Applications software - Word processing - Spreadsheet - Database management systems - Graphics - Software suites - Enterprise application software **Chapter 4 - Data representation in computers (8 hrs)** 4.1. Units of data representation 4.2. Concept of number systems and binary arithmetic - Binary, Octal, and Hexadecimal number systems - Conversion from one number system to another - Binary arithmetic 4.3 Coding method - EBCDIC (Extended Binary Coded Decimal Interchange Code)

	- BCD 4 and 6 (Binary Coded Decimal) - ASCII 7 and 8 (American Standard Code for Information Interchange) - UNICODE 4.4 Representation of negative numbers and arithmetic - Signed magnitude, One's complement, Two's complement 4.5 Floating-point representation **Chapter 5 - Computer networks and communications (4 hrs)** 6.1 Introduction to computer networking and its applications 6.2 Types of networks - LANs (Local Area Networks) and WANs (Wide Area Networks) 6.3 Introduction to the Internet - Services of the Internet (e-mail, World Wide Web, file transfer/access, remote login/execution, video conferencing) **Chapter 6 - Computer security (2 hrs)** - Introduction to computer security - Encryption - Backup - Viruses and worms **Introduction to Computer Science Laboratory content outline** 1. Introduction to Windows operating system ▪ History of Windows operating system ▪ Windows Environment 1. Introduction to Application Software ▪ Background of Application software ▪ Application Software environment ▪ Types of application software 2. introduction to Microsoft Word

	3. introduction to Microsoft Excel 4. introduction to Microsoft PowerPoint 5. Introduction to the Internet
Text books & References:	- Dida Midekso, *information technology:* Addis Ababa University Printing Press, revised press, 2006 - Fikire Sitota and Belay Tedla: fundamentals of information technology; AA, mega publishing enterprise, 2002 - ITL ESL , I*ntroduction to computer science* , Pearson edition ,2004 - Kenneth C Laudon, Carol Guercio Traver, Jane Price laudon : *information technology and society*, second edition, 1996 - William Stallings, Computer Organization and Architecture, 5/E, 6/E, Prentice Hall, 2003 - Donald H. Sandar , *computer concepts and applications; USA; Von Hoffman press*, 1987