

ITEM	DETAILS
1. Title of subject	INTRODUCTION TO INFORMATION TECHNOLOGY
2. Subject code	STC102
3. Status of subject	Core
4. Stage	Year 1
5. Credit Hour	3
6. Pre-Requisite	None
7. Assessment	<p>Coursework 40% Test 1 10% Test 2 10% Assignment 1 10% Assignment 2 10%</p> <p>Final Exam 60%</p>
8. Semester	Semester 1
9. Objective of subject	<p>To enable students to:</p> <ul style="list-style-type: none"> • Have a good knowledge of computer technologies. • Understand the internal working concepts of a computer • Differentiate between the different storage technologies • Understand the impact of internet and multimedia.
10. Synopsis of subject	<p>Identify a range of common modern applications of computers that meet the information needs of a variety of users; Discuss different models of computer architecture; Compare and contrast the characteristics of different types of input, output and data storage devices; Describe the characteristic data types and data flows within a range of business; Give example of the requirements for, and use of, operating systems and the facilities they offer; Describe typical forms of data representation and their implications for data storage and retrieval; Describe the use of layered models to explore and understand communications networks; Evaluate the use of Internet from a data communications and a business applications viewpoint with strong emphasis on its use in e-commerce; Describe the benefits of Multimedia in business, education and entertainment.</p>

11. Details of subject	Contents	Hours
Week 1 and 2	<p>Computer Applications</p> <ul style="list-style-type: none"> - Define computer systems, data and information. - Describe why information systems are important in business. - Identify and describe the major applications of computers in businesses of various types, ranging from the small to the multi-national. - Identify and describe the information needs in organisations of various sizes, including organisations that process large volumes of data. Show how computers can meet these demands. - Define the concept of an organisation's database. - Recognise the need for data communication. - Identify and describe the personal information needs of users. - Describe the characteristics and uses of applications packages (for example word-processing, spreadsheet, database, software tools) and define criteria for the selection of a package. <hr/> <p>Learning Outcomes: At the end of the lesson, students will be able to: Understand the basics of computers and databases.</p> <hr/> <p>Further reading for this lesson: Capron. (2002). Chapter 1.</p>	<p>6</p>
Week 3 and 4	<p>Computer Architecture</p> <ul style="list-style-type: none"> - Illustrate the data processing function of a computer system with a simple input/process/output model and apply this to real computer hardware. - Describe the basic architecture of a PC and give examples of common variations. - Describe the processing cycle of a typical CPU, using this to illustrate the storage of data in primary storage, its input and output through peripherals. - Define the typical ways in which computers and computer usage can be organised, including client/server, thin client and directly connected terminals. <hr/> <p>Learning Outcomes: At the end of the lesson, students will be able to: Understand the physical architecture of a computer.</p> <hr/> <p>Further reading for this lesson: Capron. (2002). Chapter 4.</p>	<p>6</p>

Week 5	<p>Data Storage Devices</p> <ul style="list-style-type: none"> - List the range of typical input devices used in business and industrial computer systems, describing their qualitative and performance characteristics. - List the range of typical output devices used in business and industrial computer systems, describing their qualitative and performance characteristics. - Describe the characteristics, particularly performance characteristics, of common magnetic and optical disc storage technologies and show how these would be applied to typical business applications and situations. 	3
	<p>Learning Outcomes: At the end of the lesson, students will be able to: Understand the characteristics of data storage devices.</p>	
	<p>Further reading for this lesson: Capron. (2002). Chapter 5.</p>	

Week 6	<p>Data Types and Data Flows</p> <ul style="list-style-type: none"> - Describe all the data types and data flows within a range of businesses. - Show how these data requirements influence the types of computer system needed to meet the objectives of the business. - Show how the volume of data and performance requirements of such businesses are met with different types of system architecture. 	3
	<p>Learning Outcomes: At the end of the lesson, students will be able to: Understand the flow of data and performance requirements.</p>	
	<p>Further reading for this lesson: Capron. (2002). Chapter 5.</p>	

<p>Week 7 and 8</p>	<p>Operating Systems</p> <ul style="list-style-type: none"> - Define and distinguish between the different types of software. - Describe the different models of data processing, including batch, on-line, real-time, networked and distributed systems. - Show how different models of data processing are appropriate for different types of business applications. - Describe the main functions of Operating Systems. - Show how different types of Operating System (OS) are required to support desktop users, departmental and enterprise systems. This should include a detailed description of Windows. - Describe the facilities and utilities offered by different types of OS. <p>Learning Outcomes: At the end of the lesson, students will be able to: Understand the main functions and types of Operating Systems.</p> <p>Further reading for this lesson: Capron. (2002). Chapters 2 & 3.</p>	<p>6</p>
<p>Week 9 and 10</p>	<p><i>Data Storage and Retrieval</i></p> <ul style="list-style-type: none"> - Describe the internal representation of data and various character coding systems. - Describe why it is necessary to develop effective methods for managing and accessing large volumes of data. - Explain and define the relationship between items of data held within records, files, arrays and other appropriate data structures. - Explain the principal methods of file organisation and manipulation. - Explain current methods for maintaining accuracy, security and control of data, including recovery procedures. - Define database and database management systems and show how and why these are used in business. - Illustrate the database concept using the relational model, explaining how this is used in practice. Demonstrate how data may be inserted into or deleted from such data structures. - Apply algorithms to search for and retrieve data held within data structures. - Apply elementary techniques for sorting items of data. - Demonstrate the use of hashing algorithms, for example, for generating address, hash and batch totals. 	<p>6</p>

	<p>Learning Outcomes: At the end of the lesson, students will be able to: Understand the different types of storage technologies</p>	
	<p>Further reading for this lesson: Capron. (2002). Chapter 6.</p>	
<p>Week 11 and Week 12</p>	<p>Networks</p> <ul style="list-style-type: none"> - Define the major types of data communication networks. - Apply a simple layered model to the understanding of different types of communication networks. - List the characteristics of Local Area Networks (LAN). - Describe the application of some popular LAN technology. - List the characteristics of Wide Area Networks (WAN). - Describe the application of hardware associated with WAN. - Describe the types of hardware used and facilities available to support data communications. - Use the Internet as a means of data communication. <p>Learning Outcomes: At the end of the lesson, students will be able to: Demonstrate the understanding of changes in resource prices in markets, changes in the relationships the business has to other businesses and customers and changes in the size and performance of the national economy.</p> <p>Further reading for this lesson: Capron. (2002). Chapter 7.</p>	<p>6</p>
<p>Week 13 and 14</p>	<p>Internet</p> <ul style="list-style-type: none"> - Define the Internet and describe in outline its historical development. - Show how the Internet is based on underlying communication protocols. - Evaluate at least three different business models for the application of the Internet in business. - Evaluate possible directions in which e-commerce is likely to develop. <p>Multimedia</p> <ul style="list-style-type: none"> - Define and describe multimedia. - Show how multimedia applications are used in business, education and entertainment. - Discuss the specific hardware and software needed to support multimedia applications. - Evaluate possible directions in which multimedia is likely to develop over the next five years. <p>Learning Outcomes: At the end of the lesson, students will be able to: Define the internet and multimedia activities.</p>	<p>6</p>

	Further reading for this lesson: Capron. (2002). Chapter 6 & 8.		
	Total		42
12. Text	Compulsory	Capron, H. L. (2002). <i>Computers: Tools for an Information Age</i> (7 th ed.). Addison Wesley.	
	Reference	Parsons, J. (1999). <i>Computers, Technology & Society</i> . Cambridge: Course Technology.	