Federal Democratic Republic of Ethiopia Ministry of Education

Information Communication Technology Syllabus Grades 11

2009

Introduction to Grades 11 and 12 Syllabus

In the preparatory schools students follow either the Social Science stream or the Natural Science stream; all students will continue to study IT.

In the long term, students will follow a common course of IT, irrespective of which stream they are in. This course will cover Information Systems, Basic trouble shooting, Image processing and Multimedia Systems in some depth. There will also be many opportunities to use software applications and tools that they have encountered during studies in earlier grades.

In future years, students may elect to follow a more-specialist course in Computer Science covering such areas as Computer Architecture, Systems Analysis and Design, Data Communications and Fundamentals of Programming.

In the short term, Grade 11 and 12 students will continue to follow the old Information Technology course until it is appropriate to introduce the new curriculum as described above.

Unit 1 Information Systems *(15 periods)*
*Unit Outcome*s: Students will be able to
- Know the application of ICT in different sectors;
- Understand the components of an Information System;
- Recognise the application of ICT in different sectors;
- Recognise how ICT can change the life of people.

Competencies	Content	Suggested Activities
Students will be able to: • Describe some applications of ICT • Explain the definition of each types of IS • Explain the application of each types of IS	**1.1 General Concepts of Information Systems** • Some Applications of ICT at Home, Office, Factory, Transport, Communications, Education/training and Health **1.2 Types of Information System in the organization** • Definition of system and characteristics • Application of information system types - Transactional Information System - Management Information System - Decision Support System - Executive Information System - Office Automation Information System	• Students should identify the application of ICT • Explain and demonstrate detailed examples of applications of ICT in the areas listed • Explain the types of Information System • Explain the definition of the types • Explain the application of all types of Information Systems e.g. Describe the main advantages and disadvantages of an on – line Airline timetable and a printed one • Students should describe the types of information system
• Describe the impact of ICT in everyday life	**1.3 Impact of ICT in everyday life**	• Students should describe the impact of ICT in everyday life, considering the aspects listed

Competencies	Content	Suggested Activities
	• Define a digital device • Impact of using computers in offices • Impact of mobile phones • Impact of satellite broadcasting • Differences between information poor and information rich society	• Explain why the mobile phone has been such a successful technology

Assessment

The teacher should assess each student's work continuously over the whole unit and compare it with the following description, based on the specific objectives, to determine whether the student has achieved the minimum required level.

A student working at the minimum requirement level will be able to: Describe some applications of ICT, Explain the definition of each types of IS, Explain the application of each types of IS and Describe the impact of ICT in everyday life

Students working above the minimum requirement level should be praised and their achievements recognized. They should be encouraged to continue working hard and not become complacent.

Students working below the minimum requirement level will require extra help if they are to catch up with the rest of the class. They should be given extra attention in class and additional lesson time during breaks or at the end of the day.

Unit 2 Enhancing the Use of Software   *(24 periods)*
Unit Outcome: Students will be able to
- Recognise to choose appropriate software tools to solve problems, illustrate ideas, and clarify thinking in the other subjects chosen for study in grade 11

Competencies	*Contents*	*Suggested Activities*
Students will be able to:	**2. Using application software**	

	• Word Processing,
	   - overview
	   - Section breaks
	   - Mail merge
	   - Header & Footer
		• Students should Use the correct software tool and will enhance knowledge of IT at the same time as the chosen subject

• Solve problems by specific software
 • Illustrate their ideas
 • Organising their contents
 • Testing their hypotheses
	• Presentation Software
	   - overview
	
	 • Spreadsheets,
	   - overview
	   - If condition with AND or OR
	
	 • Publishing Software
	   - overview
	 • Database Management
	   - overview
	   - Main/sub Reports
	   - Group section
		• This should be done joint assessment by It teacher and subject teacher
		
		 • Students should use appropriate software tools
		   e.g. spread sheet package to solve a mathematical problem

Assessment

The teacher should assess each student's work continuously over the whole unit and compare it with the following description, based on the specific objectives, to determine whether the student has achieved the minimum required level.

A student working at the minimum requirement level will be able to solve problems by specific software, illustrate their ideas, organising their contents and testing their hypotheses

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Unit 3 Basic Troubleshooting   *(18 periods)*

Unit Outcomes: Students will be able to
- Recognise basic idea in preventive maintenance
- Apply the knowledge gained in preventive maintenance to prolong the life of the computer
- Be aware of basic safety issues
- Recognise major hardware components inside the computer
- Acquire knowledge on how to format hard disc and install software

Competencies	*Contents*	*Suggested Activities*

Students will be able to:
 • Identify proper location for the computer
 • Protect computers from harm and damage
 • Explain possible problems that may occur with the power supply
 • Explain the use of stabilisers and UPS
 • Back up files stored in the computer
 • Use defragmenter and disk cleanup to improve hard disk performances
	3.1 Basics of Preventative Maintenance*(2 periods)*
	 • Environment and location of a computer
	 • Electric power
	 • Back up methods
	 • Manual
	 • Using utility programs
	
	 • Improving hard disk performance
	 • Disk Defragmenter
	 • Disk cleanup
		• The teacher will explain and demonstrate
		 • The students will practice as the teacher instructs about
		   • Environment and location of a computer, Computer cleaning tools ,Compressed air, Liquid cleaning compounds, Clean or soapy water and a damp cloth, Glass cleaner, Lint free cloth,
		   • Electric power, Input voltage (220V), Plugging power cable, Electric power fluctuation, Power surge, Power sags, Power spike, Avoiding electrical problems, UPS expand ups, Standby power system, Surge suppressors
		   ▪ Back up methods, Manual
		   • Using utility programs
		   • Improving hard disk performance
		   • Disk Defragmenter
		   • Disk cleanup

• Apply safe methods • Define ESD • Identify some ESD types • List some types of ESD protection Devices • Explain the concept of ergonomically correct computer and seating	**3.2 Basic Safety Issues** *(1 period) should mention eye strain some where!!* • Overview of safety measures • Electro Static Discharge (ESD) • Hidden ESD • Catastrophic ESD • Degradation	• Explain the concept of safety precautions, ESD and its effect. Explain and demonstrate • ESD protection devices and an ergonomically correct computer

Competencies	Contents	Suggested Activities
• Plug properly input and output devices with the system unit. • Describe the general steps to troubleshoot problems • Troubleshoot minor Problems related with some common input And output devices.	• Some common ESD protection devices • Anti- Static Wrist and ankle Straps • Anti-Static mats • Setting up an Ergonomic Computer and seating **3.3 Hardware Maintenance Basics (2p)** • Connecting basic input and output devices with the system units • Checking dead system • general steps to troubleshoot problems • Troubleshooting common input and output devices	• The teacher will demonstrate how to plug properly input and output devices with a system unit. • Explain the basic steps to follow while troubleshooting problems
• Install and uninstall applications software	**3.4. Installing and uninstalling applications software** *(2 periods)* • Installing application software e.g. (Microsoft Office) uninstalling application software e.g. (Microsoft Office)	• The teacher will explain and demonstrate how to install and uninstall application software The students will practice used computer and Application software CD, Ask the students to install and uninstall an application system.

Assessment

The teacher should assess each student's work continuously over the whole unit and compare it with the following description, based on the specific objectives, to determine whether the student has achieved the minimum required level.

A student working at the minimum requirement level will be able to Identify proper location for the computer, Protect computers from harm and damage, Explain possible problems that may occur with the power supply, Explain the use of stabilisers and UPS, Identify proper location for the computer, Protect computers from harm and damage, Explain possible problems that may occur with the power supply, Explain the use of stabilisers and UPS, Back up files stored in the computer, Use defragmenter and disk cleanup To improve hard disk performances, Apply safe methods, Define ESD, Identify some ESD types, List some types of ESD protection Devices, Explain the concept of ergonomically correct computer and seating, Plug properly input and output devices with the system unit, Describe the general steps to

Troubleshoot problems, Troubleshoot minor problems related with some common input and output devices. And Install and uninstall applications software

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Unit 4 Exploiting the Internet (*18 periods*)
Unit Outcomes: Students will be able to
- Find specific information on the world wide web in the form of text, images or sound required to solve a problem
- Develop an awareness of web developments in making information available in different formats.

Competencies	*Contents*	*Suggested Activities*
Students will be able to: • Use Boolean searching techniques • Report on improvements	**4.1 Advanced Searching** *(1 period* Exact match "x"or "y" "x" and "y" "x"but "y" Language limitations	• Using handout from teacher to solve problems involving It in some way e.g. Explore connection between Newman Hollenith and the millennium bug
• Explain the function ability of wikis, blogs and pod casts list the advantages of their use	**4.2 Using Wikis, Blogs and Podcasts** *(periods*	• Visit at least one wiki e.g. wikipedia • Set up a blog about life in their community • View and listen to a podcast e.g. BBC
• Explain what is meant by'' social networking ''	**4.3 Social Networking** *(periods)*, **4.4** Producing a Webpage using simple Web design software	• Students should join a social network e.g. face book ,his etc • Students should have computers and access to the internet and Webpage software
• Design a simple Webpage • Implement the webpage Publish webpage	**4.5** Publishing to a web server (or free web server or a wikipedia webserver)	• Students should implement the webpage by selecting free web server or a wikipedia webserver

Assessment
The teacher should assess each student's work continuously over the whole unit and compare it with the following description, based on the specific objectives, to determine whether the student has achieved the minimum required level.

A student working at the minimum requirement level will be able to Use Boolean searching techniques, Report on improvements, Explain the function ability of wikis, blogs and pod casts list the advantages of their use, and Explain what is meant by'' social networking ''

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Unit 5 Image Processing and multimedia Systems *(27 periods)*
Unit Outcomes: Students will be able to
- Understand the concept of image processing.
- Differentiate image file format.
- Recognize the function of image processing software.
- Recognize Interface layout of Image processing software
- Edit images properly using image processing software.

Competencies	*Contents*	*Suggested Activities*
Students will be able to: • Define Image processing • List band explain different types of image file formats	**5.1 Overview of Image Processing** *(period)* • Overview of Image processing • Definition of image processing • Image processing software • Image file format	• Give a brief explanation of Image processing • Describe about image processing software and its function. • List and explain the different image file format • • Image file format Gif, Jpg, Bmp, and Tif
• Open and setup a new document. • Save an image document.	**5.2 Basics of Image Processing (periods)** • Getting Started • Opening new document • Setting up a document	• Demonstrate how to get started of Image processing software. • Demonstrate and explain the properties to be set in a document • List and Demonstrate interface layout of the image processing software listed under the content. • Students should Setting up a document like Page size and orientation, Resolution, Colour mode and Background content
• List and explain common Interface layout of image processing software	• Creating an image • Saving image document • Interface layout • Inserting image from a file or other devices	• Students should Interface layout like Menu bar, Tool bar, Image area, Palettes, Navigator and Colour swatch, , style, History, Layers, Tool box , Selection tools, Alteration tools, Drawing and Selection tools, Assisting tools and Colour boxes and Modes

Competencies	Contents	Suggested Activities

• Edit an image in a desired way.	**5.3 Basic Image editing(cropping, resizing, correcting, sharpening/ softening)** *(2 periods)*
	• Basic Image editing
	  • Cropping
	
	  • Resizing
	
	  • Correcting
	
	  • Sharpening / Softening
	  -Sharpening
	   Softening
		• Students should define what an image editing is.
		• Demonstrate and explain the image editing options listed under the content.
		
		• Students should editing image with cropping like Cropping with the crop tool, Cropping to a specific size, and Cropping with the marquee tool
		
		• Students should resize image like Resizing to a specific size, Resizing Digital photo and Enlarging
		• Students should correct image like Red Eye removal, Hot Spot Removal, Adding Flash, and Colour Adjustment
		
		• Ask the students to scan their photograph and edit in the desired size and colour
		• Resources: Computer ,Image Processing Software, Scanner, Digital camera

Assessment

The teacher should assess each student's work continuously over the whole unit and compare it with the following description, based on the specific objectives, to determine whether the student has achieved the minimum required level.

A student working at the minimum requirement level will be able to Define Image processing, List band explain different types of image file formats, Open and setup a new document, Save an image document, List and explain common Interface layout of image processing software, and Edit an image in a desired way

Students working above the minimum requirement level should be praised and their achievements recognized. They should be encouraged to continue working hard and not become complacent.

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