Syllabus for Information Technology

Grade 8

Prepared by the **Information Technology Department**

Computing Education is constantly being reshaped. New thinking and new technologies continue to influence this. It is critical that the distinction be made among the three most common areas of computing education.

Each of these areas is known by various names in different jurisdiction, however in our context we call them:

➢ Information Technology
➢ Computer Science
➢ Educational Technology / Information and Communication Technology (ICT)

Defining key Terminologies

In its computing curriculum 2005: the overview report, the Association of Computer Machinery (ACM) and Institute of Electrical and Electronics Engineers (IEEE) Computing Society recognises the following:

Information Technology (IT)

Information Technology is "the proper way of technologies by which people manipulate and share information in its various forms. "It involves learning about computers, and emphasizes the technology itself. Information Technology specialists assume responsibility for selecting appropriate hardware and software products, integrating those products with organizational needs and infrastructure, and installing, customizing, and maintaining those resources. Information Technology, therefore, focus on:

➢ installing, securing, and administrating computer network;
➢ installing, maintaining, and customizing software;
➢ managing and securing data in physical and virtual worlds;
➢ managing communication systems ;
➢ designing implementing, and managing multimedia resources and other digital media

Computer Science (CS)

Computer Science is the study of computers and algorithmic processes, including their principles, their hardware and software designs, their application and their impact on society. Computer Science spans a wide range of computing activities, from theoretical foundations to robotics, intelligent systems, and bioinformatics and it is concentrates on designing, creating, modifying, and verifying computing tools.

Difference between Information Technology and Computer Science

IT is an applied field of study, driven by the practical benefits of its knowledge, while computer science adds scientific and mathematical, as well as practical, dimensions. Some of the practical, dimensions of computer science are shared with IT, such as working with text, graphics, sound, and video. IT concentrates on learning how to use and apply these tools while computer science is concerned with learning how these tools are designed and why they work. Computer science and IT have a lot in common, but neither one is fully interchangeable.

Educational Technology / Information and Communication Technology (ICT)

Educational Technology / ICT integration can be defined as using technology tools across the curriculum, or more specifically, using computer technology (hardware and software) to learn about other disciplines. For example, a science teacher may use computer simulations to provide students with a better understanding of a lesson on genetics, or a Social Studies teacher may use a digital story or Web quest to help students understand the middle passage.

Information Technology Literacy and Information Technology Fluency

There are two other terms that is emerging in computing education these are Information Technology Literacy and Information Technology Fluency. A study published in 1999, defines IT fluency as something more comprehensive than IT literacy. Whereas IT literacy is the capability to use today's technology in one's field, the notion of IT fluency adds the capability to independently learn and use new technology as it evolves throughout one's professional life time. Moreover, IT fluency also includes the active use of computational thinking (including programming) to solve problems, whereas IT literacy does not.

Aim of Information Technology (IT):

The 21st century learner lives in a technologically charged environment and IT will provide them with the requisite knowledge and skills to understand the underpinnings of current technology and to prepare them for utilizing new and emerging technologies. The Grades 7 - 9 Information Technology (IT) curriculum will introduce students to the opportunities afforded by this dynamic field and begin to prepare them for a wide range of rewarding careers as well as for personal use. IT is relevant as it incorporates a wide range of problem solving techniques and skills that is needed for life-long learning. The fundamental purpose of the IT curriculum is to provide students with knowledge, skills and attitudes that will enable them to achieve success at every stage of life be it personal, professional or academically.

The goals of the IT curriculum are to enable students to:
- ➢ achieve an understanding of IT concepts
- ➢ develop essential skills such as critical thinking skills, research and enquiry skills and to communicate information effectively, accurately and ethically

- utilize the knowledge, skills and attitudes acquired through the study of IT to a variety of learning tasks in other subject areas
- develop life-long learning habits that will assist students in adapting to new and emerging technologies
- become aware of the wide range of career options available to individuals with IT skills

ROLES AND RESPONSIBILITIES OF THE DELIVERY OF THE IT CURRICULUM

In order for the delivery of this curriculum to be effective all key stakeholders must be aware of their roles and responsibilities.

STUDENTS

Students are responsible for their learning. It is clear that there is a relationship between student's effort and achievement. Students are encouraged to motivate themselves to learn. Teacher's encouragement can motivate any student to learn. Taking the learning experience outside of the classroom will extend and enrich their understanding of the content. These may include becoming members of a computer club, subscribing to magazines and other online resources; attend Technology conferences and competitions to learn of new and emerging technologies.

PARENTS/GUARDIANS

Parents/guardians have a critical responsibility in supporting their child/ward learning experience. By becoming knowledgeable about the curriculum they determine what is taught and can determine best to support their child/ward. Parents/guardian can assist their child/ward by attending school's consultation sessions and encouraging then to do extended work outside the classroom.

TEACHERS

Teachers and students responsibilities complement each other. Teachers are responsible for developing culturally relevant instructional technologies to achieve learning outcomes as well as appropriate methods for assessment and evaluations. Joining professional technology societies, subscribing to technology magazines and other online resources, attend Technology conferences to be aware of new and emerging technologies as well as teaching strategies.

Term 1

Unit 1
Health and Safety
Demonstrate health and safety practices while operating the computer system
- ✓ Proper hardware handling when connecting and disconnecting peripheral devices
- ✓ Software compatibility
- ✓ Proper care and maintenance of computer equipment and accessories.

Unit II
Foundations of Hardware & Software
Demonstrate competency in the use of hardware devices, software and productivity tools.
- ✓ **Hardware**
- ✓ **Software**
- ✓ **Productivity Tools (Basic Spreadsheet)**

Term 2

Unit III
Data Communication, Networking and Internet
Understand the application of communication technologies in everyday life
- ✓ Data communication process
- ✓ Transmission Direction
- ✓ Data Communication and Networking devices
- ✓ Transmission media (Wired and Wireless)
- ✓ Internet Resources
- ✓ Protocols

Term 3

Unit VI
Multimedia Authoring
Demonstrate their understanding of the use of multimedia authoring tools to create videos