



GIRLS' HIGH SCHOOL

INFORMATION TECHNOLOGY

Form 4 Academic Year: January 2026

Term 2 – 12 weeks

COMPUTER NETWORKS AND WEB TECHNOLOGIES

Week 1	<p>1. Distinguish among types of networks;</p> <ul style="list-style-type: none">• Types of networks based on geographic span (local area network, metropolitan area network, wide area network).• Wireless network technologies (for example, Bluetooth, Wi-Fi, hotspot).• Level of privacy (intranet, extranet, Internet).
Week 2	<p>2. Explain the functions of the basic components of a network; Basic components and functions:</p> <p>(a) Transmission media:</p> <ul style="list-style-type: none">(i) Wired: coaxial, twisted pair, fibre; and,(ii) Wireless: satellite, microwave, infrared). <p>(b) Hub: switch/router, modem.</p> <p>(c) Network interface card/network adapter.</p>
Week 3	<p>3. Assess the importance of mobile communication technologies as a component of modern communication networks; and,</p> <ul style="list-style-type: none">• Concept of mobile network as radio-based common carrier.• Overview of mobile networks: from 2G to current. Knowledge of the inner workings of mobile systems is NOT required.• Suitability of mobile networks to various applications (for example, education, commerce, and journalism).
Week 4	<p>4. Demonstrate the interrelationship among key Web technology components.</p> <ul style="list-style-type: none">• World Wide Web.• Hypertext Markup Language.• Hypertext Transfer Protocol.• Hyperlinks.• Web Server.• Web Page.• File Transfer Protocol.• Web Browser.• Uniform Resource Locator.

SOCIAL AND ECONOMIC IMPACT OF INFORMATION AND COMMUNICATIONS TECHNOLOGY (ICT)

<p>Week 5</p>	<p>1. Outline the concepts of cybersecurity and computer misuse;</p> <ul style="list-style-type: none"> • Cybersecurity as related to the assessment and minimisation of risk. • Elements: vulnerability, threat, attack, countermeasure. • Computer misuse by individuals and organisations. <p>2. Assess the impact of computer systems misuse based on the main entity impacted;</p> <p>Misuse:</p> <p>a) Cyberbullying, copyright infringement, data theft, denial of service attacks, transmission of viruses, identity theft, online publication of obscene materials, phishing attacks, software and music piracy, financial abuses, violation of privacy, propaganda, electronic eavesdropping, industrial espionage; and,</p> <p>b) Entity impacted: individuals, organisations, government.</p>
<p>Week 6</p>	<p>3. Describe suitable countermeasures to mitigate effects of identified threats;</p> <ul style="list-style-type: none"> • Physical measures: backup and recovery procedures; hardware firewall, intrusion detection systems. • Software measures: effective passwords and authentication systems, encryption of data, malware detection, network security protocols, firewall; use of propriety data and software. • Personal Security practices. <p>Some practices include:</p> <ul style="list-style-type: none"> - Verifying authenticity of email from companies or individuals, assessing website URLs for authenticity, limiting access to open Wi-Fi networks, securing mobile devices, protecting identity in an online environment.
<p>Week 7</p>	<p>4. Assess the effect of automation on job security;</p> <ul style="list-style-type: none"> • Job loss vs productivity gains in skilled and unskilled job categories. <p>5. Describe the roles of various personnel in computer-related professions; and,</p> <ul style="list-style-type: none"> • Computer network architect, computer programmer, computer support specialist, computer systems analyst, network and computer systems administrator, database administrator, software developer, web developer.

6. Assess the impact of information and communications technology on education and on the field of medicine.

- Impact on Education in terms of:
 - Access to information, reach (distance teaching), collaborative teaching and learning, plagiarism; online tutoring.
- Impact on Medicine in terms of:
 - Access to information (for both medical personnel and patients), telemedicine, eHealth (online access to health services), implications for the quality of healthcare, increase in self-diagnosis, easy access to medical expertise in distant location (for example, teleradiology).
- Economic implications of ICT on Medicine and Education.

DATABASE MANAGEMENT

Week 8 -
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1. Explain the concept of a database;

Definition of database:

- (a) Repository of information; and,
- (b) Collection of tables that are related to each other.

2. Use terminology commonly associated with a database;

Purpose of database

Database terminology: table, row (record), column (field), primary key, secondary key, candidate key, foreign key.

Data types: numeric; text; logical; date /time; currency.

3. Create a database; and,

Table structure with at least three data types and populated with at least 25 records.

Modify a table structure: adding new fields, deleting fields, changing field definitions.

Establish primary keys.

Establish relationships: show the joins between tables (one-to-one and one-to-many).

4. Manipulate data in a database.

(a) **Forms:**

- (i) Use of form wizard only;
- (ii) select suitable fields; and,
- (iii) use of sub-form.

(b) Queries:

- (i) more than one criterion;
- (ii) use of select;
- (iii) use of calculated field; and,
- (iv) Two or more fields involving the use of relational and logical operators.

(c) Reports:

- (i) use of report wizard;
- (ii) use of sorting, grouping, statistical And summary features, for example, count, sum, and average;
- (iii) report generated to screen, printer and file; and,
- (iv) renaming of report title.