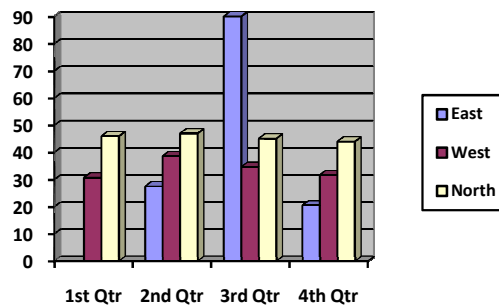




## NATIONAL DIPLOMA IN COMPUTER SCIENCE

# MANAGEMENT INFORMATION SYSTEM

COURSE CODE: COM 224



**YEAR 2- SEMESTER 2**

**PRACTICAL**

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## Table of Contents

WEEK 1	Understanding Systems in our environment .....	3
WEEK 2	Creating a spreadsheet to design a pay roll.....	4
WEEK 3	Creating a spreadsheet to design a pay roll and generate Management Information and other reports for decision making. ....	5
WEEK 4	Creating table using MS Access as Database Management System to design MIS ....	6
WEEK 5	Creating table using MS Access Database Management System to design MIS with use of form.....	7
WEEK 6	Querying Access database .....	8
WEEK 7	Project Management software Package.....	9
WEEK 8	Project Management software Package Tools. ....	10
	Activities.....	10
WEEK 9	Use of Project Management Tools for problem solving .....	11
WEEK 10	Use of Project Management Tools for problem solving .....	12
	Slack .....	12
WEEK 11	Solving specific problems with Project Management Tools .....	13
WEEK 12-13	Solving specific problems with Project Management Tools .....	14
	Slack .....	14
WEEK 14-15	Design of MIS from unstructured Table as given below .....	16

## **Understanding Systems in our environment .**

The students should be able to give examples of different systems from their surroundings , identify all its components or elemental parts and explain how they work together for attainment of its set goals.

Activities:

These examples must be used to explain the following :

- i.) Use your example to illustrate : subsystem , super system .
- ii.) Use another example to explain taxonomy of systems: Deterministic, Probabilistic Probabilities, Static, Dynamic etc. Give examples of each.
- iii) Explain functions performed or carried out by each elemental part of the system.
- iv) Basic elements of a system and their functions.

WEEK 2
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### **Creating a spreadsheet to design a pay roll.**

Use MS Excel to generate a payroll report that will track employees' information. The package is expected to track the following categories of input data: employee Bio data, Qualification, Programme of Study, Next of Kin data, basic salary and allowances and deductions if any.

**ACTIVITY:** Develop MS Excel spreadsheet to capture information for twenty (20) using the given details that is, use the various data categories given above and design spreadsheet for the structure. You might use some criteria for generating useful report.

WEEK 3
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## **Creating a spreadsheet to design a pay roll and generate Management Information and other reports for decision making.**

Use MS Excel to generate a payroll report that will track employees' information. The package is expected to track the following categories of input data: employee Bio data, Qualification, Programme of Study, Next of Kin data, basic salary and allowances and deductions if any.

### **ACTIVITIES:**

- 1.) Develop MS Excel spreadsheet to capture information for twenty (20) using the given details that is, use the various data categories given above and design spreadsheet for the structure. You might use some criteria for generating useful report.
- 2.) Carry out some useful calculations across rows and columns of your spreadsheet.

## **Creating table using MS Access as Database Management System to design MIS**

Use MS Access to generate a payroll report that will track employees' information. The package is expected to track the following categories of input data: employee Bio data, Qualification, Programme of Study, Next of Kin data, basic salary and allowances and deductions if any.

### **ACTIVITIES:**

- 1.) Design the structure of your table in the design view of MS Access.
- 2.) Develop MS Access in the datasheet view of MS Access to capture information for twenty (20) using the given details that is, use the various data categories given above and design spreadsheet for the structure. You might use some criteria for generating useful report.
- 3.) Carry out some useful calculations across rows and columns of your records.

## **Creating table using MS Access Database Management System to design MIS with use of form.**

Use MS Access to generate a payroll report that will track employees' information. The package is expected to track the following categories of input data: employee Bio data, Qualification, Programme of Study, Next of Kin data, basic salary and allowances and deductions if any.

### **ACTIVITIES:**

- 1.) Design the structure of your table in the design view of MS Access.
- 2.) Develop MS Access in the datasheet view of MS Access to capture information for twenty (20) using the given details that is, use the various data categories given above and design spreadsheet for the structure definition. You might use some criteria for generating useful report.
- 3.) Carry out some useful calculations across rows and columns of your records.
- 4.) Design two forms for the tables created in activity 7 to handle data input and update.

## Querying Access database

Use MS Access to design students' Management Information System (MIS). The package is expected to track the following categories of input data: student' Bio data, Local Government Area, Programme of Study, Next of Kin data, State and any other information.

### ACTIVITIES:

- 1.) Design the structure of your table in the design view of MS Access.
- 2.) Develop MS Access in the datasheet view of MS Access to capture information for twenty (20) using the given details that is, use the various data categories given above and design spreadsheet for the structure definition. You might use some criteria for generating useful report.
- 3.) Carry out some useful calculations across rows and columns of your records.
- 4.) Design two forms for the tables created handle data input and update.
- 5.) Design queries that will compute fees balance for all the students in the database. Use different criteria to generate different management information.



## **Project Management software Package.**

MS-Project is Project management software Package that has capabilities that makes it a necessary tool for project Management. MS-project is a Menu driven program i.e. a program that allows you to interact with the computer by enabling you to select from a group of alternatives, with an highlight of the consequences of selecting any of the various alternatives.

Since the essence of project Management is managing information, MS-project's views and features make is easy to enter organize and present project information. MS-project helps plan projects manage and upgrade information and communicate status once a project is underway. For a menu driven package such as MS-project, the use of a 'mouse' - a device for pointing at things on the screen normally used instead of the keyboard-becomes inevitable.

### Activities

- 1.) Load MS Project package.
- 2.) Create a project file as a test run.
- 3.) Familiarize yourself to most of the tools on your screen.

## **Project Management software Package Tools.**

MS Project has a range of project management tools available to assist with the planning and control of individual systems projects. These tools are designed to improve the effectiveness of the project management process.

The project management tools available include:

- Work breakdown structure
- Critical path analysis
- Gantt chart
- Resource histogram
- Budget.

## **Activities**

- 1.) Load MS Project package.
- 2.) Create a project by entering Tasks in the Gantt Chart
- 3.) Outline the tasks
- 4.) Assign task relationship by linking tasks in a project by drawing connecting tasks in the default Gantt Chart view.

## Use of Project Management Tools for problem solving

Recall that Critical path scheduling is a scheduling technique used to determine the order and duration of the sequence of project activities that directly affect the completion date of a project. Characteristics of a project include:

- well defined activities that have a clear beginning and end point;
- activities that can be worked on independently of other activities;
- activities that are ordered;
- and activities that serve the purpose of the project.

Pert and Gantt charts are tools that help system developers identify and order project activities and determine the critical path for project completion. Pert charts show how activities should be ordered and allow system developers to visualize project scheduling requirements. Pert charts often highlight the critical path that identifies the sequence of activities whose order and duration could affect the overall completion time of the project. Gantt charts are good for visually representing the duration of project activities, but they do not necessarily show how tasks must be ordered. Both tools are useful in helping developers plan and manage the systems development project.

This Practical work gives you an opportunity to work through some critical path scheduling exercises. You will calculate expected completion times for specific activities. The objective of this practical is to give you hands-on experience with some of the tools used to manage systems development projects.

Activities:

- 1.) Develop PERT and GANTT charts and identify the critical path for the project outlined in the assignment.
- 2.) Calculate the expected time for following tasks using a formula of  $(O + 4M + P)/6$

Task	Optimistic Time	Pessimistic Time	Most Likely Time	Expected Time
A	3	5	4	
B	2	5	3	
C	4	7	5	
D	2	3	3	

## Use of Project Management Tools for problem solving

This Practical work gives you once again an opportunity to work through some critical path scheduling exercises. You will calculate expected completion times for specific activities, estimate completion times activity for sequenced activities, determine slack times for project activities, develop PERT and GANTT charts and identify the critical path for the project outlined in the assignment. The objective of this practical is to give you hands-on experience with some of the tools used to manage systems development projects.

Activities:

- 1.) Derive the earliest completion time ( $T_E$ ),
- 2.) Derive latest completion time ( $T_L$ ), and
- 3.) slack for each of the following task  
(begin at time = 0). Which tasks are on the critical path? Make a check mark (✓) in the cells for activities on the critical path.

Task	Preceding Event	Succeeding Event	Expected Duration	$T_E$	$T_L$	Slack ( $T_L - T_E$ )	Critical Path?
A	--	B, C, E	2				
B	A	D	3				
C	A	D, F	5				
D	B, C	G	4				
E	A	F	4				
F	C, E	G, I	3				
G	D, F	H, I	4				
H	G	J	4				
I	F, G	J	5				
J	H, I	K	2				
K	J	--	3				

## Solving specific problems with Project Management Tools

Consider the following tables for the questions below:

Task	Optimistic Time	Pessimistic Time	Most Likely Time	Expected Time
A	3	5	4	
B	2	5	3	
C	4	7	5	
D	2	3	3	

Problem:

1.) Draw 1) a PERT and 2) a Gantt chart for the above problem. Draw the charts using a software application package such as MS Project or PowerPoint (Do not draw the charts by hand).

2.) Calculate the expected time for following tasks using a formula of  $(o+4M+P)/6$

Activities:

1. Create a project by entering Tasks in the Gantt Chart
2. Outline the tasks
3. Assign task relationship by linking tasks in a project by drawing connecting tasks in the default Gantt Chart view.
4. Entering resources and assigning them to task in the task entry view.

## Solving specific problems with Project Management Tools

Consider the following table for the questions below:

Task	Preceding Event	Succeeding Event	Expected Duration	$T_E$	$T_L$	Slack ( $T_L - T_E$ )	Critical Path?
A	--	B, C, E	2				
B	A	D	3				
C	A	D, F	5				
D	B, C	G	4				
E	A	F	4				
F	C, E	G, I	3				
G	D, F	H, I	4				
H	G	J	4				
I	F, G	J	5				
J	H, I	K	2				
K	J	--	3				

Problem:

- 1.) Draw 1) a Pert and 2) a Gantt chart for the above problem. Draw the charts using a software application package such as MS Project or PowerPoint (Do not draw the charts by hand).
2. Derive the earliest completion time ( $T_E$ ), latest completion time ( $T_L$ ), and slack for each of the following task (begin at time = 0). Which tasks are on the critical path? Make a check mark (✓) in the cells for activities on the critical path.

Activities:

1. Create a project by entering Tasks in the Gantt Chart
2. Outline the tasks
3. Assign task relationship by linking tasks in a project by drawing connecting tasks in the default Gantt Chart view.
4. Entering resources and assigning them to task in the task entry view.
5. Producing a report: It is possible to carry out the following activities under this heading: change text format, change Gantt

Charts, change field displayed in PERT nodes , and print views and reports.

6. Create a template that contains only the features you want in a project file.
7. Work with the critical path and identify critical tasks.
8. Display project information in the new calendar view.
9. Create recurring tasks that are placed at regular intervals in a schedule.
10. Use new filtering options and apply filters with a button.
11. Use the tracking toolbar to get quick access to the commands you need when updating the project.

## Design of MIS from unstructured Table as given below

ABC polytechnic needs a simple database structure to handle their requirement for information storage and retrieval. The institution has the following information on her students result called GRADE-REPORT.

Studentno	Student Name	Major	Course Name	Course Title	Instructor Location	Instructor Name	Grade
06/456	peter	computer	Database Graphics	Com423 Com311	Cst12 Cst13	Ola Dauda	A C
07/567	Audu	stats	Graphics Stat Theor Op Res	Com311 Sta381 Stat345	Cst13 Cst17 Cst13	Dauda John Dauda	A B C
.....							

Use MS Access to develop a simple database for this institution by taking the following activities.

Activities:

- 1.) Identify all the entities captured in the table above and put their records in different table manually (on paper) through 'Normalization process'.
- 2.) Create a new database
- 3.) create new tables
- 4.) set your primary key for each table.
- 5.) Save the design.
- 6.) Construct an Entity Relationship ER model for the institution with MS Access.
- 7.) Making relationship.
- 8.) Editing and deleting if necessary.
- 9.) Use different queries according to your needs.
- 9.) Print your reports.