

BINDURA UNIVERSITY OF SCIENCE EDUCATION
FACULTY OF AGRICULTURE AND ENVIRONMENTAL SCIENCE
DEPARTMENT: NATURAL RESOURCES

JUN 2024

COURSE CODE ES413 (1) PROJECT PLANNING AND MANAGEMENT

DURATION: 2hrs

TOTAL MARKS: 70

INSTRUCTIONS TO CANDIDATES

Answer **THREE** questions out of the following five questions. You must answer question **ONE** from **SECTION A** and any **TWO** questions from **SECTION B**.

SECTION A (COMPULSORY)

1. (a) Define the following terms:

- | | |
|-----------------------------------|----------|
| (i) Critical path, | [2Marks] |
| (ii) slack time, | [2Marks] |
| (iii) scope, | [2Marks] |
| (iv) work breakdown structure and | [2Marks] |
| (v) project schedule. | [2Marks] |

(b) You are a member of the senior management staff at XYZ Corporation. You have historically been using a functional structure setup with five departments: finance, human resources, marketing, production, and engineering.

(i) Create a drawing of your simplified functional structure, identifying the five departments. [4 Marks]

(ii) Assume you have decided to move to a project structure. What might be some of the environmental pressures that would contribute to your decision that it is necessary to alter the organisational structure? [4 Marks]

- (iii) The organisation has four ongoing projects: tailing dam rehabilitation, instrumentation and testing equipment, smelting plant, and security communications. Draw the new structure that creates these four projects as part of the organizational chart. [4 Marks]
- (iv) Suppose you now want to convert the structure from that in 1b(iii) to a matrix structure, re-create the structural design to show how the matrix would look. [4 Marks]
- (v) What behavioural problems could you begin to Anticipate through matrix structure? [4 Marks]

SECTION B

2. (a) You have created the project charter but could not get it approved by senior management. Your manager and his boss have asked you to begin the project anyway. What are the implications of taking such an action? [10 Marks]
- (b) Outline the three major steps in stakeholder management. [10 Marks]

3. A set of activities, their expected durations, and immediate predecessors are shown in the table below. Construct an activity network; identify the critical path and all activity slack times.

Activity	predecessor	Expected Duration
A	-----	6
B	A	7
C	A	5
D	B	3
E	C	4
F	C	5
G	D,E	8
H	F,G	3

[20 Marks]

4. Suppose you are considering whether to crash project activities to expedite your project. You have calculated the costs per activity for both normal and crashed options. These are shown in the table below:

Activity	Normal		Crashed	
	Duration	Cost	Duration	Cost
A	6 days	\$2400	4	\$3600
B	7 days	3500	5	5600
C	5 days	3000	4	3800
D	3 days	2700	2	4500
E	4 days	800	3	1500
F	5 days	1200	3	2100
G	8 days	2400	5	4200
H	3 days	4500	2	7000
Total		20 500		31 700

- (a) Which activities are the most cost-effective to crash)?

[14 Marks]

- (b) Explain the main benefits of developing a comprehensive project scope analysis.

[6 Marks]

5. (a) Distinguish conceptual framework from logical framework. [2 Marks]
- (c) Explain the functions of key components of a typical Logical framework matrix [12 Marks]
- (c) Provide a justification for the continued popularity of the Logical framework approach in project monitoring and evaluation. [6 Marks]

End of paper