LEBANESE INTERNATIONAL UNIVERSITY

School of Engineering
Department of Industrial Engineering

Semester: Fall 2015

IENG300 – Engineering Project Management Midterm

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Date: Friday, December 4th, 2015 **Time:** 8:00 – 9:15 (75 minutes)

Student Name: _____ **Student ID:** _____ **Section:** ____

There are **5 questions** in the booklet; each has several parts. Please answer all parts of the questions to the best of your ability.

Marking Scheme

Questions	Weight	Mark
Question 1	**10 points**	
Question 2	**30 points**	
Question 3	**15 points**	
Question 4	**25 points**	
Question 5	**20 points**	
Total	**100 points**	

1. **This booklet contains 9 pages including this one. Make sure all these pages are attached.**
2. **Closed book examination. Formulas are provided as needed.**
3. **Do not take the staple out. The exam booklet must remain intact.**
4. **Cheating penalty will be an "F" grade on the exam.**
5. **Non-programmable calculators are allowed.**
6. **Mobile phones/devices are to be turned off and stowed away.**
7. **Students must sign out prior to leaving the exam room.**

Good luck

Question 1 (10 points):

Mark the following statements as either TRUE (T) or FALSE (F) in the table that follows. If you change your answer, scratch previous one and clearly re-write the new one. Questions with a confusing answer will automatically get a zero mark. Wrong answers do not penalize correct ones. The weight for each question is 1 point.

1. The first stage in Project Life Cycle (PLC) is the planning stage.
2. Project managers manage repetitive activities to complete a project.
3. Scenario planning is a structured process of only thinking about future possible environments that would have potential high impact to disrupt business.
4. Understanding an organization's strategy is important for the project managers as strategy is usually implemented through projects.
5. For large project-based companies such as Apple, it is highly recommended to use a strong matrix project management structure.
6. Since work packages define work and identify the time to complete a task, they represent the highest level in Work Breakdown Structure (WBS).
7. The two estimate approaches are the top-down approach typically performed by the people who are doing the work and are based on estimates of elements found in the Work Breakdown Structure (WBS), and the bottom-up approach usually done by senior management.
8. The project network is the tool used for planning, scheduling and monitoring project progress.
9. Change is highly encouraged in a project and should be controlled through a well-defined change management process.
10. A risk can never be a positive opportunity.

Question	1	2	3	4	5	6	7	8	9	10
Answer										

Question 2 (30 points)

Choose the correct answer. Only one answer may be marked. Questions with more than one answer will automatically get a zero mark. Wrong answers do not penalize correct ones. The weight for each question is 2 points.

1. Projects are characterized by:
    a. Routine repetitive tasks.
    b. Having multiple starts and multiple ends.
    c. Producing something new.
    d. None of the above.

2. Financial methods for evaluating projects do not include the:
    a. Critical path method (CPM).
    b. Payback method.
    c. Net present value (NPV) method.
    d. None of the above.

3. An integrative project management approach would typically cover:
    a. Project management.
    b. Program management.
    c. Portfolio management.
    d. All of the above.

4. Which of the following statements is accurate:
    a. Project managers should not understand organization culture as culture does not impact projects implementation.
    b. Project managers should understand organization strategy as strategy is usually implemented through projects.
    c. Project managers are responsible for setting organization strategy.
    d. All of the above are statements accurate.

5. Multi-weighted scoring models have:
    a. Numerical solution
    b. No single criterion
    c. Several weighted selection criteria
    a. All of the above.

6. The work breakdown structure (WBS) is characterized by having:
    a. The actual project as the highest level and the work packages as the lowest levels.
    b. The actual project as the lowest level and the work packages as the highest levels.
    c. Nodes and arrows as its building blocks.
    d. All of the above.

7. Who should not be involved in the development of the project plan?
    a. The project manager.
    b. Key project team stakeholders.
    c. The functional managers.
    d. The vendors.

8. In reviewing the status of her project with top management, Maya was told that the SoW must be completed by June 3rd, 2015. The SoW would be considered as a:
    a. Milestone.
    b. Deliverable.
    c. Stakeholder.
    d. Strategic objective.

9. E and F are two activities in a project network that has a critical path of A, B, F, G and H. If E and F each delayed 6 time units , so the total project is delayed by:
    a. 12 time units
    b. 6 time units of activity E
    c. 6 time units of activity F
    d. No delay.

10. The final step in the creation of a Work Breakdown Structure (WBS) is to:
    a. Assign the cost account to a manager.
    b. Develop the responsibility matrix.
    c. Code the WBS for tracking.
    d. Assign the work package to a manager.

11. An Activity on Node (AoN) network is usually built in order to illustrate:
    a. The project charter.
    b. Project activities graphically as a project plan.
    c. The organization breakdown structure (OBS).
    a. The project overhead costs.

12. Which of the following technique is to avoid long delay of successor and reduce network details due to the long duration of the predecessor activity:
    a. Laddering
    b. Use of lags
    c. Hammock activities
    d. All of the above.

13. A risk value may be calculated as:
    a. The product of the probability and the ease of detection.
    b. The product of the ease of detection and the impact.
    c. The product of the probability and the impact.
    d. All of the above.

14. Project estimations may be classified as:
    a. Financial.
    b. Macro.
    c. Strategic.
    d. A waste of time and money.

15. The risk management process does not involve:
    a. Identifying risks.
    b. Planning risks.
    c. Responding to risks.
    d. Controlling risk response.

Question 3 (15 points):

The IENG300 course is considered as a project. Based on this fact, answer the questions in the solution section:

Question 3 Solution

a. Develop a WBS for the IENG300 course? **(10 points)**

b. Identify three deliverables of this project? **(3 points)**

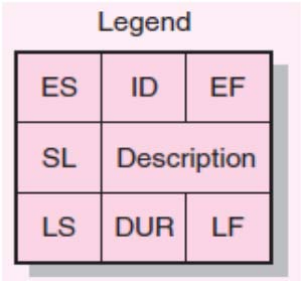
c. Identify two stakeholders of this project? **(2 points)**

Question 4 (25 points):

Given the project information summarized in the following table:

Activity	Predecessor	Duration
A	None	3
B	A	5
C	A	4
D	A	4
E	B, C, D	4
F	E	7
G	E	8
H	E	9
I	F, G, H	5
J	I	10

And using the following legend to represent the node:



AoN Calculations Formulas:

- EF = ES + Duration
  Where EF is Early Finish & ES is Early Start

- LS = LF – Duration
  Where LS is Late Start & LF is Late Finish

- SL = LS – ES
- SL = LF – EF
  Where SL is Slack

Question 4 Solution

a. Draw the Activity on Node (AON) network. **(5 points)**

b. Calculate the early start (ES), early finish (EF), late start (LS), late finish (LF) and slack. **(10 points)**

c. Identify the critical path(s). **(5 points)**

d. How soon can the project be finished? **(2 points)**

e. Suppose that the duration of one of the activities B, C, and D can be shortened **by** one time unit. Which activity would you shorten to reduce the project duration **by** one time unit? Why? **(3 points)**

Question 5 (20 points)

LIU New Building

After several successful launches of buildings in Beirut campus, LIU is in the process of constructing another new building, Block H.

The building is scheduled to be fully functional and in service for the students, staff and instructors by the beginning of the Christmas vacation. Unlike previous jobs, the contractor company who is responsible about finishing up the construction of "Block H" left the country to another overseas opportunity leaving "Block H" halfway done. LIU immediately hired another contractor to takeover. In addition, LIU started recruiting volunteers from instructors, staff, and students to help in speeding up and finish the work by the scheduled date.

Question 5 Solution

a. Do you consider constructing and opening a new building in Beirut campus a project? Justify your answer. **(4 points)**

b. What would be the criteria for LIU to measure the project success? **(4 points)**

c. Create a responsibility matrix per LIU departments that are going to get involved this event? **(4 points)**

d. What would be the recommended project management structure that would speed up the process of finishing up the project irrespective of the cost? **(4 points)**

e. Would you include risk management plan in your baseline plan? Identify 2 risk events that might impact the scope, cost, time, or quality of your project and propose the response and contingency plan for each risk. **(4 points)**