



THE UNIVERSITY OF
SYDNEY

SEAT NUMBER: _____

LAST NAME: _____

FIRST NAME: _____

SID: _____

School of IT **INFO6007 - Project Management in IT**

Mid-Term Examination, Semester 2 – 2016

Total Duration: 1 hours and 40 minutes

Writing Time: 1 hours and 30 minutes

Reading Time: 10 minutes

INSTRUCTIONS TO CANDIDATES

1. Please read each question carefully. The value of each question has been written next to the question. All questions must be answered.
2. That questions are of unequal value. The total of marks of this exam paper is 90.
3. You have 90 minutes to answer questions worth 90 marks of value. You may wish to allocate your time based on 1 minute per mark.
4. Write your response to questions in the answer booklets provided.
5. Please ensure that your Name and Student Number are written on each booklet you use.
6. Please indicate the Question number/s on the front of each booklet you use.
7. This question paper must be returned with the answer booklets
8. Every attempt has been made to make the questions unambiguous. However, if you are not sure what a question is asking, make a reasonable assumption and state it at the beginning of your answer.

Materials Permitted:

You may bring into the exam a single handwritten sheet of A4 paper. Both sides of the sheet may be written on. **You must submit this sheet of paper with your answer booklet.**

Translation Dictionaries are permitted.

Non programmable calculators are permitted.

Please check your examination paper is complete (**4 pages including cover sheet**) and indicate you have done this by signing below.

I have checked the examination paper and affirm it is complete.

Student Name _____ Date: _____

1. [55 Marks]] Time to teach

Twelve years have passed since you successfully completed Info6007 at the University of Sydney. Over the last eight years you have been project managing increasingly larger projects. Your last engagement was as a contract program manager based out of London, leading 4 project managers, 80 consultants and a project budget of just under €6m. The project was a significant success and provided you with an impressive salary. However, during most of those years you worked in excess of 80 hours a week and spent very little time with your spouse and four children. You have decided to take life a little easier for the next few years, travelling throughout Europe during the school holidays with your family who are now all located in the UK. You have accepted a contract to teach Project Management to MIT students at the University of York – a course quite similar to the one you attended all those years ago.

As there will be 60 students in your class, the University has assigned you a tutor (Erika) to assist in course generation, delivery, and in marking assignments and exams. In Week 5 you will be in Prague for a holiday. Erika has confirmed she will be able to run the class completely that week. She will teach the class how to use “Google Project for Droid 2028” (which is due to be released by Google during the first week of class) for the whole three hours. In that week only, all the students will need access to PCs. In Week 12, Australia’s president will be visiting the University; there is a small chance you will not have access to your classroom that week.

All Universities now run each course as a project with its own P&L (profit and loss budget), apportioning costs for room and resources rental (€5/student/hour), PC rental (€5/student/hour), printing (€1/page), and administrative support (€5000 flat fee plus €20/student, paid in Week 0). You are paid €100/hour and Erika is paid half that amount. As the course coordinator, you are also the designated project manager.

There are 15 course weeks: Week 0 which includes course preparation; 13 weeks of course delivery; and Week 14 which includes the exam and all final marking.

Please put together for the University of York:

- (a) A project objective statement (6 Marks)
- (b) A detailed work breakdown structure (24 marks)
- (c) A cost budget (**not a baseline**) stating the basis of any estimates (17 Marks)
- (d) A weekly resource plan for the project (8 marks)

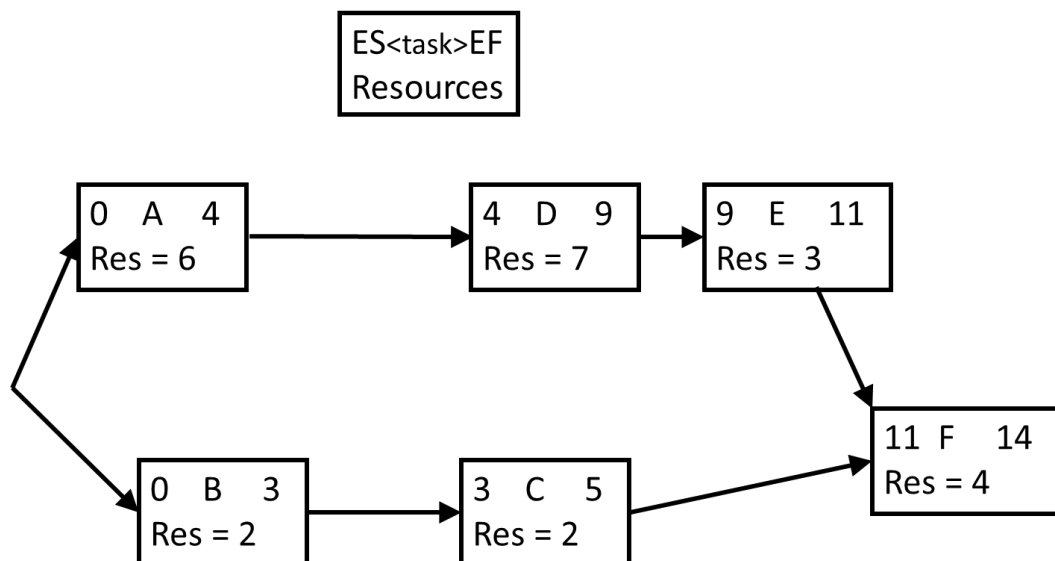
2. [7 marks] Time

The task “ERP Testing” has 6 weeks of *duration* and 18 weeks of *work*

- [2 marks] What is the difference between *work* and *duration*
- [3 marks] Give a specific example of a resource allocation that the *ERP Testing* task could have (assuming resources are allocated 100% of their available time)
- [2 marks] Lucy is estimating the amount of time it will take to upgrade all of the centrally managed university servers. She is basing her estimate on past upgrades. What is the PERT estimate if the previous 6 upgrades have taken the following amount of time: 3 days, 4 days, 4 days, 4 days, 5 days, and 11 days?

3. [14 marks] Resource Levelling.

Consider the project described by the AON diagram below:



- Draw the resource usage chart (using labelled boxes and without levelling). (6 marks)
- Resource level the project without extending the project’s deadline and without pausing tasks once they have begun. Draw the new resource usage chart. (4 marks)
- How many fewer resources are needed on the project at any one time as a result of the levelling? (1 mark)
- For this particular project, why might the new levelled schedule be worse than the initial schedule? (3 marks)

4. [14 Marks] Costs – NLP 1

Your company is developing a new generation search engine which it plans to sell for \$500m in 3 years' time. The search engine should cost \$300m to develop over the three years. You plan to hire your new developers from graduates of the School of IT at the University of Sydney. The following table summarises the timing of the planned costs. Your company's discount rate (R) is 20%.

Year	\$ Costs for that Year
0 (up front)	\$50m
1	\$80m
2	\$120m
3	\$50m

At the **end** of first year, the project team has only completed 90% of the tasks it had planned to complete, with actual costs of \$117m

- (a) Calculate the Earned Value, Cost Variance, and Schedule Variance (6 marks)
- (b) What is a possible explanation for these results? (4 marks)
- (c) What is the likely duration of the entire project? (2 marks)
- (d) How much is the project likely to cost by the time it is complete? (2 marks)

The formulas below may assist in your calculations

TERM	FORMULA
Earned Value	$EV = PV \text{ to date} \times RP$
Cost Variance	$CV = EV - AC$
Schedule Variance	$SV = EV - PV$
Cost Performance Index	$CPI = EV/AC$
Schedule Performance Index	$SPI = EV/PV$
Estimate at Completion (EAC)*	$EAC = BAC/CPI$
Estimated Time to Complete	Original Time Estimate/SPI

END OF QUESTIONS