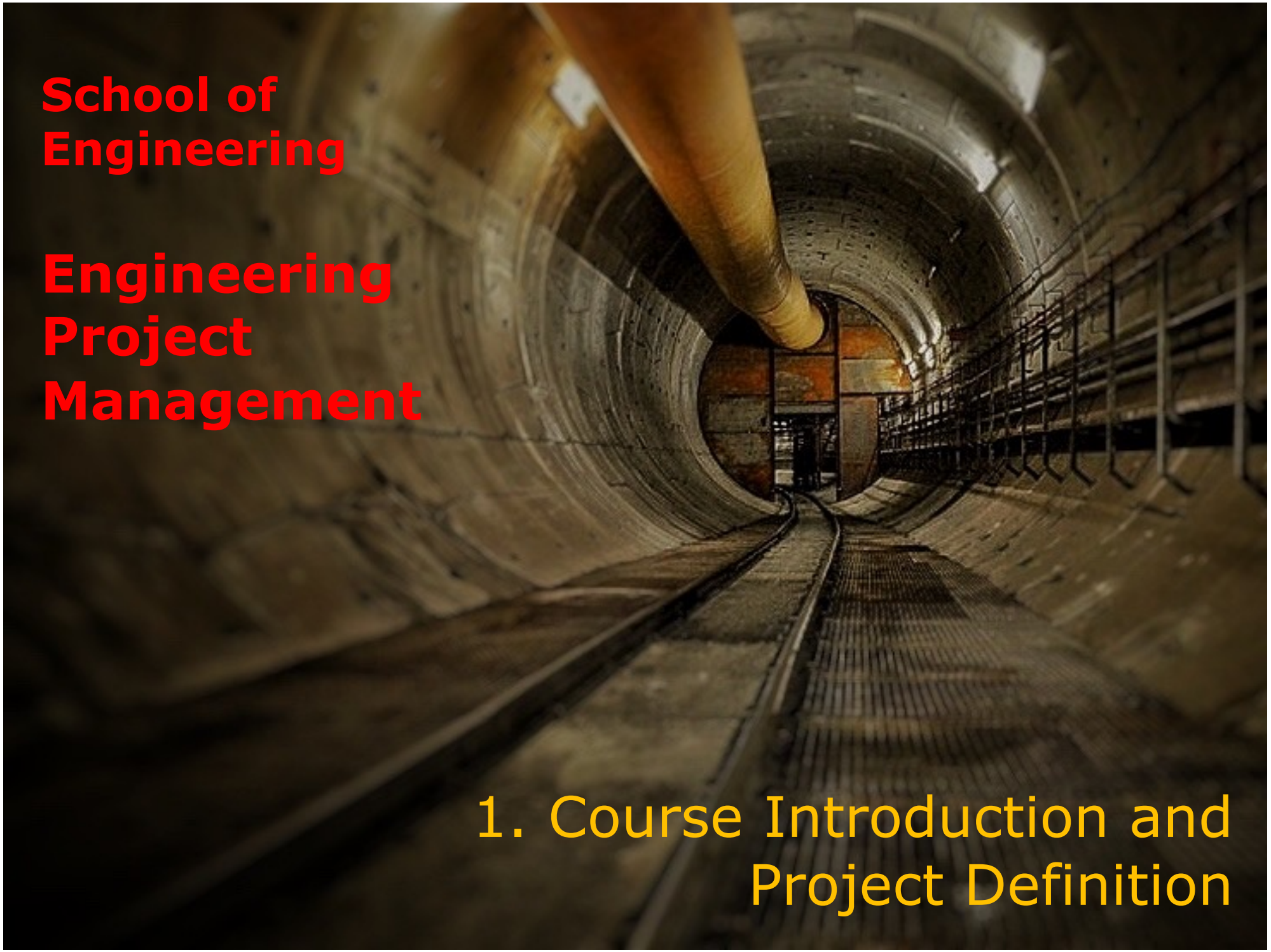


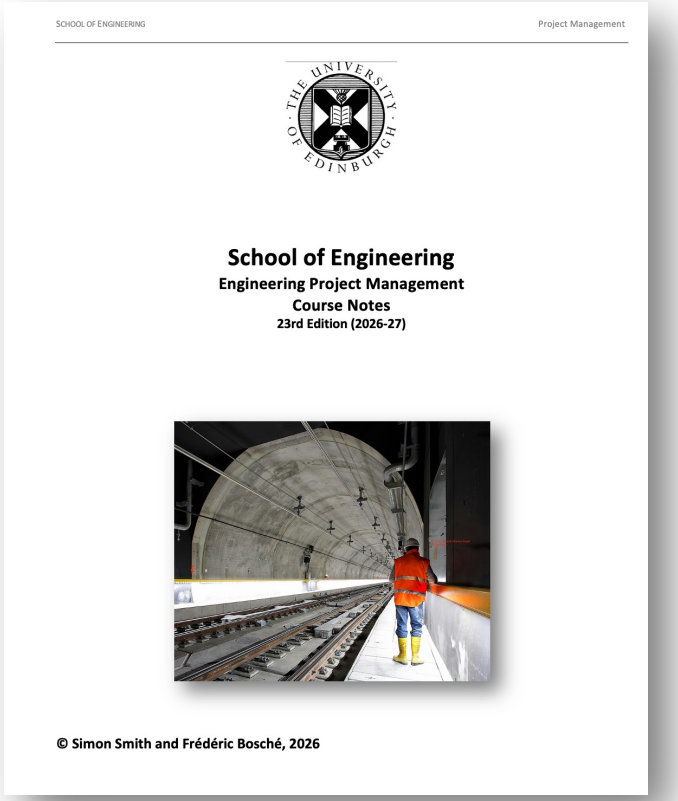
School of Engineering

Engineering Project Management

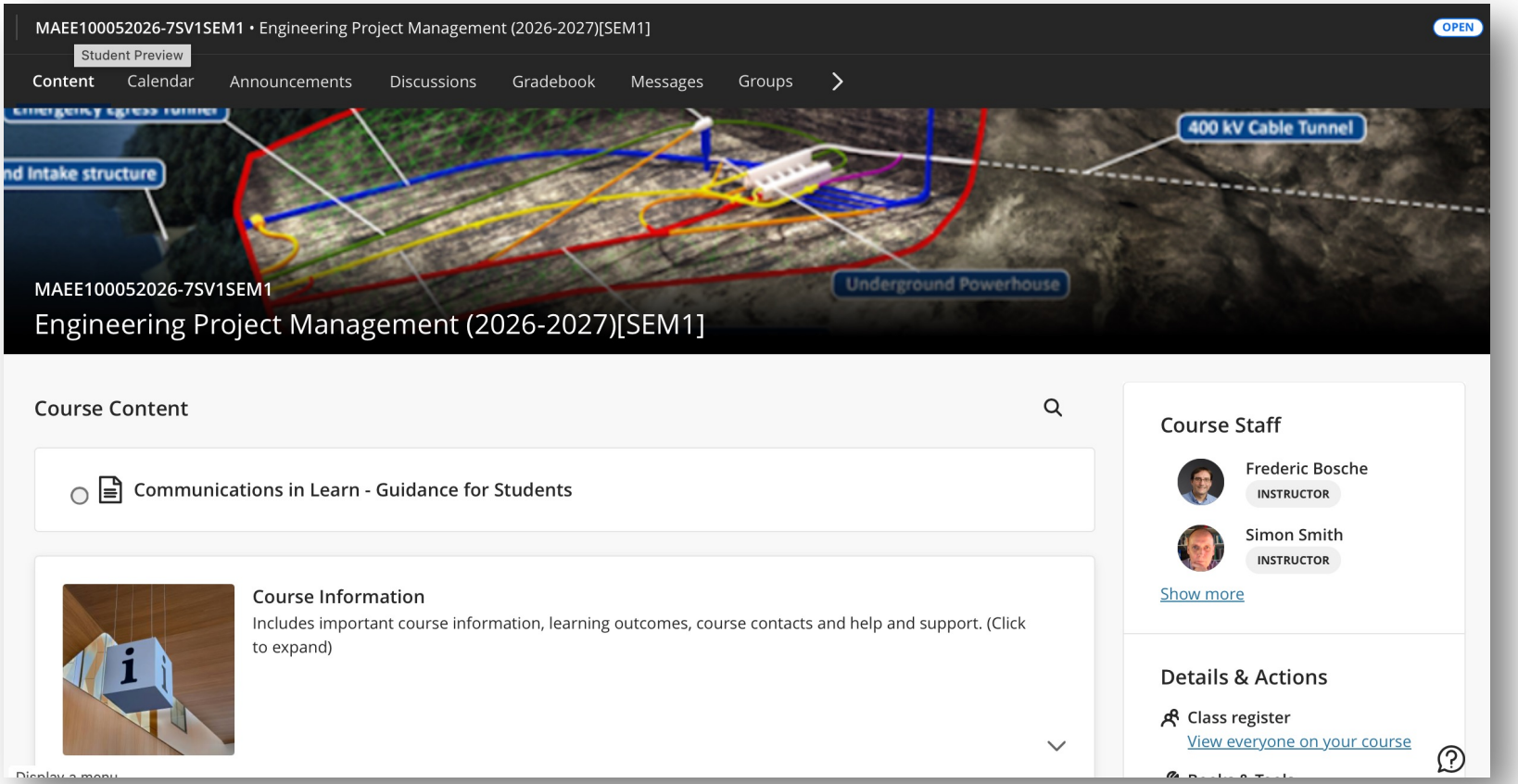
1. Course Introduction and Project Definition

Course Notes & Learn Site

- Course notes,
- Past papers,
- Lecture slides,
- Lecture captures,
- Self-paced study questions,
- Case-studies,
- Reading lists
- and other information about this course can be see and downloaded from the *Course LEARN* site

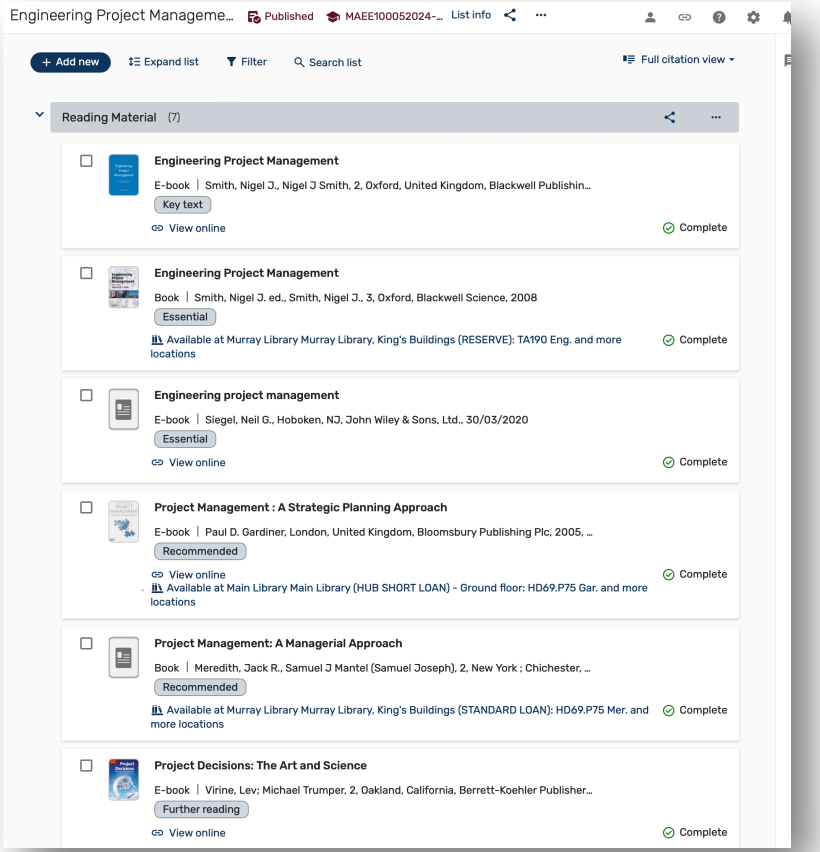


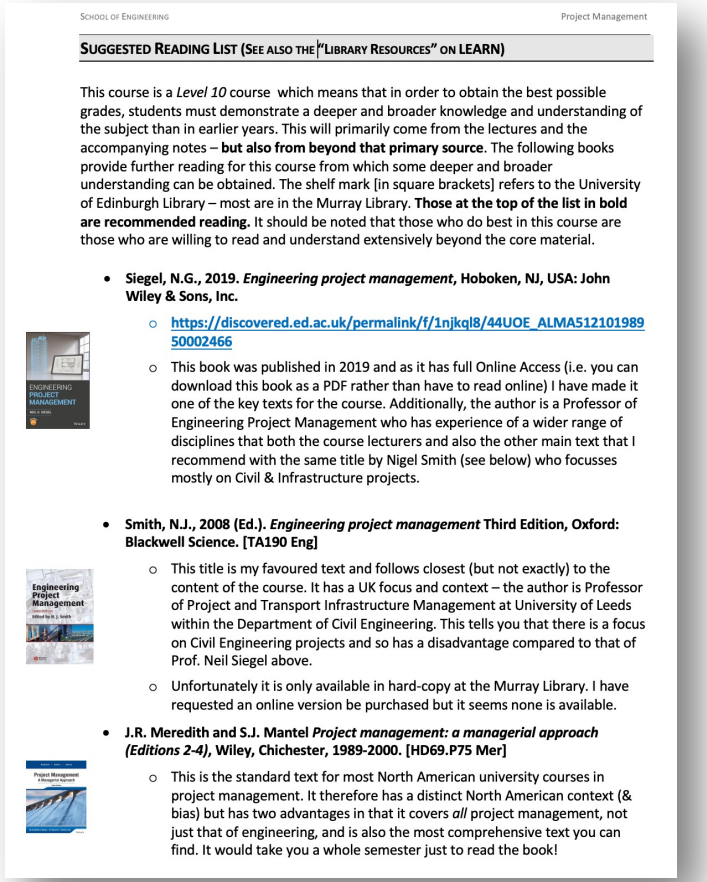
EPM Learn Site



Suggested Reading

- See links on Learn, and also listed in the notes





Learning Outcomes

- On completion of this course, the student will be able to:
  - Recognise the constituent parts of a project life cycle and the relevant parties involved
  - Demonstrate understanding of the importance project demand and client responsibility in project success
  - Be able to analyse basic project cost and time information and produce simple estimates and plans
  - Distinguish between different contractual and procurement methods for engineering projects
  - Appraise project information and critique a project's likely success

Lecture Topics **Simon Smith** **Fred Bosché**

1. **Introduction and project definition**; definition of project management; project objectives & compromises.
2. **Project Life Cycle**: what the various stages of an engineering project are, from conception to commissioning to decommissioning.
3. **Parties to a project**: who the main players in an engineering project are and what are their roles. Project breakdown and Work Breakdown Structures.
4. **Project planning**. Networks, Gantt charts & network techniques.

Lecture Topics

5. **The Critical Path Method** as a way of analysing precedence networks and determining the critical path and activity floats.
6. **The planning & estimating role** and introduction to the estimating process
7. **Financial resources**. The role of cash flow and the concepts of liability, earning, profit, surplus and expenditure.
8. **Elements of cost and cost data**; the all-in rate; estimating methods: global, factorial and labour-hours methods.
9. **Further estimating methods**: unit-rate estimating and operational estimating.

Lecture Topics

10. **Further issues in estimating**: conversion to tender bid; learning & forgetting; estimating accuracy; budgeting.
11. **Project Monitoring and Control.** Understanding the principles of Milestone Monitoring and Earned Value Analysis
12. **Project Monitoring** Worked Examples.
13. **Introduction to contract management** and contract law.
14. **Types and classifications of engineering contracts**. Contracts can be classified in three ways and this lecture will look at the differences between these classifications and why they are used.

Lecture Topics

14. **Contract planning & contractor selection**. The stages in the lead up to appointing an appropriate contractor for the project and how this is undertaken.
15. **Contract award and conditions of contract**. The procedures for awarding an engineering contract and how such contracts are administered through 'Conditions of Contract.
16. **Conditions of contract continued** and the 'Engineering & Construction Contract'.
17. **Contract management case studies**.
18. **Teams & Leadership in Engineering** projects – how teams perform together.


LATEST
Inquiry into Edinburgh Tram project finds litany of issues in procurement and project management
20 SEP, 2023 | BY ROB HAKIMIAN

General Semester Timetable

Engineering Project Management - Schedule, Semester 1, 2026-27

Note: Schedule is subject to change - all updates will be notified by via LEARN Announcements

	Wednesdays 1100-1300	Subject	Location	Lecturer	
Week 1	**23-Sep-26**	Introduction	LT250 - Joseph Black Building	SDS	
Week 2	**30-Sep-26**	The Project Life Cycle and Parties to a Project	LT1 - Ashworth Laboratories	SDS	
Week 3	**07-Oct-26**	Planning and the Critical Path Method	LT1 - Ashworth Laboratories	FB	
Week 4	**14-Oct-26**	Estimating Part 1	LT1 - Ashworth Laboratories	SDS	
Week 5	**21-Oct-26**	Estimating Part 2	LT1 - Ashworth Laboratories	SDS	
Week 6	**28-Oct-26**	Project Monitoring & Control	LT250 - Joseph Black Building	FB	
Week 7	**04-Nov-26**	Contract Law & Contract Management	LT250 - Joseph Black Building	SDS	C/W due Friday 6 Nov 1400
Week 8	**11-Nov-26**	Contract Planning & Conditions of Contract	LT250 - Joseph Black Building	SDS	
Week 9	**18-Nov-26**	Teams & Leadership	LT250 - Joseph Black Building	SDS	
Week 10	**25-Nov-26**	Guest Speaker: To Be Confirmed	LT250 - Joseph Black Building	SDS	
Week 11	**02-Dec-26**	Revision Lecture and Exam Study Approach	LT250 - Joseph Black Building	SDS	
Week 12	**09-Dec-26**	Study Week			
Week 13	**9-21 Dec 2026**	Exam - Date, Time & Location to be determined and notified by Student Administration - see https://exams.is.ed.ac.uk			
Week 13					

SDS - Dr Simon Smith - William Rankine Building Room 3.20 simon.smith@ed.ac.uk
FB - Dr Fred Bosché - - William Rankine Building Room 3.18 f.bosche@ed.ac.uk

Office Hour - Mondays at 4pm
Note - all 1-1 communication with Lecturers *must* be by email. No Teams messages!

Assessment

- Credit awarding:
  - 80% degree exam
    - Exam timetable usually published towards end of October – check for date, time & location
    - Exam will be 1.5 hours long
    - Exam will be 2 questions
  - 20% Coursework Exercise
    - Done in pairs
    - Introduced by Dr Bosché in Week 3

Previous results - 2015

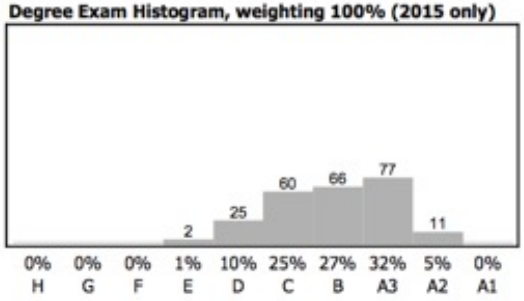
Class: MAEE10005 - Engineering Project Management 4
Credits: 10
Semester: 1
Organiser: Dr Simon Smith

Year	Number of students	Averages by Coursework and/or Exam		Overall		Pass Rate
		Coursework Average	*Degree Exam Average*	*Overall Course Average*	*Overall Course Standard Deviation*	
2009 = 2009/10, etc.						
2015	241		63.3	63.4	10.8	99.2

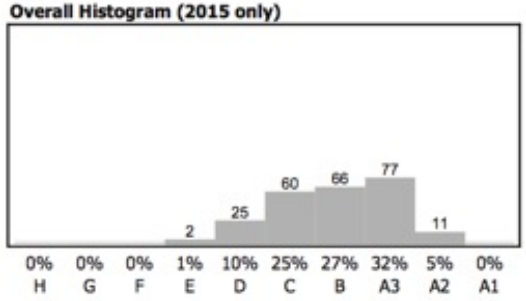
Coursework Histogram, weighting 0% (2015 only)

No Marks

Degree Exam Histogram, weighting 100% (2015 only)



Overall Histogram (2015 only)



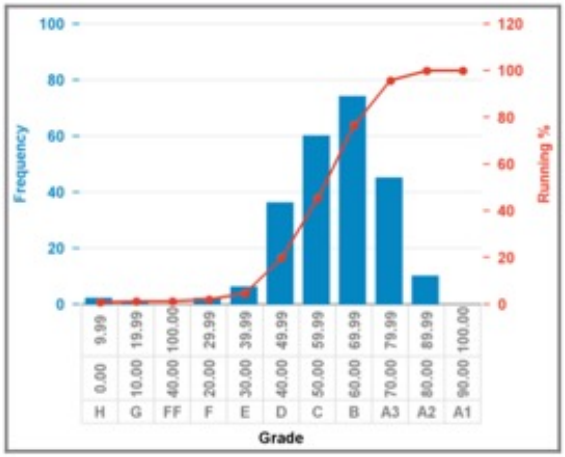
Previous results - 2016

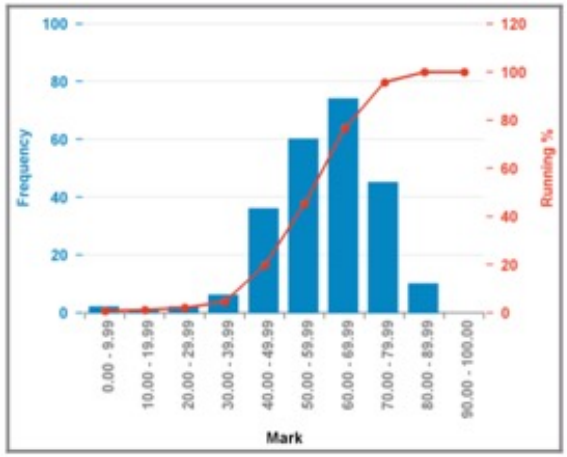
Course Report - Summary MAEE10005 Engineering Project Management 4

Course Code	**MAEE10005 (10 Credits)**
Course Name	**Engineering Project Management 4**
Academic Year	**2016/7**
Convenor	**Yong Lu**
Course Organiser	**Simon Smith**
Course Secretary	**Emily Rowan**
Report Run - Time/Date	**1/25/17 - 9:49:43 AM GMT+00:00**

Result	Students	%
Pass	225	95.34
Fail	11	4.66

Grade	Min Mark	Max Mark	Students	Running %	%
A1	90.00	100.00	0	0	0
A2	80.00	89.99	10	4.24	4.24
A3	70.00	79.99	45	23.31	19.07
B	60.00	69.99	74	54.66	31.36
C	50.00	59.99	60	80.08	25.42
D	40.00	49.99	36	95.34	15.25
E	30.00	39.99	6	97.88	2.54
F	20.00	29.99	2	98.73	0.85
FF	40.00	100.00	0	98.73	0
G	10.00	19.99	1	99.15	0.42
H	0.00	9.99	2	100.00	0.85





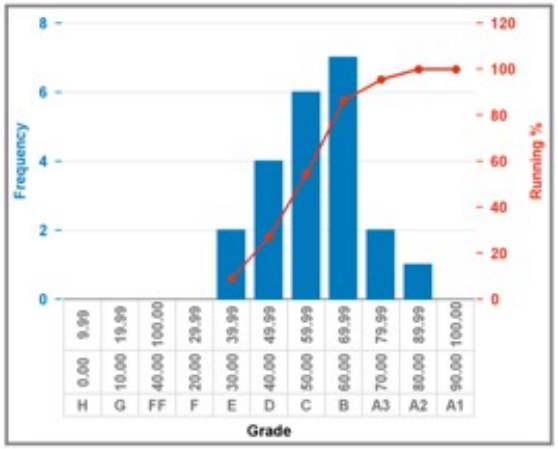
Previous results – 2016 MSc

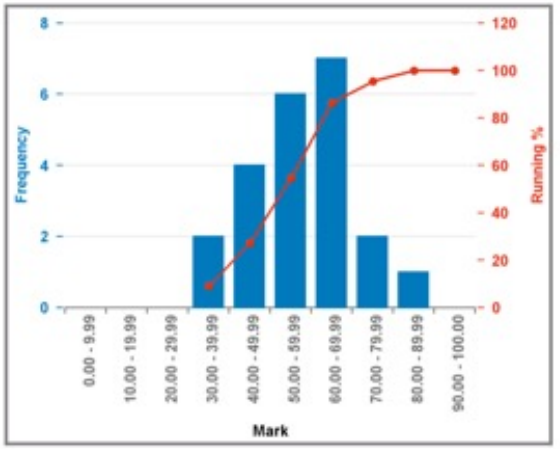
Course Report - Summary PGEE10012 Engineering Project Management (MSc)

Course Code	PGEE10012 (10 Credits)
Course Name	Engineering Project Management (MSc)
Academic Year	2016/7
Convenor	Yong Lu
Course Organiser	Simon Smith
Course Secretary	Emily Rowan
Report Run - Time/Date	1/25/17 - 10:05:08 AM GMT+00:00

Result	Students	%
Pass	20	90.91
Fail	2	9.09

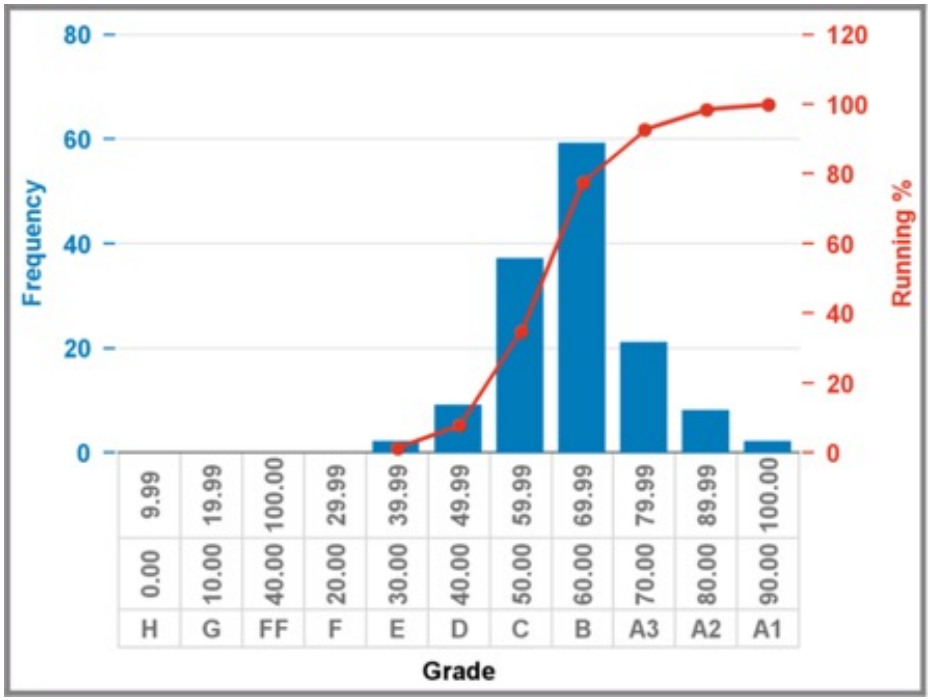
Grade	Min Mark	Max Mark	Students	Running %	%
A1	90.00	100.00	0	0	0
A2	80.00	89.99	1	4.55	4.55
A3	70.00	79.99	2	13.64	9.09
B	60.00	69.99	7	45.45	31.82
C	50.00	59.99	6	72.73	27.27
D	40.00	49.99	4	90.91	18.18
E	30.00	39.99	2	100.00	9.09
F	20.00	29.99	0	100.00	0
FF	40.00	100.00	0	100.00	0
G	10.00	19.99	0	100.00	0
H	0.00	9.99	0	100.00	0





Previous results - 2017

Course Code/Points	**MAEE10005 (10 Credits)**
Course Name	**Engineering Project Management 4**
Academic Year	**2017/8**
Convenor	**Yong Lu**
Course Organiser	**Simon Smith**
Course Secretary	**Shona Barnet**
Report Run - Date/Time	**1/24/18 - 9:46:59 AM GMT+00:00**



Grade	Min Mark	Max Mark	Students	%
A1	90.00	100.00	**2**	**1.45**
A2	80.00	89.99	**8**	**5.80**
A3	70.00	79.99	**21**	**15.22**
B	60.00	69.99	**59**	**42.75**
C	50.00	59.99	**37**	**26.81**
D	40.00	49.99	**9**	**6.52**
E	30.00	39.99	**2**	**1.45**
F	20.00	29.99	**0**	**0**
FF	40.00	100.00	**0**	**0**
G	10.00	19.99	**0**	**0**
H	0.00	9.99	**0**	**0**

Result	Students	%
Pass	**136**	**98.55**
Fail	**2**	**1.45**

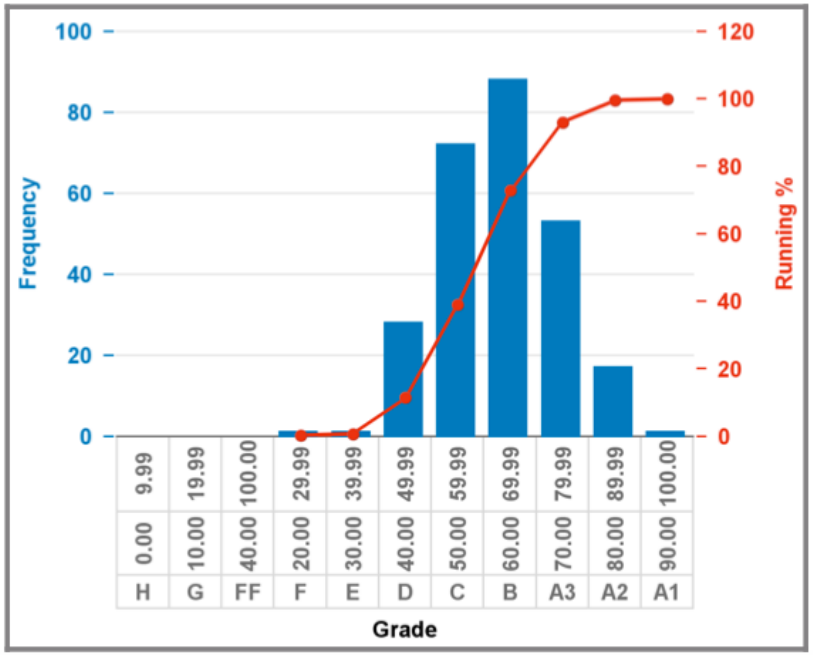
Previous Results 2018

Ratified Results - Original Diet: MAEE10005 Engineering Project Management 4 2018/9

Course Code	**MAEE10005 (10 Credits)**
Course Name	**Engineering Project Management 4**
Academic Year	**2018/9**
Convenor	**Yong Lu**
Course Organiser	**Simon Smith**
Course Secretary	**Margaret Robertson**
Report Run - Time/Date	**1/31/19 - 2:33:59 PM GMT+00:00**

Result	Students	%
Pass	**259**	**99.23**
Fail	**2**	**0.77**
Mean Course Mark		**62.96**
Standard Deviation		**11.09**

Grade	Min Mark	Max Mark	Students	Running %	%
A1	90.00	100.00	1	0.38	0.38
A2	80.00	89.99	17	6.90	6.51
A3	70.00	79.99	53	27.20	20.31
B	60.00	69.99	88	60.92	33.72
C	50.00	59.99	72	88.51	27.59
D	40.00	49.99	28	99.23	10.73
E	30.00	39.99	1	99.62	0.38
F	20.00	29.99	1	100.00	0.38
FF	40.00	100.00	0	100.00	0
G	10.00	19.99	0	100.00	0
H	0.00	9.99	0	100.00	0

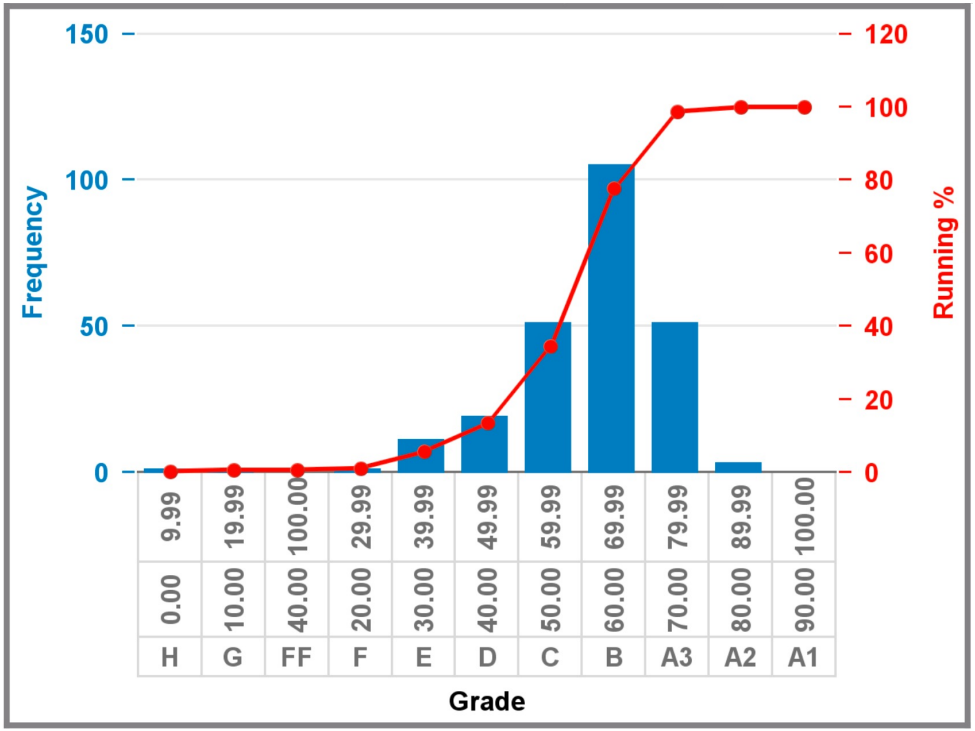


Previous Results 2021

Course Code/Points	**MAEE10005 (10 Credits)**
Course Name	**Engineering Project Management 4**
Academic Year	**2021/2**
Convenor	**Yong Lu**
Course Organiser	**Simon Smith**
Course Secretary	**Margaret Robertson**
Report Run - Date/Time	**08-02-2022 03:29:08 PM**

Grade	Min Mark	Max Mark	Students	%
A1	90.00	100.00	**0**	**0**
A2	80.00	89.99	**3**	**1.23**
A3	70.00	79.99	**51**	**20.99**
B	60.00	69.99	**105**	**43.21**
C	50.00	59.99	**51**	**20.99**
D	40.00	49.99	**19**	**7.82**
E	30.00	39.99	**11**	**4.53**
F	20.00	29.99	**1**	**0.41**
FF	40.00	100.00	**0**	**0**
G	10.00	19.99	**1**	**0.41**
H	0.00	9.99	**1**	**0.41**

Result	Students	%
Pass	**230**	**94.26**
Fail	**14**	**5.74**

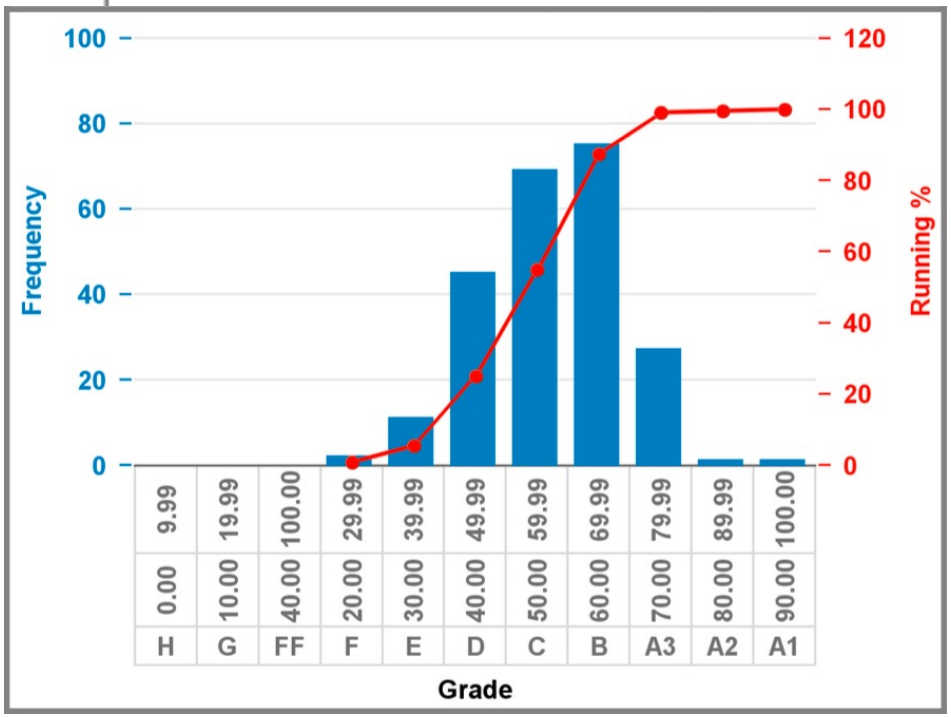


Previous Results 2022

Course Code/Points	**MAEE10005 (10 Credits)**
Course Name	**Engineering Project Management 4**
Academic Year	**2022/3**
Convenor	**Yong Lu**
Course Organiser	**Simon Smith**
Course Secretary	**Ruben Gutierrez Martin**
Report Run - Date/Time	**13-02-2023 12:26:50 PM**

Grade	Min Mark	Max Mark	Students	%
A1	90.00	100.00	1	0.43
A2	80.00	89.99	1	0.43
A3	70.00	79.99	27	11.69
B	60.00	69.99	75	32.47
C	50.00	59.99	69	29.87
D	40.00	49.99	45	19.48
E	30.00	39.99	11	4.76
F	20.00	29.99	2	0.87
FF	40.00	100.00	0	0
G	10.00	19.99	0	0
H	0.00	9.99	0	0

Result	Students	%
Pass	218	92.77
Null Sit	4	1.70
Fail	13	5.53

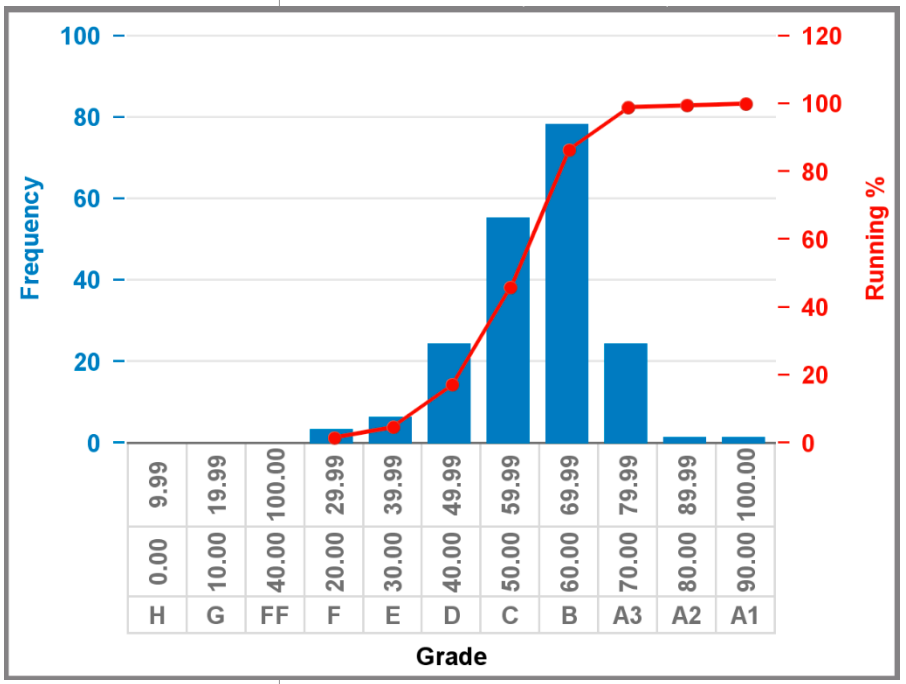


Previous Results 2023

Course Code/Points	**MAEE10005 (10 Credits)**
Course Name	**Engineering Project Management 4**
Academic Year	**2023/4**
Convenor	**Yong Lu**
Course Organiser	**Simon Smith**
Course Secretary	**Mhairi Sime**
Report Run - Date/Time	**28-01-2024 05:58:47 PM**

Grade	Min Mark	Max Mark	Students	%
A1	90.00	100.00	1	0.52
A2	80.00	89.99	1	0.52
A3	70.00	79.99	24	12.50
B	60.00	69.99	78	40.63
C	50.00	59.99	55	28.65
D	40.00	49.99	24	12.50
E	30.00	39.99	6	3.13
F	20.00	29.99	3	1.56
FF	40.00	100.00	0	0
G	10.00	19.99	0	0
H	0.00	9.99	0	0

Result	Students	%
Pass	183	95.31
Fail	9	4.69



Previous Results 2024

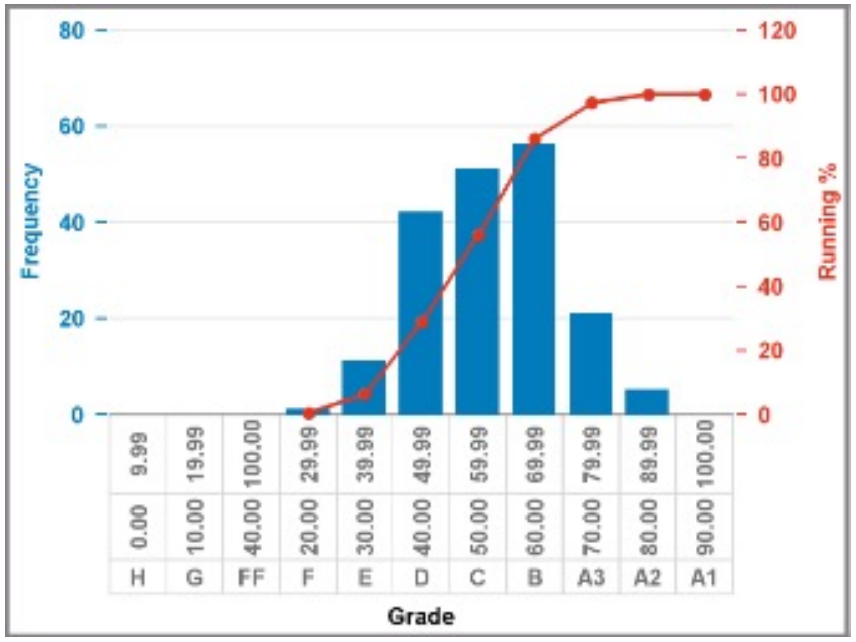
Course Code/Points	**MAEE10005 (10 Credits)**
Course Name	**Engineering Project Management 4**
Academic Year	**2024/5**
Convenor	**Yong Lu**
Course Organiser	**Simon Smith**
Course Secretary	**Tom Lawford-groves**
Report Run - Date/Time	**24-01-2025 01:27:21 PM**

Grade	Min Mark	Max Mark	Students	%
A1	90.00	100.00	**0**	**0**
A2	80.00	89.99	**5**	**2.67**
A3	70.00	79.99	**21**	**11.23**
B	60.00	69.99	**56**	**29.95**
C	50.00	59.99	**51**	**27.27**
D	40.00	49.99	**42**	**22.46**
E	30.00	39.99	**11**	**5.88**
F	20.00	29.99	**1**	**0.53**
FF	40.00	100.00	**0**	**0**
G	10.00	19.99	**0**	**0**
H	0.00	9.99	**0**	**0**

Result	Students	%
Pass	**175**	**93.58**
Fail	**12**	**6.42**

Student Feedback Comment:

Sometimes the requirements needed to achieve a high mark (70 and above) are very strict and don't reward hard work, especially when lecturers state from the offset of a course that to get such a high mark it work would need to be industry standard, in some cases this is impossible.



Previous Results 2025

Course Code/Points	**MAEE10005 (10 Credits)**
Course Name	**Engineering Project Management 4**
Academic Year	**2025/6**
Convenor	**Yong Lu**
Course Organiser	**Simon Smith**
Course Secretary	**Tom Lawford-groves**
Report Run - Date/Time	**23-01-2026 11:50:43 AM**

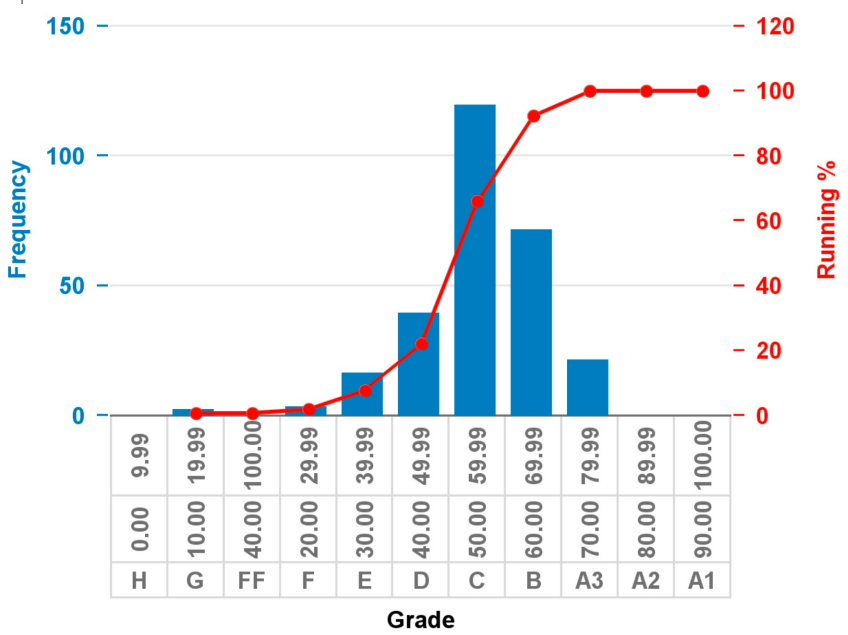
Grade	Min Mark	Max Mark	Students	%
A1	90.00	100.00	**0**	**0**
A2	80.00	89.99	**0**	**0**
A3	70.00	79.99	**21**	**7.75**
B	60.00	69.99	**71**	**26.20**
C	50.00	59.99	**119**	**43.91**
D	40.00	49.99	**39**	**14.39**
E	30.00	39.99	**16**	**5.90**
F	20.00	29.99	**3**	**1.11**
FF	40.00	100.00	**0**	**0**
G	10.00	19.99	**2**	**0.74**
H	0.00	9.99	**0**	**0**

Result	Students	%
Pass	**250**	**92.25**
Fail	**21**	**7.75**

Student Feedback Comment:

Sometimes the requirements needed to achieve a high mark (70 and above) are very strict and don't reward hard work, especially when lecturers state from the offset of a course that to get such a high mark it work would need to be industry standard, in some cases this is impossible. Personally, first-year halls did not provide me with a

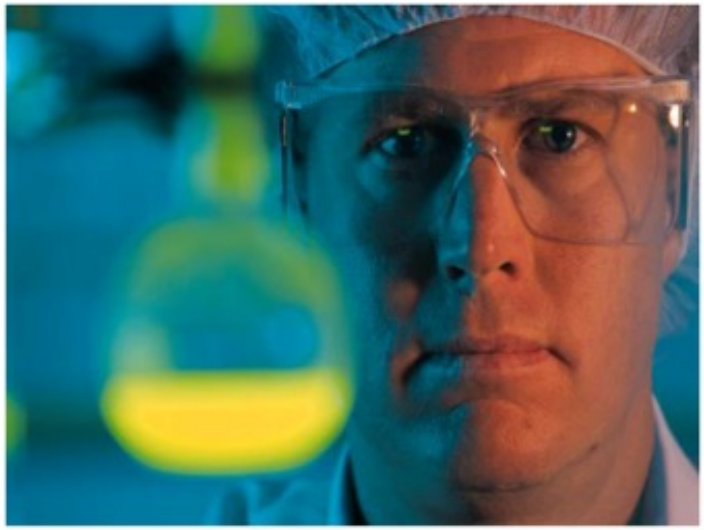
WRONG!

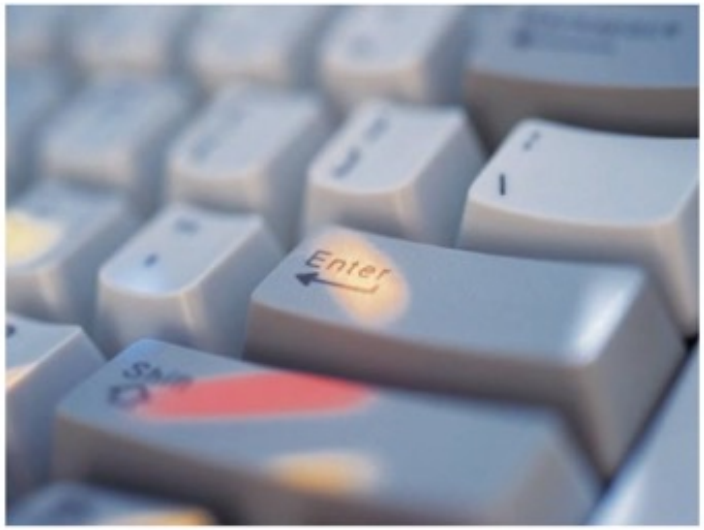


Projects









What might be a Project?

What might be a project?	Is this an engineering project?	If so which discipline?	What are the things which make you think it is a project?	What is the thing the project is intended to do?	How will you know when it has done what you want it to do?
Doing a beach clean in the maldives	No		Gathering people together to a common cause Time limits Cost limits	Make the beach a better place – then maybe the world	It is clean
Designing the next generation of a medical device	Yes	Many	Gathering resources, time, cost, QUALITY - standards	Avoid obsolescence, needs to be competitive	Profitable

What might be a Project? (suggestions from previous years)

- Build factory
- Oil or gas platform
- Building a rollercoaster
- Remedial structural work
- Planning an event
- Activate article 50
- Nuclear power plant
- Design
- Investigating a crime
- Group project
- Dissertation or thesis

What makes a Project a Project?

- A finite length of time
- Objective
- Budget
- Team
- Stakeholder
- Planning
- Problem
- Resources
- Specific
- Safe environment
- Multiple stage process
- Motivation

What is a Project?

- Most projects will be characterised by the following:
- **Clear objective**
  - It must fulfil and satisfy a *need* or *demand* that has been identified
- **Constraints of *Cost*, *Quality* and *Time***
  - These are not unlimited and will be set by the projects owners, giving a fixed timescale and a fixed budget with clear specifications for quality.
- **A team of people**
  - Who may or may not be familiar with the work to be done, and may or may not be familiar with the other team members

What is a Project? [2]

- **Little practice or rehearsal**
  - There is very rarely more than one attempt to get the project right, and no opportunity for 'prototypes' (c.f. manufacturing)
- **Change and uncertainty**
  - Project attributes and other influencing factors (weather? ground conditions?) will vary with time.
- **UNIQUENESS**
  - No project is *exactly* the same as a previous project.

What is a Project?

- Finally, all projects will have a definable start and endpoint
  - this is what differentiates them from continuous processes such as operations.
  - Within most organisations a project starts when approval is granted for work to proceed to the initial stage and ends *when the objectives are achieved*.
  - Project scale can be quite broad – you may encounter small projects that take only days to perform, require few people and cost very little;
  - or you may encounter projects which are vast in terms of the cost, time scales, end product or number of people involved.

You'll notice a lot of the same words crop up when considering what a project is and what it needs to do



why



what



where



who



when



how

The 5 Ws and a H. Oh, and a D as well

- Interrogative words
- None have “yes” or “no” as an answer
- It starts with the **WHY?**
- Continues with the **HOW?**
- And ends with the **DO**

This is Project Management…



Think:

Why?

What?

Where?

When?



Plan:

How?

Who?



Do

What is a Project Manager expected to do?

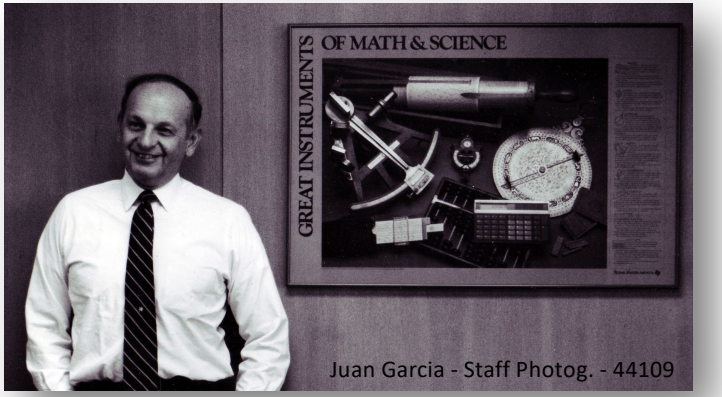
What are the things that Project Manager has to do?	Why?	What? Are they expected to achieve?	How? Will your PM know this has been done

What is a Project Manager expected to do?

What are the things that Project Manager has to do?	Why?	What? Are they expected to achieve?	How? Will your PM know this has been done
allocate time Purchase resources	efficiency	completion of task by deadline Keep old tapes intact	weekly updates Short-term goals
hire the contractors at the right time	to get the highest yield & greatest quality	successfully avoid bad weather and get a high quality crop	quality of end product is as hoped
Keep project on budget	So that they don't make a loss	Ensure actual costs don't exceed estimated costs	Positive profit margin
Keep project safe	Human life is important	Avoid fatalities Avoid negative publicity Keep morale positive	Accident statistics?
Maintain quality	Keep client (daughter) happy Maintain own pride	Take care over choice of materials and methods	Happy client

The Heilmeier Catechism

- George H. Heilmeier
- An American Electrical Engineer
  - An LCD pioneer
- He maybe didn't himself call it a catechism…
- But they are questions that all Engineering Project Managers should ask



Go back to your prep and ask for one of your examples…

- What are you trying to do? Articulate your objectives using absolutely no jargon.
- How is it done today, and what are the limits of current practice?
- What's new in your approach and why do you think it will be successful?
- Who cares? If you're successful, what difference will it make?
- What are the risks and the payoffs?
- How much will it cost?
- How long will it take?
- What are the midterm and final "exams" to check for success?

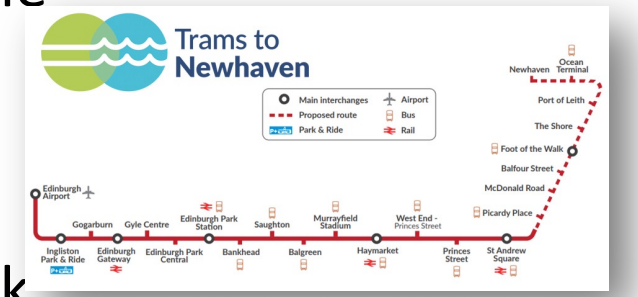
DEMAND

- Go back to the **why** question
- Why, why, *why… but WHY!!??*
- In projects the WHY leads to an understanding of the DEMAND
- All projects *must* have a demand
- And the demand *must be* understood
- Otherwise how will we know when we are successful or not?

Knowing **Why** leads to Knowing **What**

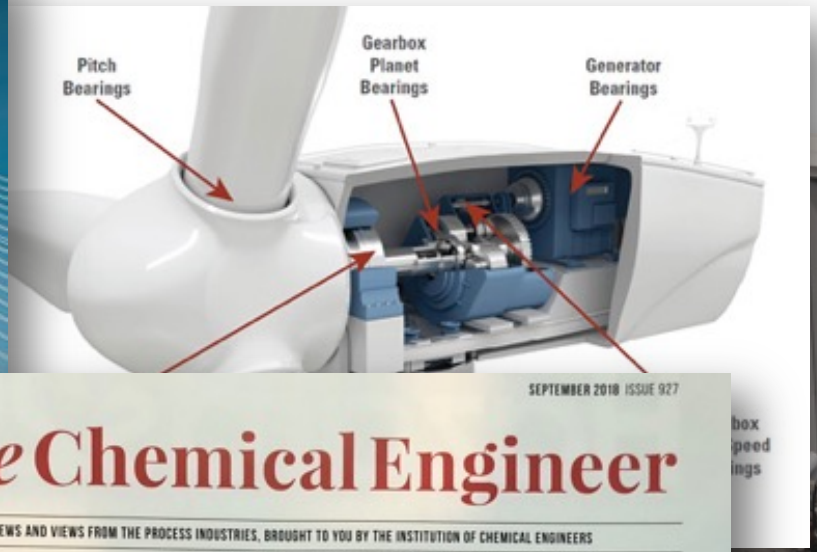
- To understand why *Why* is the most important question in Engineering
  - Take a look at **Simon Sinek's** marvellous Ted Talk (linked to on Learn)
- Answering *correctly* Why? tells us what our project *Demand* is
  - *Why* do we need an Edinburgh Tram?
  - Because Dublin has a Tram. WRONG!
  - Because we *need* to transport more people from the airport to the expanding area of Leith & Granton and provide economic stimulus in between? CORRECT!
  - Explored in much greater depth next week





Civil/Chemical/Mechanical/Electrical Engineering?



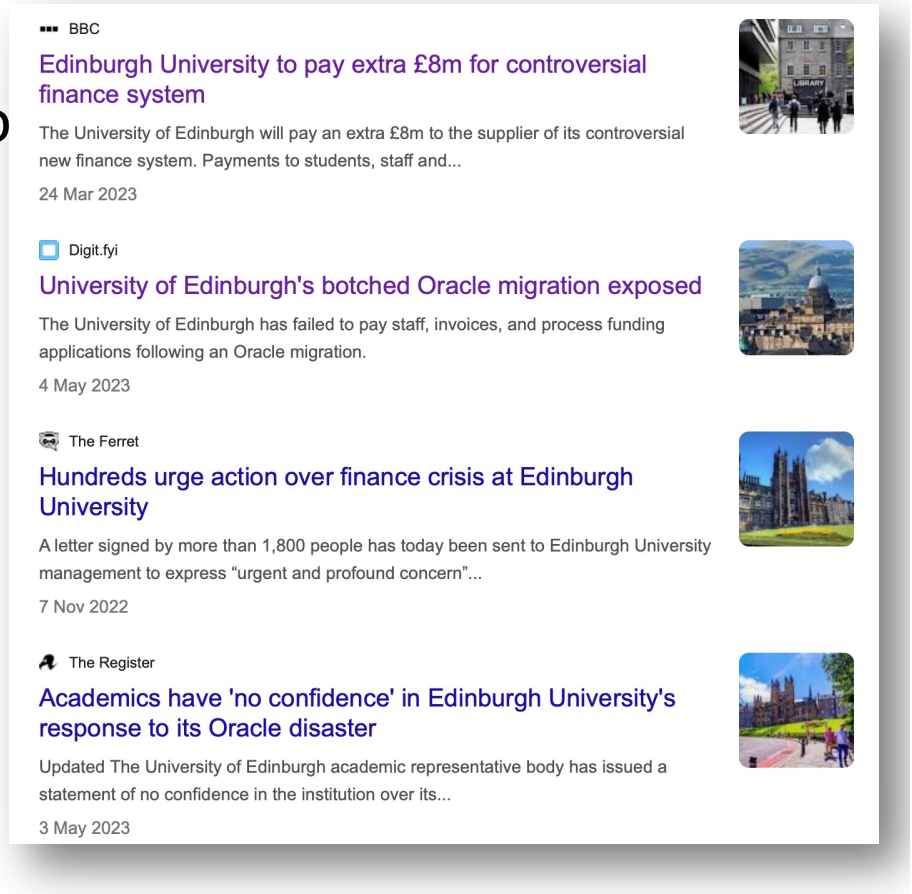






Programme Example – UoE's "People and Money"

- "Programme Management" - a series of individual but connected projects often with the intention o improving an organization's performance"
  - Human Resources
  - Payroll
  - Finance
  - Procurement
  - Expenses
  - Leave Management



Programme Management

- Not just organisational change
- Large scale societal change through infrastructure?
- Connected projects for
  - Tracks
  - Tunnels
  - Trains
  - Stations



Examples of building projects (with problems...)

- In Edinburgh:
  - Scottish Parliament
    - (August 2003)



  - New Wembley Stadium
    - (June 2006)



Example of Engineering Project with problems...

- Very politicised
- A number of contracts
- Most problems with the INFRACO contract
- Contractor (BBS) refusing to do some sections claiming problems outwith their control
- Client (TIE) possibly not been as rigorous as they could be with their contract agreement with BBS
- More later in the semester





See: http://edin.ac/18BDVyk

"Clear Objective"?

- All projects need their demand & need identifed
- Success is prevalent on this being achieved



What is a Project - summary

- **Clear objective**
  - It must fulfil and satisfy a *need* or *demand*
- **Constraints of *Cost*, *Quality* and *Time***
- **A team of people**
  - Who may or may not be familiar with the work to be done, and may or may not be familiar with the other team members
- **Little practice or rehearsal**
  - There is very rarely more than one attempt to get the project right
- **Change and uncertainty**
  - Project attributes factors will vary with time.
- **UNIQUENESS**
  - No project is exactly the same as a previous project.
- **All projects have a definable start and endpoint**

What is Project Management?

- Why is it distinguished from ordinary management?
- *Management* can be defined as:

  The technique, practice or science of managing or controlling; the skilful or resourceful use of materials, time etc.,

- *Project* management:

  The planning, control and co-ordination of a project from conception to completion (including commissioning) on behalf of a client.

  It is concerned with the identification of the client's objectives in terms of utility, function, quality, safety, time and cost, ….

APM



Where does it differ from other types of management?

- To understand *project* management it may help to define other types of management:
- *Business management*

  concerns the ongoing operations of an enterprise, that is characterised by an indefinite endpoint, gradual growth and many differing teams of people.
- *Facilities management*

  concerns the development and management of buildings, offices, hospitals schools etc.
- *Crisis management*

  is a relatively new field of management. Typically, proactive crisis management activities include forecasting potential crises and planning how how to deal with them. Hopefully, organisations have time and resources to complete a crisis management plan before they experience a crisis

So what is the big deal?

- Do projects ever *not* get realised?
  - Very few examples
    - some high profile IT project failures – e.g the NHS's 'Connecting for Health' programme, projected to eventually cost £12.4bn over 10 years in 2006, the project was shelved, then reinstated, now "*A Department of Health review of the National Programme for IT has concluded that a centralised, national approach is no longer required*")+

- Justinia, T. (2017). The UK's National Programme for IT: Why was it dismantled? *Health Services Management Research*, *30*(1), 2–9. https://doi.org/10.1177/0951484816662492

So what is the big deal?

HS2 could be scrapped as critic given role in independent review

Government needs clear evidence before going ahead, says transport secretary



▲ An artist's impression of a HS2 train on the Birmingham and Fazeley viaduct. Photograph: HS2/PA

The future of the HS2 high-speed rail project has been thrown into doubt after the government launched a "go or no go" review into the proposed £55.7bn network, with a leading critic of the scheme as its joint author.

So what is the big deal?

- Its difficult to scrap projects
  - Both Holyrood and Edinburgh Tram were considered but not scrapped.
  - "Sunk Cost" effect hard to ignore

Sunk-Cost Effect – The tendency to make a choice considering the cost that has already been incurred and cannot be recovered (sunk cost). Sunk costs affect the decisions due to the loss-aversion effect. Sunk costs may cause cost overruns and may also lead to investment in a project that now has no value. This effect is related to the escalating commitment bias.

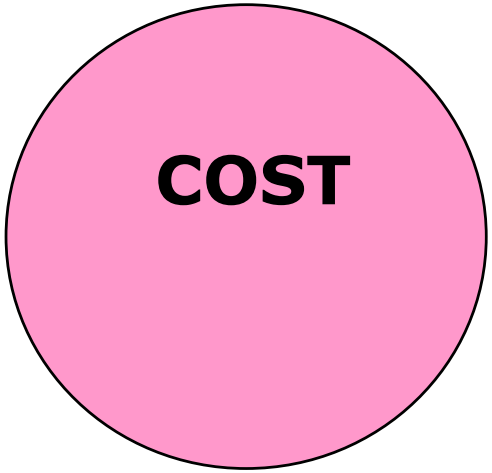
- So if most projects get to the end why is Project Management necessary?

So what is the big deal?

- Because we want ***Successful Projects***
- What are the Success Factors?
  - Cost
  - Time
  - Quality
  - Safety
  - Environment
  - Sustainability
- ...
- Which are also Compromises:

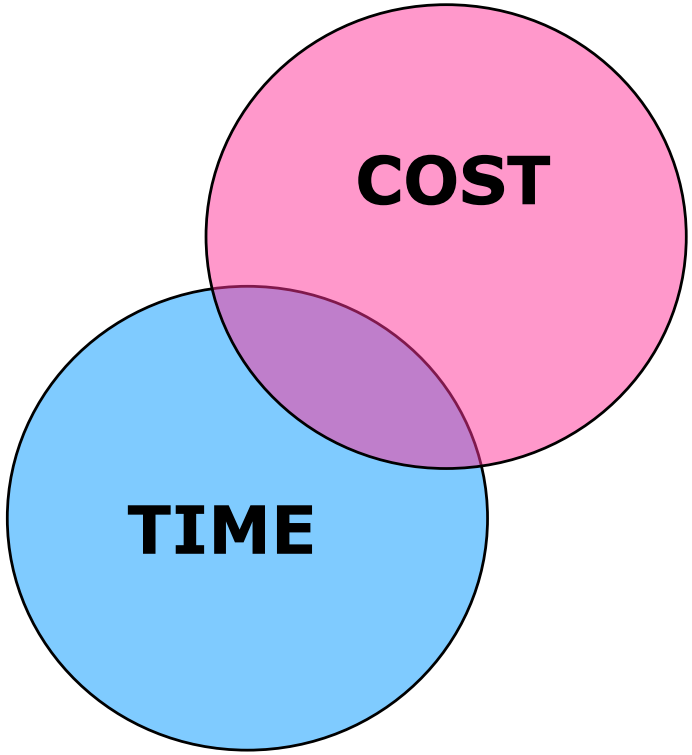
The Project Compromises

- The management of projects is all about dealing with compromises. A traditional view of a project is that there are three aspects of a project which the Project Manager is striving to maintain, but each are dependent upon each other to some degree: ***Cost***, ***Time*** and ***Quality***.



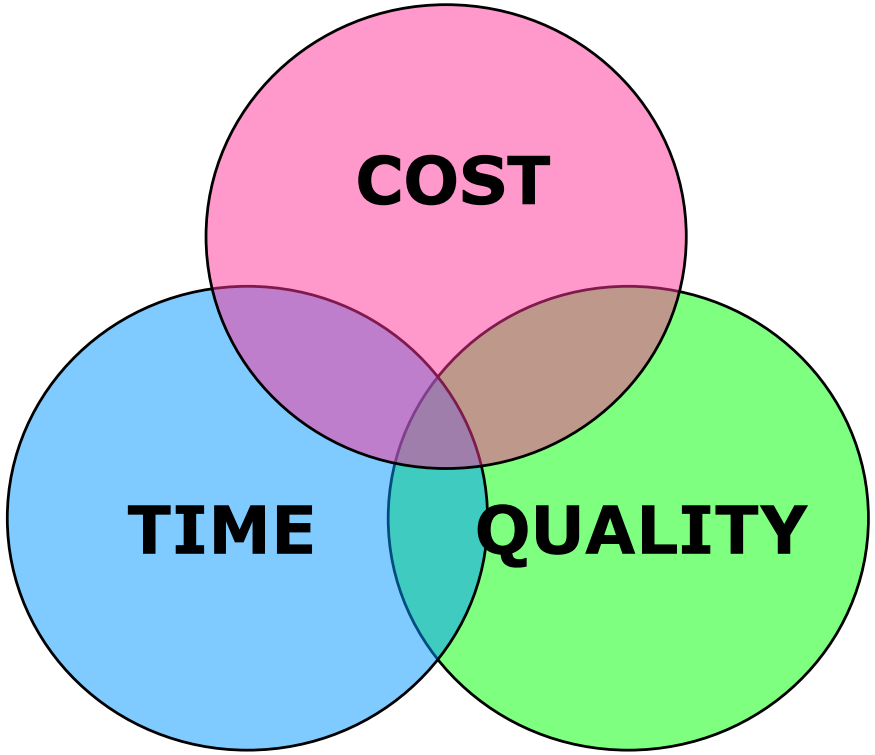
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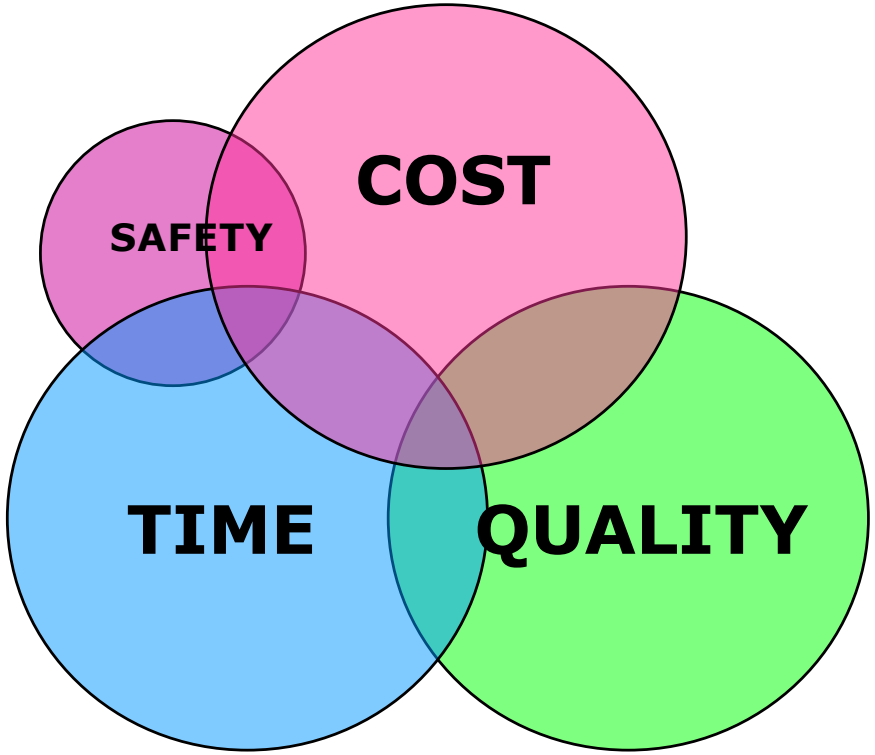
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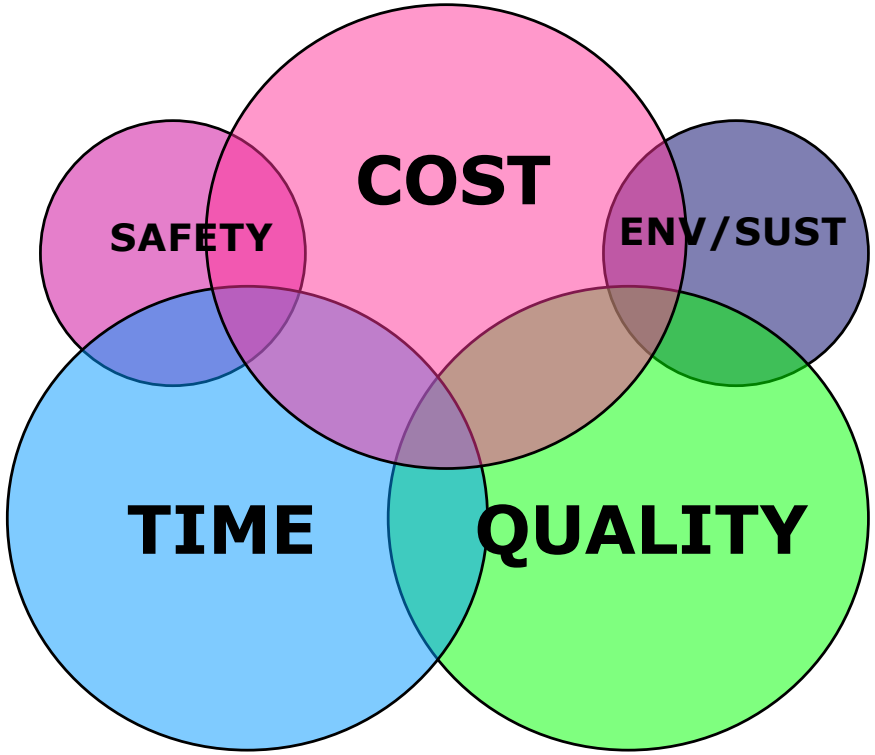
Safety will also impinge on all aspects



The Project Compromises

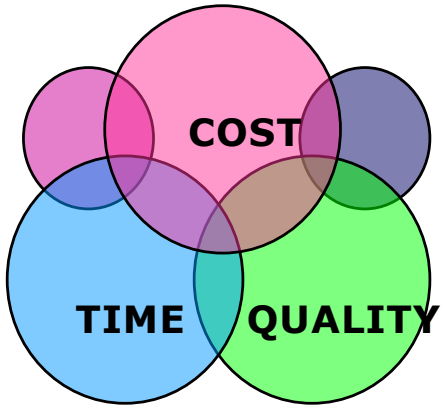
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Safety will also impinge on all aspects



And finally environment and sustainability must be considered also

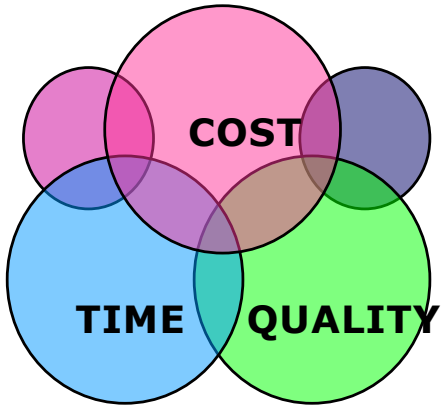
The Project Compromises



- The importance of each of these four attributes on a specific project will vary.
  - For example, the organisers of the Olympic Games would place a higher priority upon *time* than they would on *cost*



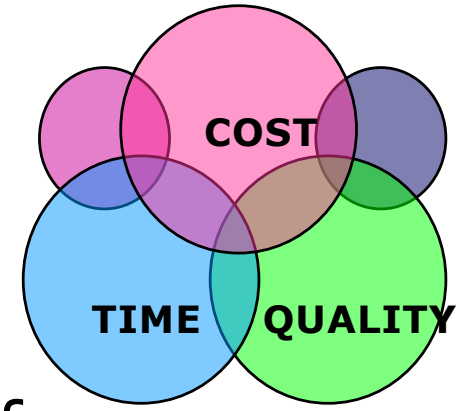
The Project Compromises



- The importance of each of these four attributes on a specific project will vary.
  - A new railway is likely to have a stringent budget;



The Project Compromises

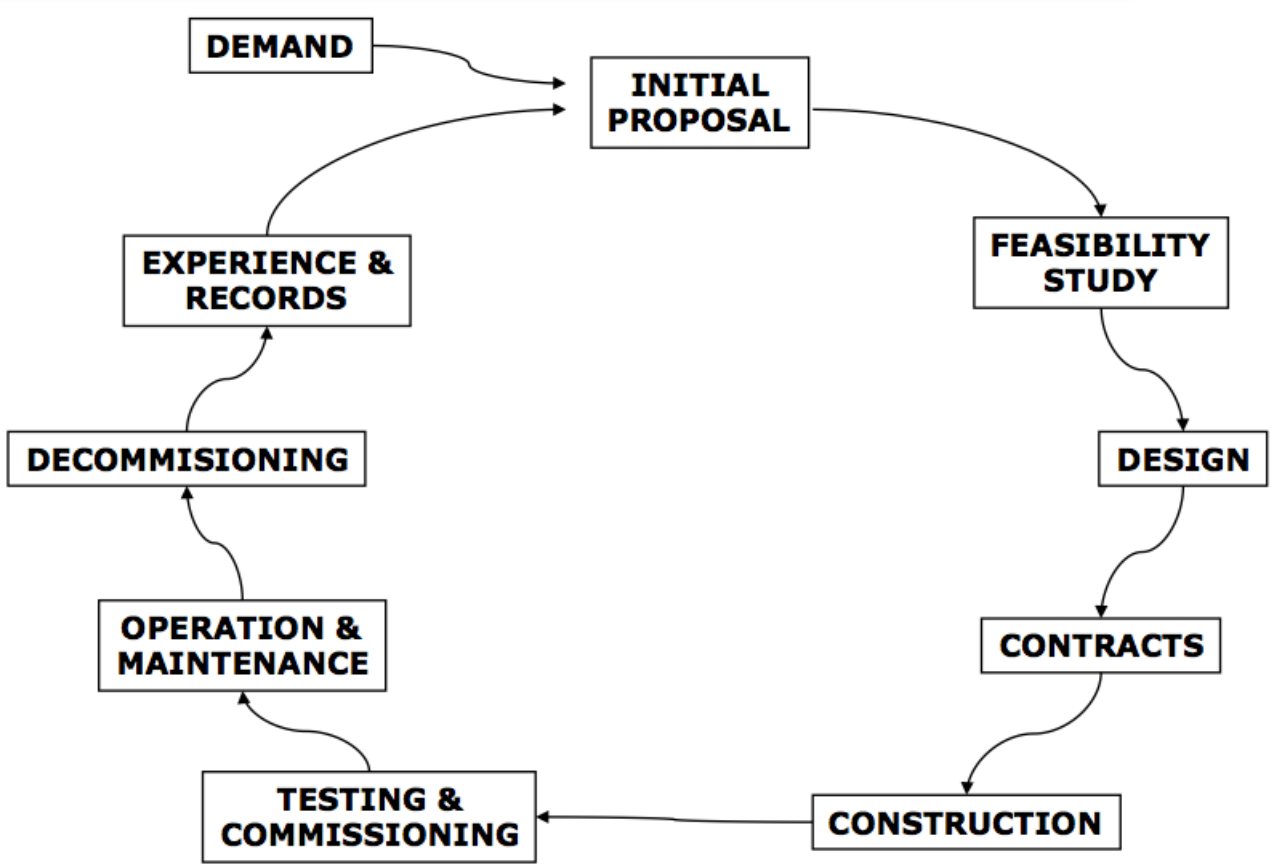


- The importance of each of these four attributes on a specific project will vary.
  - A new petrochemical plant may consider quality to be the most important attribute



Next Week

- Project Life Cycle:



- *and* Parties to a Project