

ENGM 411: Foundation in Research Methods

Course Description

This course is designed to provide students with essential knowledge and skills to conduct research in engineering management. It covers the entire research process from defining research problems and designing methodologies to data collection, analysis, and reporting. Emphasis is placed on critical literature review, ethical research practices, and effective proposal writing and presentation for academic and professional audiences.

Course Learning Outcomes

By the end of the course, students will be able to:

1. Demonstrate critical knowledge and understanding of theories and research methods in engineering management.
2. Apply core and specialized theories and research methods effectively in engineering management
3. Critically review and assess published literature using appropriate analytical approaches relevant to engineering management
4. Demonstrate advanced skills in writing and presenting a research proposal to academic, professional, and peer audiences in engineering management.

Learning Resources

Saunders, M., Lewis, P and Thornhill, A. (2019) Research Methods for Business Students, 8th Edition. Harlow: Pearson.

Course Content

1. Introduction to the Course, Course outline, Assessments
2. Critically Reviewing the Literature
3. Introduction to Qualitative and Quantitative Research
4. Understanding Research Philosophy and Approaches to Theory Development
5. Selecting samples
6. Research Ethics
7. Understanding Quantitative Data
8. Understanding Qualitative Data
9. Writing and Analysing Qualitative Results
10. Programming Analysis of Data using SPSS/Smart PLS etc
11. Concluding a Proposal
12. Research Reports: Support Insights and Recommendations