**Course Code:** LANG4034  
**Course Title:** Technical Communication II for Mechanical and Aerospace Engineering  

**Terms Offered (Credits):** Spring (3 credits)

**Pre/Co-Requisites:**  
Prerequisite(s): LANG 2030  
Corequisite(s): MECH 3690 OR MECH 3830

**Course Structure (weekly, blended teaching format):**  
**Class:** 3 hours compulsory class each week, conducted via Zoom in Spring 2021.  
**Out-of-class work:** Up to 6 hours per week. Supplementary materials and resources (texts and videos) on Canvas for self-study, out-of-class group work is required for assignments.

**Textbook/Required Material:**  
Electronic materials. Course materials for each lesson are provided in an electronic course book & via supplementary materials on Canvas

**Bulletin Course Description:**
1. This course teaches laboratory report writing through communicative task-based language activities and analysis of sample laboratory reports. For example, students will read and compare examples of real laboratory reports to identify good and bad practice in terms of task achievement, language and formatting. There will also be pre- and post-task activities focusing on discussion, language and literacy skills, for example using the past tense and the passive voice to describe an experimental procedure in a narrative style.

2. The second part of the course is related to the final year design project. Students develop a design project idea in a small group and practice language for writing a presenting their idea, focusing on specific functions that support their idea, for example justifying the design specifications. Students will participate in communicative task-based language activities and analyze samples of real final year design project reports to identify good and bad practice in terms of task achievement, language and formatting.

3. The course is taught using an electronic course book and other materials provided on Canvas. Each individual lesson will consist of a main task related to an aspect of laboratory report writing or communications skills for final year design projects, and supporting tasks focusing on discussion, language and literacy skills, for example proposing ways to overcome engineering challenges when developing a design project idea. The themes of the lessons and the input materials (texts and videos) are all related to Mechanical and Aerospace Engineering.

**Course Topics:**  
Laboratory report writing  
1. Course overview  
2. Introduction and Experiment objectives  
3. Theory and Citation  
4. Apparatus and procedures  
5. Results and Discussion  
6. Conclusion and Abstract  
7. Review and Practice
Communication skills for technical projects
8. Introducing a Technical Project
9. Introductions: overview, objectives and scope
10. Reviewing the work of others
11. Describing a Prototype
12. Testing a Prototype
13. Discussing and Evaluating Results
14. Drawing Conclusions and Talking about the Future
15. Pitching a Project to Investors
16. Explaining Technology to Business People
17. Estimating Market Potential
18. Presentation skills: Revision
19. Presentation skills: Group Presentations & Q&A
20. Presentation skills: Visual Aids

| Course Objectives: (correlated program objectives) | 1. To equip students with effective organizational strategies and enhance their ability to use appropriate language and skills to write laboratory reports (P-01, P-03).
| 2. To provide students with an understanding of what constitutes an effective laboratory report, and to encourage students to use this knowledge to peer review their classmates’ laboratory reports (P-01, P-03, P-05).
| 3. To equip students with organizational strategies and enhance their ability to use appropriate language and skills to write a design project report (P-01, P-02, P-03, P-04).
| 4. To equip students with effective presentation skills to present information coherently, and for maximum impact on the target audience (P-01, P-02, P-03, P-04, P-05). |

| Course Outcomes: (correlated course objectives and program outcomes) | A. Students will gain a deeper awareness of effective laboratory report writing and be able to apply this to their laboratory report assignments on other courses and in future [1, 2] (POC7).
| B. Students will be able to communicate their Final Year Design Project idea and progress informatively and persuasively, both through oral presentation and written reports, to a technical and semi-technical/business audience [3, 4] (POC7, POC12). |

| Assessment Tools: (correlated course outcomes) | Design proposal report Part 1 Individual 10%
| Design proposal report Part 2 Individual 40%
| Presentation 1:
| A. Pitch for your design idea Individual 10%
| B. Peer feedback on Presentation 1 Individual 5%
| Presentation 2 (Presentation of your design idea) Group/individual 35% |
BEng in Mechanical Engineering (4-year program)

Program Objectives:
P-O1. Be able to communicate and perform as an effective engineering professional in both individual and team-based project environments,
P-O2. Have an international outlook with clear perspectives on the Pearl river Delta and Greater China,
P-O3. Be able to research, design, develop, test, evaluate and implement engineering solutions to problems that are of complexity encountered in professional practice and leadership,
P-O4. Clearly Consider the ethical implications and societal impacts of engineering solutions,
P-O5. Continuously improve through lifelong learning.

Program Outcomes:
POC1. ability to identify and formulate problems in multidisciplinary environment with an understanding of engineering issues and constraints;
POC2. ability to design and conduct experiments as well as analyze and interpret data;
POC3. ability to apply knowledge of mathematics, science, and engineering for problem solving in mechanical engineering and related sectors or for further education in a research career;
POC4. ability to develop specification and to design system, component, or process to meet needs;
POC5. ability to understand the manufacturability, maintainability, and recyclability of engineering system and components;
POC6. ability to use modern engineering tools, techniques, and skills in engineering practice;
POC7. ability to communicate effectively;
POC8. ability to function in multi-disciplinary teams and provide leadership;
POC9. broadly educated with an understanding of the impact of engineering solutions on issues such as economics, business, politics, environment, health and safety, sustainability, and societal context;
POC10. clear understanding of professional and ethical responsibilities;
POC11. recognition of the need for life-long learning and continuing education;
POC12. international outlook with knowledge of contemporary issues.