COLLEGE OF ENGINEERING
Department OF Electrical Engineering

EngE499 - Senior Project (I)
Proposal Procedure

Proposals can be submitted by students, faculty or industry. The deadline for submission is First of September, and First of April. Each project will be completed under the supervision of one or more department or college staff members with expertise in the project area. Each student team will normally consist of Three to Four Department or college engineering seniors.

Each project must meet the following criteria:

1. Project can be completed during TWO semesters (ONE academic year.)
2. Project must meet ABET design criteria:
   a) Open ended
   b) Non-unique solutions
   c) Student decisions required
   d) Involve advanced engineering analysis
   e) Design configuration decisions required
   f) Visibility studies and market needs

The main emphasis of the project is design. If construction is involved it must not override the engineering design aspects of the project.

Each proposal should be outlined as listed below:

A. Proposer's name, address, phone number and affiliation.
B. Choice of faculty advisor if known.
C. Number of students desired and student design team choice if known.
D. Type of analysis that project may involve such as (Department specialties)…….
   ……..
E. State tentative project name followed by a description of the project not more than one page in length.
F. If the project is from industry please state what your company is willing to donate to the project to offset student travel, duplication expenses, etc. Estimated Budget around 5000 SR or budget accepted by the university

The proposals will be reviewed by the department and confirmed by the Advisory Board. Students will be assigned to selected projects early at 10th September and April

Please submit proposals with formal attached Form by Email to:

College Coordinator of Capstone Design
Dr. Refaat Khater
ref_khater@yahoo.co.uk,
Department Coordinator of Capstone Design
Name:……
Email: ……

COLLEGE OF ENGINEERING
Department OF Electrical Engineering
EngE499 – Senior Project (I)

Proposal Format

Academic year	**2019 –2020**
Semesters	**Fall / Spring**
Academic Level	**Nine / Ten**
Project Title	**Energy efficient street light controller for smart cities**
Supervisor	**Dr. Ghazi BEN HMIDA**
Number of Student Team	**5**

1- Introduction & Background

Smart City-based electronic product applications are gaining importance nowadays. It contains efficient urban mobility, efficient public transportation, e-governance, safety and security, smart lighting system, etc. The main focus of this work is to present a design of street light controller to provide a reduction in power consumption and wireless control which eventually will provide a reduction in the required budget of electricity for street lights. Reducing power consumption leads to a reduction in brightness of lamps. We can monitor this using your smart gadgets. Thingspeak cloud is used as IoT platform and Arduino Uno and Raspberry Pi along with light sensors are used to be Smart.

2- Problem Statement and Objective (ABET – 3e)

Problems are classified as follows: i) Solid state of street light controller. ii) Specifications of an IOT (Internet Of Thing) Based street light System iii) Realization of the final project.

3- Problem justification and Outcomes (ABET - 3e)

In this project the students justified the engineering problems and formulate how to solve these problems. In fact, smart lighting systems are gaining importance nowadays.

4- Literature Review (ABET – 3j)

i) Arduino Board ii) Digital and Analog sensors iii) IoT.

5- Problem Constraints (ABET - 3c)

Problem constraints are: i) Measurement of body parameters ii) Arduino Board iii) Digital and analog sensors iv) stores all the data in the cloud.

6- Design Approach and Methodology (ABET - 3a, 3b, 3e, 3k)

i) Knowledge of street light system
ii) Detect the presence of vehicles transmitted from sensors to Arduino board
iii) Develop an automatic light controller

7- Tasks and Time Schedule

(Level: 9, First Term, 2020-1)

Task No.	Task Name	Duration (Weeks)
1	Detect the presence of vehicles	2
2	Use sensors with arduino	3
3	Design and Realize a small prototype	3
4	Control the energy efficiency of the light controller system	3

(Level: 10, Second Term,2020-2)

Task No.	Task Name	Duration (Weeks)
1	Revision of the tasks on first semester	1
2	Connection of all sensors	2
3	Write the final code	2
4	Establish a real test.	2
5	Discussion, conclusion and final report	4

8- Budget & Expenditures Sheet

Items	Description	Estimated Price
1		
2		
3		
4		

8- Visibility of the product and market needs (ABET -)

Supervisors	
Name	Signatures
Dr. Ghazi BEN HMIDA	

Senior Project -Presentation

EngE 498 Case Study Presentations

I have invited Guest lecturers and students to provide you with actual projects or situations for your review.

- Review your notes and presentation slides
- Study the information
- Use what you have learned in project class to identify various issues/topics of interest

- Working in your teams, select one of the Guest Lecturer projects for review.
- Please identify why you have selected the guest lecture or video for case study review.
- Please identify the Engineering Challenges for the Case Study.
- Review and discuss the project within the framework of the course topics including:

  - Need Identification and Problem Definition
  - Project Planning
  - Technological Innovation
  - Concept Generation and Evaluation
  - Legal and Ethical Issues

Your Case Study review should be between 8 to 10 minutes. Because of time constraints, I may cut off teams in excess of 10 minutes. Therefore please plan your time wisely.

You should prepare your presentation with PowerPoint and have a copy on a USB memory stick. Please do not show up with a floppy disk and expect to load onto the computer. Please be prepared to present at your selected time. If you have a significant delay in setting up that effect the timing of other presentation, your score will be deducted.

A good rule of thumb is one slide per minute. Therefore, I recommend that you limit to more than 12 slides.

Recommended Presentation Outline

- Title Slide: Case Study Project,
- Team Members,
- Date
- Agenda – organization of the presentation materials

- Case Study Selection – Why you have chosen or selected this project for review
- Background – Provide summary or overview of the case study project
- Engineering or Technical Challenges – Identify the challenges as presented
- Case Study Review – Identify and discuss various course topics as they relate to the case study. You should be able to describe the Design Process or Methodology for your case.
- Summary/Conclusions, what is your outcomes, visibility, marketing
- References/Acknowledgements

Your presentation will be assessed by the following criteria:

- Organization and Style of Presentation
- Case Study Review – identification of topics, significance of review

EngE 499 – Senior Project

Catalog Data: *EngE 499* – Senior Project. (4:6,0)
Continuous Assessment two semesters (Duration – 32 weeks)

Fall / Spring 2020

Department of: Electrical Engineering

Senior Project Sign-Up Sheet

Project Title: **Energy efficient street light controller for smart cities**

Project Advisor: Dr. GHAZI BEN HMIDA

Students

الترتيب	رقم الطالب	اسم الطالب
1	201400119	جابر نهاري يحي هراش
2	201411787	عبدالعزيز آحمد يحي صعدى
3	201500365	نايف يحي ابراهيم الحازمي
4	201600417	أحمد عبد العزيز إبراهيم الأمير
5	201614145	عمار علي عبيد بايوسف

Please identify the everyday item that will be addressed by the design project.
Your team will also address the Case Study assignment.
Please identify a Team Leader to address communication responsibilities.
Team must have a minimum of 3 members and no more than 5 members.

Signature

(1) …… (2) …… (3) …… (4) ……..

[This page must be signed and returned no later than the start of the 2rd Session. Students who are not comfortable signing this document should meet with the course coordinator before the third week of the semester to review the requirements as necessary.]