اعتماد
NCAAA

T4

2020

Course Specifications

Course Title:	Capstone Project (2)
Course Code:	503599-3
Program:	Computer Engineering
Department:	Computer Engineering
College:	Computers and Information Technology
Institution:	Taif University

Table of Contents

A. Course Identification

1. Credit hours: 3
2. Course type
a.   University ☐   College ☐   Department ■   Others ☐
b.   Required ■   Elective ☐
3. Level/year at which this course is offered: 10/5
4. Pre-requisites for this course (if any)**:**   Capstone Project (1) 503598-3
5. Co-requisites for this course (if any)**:**   Non

6. Mode of Instruction (mark all that apply)

No	Mode of Instruction	Contact Hours	Percentage
1	**Traditional classroom**	3	100%
2	**Blended**		
3	**E-learning**		
4	**Distance learning**		
5	**Other**		

7. Contact Hours (based on academic semester)

No	Activity	Contact Hours
1	**Lecture**	45
2	**Laboratory/Studio**	
3	**Tutorial**	
4	**Others** (specify)	
	Total	45

B. Course Objectives and Learning Outcomes

1. Course Description

Capstone project is a two-semester course in which student teams design a project to solve a computer engineering problem under the direction and supervision of faculty members, taking into account the engineering standards and realistic constraints. The teams demonstrate their ability to analyze, design, implement solutions, and communicate significant knowledge and comprehension.

During the second semester and after implementing, testing, and evaluating the proposed solution, students submit a final report, a poster, and prepare a PowerPoint presentation for the examination committee.

In both projects the students are expected to show their abilities on designing, developing, orally presenting and documenting a project, just like they will need to in their professional lives. That is to say, the students are expected to display their social and communication skills as well as their technical abilities.

2. Course Main Objective

1. To apply the knowledge gained in earlier courses to the design process..
2. Familiarize the student with the engineering design process Definition, Synthesis, Analysis and Implementation, using suitable engineering standards and multiple realistic constraints.
3. To improve communication skills, and promote organizational skills.
4. To stress importance of other influences (constraints) on design such as economics, reliability, performance, safety, ethics and social impacts.
5. To demonstrate ability to work independently and as a team to accomplish the project.
6. To emulate the post graduate job environment.

3. Course Learning Outcomes

	CLOs	Aligned PLOs
1	**Knowledge and Understanding**	
1.1	Demonstrate the ability to design a major software and/or a hardware system with alternative solutions that meets a set of design requirements	K1
2	**Skills :**	
2.1	Communicate their technical accomplishment both orally and in writing.	S2
2.2	Apply modern engineering tools to support their design decisions according to engineering standards.	S1
3	**Values:**	
3.1	Incorporate the issues of economics environment engineering ethics health and safety manufacturability liability and responsibility in their design.	V1
3.2	Recognize the need for lifelong learning because of the nature of change in technology.	V1
3.3	Appreciate concepts of professionalism and ethics.	V2
3.4	Actively participate as a member of an engineering design team and make contributions to achieving the teams stated goals and objectives.	V3

C. Course Content

No	List of Topics	Contact Hours
1	Project Implementation	3
2	Cont. Project Implementation	3
3	Cont. Project Implementation	5
4	Integration, Testing, and modification	5
5	Integration, Testing, and modification	5
6	Documentation	5
7	Preparing the presentation, demonstration	5
8	submitting Final report	5
9	Submitting Poster	5
10	Project presentation and demonstration	4
	Total	45

D. Teaching and Assessment

1. Alignment of Course Learning Outcomes with Teaching Strategies and Assessment Methods

Code	Course Learning Outcomes	Teaching Strategies	Assessment Methods
1.0	**Knowledge and Understanding**		
1.1	Demonstrate the ability to design a major software and/or a hardware system with alternative solutions that meets a set of design requirements	Lecture Discussion Brainstorming Self-Learning Problem Solving Projects	Written report Oral Test Oral Presentation Project
2.0	**Skills**		
2.1	Communicate their technical accomplishment both orally and in writing.	Lecture Group Work Self-Learnin Projects	Written report Oral Test Oral Presentation Project
2.2	Apply modern engineering tools to support their design decisions according to engineering standards.	Lecture Discussion Brainstorming Problem Solving Projects	Written report Oral Test Oral Presentation Project
3.0	**Values**		
3.1	Incorporate the issues of economics environment engineering ethics health and safety manufacturability liability and responsibility in their design.	Discussion Brainstorming Self-Learning	Written report Oral Test Oral Presentation Project Practical Test
3.2	Recognize the need for lifelong learning because of the nature of change in technology.	Discussion Brainstorming Self-Learning	Written report Oral Test Oral Presentation Project Practical Test
3.3	Appreciate concepts of professionalism and ethics.	Lecture Discussion Brainstorming Projects	Written report Oral Test Oral Presentation Project
3.4	Actively participate as a member of an engineering design team and make contributions to achieving the teams stated goals and objectives.	Lecture Discussion Brainstorming Problem Solving Projects	Written report Oral Test Oral Presentation Project

2. Assessment Tasks for Students

#	Assessment task*	Week Due	Percentage of Total Assessment Score
1	Outcome/Demonstration	3	20%
2	Project Report	9	30%
3	Project Presentation	15	30%

#	Assessment task*	Week Due	Percentage of Total Assessment Score
4	Overall Work	15	20%

*Assessment task (i.e., written test, oral test, oral presentation, group project, essay, etc.)

E. Student Academic Counseling and Support

Arrangements for availability of faculty and teaching staff for individual student consultations and academic advice:

Teaching staff provide at least 6 office hours for students to help them in the course as well as in any other academic issues.

F. Learning Resources and Facilities

1.Learning Resources

Required Textbooks	Project Committee `Capstone Project Manual ` Publisher CIT 2012
Essential References Materials	Project Committee `Capstone Project Manual ` Publisher CIT 2012
Electronic Materials	
Other Learning Materials	

2. Facilities Required

Item	Resources
Accommodation (Classrooms, laboratories, demonstration rooms/labs, etc.)	Traditional Classrooms, Laboratory
Technology Resources (AV, data show, Smart Board, software, etc.)	Data show
Other Resources (Specify, e.g. if specific laboratory equipment is required, list requirements or attach a list)	

G. Course Quality Evaluation

Evaluation Areas/Issues	Evaluators	Evaluation Methods
Extent of achievement of course learning outcomes	Students	Indirect (Survey)
Effectiveness of teaching and assessment	Students	Indirect (Survey)
Extent of achievement of course learning outcomes	Faculty	Course Report

Evaluation areas (e.g., Effectiveness of teaching and assessment, Extent of achievement of course learning outcomes, Quality of learning resources, etc.)
Evaluators (Students, Faculty, Program Leaders, Peer Reviewer, Others (specify)
Assessment Methods (Direct, Indirect)

H. Specification Approval Data

Council / Committee	Computer Engineering Council / Curriculum Committee
Reference No.	16
Date	20/8/2023

قسم هندسة الحاسب
Computer Engineering Department
TU
جامعة الطائف
TAIF UNIVERSITY