

TEMPLATE FOR COURSE SPECIFICATION

HIGHER EDUCATION PERFORMANCE REVIEW: PROGRAMME REVIEW

COURSE SPECIFICATION

This Course Specification provides a concise summary of the main features of the course and the learning outcomes that a typical student might reasonably be expected to achieve and demonstrate if he/she takes full advantage of the learning opportunities that are provided. It should be cross-referenced with the programme specification.

1. Teaching Institution	Ministry of Higher Education & Scientific Research
2. University Department/Centre	Control and systems Engineering Department/ Computer and control Department
3. Course title/code	Control System Design/ CSE-C4305
4. Programme(s) to which it contributes	Theoretical and practical
5. Modes of Attendance offered	Full time
6. Semester/Year	2nd. semester / 2020 -2021
7. Number of tuition hours (total)	3
8. Date of production/revision of this specification	June 2021
9. Aims of the Course	
By the end of this course the student should be able to: 1. Understand the concepts of Artificial intelligence. 2. Understand fuzzy logic and fuzzy logic control structure. 3. Build fuzzy logic control based application and implement it.	

10- Learning Outcomes, Teaching, Learning and Assessment Methods
<p>A- Knowledge and Understanding</p> <p>A1: Using the MATLAB programming language</p> <p>A2: Designing and implementing a control system using the MATLAB programming language.</p>
<p>B- Subject-specific skills</p> <p>B1 - Ability to discuss</p> <p>B2 - Encouraging students to find ideas about programming and implementing what is presented during the lecture</p> <p>B 3- Developing and integrating his abilities through the student's self-learning</p> <p>B4- Work as collaborative groups or teams through shared learning</p> <p>B5- Competition among students through competitive learning</p>
Teaching and Learning Methods
Theoretical lectures, examples, exercises, problems, discussion, dialogue and brainstorming to achieve goals.
Assessment Methods
Daily exams, quizzes, documented examinations, quarterly exams, final exams, oral questions and discussions during the lectures, and home works.
<p>C- Thinking Skills</p> <p>C 1- The ability to understand, analyze and solve problems</p> <p>C2- Making a decision regarding programming and choosing the best one</p> <p>C3 - Encouraging cooperative learning</p> <p>C5 - Competitive Learning</p> <p>C6- Taking responsibility and leading the work team</p>
Teaching and Learning Methods
<p>1- Take advantage of the theoretical and practical experience</p> <p>2- Motivating students to learn the basic principles of scientific research.</p> <p>3- Scientific visits to work sites</p>
Assessment Methods
Daily exams, quizzes, documented exams, semester exams, final exams, oral questions and discussions during lectures, homework.
<p>D- General and Transferable Skills (other skills relevant to employability and personal development)</p> <p>D1- Make a decision</p> <p>D2 -Continuous learning and self-development</p> <p>D3 -Skills development</p> <p>D4- Complete the tasks on time</p> <p>D5- Take responsibility</p> <p>D6- Excellence in work</p>

11• Course Structure					
Week	Hours	ILOs	Unit/Module or Topic title	Teaching Method	Assessment Method
1.	3	1-Learn to use Matlab programming language. 2- Design and implementation of control system	Introduction to Artificial Intelligence, Fuzzy logic controller, applications and MATLAB installation	Daily exams, quizzes, documented examinations, quarterly exams, final exams, oral questions and discussions during the lectures, and home works	Theoretical lectures, practical laboratory experiments, discussion and dialogue, brain storming, examples and questions used to achieve the goals
2.	3		Review of the introduction to fuzzy Concepts and Fuzzy Sets.		
3.	3		Review the types of fuzzification, Inference Engine, Rule-Base, types of Defuzzification, and fuzzy Logic Control.		
4.	3		Applications of Fuzzy logic controller using MATLAB		
5.	3		Design Fuzzy logic controller using MATLAB		
6.	3		Final exam.		

12• Infrastructure	
Required readings: - Core Texts - Course Materials - Other	Theoretical lectures Text book: “Introduction to Artificial Neural Systems”, “Fuzzy Control”, Jacek M. Zurada, 1999. Kevin M. Passino and Stephen Yurkovich, 1998
Special requirements (include for example workshops, periodicals, IT software, websites)	None
Community-based facilities (include for example, guest lectures, internship, field studies)	None

13• Admissions	
Pre-requisites	
Minimum number of students	unlimited
Maximum number of students	unlimited

