Zarqa University

Faculty of Information Technology
Department: Computer Information Systems
Course title: Research Methodology and Ethics(1502360)

Prerequisite:
Instructor: Dr. Aref abu Awwad
Lecture's time: 11:00-12:00
Semester: first

Office Hours: 12-13

Course description:

This course is designed to be a prerequisite to the graduation project. The main and purpose of this course is to provide you with a broad introduction to the foundations and tools that can help you to do a good job in your graduation project. Topics include: Research methodology, Technical writing, Presentation skills, Manage team working, and legal and ethical issues.

Aims of the course:

1. Learn about the different approaches to conduct computer science research (i.e. experimental, quantitative, and qualitative and, literature survey ...).
2. Gain an understanding of the importance of ethics and integrate ethics into the computing process.
3. Get experience in working within a team and cooperate effectively with other workers on a project
4. Get a broad view of the ongoing research in the information technology domain
5. Get good technical writing practices.
6. Make excellent project presentations.
7. Practice some related tools.

Intended Learning Outcomes (ILOs):

At the end of the course, students are expected to learn:

A. Knowledge and Understanding

A1.Concepts and Theories:

Name and explain different approaches to conduct computer science research (i.e. experimental, quantitative, and qualitative and, literature survey ...).
Understand the importance of ethics.

A2.Contemporary Trends, Problems and Research:

Define research problem.
Integrate ethics into the computing process.

A3.Professional Responsibility:

Select research problem.
Select team members.
Make excellent project presentations.

B. Subject-specific skills

B1. Problem solving skills:

How to investigate the research problems that encounter an Information Technology?

B2.Modeling and Design:

How to model a research problem for better understand?
How design a methodology to solve a research problem?

B3.Application of Methods and Tools:.

Investigate examples of different research methodology.
Investigate practice some related tools.
Get good technical writing and presentation practices.

C. Critical-Thinking Skills

C1.Analytic skills: Assess

How to utilize the existing related work of the research problem?

C2.Strategic Thinking:

How to adapt a research methodology to operate well the Information Technology research problems?

C3.Creative thinking and innovation:

Suggest a problem and a solution to some open issues related to the Information Technology.

D. General and Transferable Skills (other skills relevant to employ ability and personal development)

D1. Communication:

Work and cooperate effectively with other workers on a project.

D2. Teamwork and Leadership:

Group presentations.

Course structures:

Week	C. Hrs	ILOs	Topics	Teaching Procedure	Assessment methods
1	3	A1	**-Overview** **-Introduction to research and research process**	Presentation methods and techniques	Lecturing with active .participations

2, 3 and 4	6	C1, D1, and D2	**Graduation Project**
			• **Regulations**
			• **Templates**
			• **Project 1 and 2**
			  ○ **Research Process**
			  ○ **Problem definition**
			  ○ **Modeling, Experimental, Computer Simulation**
			  ○ **Data gathering: Quantitative, Qualitative**
			  ○ **Data Analysis**
			  ○ **Presenting results**
			• **Research Skills and reading**
			  ○ **Critical thinking**
			  ○ **Domain knowledge**
			• **Effective use of research resources.**
				Presentation methods and techniques	-Homework's
					-Presentation
					-Assignments
					.-Problem solving

5 and 6	3	C1	**Research Ethics**
			• **Research Ethics**
			  ○ **Plagiarism and how to avoid plagiarism?**
			  ○ **Fair Use**
			  ○ **Information Privacy**		

			○ **Data gathering and privacy implication**		
7 and 8	6	A3, B2, B3, D1, and D2	**Team Working** • **Why TEAM work?** • **What is Teamwork?** • **What makes an Effective Team?** • **Motivation Matters** • **Stages of Team Development** • **Roles of Team Members** • **Factors Critical for Strong Teams** • **Team Communication** • **Conflict Resolution** • **Team Leadership**	Presentation methods and techniques	-Determine Team members -Learning by activities.
	1		**Mid Exam**		
9 and 10	3	C1, C2, and C3	**Technical Writing** • **Writing as a process (planning, writing, revising)** • **Tips and skills: Clarity, Brevity, Simplicity, Word Choice, Active Voice…** • **How to cite references properly** • **Proposal preparation and abstract writing**	Presentation methods and techniques	-Homework's -Presentation -Assignments -Connecting students with different sources of information
11 and 12	3	A2, A3, B1, and B3	**Presentation Skills** • **Preparing the Presentation (Introduction, The body, The closing)** • **Body Communicates** • **Dealing with Questions** • **Habits** • **Tips and Techniques for Great**	Presentation methods and techniques	-Homework's -Presentation -Assignments -Learning by activities.
	9		• **Presentations**		
13 and 14	9	A3, and B2	**Tools (advance word, excel, prezi… etc)** • **Using Document Templates** • **Using Styles** • **Working with sections** • **Referencing** • **Creating and Using Bookmarks** • **Creating a Table of Contents** • **Creating Symbol Shortcuts** • **Creating Hyperlinked Text** • **Importing Files in Other Formats** • **Inserting Watermarks**	Presentation methods and techniques	-Homework's -Presentation -Assignments -White paper -Learning by activities.

			• **Saving as PDF** • **Using Comments and Changes**		
15	6	D1, and D2	**Project presentation**		-Presentation -Poster -White paper
16	2		**Final Examination**		

References:

A. Main Textbook:

Zikmund, W.G., Babin, B.J., Carr, J.C. and Griffin, M., 2013. *Business research methods*. Cengage Learning.

B. Supplementary Textbook(s):

-Myers, Michael D., and David Avison, eds., "Qualitative research in information systems: a reader. Sage" 2002.

-Vaishnavi, Vijay K., and William Kuechler., "Design science research methods and patterns: innovating information and communication technology" 2015,Crc Press.

-Brandler, Sondra, and Camille P. Roman., "Group work: Skills and strategies for effective interventions" 2015, Routledge

Assessment Methods:

Methods	Grade	Date
Mid Exam	30%	
Activities (White research paper / Project Reports /Poster/ Seminar / Presentation ….)	20%	
Activity file	10%	
Final Examination	40%	

Regulations to maintain the teaching-Learning Process in the Lecture:

- Practical assignments to achieve the syllabus objectives.
- Regulations to maintain the teaching-Learning Process in the Lecture:
- Regular attendance
- Respect of commencement and ending of the lecture time.
- Positive relationship between student and teacher
- Commitment to present assignments on time.
- High commitment during the lecture to avoid any kind of disturbance and distortion.
- High sense of trust and sincerity when referring to any piece of information and to mention the source.
- The student who absents himself should submit an accepted excuse.
- University relevant regulations should be applied in case the student's behavior is not accepted.
- Allowed Absence percentage is 15%.