

Course Description - Research Methodology

Course Description

The course description provides a comprehensive overview of its main features and expected educational objectives for the student. It focuses on assessing the extent to which the student benefits from the available learning opportunities by linking it to the description of the academic program as a whole. This linkage helps understand how the course integrates with the rest of the program's courses, thereby enhancing the student's ability to achieve their educational objectives in general.

1. Educational Institution:	University of Tikrit / College of Computer Science and Mathematics
2. Academic Department / Center: Computer Science	Computer Science
3. Course Name / Code:	Research Methodology
4. Available Attendance Modes:	In-person
5. Semester / Academic Year:	2023-2024
6. Total Study Hours:	30 hours (Theoretical)
7. Date of Preparation of this Description:	January 28, 2024
8. Course Objectives: <ol style="list-style-type: none">1. To teach students the skills derived from the Research Methodology subject.2. To deepen the university student's knowledge of the steps of scientific research.3. To prepare students to teach this subject to middle and high school students.4. To prepare students to contribute to the advancement of science in all aspects, through modern discoveries and the development of old ones.5. To introduce students to the concept of research and the scientific method in research.6. To introduce students to the steps of scientific research, graduation projects.7. To equip students with the knowledge of how to identify research assumptions and problems.8. To introduce students to classifications of research in terms of their objectives and methodologies.9. To understand the method of criticism and analysis.10. To introduce the importance of electronic libraries and the internet and their role in scientific research.11. To introduce the importance of the ethical aspect in scientific research.	

1. Course Outputs and Teaching, Learning, and Assessment Methods

A. Cognitive Objectives

A1 - Understanding of the fundamental concepts of the Research Methodology subject.

A2 - Familiarity with the importance of general concepts of scientific research.

A3 - Recognition of the significance of research vocabulary and tools.

A4 - Introduction to the concept of research tools and their role in data collection, along with the conditions required for their validity and reliability.

B. Skill-based Objectives specific to the course

B1 - Learning the steps of writing scientific research, graduation projects, scientific reports, and possessing the ability to prepare them.

B2 - Familiarizing students with following the approved scientific methods and rules in writing research papers.

B3 - Acclimating students to using documents, books, information sources, and linking them together.

B4 - Understanding the importance of databases and electronic libraries to assist in obtaining the latest sources.

B5 - Understanding the method of research, collecting reliable scientific sources, and utilizing them in writing.

Teaching and Learning Methods:

- Traditional lectures and discussion/dialogue approach.
- Classroom activities and preparation of reports.
- Advanced lectures (with presentations).
- Utilization of discussion through Google Classroom.
- Using reference writing software in electronic format.
- Incorporating illustrative images, diagrams, and graphical examples to clarify scientific material.

Assessment Methods:

- Conducting theoretical and practical exams (daily, periodic, final).
- Reports.
- Conducting oral exams.

C. Emotional and Values-based Objectives

C1 - Utilizing scientific and cognitive skills through dialogue in academic topics.

C2 - Developing students' abilities in the field of scientific research, and enhancing their ability to perceive, understand, and comprehend the standards they rely on through discussions and classroom activities.

C3 - Fostering a spirit of participation among students and promoting teamwork.

C4 - Reinforcing and instilling the principle that time is a necessary and important factor in research work.

Teaching and Learning Methods:

- Classroom and homework assignments.
- Practical activities.
- Discussion and positive participation through the online classroom.

Assessment Methods:

- Conducting theoretical and practical exams.
- Preparation of reports.

D. General and Qualifying Skills (Transferable) and Other Skills Related to Employability and Personal Development.

D1 - Positive thinking and the application of acquired knowledge.

D2 - Ability to communicate with entities outside the university and engage in training with them.

D3 - Empowerment of students to teach the material they have learned if employed in an educational institution.

D4 - Ability of the student, if desired to advance themselves academically by applying for postgraduate studies, to be prepared for research work.

9. Course Structure					
Week	Hours	Required Learning Outcomes	Unit/Topic Name	Teaching Method	Assessment Method
1.	2	Meaning of the Scientific Research	Meaning of the Scientific Research	Traditional lectures and discussion method with presentations.	Discussion and exams.
2.	2	The main objectives of the Scientific Research	The main objectives of the Scientific Research	Traditional lectures and discussion method with presentations.	Discussion and exams.
3.	2	The main form of the Scientific Research	The main form of the Scientific Research	Traditional lectures and discussion method with presentations.	Discussion and exams.
4.	2	Types of Scientific Research	Types of Scientific Research	Traditional lectures and discussion method with presentations.	Discussion and exams.
5.	2	Research Characteristics	Research Characteristics	Traditional lectures and discussion method with presentations.	Discussion and exams.
6.	2	The Elements of Scientific Research	The Elements of Scientific Research	Traditional lectures and discussion method with presentations.	Discussion and exams.
7.	2	Research Methodology	Research Methodology	Traditional lectures and discussion method with presentations.	Discussion and exams.
8.	2	Classification of scientific research methods	Classification of scientific research methods	Traditional lectures and discussion method with presentations.	Discussion and exams.
9.	2	Scientific Method	Scientific Method	Traditional lectures and discussion method with presentations.	Discussion and exams.

10.	2	Steps of Scientific Research	Steps of Scientific Research	Traditional lectures and discussion method with presentations.	Discussion and exams.
11.	2	Defining the research problem, choosing the research topic, and collecting scientific material	Defining the research problem, choosing the research topic, and collecting scientific material	Traditional lectures and discussion method with presentations.	Discussion and exams.
12.	2	Good writing conditions and steps	Good writing conditions and steps	Traditional lectures and discussion method with presentations.	Discussion and exams.
13.	2	How to write references and citations	How to write references and citations	Traditional lectures and discussion method with presentations.	Discussion and exams.
14.	2	Producing Scientific Research	Producing Scientific Research	Traditional lectures and discussion method with presentations.	Discussion and exams.
15.	2	Graduation Project Structure	Graduation Project Structure	Traditional lectures and discussion method with presentations.	Discussion and exams.

10. Course Infrastructure	
<ul style="list-style-type: none"> - Kumar, Ranjit - Research methodology_ a step-by-step guide for beginners-SAGE Publications (2012). - C.R. Kothari - Research Methodology_ Methods and Techniques-New Age Publications (Academic) (2009). 	1- Required Course Textbooks
- أساسيات البحث العلمي لطلاب الحاسوب وتقنية المعلومات	2- Primary References (Sources)
https://www.youtube.com/watch?v=sE7IbPxJzgw	Electronic References, Websites, ...

11. Curriculum Development Plan

Changing the vocabulary annually by 10% based on recent sources.