هيئة تقويم التعليم والتدريب
Education & Training Evaluation Commission

Course Specifications

Course Title:	**Research Methodology**
Course Code:	**597PMDS-3**
Program:	**Professional Master of Data science**
Department:	**Computer Science**
College:	**Computer Science and information systems**
Institution:	**Najran 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: Year 1 – level 1
4. Pre-requisites for this course (if any)**:**
5. Co-requisites for this course (if any)**: NA**

6. Mode of Instruction (mark all that apply)

No	Mode of Instruction	Contact Hours	Percentage
1	**Traditional classroom**	30	100%
2	**Blended**		
3	**E-learning**		
4	**Distance learning**		
5	**Other**		

7. Contact Hours (based on academic semester)

No	Activity	Contact Hours
1	**Lecture**	30
2	**Laboratory/Studio**	
3	**Tutorial**	
4	**Others** (specify)	
	Total	30

B. Course Objectives and Learning Outcomes

1. Course Description

This course focuses on the methodology of doing scientific research. Topics covered include: the research problem, review of literature, conceptual modelling and research design, case study research, questionnaire design for survey, collection of data, analysis methods including qualitative, quantitative and mixed data analysis, research ethics, reporting the results and publishing.

2. Course Main Objective

After successful completion of this course students should be able to:

- describe the contents and process of proposal development
- describe the areas of networking and system administration
- describe the difference between graduate and undergraduate work in networking and system administration
- list and describe different approaches to research
- conduct a literature search on a specific topic

- design and validate an experiment
- collect experimental data, analyze it, and present it.
- write a paper to the standards of a selected publication

3. Course Learning Outcomes

CLOs		Aligned PLOs
1	**Knowledge and Understanding**	
1.1	Describe the contents and process of proposal development	K1,K2
1.2	Describe the areas of networking and system administration	K2
1.3	Describe the difference between graduate and undergraduate work in IT and system administration	K1
1.4	Describe different approaches to research	K2
1.5		
2	**Skills**	
2.1	Collect experimental data, analyze it, and present it.	S1,S3
2.2	Write a paper to the standards of a selected publication	S3
2.3	Conduct a literature search on a specific topic	S3
2.4	Design and validate an experiment	S1,S2,S3
3	**Competences:**	
3.1		
3.2		
3.3		
3...		

C. Course Content

No	List of Topics	Contact Hours
1	Course introduction and overview	2.5
2	Masters project process overview; Generating research ideas	2.5
3	Structure of research papers	2.5
4	Current research in IT and security, Part I	2.5
5	Current research in IT and security, Part II	2.5
6	Research methodology in networking and security I	2.5
7	Research methodology in networking and security II	2.5
8	Research methodology in networking and security III	2.5
9	Literature searching, Part I	2.5
10	Literature searching, Part II	2.5
11	Literature searching, Part III	2.5
12	Scholarly publishing; Conference and journal submission	2.5
13	Scholarly publishing; Conference and journal submission	2.5
14	Course wrap-up	2.5

15	No class – complete all written assignments!	
Total		30

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	describe the contents and process of proposal development	TS-1: Relate Course Learning Outcomes (CLOs) to the topics TS-2: Giving Lectures in PPT, recalling the lecture through asking Questions. Clarifying doubts on Lecture. TS-3: Conducting a discussion of real life problems, among teacher, students	Quiz Assignments Midterm Examination Final Examination
1.2	describe the areas of networking and system administration		
1.3	describe the difference between graduate and undergraduate work in networking and system administration		
1.4	list and describe different approaches to research		
2.0	**Skills**		
2.1	collect experimental data, analyze it, and present it.	TS-1: Relate Course Learning Outcomes (CLOs) to the topics TS-2: Giving Lectures in PPT, recalling the lecture through asking Questions. Clarifying doubts on Lecture. TS-3: Conducting a discussion of real-life problems, among teacher, students TS-4: Cooperative learning among the students. Encourage students to browse different journals, seminars or websites at their leisure time to have a better understanding about the course	Quiz Assignments Midterm Examination Final Examination,
2.2	write a paper to the standards of a selected publication		Quiz, Assignments Final Examination
2.3	conduct a literature search on a specific topic		Quiz Assignments Final Examination
2.4	design and validate an experiment		Lab Assignments, Midterm Examination,
2.5			Final Examination
3.0	**Competences**		
3.1			
3.2			
…			

2. Assessment Tasks for Students

#	Assessment task*	Week Due	Percentage of Total Assessment Score
1	Quiz1	3rd week	5%
2	Midterm	6th week	20%
3	Project	5th week	10%
4	Theory Assignments	2th , 5th , 8th , 10th weeks	10%
5	Lab Assignments	7th week	10%
6	Quiz2	10th week	5%
8	Final Exam	12th or 13th week	40%

***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 :

- Weekly office hours + Appointments
- Weekly academic advising hours
- Extra weekly 2 office hours prior to exams.
- Tutorials are also provided to the students

F. Learning Resources and Facilities

1.Learning Resources

Required Textbooks	None
Essential References Materials	
Electronic Materials	
Other Learning Materials	

2. Facilities Required

Item	Resources
Accommodation (Classrooms, laboratories, demonstration rooms/labs, etc.)	Room B-58 Laboratory A-16L
Technology Resources (AV, data show, Smart Board, software, etc.)	Data show, PCs.

Item	Resources
Other Resources (Specify, e.g. if specific laboratory equipment is required, list requirements or attach a list)	• Printer is important in the lab to print reports and some snapshots. • Projector and PC for the lab instructor is required

G. Course Quality Evaluation

Evaluation Areas/Issues	Evaluators	Evaluation Methods
Online course survey	Students	Indirect
Focus group discussion with small groups of students.	Instructor	Direct
Extent of achievement of course learning outcomes	instructor	Direct

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 Science Departmental Council
Reference No.	14440203-0185-00002
Date	1st Sep, 2022