

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	Al-Nahrain University
2. University Department/Centre	College of Science/ Department of Mathematics and Computer Applications
3. Course title/code	Foundation I/MATH 114
4. Modes of Attendance offered	Physical Attendance
5. Semester/Year	First Semester/ Year one
6. Number of hours tuition (total)	60 hours
7. Date of production/revision of this specification	15/10/2022
8. Aims of the Course	
<ul style="list-style-type: none">• To Motivate students appreciation for the study of mathematics.	
<ul style="list-style-type: none">• Emphasis will be given to the concepts of sets, mathematical statements, functions.	
<ul style="list-style-type: none">• Understanding the need for proof and develop the skills to enable the student to construct for themselves formal proofs.	
<ul style="list-style-type: none">• To develop the manipulative skills and mathematical intuition necessary for the study of mathematics at the university.	

9. Learning Outcomes, Teaching ,Learning and Assessment Methode

A- Cognitive goals:

A1. Experience to deal with sets and the operations on them.

A2. Understanding and using logical notation and arguments; construct simple mathematical proofs.

A3. Acquire the skill of finding the domain and range of functions and their graphs.

B. The skills goals special to the course.

B1. The ability to construct simple but mathematical arguments, and express correctly statements and proofs of simple mathematical theorems.

B2.

Teaching and Learning Methods

- Giving lectures notes, exercises and activities in the classroom
- Daily and Weekly Assessments.
- Giving homework.

Assessment methods

- Participation in the classroom.
- Submit Homework.
- Semester and final Assessments and activities.

C. Affective and value goals

C1. Developing the student's ability to work on assignments and send them on time.

C2. Applying concepts by solving different types of exercises.

C3. Developing the student's ability to argue and discussion.

Teaching and Learning Methods

- Managing the lecture in an applied manner related to the reality of daily life to attract the student to the topic of the lesson.
- Allocate a percentage of grade for assignments. and daily assessments.
- Assigning the student some group activities and assignments.

Assessment methods

- Active Participation in the lesson.
- Commitment to the deadline specified in the submission of exercises.
- The Mid-Semester and End-Semester exams express the obligation and skill achievement.
- Exercises and daily duties.

D. General and rehabilitative transferred skills(other skills relevant to employability and personal development)

D1. Emphasizing the importance of linking different concepts.

D2. Develop the student's ability to search on the Internet.

D3. Develop the student's ability to dialogue and discussion.

D4. Develop the student's ability to deal with technical means.

10. Course Structure					
Week	Hours	ILOs	Unit/Module or Topic Title	Teaching Method	Assessment Method
The First	(3)+(1) discussion	Inclusion concepts, Equal sets, Subsets	The sets	Lectures	General questions, discussion and assignments
The Second	(3)+(1) discussion	Proper subsets, Empty set, Universal set	The sets	Lectures	General questions, discussion and daily test
The Third	(3)+(1) discussion	Union, Intersection, Disjoint set, Difference,	The sets	Lectures	General questions, discussion and assignments
The Fourth	(3)+(1) discussion	Power set Complement set Algebra of sets	The sets	Lectures	General questions, discussion and daily test
The Fifth	(3)+(1) discussion	Combining statements, Truth tables	Mathematical Logic	Lectures	General questions, discussion and assignments
The sixth	(3)+(1) discussion	Condition statements, Bio-condition statements	Mathematical Logic	Lectures	General questions, discussion and daily test
The Seventh	(3)+(1) discussion	Tautology, Contradiction	Mathematical Logic	Lectures	General questions, discussion and assignments
The Eighth	(3)+(1) discussion	Logical equivalence, Converse and Inverse, Contrapositive	Mathematical Logic	Lectures	General questions, discussion and Daily text
The Ninth	(3)+(1) discussion	Quantifiers,	Mathematical Logic	Lectures	General questions, discussion and assignments
The tenth	(3)+(1) discussion	Mathematical Proof	Mathematical Logic	Lectures	General questions, discussion and daily test
The Eleventh	(3)+(1) discussion	Mathematical Proof	Mathematical Logic	Lectures	General questions, discussion and a semester exam
The Twelfth	(3)+(1) discussion	Domain, Range, Graph	Mapping	Lectures	General questions, discussion and assignments
The Thirteenth	(3)+(1) discussion	Algebra of functions, injective, surjective, bijective	Mapping	Lectures	General questions, discussion and Daily test
The Fourteenth	(3)+(1) discussion	Composition of functions, inverse of functions	Mapping	Lectures	General questions, discussion and assignments
The Fifteenth	(3)+(1) discussion	Some type of functions	Mapping	Lectures	General questions, discussion and a semester exam

11. Infrastructure	
1. Books Required reading:	- Foundation of Mathematics, Hadi Jaber, First Part, 1983, Basra university-Iraq, (Arabic Book)
2. Main references (sources)	- Introduction to Foundation of Mathematics, Adil G. Naoum and Basil A. , 2000, Baghdad university-Iraq, (Arabic Book)
A- Recommended books and references (scientific journals, reports...).	- Schaum's Outline of Set Theory and Related Topics
B-Electronic references, Internet sites...	https://www.britannica.com/science/foundations-of-mathematics
12. The development of the curriculum plan	
Searching and staying up-to-date on the latest books and research on the Foundation of Mathematics and their inclusion in the plan.	