Course Specifications

General Information

Course name	Real Analysis(1)
Course number	MATH3319
Faculty	
Department	
Course type	Major Needs
Course level	3
Credit hours (theoretical)	3
Credit hours (practical)	0
Course Prerequisites	

Course Objectives

1 - Apply analysis methods to other areas of knowledge
2 - Learn the tools and ethics of scientific research
3 - Writing correct mathematical proofs
4 - Develop the ability to think deductively, analyze mathematical situations and extend ideas to new context

Intended Learning Outcomes

Knowledge and Understanding	* Conclude the essential facts, conceps and theorems and their relationship to one another * Apply real analysis techniques and methods in solving problems * Relate real analysis to other fields of applied mathematics * Use techniques of analysis to reinforce and solidify the learned calculus results * Become acquainted with and develop a certain level of proficiency in analysis
Intellectual Skills	* Apreciating the value of independent thinking * Lead team work effectively for solving real analysis problems * Construct physical problems and find sutable solutions for them

Course Contents

1 - Preliminaries
2 - The algebraic and order properties of real numbers
3 - Completeness property
4 - Sequences and their limits
5 - Subsequences and Bolzano-weierstrass theorem
6 - Cauchy theorem
7 - Introduction to series
8 - Limits of functions
9 - limit theorems

Teaching and Learning Methods

1 - Lectures
2 - Discussions
3 - Assignments

Students Assessment

Assessment Method	TIME	MARKS
First mid-term exam	4th. week	20
Second mid-term exam	8th. week	20
Attendance and discussion		5
Homework		5
Final exam	End of the semester	50

Books and References

Essential books	Introduction to real analysis R. G. Bartel, D. R. Sherbert third edition
Recommended books	Mathematical analysis T. M. Apostol second edition
	Introduction to mathematical analysis W. R. Parzynski, P. W. Zipe