Course Description Form

1. Course Name: Complex Analysis I

2. Course Code: MATH411

3. Semester / Year: First/2023-2024

4. Description Preparation Date:2023-2024

5. Available Attendance Forms: Attendance

6. Number of Credit Hours (Total) / Number of Units (Total)60 hours

7. Course administrator's name (mention all, if more than one name)

Name: Dr. Iman A. Hussain
Email: iman a. hussain@nahrainuniv.edu.iq

8. Course Objectives

Course Objectives	**1-To study the techniques of complex variable and functions together with their derivatives, contour integration and transformations.** **2-To study complex power series, classification of singularities.** **3-To study calculus of residues and its applications the evaluation of integ and other concepts and properties**

9. Teaching and Learning Strategies

Strategy	Lectures, Homework, some activities in the class, Electronic referenc

10. Course Structure

Week	Hours	Required Learning Outcomes	Unit or subject name	Learning method	Evaluation method
1-3	12	Field of com numbers	Chapter 1	lectures	
4-8	20	Analytic Functions	Chapter 2	lectures	
9-11	12	Elementary Functions	Chapter 3	lectures	

12-1	16	Elementary Mapping	Chapter 4	lectures	

11. Course Evaluation

Distributing the score out of 100 according to the tasks assigned to the student such as daily preparation, daily oral, monthly, or written exams, reports .... etc

12. Learning and Teaching Resources

Required textbooks (curricular books, if any)	1-Complex variables and applications Ruel v. Churchill 2-Complex analysis Theodore
Main references (sources)	1. Ablowitz, M. J., Fokas, A. S. (2003). *Complex variables: introduction and applications* (2nd ed). Cambridge University Press. 2. Brown, J. W., Churchill, R. V. (2009). *Complex Variables and Applications.* 8th Edition. New York: McGraw-Hill Higher Education. 3. Lundmark, H. (2004). *Visualizing complex analytic functions using domain coloring.* 4. Needham, T. (1997). *Visual Complex Analysis.* Oxford University Press, Oxford.
Recommended books and references (scientific journals, reports…)	
Electronic References, Websites	