

## Course Description Form

<b>1. Course Name:</b>					
Engineering Analysis					
<b>2. Course Code:</b>					
EANA1329					
<b>3. Semester / Year:</b>					
1 <sup>st</sup> Semester					
<b>4. Description Preparation Date:</b>					
8/2/2024					
<b>5. Available Attendance Forms:</b>					
Presence					
<b>6. Number of Credit Hours (Total) / Number of Units (Total)</b>					
2/45					
<b>7. Course administrator's name (mention all, if more than one name)</b>					
Name: Luay Thamir Rasheed Email: <a href="mailto:luay.t.rasheed@uotechnology.edu.iq">luay.t.rasheed@uotechnology.edu.iq</a>					
<b>8. Course Objectives</b>					
<b>Course Objectives</b>	<ul style="list-style-type: none"> <li>• Learn how to use the power series method to solve ordinary differential equations.</li> <li>• Studying complex analysis methods, including the analyzability of functions, their integration, and their contribution to control theory in systems.</li> <li>• Methods for solving partial differential equations and their applications in engineering.</li> </ul>				
<b>9. Teaching and Learning Strategies</b>					
<b>Strategy</b>	<b>Lectures.</b> <b>Tutorial.</b> <b>Quizzes.</b>				
<b>10. Course Structure</b>					
<b>Week</b>	<b>Hours</b>	<b>Required Learning Outcomes</b>	<b>Unit or subject name</b>	<b>Learning method</b>	<b>Evaluation method</b>

1-2	6		Engineering analysis definition.  Application of engineering analysis.	Lectures	Discuss and evaluate homework
3-4	6		Power series solution of ordinary differential equations.	Lectures	Quiz
5-6	6		Legendre's polynomial.	Lectures	Discuss and evaluate homework
7-8	6		Frobenius method.	Lectures	Quiz
9-10	6		Bessel function.	Lectures	Discuss and evaluate homework
11	3		Introduction to complex number	Lectures	Discuss and evaluate homework
12-13	6		Function of complex variable	Lectures	Quiz
14-15	6		Integration of complex number	Lectures	Discuss and evaluate homework

### 11. Course Evaluation

20% documented exam  
5% Quizzes  
5% reports and homework

### 12. Learning and Teaching Resources

Required textbooks (curricular books, if any)	Higher engineering mathematics by Jo Bird, Fifth Edition 2006
Main references (sources)	Advanced engineering mathematics Erwin Kreyszig, Tenth Edition 2011
Recommended books and references (scientific journals, reports...)	
Electronic References, Websites	

