**Course Description Form**

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| 1. Course Name:
 |
| Mathematics I |
| 1. Course Code:
 |
| WBM-11-04 |
| 1. Semester / Year:
 |
| Semester |
| 1. Description Preparation Date:
 |
| 2024-03-19 |
| 1. Available Attendance Forms:
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| presence in the classroom |
| 1. Number of Credit Hours (Total) / Number of Units (Total)
 |
| 60 Hours / 3 Units |
| 1. Course administrator's name (mention all, if more than one name)
 |
| Name: Marwan Shaiban Abbasmarwanshaiban899@gmail.com |
| 1. Course Objectives
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| **Course Objectives** | **The topic of mathematics aims to clarify the scientific and philosophical challenges of current engineering mathematics that have stimulated this continuous development, as well as to present the basic concepts of functions and their useful fields for further study of engineering sciences and applied mathematics in the scientific and practical field. This is done by reviewing the basic principles in addition to introducing the principles of integration and differentiation. Its applications and some functions in particular, in addition to increasing the opportunity for students to practice sound thinking methods, such as reflective and deductive thinking, and increasing their skills in using problem-solving methods to comprehend what they are studying.** |
| 1. Teaching and Learning Strategies
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| **Strategy** | 1- Making the student able to demonstrate real knowledge of mathematical concepts during the academic level and their applications in the field of communications science.2- Learn and understand the basic definitions used in engineering mathematics, such as real value medals, exponents and roots, equations, inequalities, and graphs. ‏3- Learn and understand solution methods and time applications in calculus4- Learn and apply the laws and formulas that result directly from mathematical concepts, such as quadratic equations, exponential functions, and the properties of logarithmic relationships. |
| 1. Course Structure
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| **Week**  | **Hours**  | **Required Learning Outcomes**  | **Unit or subject name**  | **Learning method**  | **Evaluation method**  |
| 1 +2+3 | 4 | Further techniques inintegration by parts | Integration by parts | Lectures presented in PDF format | Daily exams + homework assignments + monthly exams |
| 4+5 | 4 | tabular integration,trigonometricintegrations,trigonometricsubstitution | Another Integrationmethods | Lectures presented in PDF format | Daily exams + homework assignments + monthly exams |
| 6+7+8 | 4 | partial fractions ,integration, improperintegrals | integration by Z=tan(X/2) substitutions | Lectures presented in PDF format | Daily exams + homework assignments + monthly exams |
| 9 | 4 | Definition andproperties | convergence anddivergence theorem | Lectures presented in PDF format | Daily exams + homework assignments + monthly exams |
| 10 +11 | 4 | Sequences types,Theirs limits, etc. | limit of sequences | Lectures presented in PDF format | Daily exams + homework assignments + monthly |
| 10 | 4 | definition andproperties | infinite series | Lectures presented in PDF format | Daily exams + homework assignments + monthly |
| 11+12 | 4 | partial sums test,geometric series, Nth | geometric series | Lectures presented in PDF format | Daily exams + homework assignments + monthly |
| 13 | 4 | ratio test, root test,comparison test | Term test alternatingseries | Lectures presented in PDF format | Daily exams + homework assignments + monthly |
| 14 | 4 | P-series, power series,Taylor’s theorem,maclaurin's seriesinterval of | harmonic series | Lectures presented in PDF format | Daily exams + homework assignments + monthly |
| 15 |  | matrices anddeterminant,properties, cofactorsand cominors, | matrices | Lectures presented in PDF format | Daily exams + homework assignments + monthly |
| 1. Course Evaluation
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|  Daily exams with practical and scientific questions. ‏ Participation scores for difficult competition questions among students Establishing grades for environmental duties and the reports assigned to them Semester exams for the curriculum, in addition to the mid-year exam and final exam |
| 1. Learning and Teaching Resources
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| College library to obtain additional sources for the curriculum. | Calculus, Third Edition, ROBERT T. SMITH, Millersville University of Pennsylvania, ROLAND B. MINTON, Roanoke College |
| Main references (sources) | • College library to obtain additional sources for the academic curricula• Check scientific websites to see recent developments in the subject |
| www.ieee.org | All reputable scientific journals that are related to the broad concept of mathematical theories and their results |