**Form no.(12)**

**Course Specification**

**University/Academy: Benha**

**Faculty/Institute: of Computers and Informatics**

**Department: Computer Science, Information Systems**

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| **1-Course Data** | | |
| **Course Code:**  **BSC 120** | **Course Title: Mathematics (1)** | |  | | --- | | **Academic Year:**  **1st year / B.Sc.** | |
| **Specialization:**  **Computer Science,**  **Information Systems** | **No. of Instructional Units: Lecture 4hrs**  **Practical 4hrs** | |

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| **2-Course Aims** | 1. Define principles and theories relevant to mathematical disciplines. 2. State the current developments in Mathematical research. 3. Explode the concepts, principles, theories and practices behind Mathematics as an academic discipline. 4. Applying effectively computational modelling techniques to an application area from (Science, Technology, Engineering and Mathematics) fields. 5. Retrieve the information efficiently. 6. Exhibit appropriate numeracy skills in understanding and presenting cases involving a quantitative dimension. 7. Use the general computing facilities. |
| **3-Intended Learning Outcome by the end of this course the student should be able to:** | |
| **a-Knowledge and Understanding** | 1. Define the principles relevant to mathematical disciplines. 2. State the theories relevant to mathematical disciplines. 3. Explain the current developments in mathematical research. |

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| **b-** | **Intellectual Skills** | b1. Analyze the concepts, principles behind mathematical as an academic discipline.  b2. Discuss the theories and practices behind mathematical as an academic discipline. |
| **c-** | **Professional Skills** | c1. Implement comprehensive mathematical knowledge.  c2. Apply the skills in projects in deployment of computers to solve practical problems. |
| **d-** | **General Skills** | d1. Retrieve the information efficiently.  d2. Exhibit appropriate numeracy skills in understanding.  d3. Evaluate presenting cases involving a quantitative dimension.  d4. Use the general computing facilities. |
| **4-Course Content** | | |  |  |  |  | | --- | --- | --- | --- | | **Topic** | **No. of hours** | **Lecture** | **Tutorial** | | Functions, limits , and continuity of functions | 14 | 8 | 6 | | Differentiation, basic derivative theorems , and applications | 14 | 8 | 6 | | Integration: Basic properties of indefinite integrals and numerical methods glance | 14 | 8 | 6 | | Some Applications of definite Integrals | 28 | 16 | 12 | | Transcendental functions | 28 | 16 | 12 | |
| **5- Teaching and Learning Methods** | | 1. Lectures 2. Tutorials 3. Brain storming 4. Problem solving |
| **6- Teaching and Learning Methods for Students with Special Needs** | | There are no Special Needs students |
| **7-Student Assessment:** | | |
| **a-Procedures used:** | | |  |  | | --- | --- | | **Assignments** | *to assess* progress on students’ learning, effectiveness of course materials, and approaches to instruction | | **Mid-Term exam** | *to assess* level of knowledge acquisition and concepts understanding that can be used as a feedback for enhancing the learning process | | **Oral exam** | *to assess* the level of understanding for the concepts and terminology behind the course. | | **Final exam** | *to assess* the overall level of understanding of concepts, terminologies, techniques learned throughout the course. | |
| **b-Schedule:** | | |  |  |  | | --- | --- | --- | | Assessment 1 | Assignments | By the end of each topic | | Assessment 2 | Mid-Term exam | Week 8 | | Assessment 4 | Oral exam | Week 14 | | Assessment 5 | Final Exam | Week 16 | |
| **c-Weighing of Assessment:** | | Final-term Examination 75 %  Mid-term Examination 10 %  Oral Examination 10 %  Practical Examination ---  Semester Work 5 %  Other types of assessment ----    **Total 100 %** |
| **8-List of Text books and References:** | | |
| **a-Course Notes** | | ...... |
| **b-Required Books(Textbooks)** | | * Earl W. Swokowski “ Calculus” Fifth Edition ,International Student Edition, Thomson Learning. 1991 |
| **c-Recommended Books** | | * Howard Anton, IrI Biuens and Stephen Davis “ Calculus“ Eight Edition, Wiley John Wiley &Sons,inc. 2005 |
| **d-Periodicals, Websites,...,etc.** | | ...... |

**Course Instructor:** Dr. El-Sayed El-Sayed Metwalli Badr **Signature** ( )

**Head of Department:** Prof.Dr. Mohamed Salah El-Din El-Sayed **Signature** ( )