**Course specifications**

**Programme(s) on which the course is given** B.Sc. Mathematics, Pure mathematics and Computer Science

**Major or minor element of programmes** Major

**Department offering the programme** Mathematics

**Department offering the course** Mathematics

**Academic year / Level** First (1)

**Date of specification approval** September 2012

**Date of specification approval**

**A- Basic Information**

**Title: Analytic Geometry (1)** **Code: M112**

**Credit Hours: 2.5 hrs** **Lecture: 2 hrs**

**Tutorial: 1 hr.** **Practical:** **Total: 2.5 hrs.**

**Teaching Staff** **Dr. Maha Abd El-Fattah**

**B- Professional Information**

**1 – Overall Aims of Course**

**The course is the basic course in geometry. Student learns the coordinate systems, straight line and the pair of straight lines. Also, understand the different forms of conic sections. In addition, student knows the different types of Conic sections, Parabola, Ellipse, Hyperbola and Tracing of the general conic.**

**2 – Intended Learning Outcomes of Course (ILOs)**

**a- Knowledge and Understanding:**

**a1- Demonstrate a knowledge of polar coordinate system.**

**a2- Learn the pair of straight lines.**

**a3- Have a knowledge about the circle.**

**a4- Understand the different types of conic sections.**

**b- Intellectual Skills**

**b1- Recognize the difference between the polar coordinates and cartisine coordinates.**

**b2- Formulate and construct proofs.**

**b3- Analyze and understand conic sections.**

**c- Professional and practical skills**

**c1-apply the understanding of the straight lines, circle and conics taught in further related mathematical courses.**

**c2- Solve problems on Parabola, Ellipse and Hyperbola**

**d- General and transferable skills**

**d1- Tell about straight lines and circle.**

**d2- Apply the learned principles to solve problems.**

**d3- Work as a part of team.**

**3- Contents**

| Topic | No. of hours | Lecture | Tutorial/Practical |
|---|---|---|---|
| **Polar Coordinate system and parametric equations** | **6** | **2** | **2** |
| **Change and rotation of Axis.** | **8** | **3** | **2** |
| **Pair of straight lines** | **6** | **2** | **2** |
| **The Circle** | **8** | **3** | **2** |
| **Conic sections**<br>**Parabola**<br>**Ellipse**<br>**Hyperbola** | **12** | **4** | **4** |

**4– Teaching and learning methods**

**4.1- Lectures**

**4.2- Working on hand in assignments**

**4.3- Attainting practical classes**

**5- Student assessment methods**

**5.1 Mid term written exam… to assess understanding competencies**

**5.2 Semester hand in assignments to assess attendance and interesting**

**5.3Final term written Exam to assess Learning out comes and understanding .**

**Assessment schedule**

**Assessment 1… Mid term……. Week 7 …….**

**Assessment 2 …Periodic activities…… Week 4 and 9 …….**

**Assessment 3…Final term oral exam…… Week 13…….**

**Assessment 4…final term written exam……. Week 14…….**

**Weighting of assessments**

| | |
|---|---|
| **Mid-Term Examination** | **20%** |
| **Final-term Examination** | **60%** |
| **Oral Examination.** | **20%** |
| **Practical Examination** | **00%** |
| **Semester Work** | **00%** |
| **Other types of assessment** | **00%** |
| **Total** | **100%** |

**Any formative only assessments**

**6- List of References**

**…6.1- Course notes**

**Collected and prepared notes that cover the main topics**

**……..**

**6.2- Essential Books (Text Books)**

**……..**

**……..**

**6.3- Recommended Books**

**……..**

**……..**

**6.4- Periodicals, Web Sites, … etc**

**…….**

**…….**

**…….**

**7- Facilities Required for Teaching and Learning**

**..……**

**Course Coordinator: Dr. Maha Abd El-Fattah**
**Head of Department: Prof. Mohamed A. Ramadan**
**Date: / /**