**In the name of Allah the Merciful, the Beneficent**

**Engineering Mathematics**

**Instructor: M. Motamedi Azari**

**Teacher assistance:**

**3 units, undergraduate course**

**Course contents:**

**1- Fourier; series, integral, transform**

**2- Partial Differential Equation (PDE)**

 **2.1 general descriptions of PDEs**

 **2.2 classifications of PDEs**

 **2.3 Wave equation**

 **2.4 Diffusion equation**

 **2.5 Laplace equation**

 **2.6 Fourier and Laplace Transform methods for solving of PDEs**

**3-complex variable theory**

 **3.1 Functions of a complex variable**

 **3.2 Complex integral**

 **3.3 The residue theorem and applications**

 **3.4 Conformal mapping**

**Grading policies:**

 **Presence 1 point (extra)**

 **Homework’s 1 point (extra)**

 **Quizzes 3 points**

 **Mat Lab 1 points**

 **Mid-term 8 points=2 points for Fourier+6 points other Mid Term exam**

 **Final exam 8 points**

**Section 1 of the syllabus -Fourier 4 or 5 sessions**

**Section 2 of the syllabus -PDE 14 sessions**

**Section 3 of the syllabus -Complex variables 12 sessions**

**Text book and references:**

**1- Advanced engineering mathematics by: M.D Greenberg**

**2- Translation of the mentioned book at “1”, this book is translated by a number of Lecturers of** **KNTU.**

**3- Complex variables by: Churchill**

**4- Advanced calculus by: Kaplan**

**Date of quizzes:**

**Quizzes 1 to 4: Wednesdays 8th to 29th of Mehr 1394**

**Quizzes 5 to 8: Wednesdays 6th to 27th of Aban 1394**

**Quizzes 9 to 11: Wednesdays 4th to 25th of Azar 1394**

**Quiz 12: Wednesdays 2rd of Day 1394**

**Mid-term examination (Final examination for Fourier & PDE after completion of wave equation) will be announced later.**

**Final examination 8:00-10:30 Wednesday 16th Day 1394**