MTH 5360 SYLLABUS (tentative)

APPLIED MATHEMATICS I

Fall 2017

Section 01: TTh 11:00 AM-12:15 PM, SR 203

Instructor: Professor Qin “Tim” Sheng
Office Locations: Sid Richardson 302.F and BRIC 3017
Office Phone: 254-710-1241
E-Mail: Qin.Sheng@Baylor.edu
URL: http://sites.baylor.edu/qin_sheng/

TEXTS:
• My Lecture Notes: An Introduction to the Theory and Methods of Numerical Analysis
• A First Course in the Numerical Analysis of Differential Equations by A. Iserles, Cambridge

OUTLINE OF THE TOPICS:
1. A brief introduction of applied functional analysis
2. Approximation theory
3. Interpolations
4. Numerical integration
5. Sobolev spaces
6. An introduction of Galerkin method
7. Finite difference methods
8. ADI, LOD and exponential splitting
9. Applications in important multi-physics concerns

CLASS ARRANGEMENT: We meet 2 times per week. Additional evening review sessions
may be arranged if needed. Our classroom will be SR 203 which is digitalized with required
software for all students.

HOMEWORK: As we go along section by section for the covered materials in the textbook,
students are required to complete all suggested exercises in time. You are required to keep a
notebook solely for this homework. If you have questions please see me either during my office
hours or by making an appointment. Homework will not be collected or graded directly.

PROJECT ASSIGNMENTS, QUIZZES AND GRADING POLICIES: Two theoretical
and computational assignments will be given. Quizzes will be given on Wednesdays and there will
be one final exam.

The Method of Evaluation is:
• 2 assignments, each one counts 30% toward your final (no makeup tests without justified
  reasons);
• 1 final comprehensive exam, 40%

Grading Scale: A 90-100%, B+ 85-89%, B 80-84%, C+ 75-79%, C 70-74%, D 60-69%, F
below 60%

Updated on April 1, 2017