COURSE DESCRIPTION
SCIENTIFIC PROGRAMMING
MA 360/560
FALL 2019

DEPARTMENT OF MATHEMATICS
UNIVERSITY OF ALABAMA AT BIRMINGHAM

Course Instructor: Dr. Carmeliza Navasca
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Office: UNIVERSITY HALL 4010
Phone: (205) 934-8621
Office Hours: Mon/Wed 10-11 AM and Tue/Thu 10:45-11:15 AM (or by appt)

Course Info

Meeting times: MonWedFri, 9:05–9:55 AM
Meeting location: HHB 221
Prerequisite: Grade of C or better in MA 126 or equivalent. Any student who has not fulfilled the prerequisite will be dropped from the class.
Credits: 3 semester hours
(3) Class Notes: MA 360/560, Scientific Programming by Ian Knowles. (Recommended)

Important Dates

First day of our class: August 26, 2019
Labor Day Holiday: September 2, 2019
Last day to drop without paying full tuition: September 3, 2019
Thanksgiving: November 25–December 1, 2019
Last day of our class: December 6, 2019.
Project approximate due dates: Project I: Fri, Oct 4, 2019
Project II: Fri, Nov 8, 2019
Final Date: Wed, Dec 11, 2019

Course Policies

• Please make sure that you are able to receive e-mail through your Blazer-ID account. Official course announcements may be sent to that address.

Date: August 26, 2019.
• If you are contacted by the Early Alert Program, you should consider taking advantage of the services it offers.
• If you wish to request a disability accommodation please contact DSS at 934-4205 or at dss@uab.edu.

Course Description

Programming and problem solving using Matlab and Python. Emphasizes the systematic development of algorithms and programs. Topics include iteration, functions, arrays, Matlab graphics, image processing and robotics. Assignments and projects are designed to give the students a computational sense through complexity, dimension, inexact arithmetic, randomness, simulation and the role of approximation.

Objectives of the Course

Upon successful completion of the course, a student
(1) develops and implements algorithms from a mathematical given problem;
(2) develops programming skills to produce working codes;
(3) learns the basic principles of scientific computing, i.e. algorithms and software tools for science, math and engineering problems

Class Management via Canvas

• Homework problems will be posted in canvas (http://www.uab.edu/online/canvas). All other materials (class announcements, codes, grades and etc.) will be posted in canvas. Students should log in to canvas at least once a day! (I prefer to receive emails via canvas. Your email is guaranteed to be answered within 24 hours of the next business day.)
• Homework assignments, projects and activities will only be collected on canvas.

Assessment Procedures

• Student achievement will be assessed by the following measures:
  – **Weekly homework.** Homework will be assigned on a weekly basis. There will be no extension of deadlines for any reason. Homework contributes 35% to the course average.
  – **Announced quizzes.** Quiz problems are similar to the homework problem sets. Quizzes contribute 20% to the course average. There will be no make-ups for the quiz.
  – **Two projects.** Each project contributes 10% to the course average.
  – **Final project.** The final contributes 25% to the course average.

Grading Scheme: 35 % homeworks, 20% quizzes, 20 % projects, 25% final project
• Your course performance is your course average (including the final exam score). This is a number between 0 and 100.
• Your final grade is determined according to the following table:

<table>
<thead>
<tr>
<th>Course performance:</th>
<th>88-100</th>
<th>75-87</th>
<th>62-74</th>
<th>50-61</th>
<th>below 50</th>
</tr>
</thead>
<tbody>
<tr>
<td>Final Grade:</td>
<td>A</td>
<td>B</td>
<td>C</td>
<td>D</td>
<td>F</td>
</tr>
</tbody>
</table>

Tips
• By working steadily and regularly, you will increase your chances to succeed in this course.
• Remember, being a full-time student is a full-time job.

**Academic Honor Code**

The University of Alabama at Birmingham expects all members of its academic community to function according to the highest ethical and professional standards. Academic misconduct undermines the purpose of education. Such behavior is a serious violation of the trust that must exist among faculty and students for a university to nurture intellectual growth and development. Academic dishonesty and misconduct includes, but is not limited to, acts of abetting, cheating, plagiarism, fabrication, and misrepresentation. Candidates are expected to honor the UAB Academic Honor Code as detailed in the most current UAB Student Catalog. Please consult this resource ([https://www.uab.edu/students/one-stop/policies/academic-honor-code](https://www.uab.edu/students/one-stop/policies/academic-honor-code)) for additional information regarding the specific procedures to be undertaken when a student violates the UAB Academic Honor Code.

**Non-harassment, Hostile Work/Class Environment**

The UAB College of Arts and Sciences expects students to treat fellow students, their Course Instructors, other UAB faculty members and staff as adults and with respect. No form of hostile environment or harassment will be tolerated by any student or employee.