

MEC 102: ENGINEERING COMPUTING AND PROBLEM SOLVING II

Spring 2017

Instructor: Dr. Aifang Zhou, 156B Light Engineering

Office Hours: Monday: 1:00pm – 2:30pm Light Engineering, Room 156B
Wednesday: 1:00pm – 2:30pm Light Engineering, Room 156B

TAs: 1) Ms. Qian Ye Office Hours: 1:00pm-4:00pm, Tuesday
Location: Light Engineering, Room 156A
2) Mr. Shashank Sharma Office Hours: 1:00pm-4:00pm, Thursday
Location: Heavy Engineering, 207

Undergraduate assistant

Mr. Dan Purschke Office Hours: 4:00p-5:30pm Mon; 3:00-4:30pm, Wed
Location: Break area of Heavy Engineering (end of main hall after walking in yellow doors)

Lectures: Tues and Thurs 5:30–6:50pm, Frey Hall 102

Please note: *I can only provide very limited email support to the course!* There are 191 students registered for this class. I am likely not going to be able to answer convenience questions such as what we covered in class, what will be on the exam, or how to do a particular homework problem. You will probably get much faster and more focused answers to your questions by asking questions in class, stopping by after class, and/or coming to office hours. If I can't address your email, I'll ask you to see me directly.

Course Summary: (Credits 2) Continuation of MEC101: Computer programming as related to engineering design and analysis. Matlab based. Fundamentals of computer architecture, types of data, and logical operators. Debugging and troubleshooting. General principles and guidelines for efficient programming.

Course Learning Objectives: *The objectives of this course are to prepare you to design, code, debug, and modify computer programs in the Matlab Programming language to solve engineering problems.* Specifically, upon completion of this course, the student will demonstrate proficiency with the following:

- The fundamentals of digital computer operation
- Elements of matrices and linear algebra
- Base systems, finite arithmetic, and how numbers are represented by the computer
- Basic programming constructs; elements of good programming practice
- Conditional operators and logical constructs
- Iteration, both definite and indefinite
- Use of the debugger and troubleshooting tips
- Defining functions and other logical constructs for program organization
- Elements of Object Oriented Programming

Texts:

- MATLAB Programming for Engineers, 5th ed., Stephen J. Chapman, Cengage ©2016

Software:

Matlab – the latest version is **R2016**. **Matlab is now free** for you to install on your own personal computer. Visit <http://it.stonybrook.edu/services/software-catalog/browse> or go here to download directly <https://softweb.cc.stonybrook.edu/?mw>. I strongly encourage you to set up a copy of MATLAB on your own computer.

Blackboard will be used to administer the course.

Grading: Homework 40%, Midterm 25%, and Final 35%

Homework is due at 5PM on the day it is due. Late homework will not be accepted!

The Golden Rule: I have only one rule for this course: I will not tolerate in any way one person infringing on another's opportunity to learn in the classroom. This means absolutely **no talking during class**,. Please turn your cell phones off before class. Thank you.

Computers and Matlab

This is a computing class. You will be writing computer programs and interfacing extensively with MATLAB.

Disability Support Services (DSS) Statement

If you have a physical, psychological, medical or learning disability that may impact your course work, please contact Disability Support Services, ECC (Educational Communications Center) Building, Room 128, (631) 632-6748. They will determine with you what accommodations are necessary and appropriate. All information and documentation is confidential. Students requiring emergency evacuation are encouraged to discuss their needs with their professors and Disability Support Services. For procedures and information, go to the following web site: <http://www.stonybrook.edu/ehs/fire/disabilities>.

Academic Integrity Statement

Each student must pursue his or her academic goals honestly and be personally accountable for all submitted work. Representing another person's work as your own is always wrong. Faculty are required to report any suspected instances of academic dishonesty to the Academic Judiciary. Faculty in the Health Sciences Center (School of Health Technology & Management, Nursing, Social Welfare, Dental Medicine) and School of Medicine are required to follow their school-specific procedures. For more comprehensive information on academic integrity, including categories of academic dishonesty, please refer to the academic judiciary website at <http://www.stonybrook.edu/uaa/academicjudiciary/> .

Critical Incident Management:

Stony Brook University expects students to respect the rights, privileges, and property of other people. Faculty are required to report to the Office of Judicial Affairs any disruptive behavior that interrupts their ability to teach, compromises the safety of the learning environment, or inhibits students' ability to learn. Faculty in the HSC Schools and the School of Medicine are required to follow their school-specific procedures.

Allowed Calculators

Calculators will not be allowed on any midterm or final exam during this course.