

## **BME 3053L: Computer Applications for BME**

1. **Description:** (1 credit hour) – Computer programming lab to utilize Matlab to analyze biomedical measurements.
2. **Pre-requisites and Co-requisites:** COP 2271 or equivalent and MAC 2312.
3. **Course Objectives:** Develop a proficiency in the use of the computer program Matlab to analyze biomedical measurements.
4. **Contribution of course to meeting the professional component:** N/A
5. **Relationship of course to program outcomes:** N/A
6. **Instructor:** David Gilland
  - a. Office location: 111 NRB Annex
  - b. Telephone: 273-0302
  - c. E-mail address: gilland@ufl.edu
  - d. Web site: [www.bme.ufl.edu/people/gilland\\_david](http://www.bme.ufl.edu/people/gilland_david)
  - e. Office hours: by appointment
7. **Teaching Assistant:** N/A
8. **Meeting Times:** Tuesday, period 3 (9:35-10:25)
9. **Class/laboratory schedule:** one 50 minute session per week
10. **Meeting Location:** 350 NEB
11. **Material and Supply Fees:** N/A
12. **Textbooks and Software Required**
  - a. Title: Matlab for Engineering and the Life Sciences
  - b. Author: Tranquillo, Joseph
  - c. Publication date and edition: 2011, 1<sup>st</sup> edition
  - d. ISBN number: 9781608457113

Required software: student version of Matlab

13. **Recommended Reading:** see 12 above

### **14. Course Outline**

Topic	Week
Matlab environment, scalar, vectors	1
Matrices, mat files	2
For loops and logic	3
Data input/output	4
1D signal analysis	5
1D signal analysis	6
1D signal analysis	7
Lab observation	8
Image Display	9
Image Analysis tools	10
Image Analysis tools	11
Lab observation	12
Simulink Introduction	13

Simulink Model	14
Lab exam	15

15. **Attendance and Expectations:** On time class attendance is required. Chronic tardiness or absence will negatively impact the final grade. There is zero tolerance for cell phone disruptions.

16. **Grading:**

50% Homework; 25% Lab Exam: 25% Class participation

Homework is due at beginning of class on due date. Late submission will impact grade.

Lab exam will consist of a programming assignment to be completed during the exam period.

17. **Grading Scale:**

A = 93 – 100, A- = 90 – 92

B+ = 87 – 89, B = 83 – 86, B- = 80 – 82

C+ = 77 – 79, C = 73 – 76, C- = 70 – 72

D = 61 – 70

A C- will not be a qualifying grade for critical tracking courses. In order to graduate, students must have an overall GPA and an upper-division GPA of 2.0 or better (C or better). Note: a C- average is equivalent to a GPA of 1.67, and therefore, it does not satisfy this graduation requirement. For more information on grades and grading policies, please visit:

<https://catalog.ufl.edu/ugrad/current/regulations/info/grades.aspx>

18. **Make-up Exam Policy** – Exams can be rescheduled for an individual due to sickness or religious holidays. The instructor must be notified in advance.

19. **Honesty Policy** – All students admitted to the University of Florida have signed a statement of academic honesty committing themselves to be honest in all academic work and understanding that failure to comply with this commitment will result in disciplinary action. This statement is a reminder to uphold your obligation as a UF student and to be honest in all work submitted and exams taken in this course and all others.

Unless otherwise stated, all homework for this class must be done individually. ***In this class it is a violation of the Academic Honesty code to obtain assistance on homework assignments from other individuals without acknowledging such.***

20. **Accommodation for Students with Disabilities** – Students Requesting classroom accommodation must first register with the Dean of Students Office. That office will provide the student with documentation that he/she must provide to the course instructor when requesting accommodation.

21. **UF Counseling Services** – Resources are available on-campus for students having personal problems or lacking clear career and academic goals. The resources include:

- UF Counseling & Wellness Center, 3190 Radio Rd, 392-1575, psychological and psychiatric services.
- Career Resource Center, Reitz Union, 392-1601, career and job search services.

22. **Software Use** – All faculty, staff and student of the University are required and expected to obey the laws and legal agreements governing software use. Failure to do so can lead to monetary damages and/or criminal penalties for the individual violator. Because such violations are also against University policies and rules, disciplinary action will be taken as appropriate. We, the members of the University of Florida community, pledge to uphold ourselves and our peers to the highest standards of honesty and integrity.