

E7 Introduction to Computer Programming for Scientists and Engineers
Syllabus

Lecture Location: in Zoom:

Lecture Times: Monday-Wednesday 2:00 pm – 3:00 pm

Office Hours: Monday-Wednesday 6:00 pm – 8:00 pm (in Zoom)

Email: shaofan@berkeley.edu

| Date | Class # | Topic | Video | Lab | Reading |
|-------|---------|--------------------------------|---------------------|---------|---------|
| 8/26 | 1 | Introduction | Video 1 | | |
| 8/31 | 2 | Matlab Operators | Video 2,3 | 1 | |
| 9/2 | 3 | Matlab Functions/Matlab Plots | Video 4 | 1 | |
| 9/7 | 4 | Matlab Arrays and Matrices | Video 5,6 | 2 | |
| 9/9 | 5 | Introduction to Binary | Video 7 | 2 | |
| 9/14 | 6 | Matlab Data Types | Video 8,9 | 3 | |
| 9/16 | 7 | Branching Statements | Video 10 | 3 | |
| 9/21 | 8 | Array Multiplication | Video 11,12 | 4 | |
| 9/23 | 9 | Iteration | Video 13 | 4 | |
| 9/28 | 10 | Recursion | Video 14,15 | 5 | |
| 9/30 | 11 | Sorting | Video 16 | 5 | |
| 10/12 | 12 | Random Number/Binary Search | Video 17,18 | 6 | |
| 10/14 | 13 | IEEE Format | Video 19 | 6 | |
| 10/19 | 14 | Matlab Plotting/Midterm | Video 20 | Midterm | |
| 10/21 | 15 | Matlab Graphics/Movies | Video 21 | Midterm | |
| 10/26 | 16 | Matlab Debugging | Video 21,22 | 7 | |
| 10/28 | 17 | Root Finding | Video 23 | 7 | |
| 11/2 | 18 | Newton Raphson/Fractals | Video 24,25 | 8 | |
| 11/4 | 19 | Regression | Video 26 | 8 | |
| 11/9 | 20 | Academic holiday | Video 27,28 | 9 | |
| 11/11 | 21 | Interpolation | Video 29 | 9 | |
| 11/16 | 22 | Differentiation and Difference | Video 30, 31 | 10 | |
| 11/18 | 23 | Integration | Video 32 | 10 | |
| 11/23 | 24 | Thanksgiving Holiday | Video 33,34 | 11 | |
| 11/25 | 25 | ODE | Video 35,36 | 11 | |
| 11/30 | 26 | ODE/ Runge Kutta method | Final project video | 12 | |
| 12/2 | 27 | Final Project | Final project video | 12 | |

GSI Information

Head GSIs:

Mr. Chao Wang: chao_wang@berkeley.edu

Mr. Caglar Tamur: caglar.tamur@berkeley.edu

1. Lab1 (012) (TuThu: 9:00am-11:00am)
Dennis Chiu, dennis.chiu@berkeley.edu
Nikolay Velkov, nikolayvelkov@berkeley.edu
2. Lab2 (013) (TuThu: 12:00pm -2:00pm)
Yuxi Xie, yuxi_xie@berkeley.edu
Karl Walter, karlwalter@berkeley.edu
3. Lab3 (014) (TuThu: 2:00pm-4:00pm)
Zhongyu Li, zhongyu_li@berkeley.edu
Chao Wang, chao_wang@berkeley.edu
4. Lab4 (016) (MW 12:00pm-2:00pm)
Yuxi Xie, yuxi_xie@berkeley.edu
Weixin Li, weixinli@berkeley.edu
5. Lab5 (017) (TuThu: 6:00pm-8:00pm)
Jes Parker, jmparker@berkeley.edu
Jianxuan Yin, susan1013@berkeley.edu
6. Lab6 (018) (ThuFri: 6:00pm-8:00pm)
Hardi Sura, hsur@berkeley.edu
Yizhi Zhou, breeze@berkeley.edu
7. Lab7 (019) (MW 3:00pm-5:00pm)
Jes Parker, jmparker@berkeley.edu
Chao Wang, chao_wang@berkeley.edu
8. Lab8 (020) (MW 9:00am-11:00am)
Shuangjiu Fu, shuangjiu@berkeley.edu
Sena Soysal, senasoysal@berkeley.edu
9. Lab 9 (021) (MW 6:00pm-8:00pm)
Jose Zavala, jose_zavala@berkeley.edu
Dennis Chiu, dennis.chiu@berkeley.edu
10. Lab 10 (022) (ThuFri 4:00pm-6:00pm)
Alvin Zhou, ajzhou@berkeley.edu
Jackson Le, jacksonle@berkeley.edu

Reader Information

Chengyao Liang, icyliang@berkeley.edu
 Joy Carpio, engrjoycarpio@berkeley.edu

Table 1: Discussion Session Schedule

| session | hour | date | GSI |
|---------|------------------|------|---------|
| 101 | 8:00am -9:00am | Fri | Nikolay |
| 102 | 9:00am-10:00am | Fri | Caglar |
| 103 | 10:00am-11:00am | Fri | Yin |
| 104 | 11:00am-12:00pm | Fri | Caglar |
| 105 | 12:00pm-1:00pm | Fri | Hardi |
| 106 | 1:00pm-2:00pm | Fri | Calgar |
| 107 | 2:00pm-3:00pm | Fri | Weixin |
| 108 | 3:00-4:00pm | Fri | Caglar |
| 109 | 10:00 am-11:00am | Fri | Caglar |
| 110 | 7:00pm-8:00pm | Tu | Alvin |
| 111 | 8:00pm-9:00pm | Thu | Zhougyu |
| 112 | 6:00pm-7:00pm | Thu | Karl |

Table 2: GSI Piazza Session Schedule

| Time/period | Sunday | Monday | Tuesday | Wednesday | Thursday | Friday | Saturday |
|-------------|---------|--------|---------|-----------|----------|---------------|----------|
| 9am-10am | Jes | Alvin | Fu | Fu | Chao | Yuxi | Nikolay |
| 10am-11am | Jes | Alvin | Yin | Yin | Yin | Yuxi | Nikolay |
| 11am-12pm | Hari | Alvin | Yuxi | Chao | Jose | Jose | Weixin |
| 12pm-1pm | Hardi | Jose | Yuxi | Chao | Jose | Jose | Weixin |
| 1pm-2pm | | | | | | | |
| 2pm-3pm | | | | | | | |
| 3pm-4pm | | | | | | | |
| 4pm-5pm | | | | | | | |
| 5pm-6pm | Hardi | Dennis | Yizhi | Yizhi | Yizhi | Jes/Weixin | |
| 6pm-7pm | Zhongyu | Caglar | Jackson | Sena | Jose | Dennis/Caglar | |
| 7pm-8pm | Zhongyu | Caglar | Jackson | Sena | Jose | Dennis/Caglar | |
| 8pm-9pm | Fu | Caglar | Jackson | Sena | Jose | Dennis/Karl | |

Lab Assignments

Lab assignments will typically require 6-8 hours of work per week, so start lab assignments early.

- Submit labs electronically via Bcourses
- Lab assignments due on Fridays at 11:59 PM
 - Late submissions accepted within 8-hr grace period with 25% penalty;
 - Zero credit after 8 AM next day;
 - The first lab posted September 4th and due on September 11th;
 - You can upload your HWs and update before deadline;
 - The lowest Lab score can be dropped;

Final Project/Exam Schedule

The final project/exam will be in a research project format, which will be from December 5th to December 15th
Final presentation is scheduled on December 15th (Thursday) 3:00 pm to 6:00 pm with 10 Teams.

Required Textbook: An Introduction to MATLAB® Programming and Numerical Methods for Engineers by Timy Siau and Alexandre M. Bayen , Academic Press 2014.