# Digital Signal Processing Laboratory ENGR 4351/5351

**INSTRUCTOR:** Mohamed Bingabr, Ph.D.

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**CLASS HOURS:** R 9:00 pm – 11:50 pm.

**OFFICE HOURS:** MWF 10:00 pm to 11:00 am, R 12:00 pm to 1:00 pm, and by appointments.

**Lab:** Howell Hall 150

# SYNAPOSIS:

This course comprises the laboratory component of ENGR 4333/5333. Laboratory experiments emphasize digital signal processing algorithms and DSP processors.

# PREREQUISITES:

Must enroll in ENGR 4333/5333

# Suggested Text:

“Real-Time Digital Signal Processing from Matlab to C with the TMS320C6x DSPs” 3rd edition by Welch, Wright, and Morrow. <https://rt-dsp.com/3rd_ed/index.html>

* Lab Handouts

# COURSE REQUIREMENTS AND EVALUATION:

* + Students are expected to be punctual
  + No laboratory make up is allowed
  + Lab attendance
  + Laboratory reports

# LAB POLICIES AND PROCEDURES:

1. No food, drink, or tobacco (in any form) is permitted in the laboratory at any time.
2. Book bags, coats, etc. must be stored on the rack provided, not at your workstation or lab bench.
3. At the end of the lab period, check your lab station and leave it in good and neat condition. You must return your table to the state in which you found it. If in the opinion of your lab instructor, your lab station left in an unacceptable condition, a lower score for that lab may result.
4. Each student’s grade for the laboratory will be based on lab reports
5. To compensate for unavoidable absence, your lab instructor may excuse absences for a maximum of one during the semester. An excused absence will be granted only for an event or circumstance beyond the student’s control. To obtain an excused absence, a written request must be delivered in person to your lab instructor within one week upon returning.
6. If you have missed a lab during the semester and been granted an excused absence by your lab instructor, your score for that lab would be the class average score.
7. It is imperative that you be on time for each lab. If you are more than 15 minutes late, you are considered absent for the lab and you will not be allowed to carry out the experiment.
8. A lab report must have **Title Page, Introduction, and Conclusion/Discussion**. Also, figures and graphs generated by the lab must be included in the lab report.

**Distribution of Points:**

Lab Attendance and Reports 70%

Lab Final 30%

**Grading Scale:** A: 90-100; B: 80-89; C: 70-79; D: 60-69; F: 0-59

# LAB TENTATIVE SCHEDULE:

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| Lab 1 | Introduction |
| Lab 2 | Sampling and Aliasing |
| Lab 3 | Quantization and Binary Coding |
| Lab 4 | Introduction to DSP Kit – Talk Through Project |
| Lab 5 | Using DSP Kit – Sampling and Graphic Display |
| Lab 6 | Using DSP Kit – Signal Generator |
| Lab 7 | Using DSP Kit – Filter |
| Lab 8 | DTFT |
| Lab 9 | IIR Filter Design |
| Lab 10 | FIR Filter Design |

## **ADA STATEMENT:**

"The University of Central Oklahoma complies with Section 504 of the Rehabilitation Act of 1973 and the American with Disabilities Act of 1990. Students with disabilities who need special accommodations should make their requests by contacting the coordinator of Disability Support Services, Kimberly Fields at 974-2549/2516, [DSS@uco.edu](mailto:DSS@uco.edu) . The office is located in the Nigh University Center, Room 415. Students should also notify the instructor of special accommodation needs by the end of the first week of class."

Students seeking an accommodation for medical purposes should contact UCO Disability Support Services at 405-974-2516 or [DSS@uco.edu](mailto:DSS@uco.edu).

**STUDENT INFORMATION SHEET**

<https://www.uco.edu/academic-affairs/files/student-info-sheet.pdf>