**ECE 251 Course Syllabus: Spring 2021**  
**Introduction to Microcontrollers and IoT**

**Instructor:** Dr. Ryan G. Kim  
**Office Location:** Engineering C201G (I will not be in much this semester due to COVID-19)  
**Email:** Ryan.G.Kim@colostate.edu  
**Office Hours:** Wed 10:00 – 11:00 AM or by appointment

**Lab TA:** Sumant Sakhalkar  
**Email:** Sumant.Sakhalkar@colostate.edu  
**Office Hours:** TBD

**Class Lectures:** Tuesdays and Thursdays 9:30 – 10:45 AM  
**Lab – S02:** Wednesdays 5:30 – 8:20 PM  
**Lab – S03:** Friday 11:00 AM – 1:50 PM  
**Lab – S04:** Wednesday 8:00 – 10:50 AM  
**Lab – S10:** TBD

**Required Text:** *Embedded Systems with ARM Cortex-M3 Microcontrollers in Assembly Language and C*, Dr. Yifeng Zhu, Third Edition preferred; all editions are acceptable.

**Course Description:** Microprocessor organization, assembly language, C language, I/O techniques, real-time interfaces, applications, hardware and software.

**Prerequisites:** ECE102 (Digital Circuit Logic)

**Grading:**  
The following is the grading breakdown for each major component:  
- Midterm Exams (2)  20%  
- Final Exam  15%  
- Labs & Practicals  35%  
- Homework Assignments  20%  
- Quizzes  10%

**Grading Scale:**  
While lower cutoffs may be used, the following grade cut-offs are guaranteed:

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<tr>
<th>Grade</th>
<th>Percentage</th>
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<tbody>
<tr>
<td>A</td>
<td>93 – 100</td>
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<tr>
<td>A-</td>
<td>90 – 92</td>
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<tr>
<td>B+</td>
<td>87 – 89</td>
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<tr>
<td>B</td>
<td>83 – 85</td>
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<td>C+</td>
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<td>C</td>
<td>70 – 72</td>
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<td>60 – 69</td>
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**Homework:** Homework problems will usually be assigned every other week on Canvas. Late homework will not be accepted without prior instructor approval.

**Quizzes:** Quizzes will be periodically given throughout the semester. They will be used to test knowledge gained during lectures. They will be posted on Canvas and be timed (~5-10 minutes) from the moment you start the quiz.
**Labs:** There will be a series of 8 labs. They will each be either one or two weeks long. There will be one or two lab practical exams during the course that will be held during your respective lab period. These practicals will focus on your programming skills. Successful completion of all labs is required for a passing course grade. Lab reports are due on Canvas the week after they are completed (on the same day as your lab session). Late submissions can be turned in up to 14 days (unless the final deadline near the end of the semester supersedes this) with a penalty of 10% for each day late with a maximum penalty of 50%. After 14 days late, the submission will receive a 0. For example, the maximum score for two days late is 80% while the maximum score for 5-14 days late is 50% and for >14 days late is 0%.

**Exams:** They will all be take-home exams, open book. The midterms will be 24 hours long and the final will be 48 hours long. They will be assigned and submitted through Canvas. Late exams will not be accepted without prior instructor approval.

**Collaboration:** You are expected to work on all homework problems and labs yourself (or within your team), but reasonable collaboration is allowed and encouraged. Copying software from another student is not allowed. No collaboration will be allowed on any quiz, exam or practical.

**Attendance in class is expected.** If you are unable to attend class, it is your responsibility to obtain class notes or other information. Make-up quizzes will not be allowed; however, your lowest quiz score will be dropped from your quiz average.

**Academic Integrity:**
This course will adhere to the CSU Academic Integrity Policy as found in the General Catalog (http://www.conflictresolution.colostate.edu/academic-integrity) and the Student Conduct Code (http://www.conflictresolution.colostate.edu/conduct-code). At a minimum, violations will result in a grading penalty in this course and a report to the Office of Conflict Resolution and Student Conduct Services.

All submitted work should be your own. Copying of language, structure, images, ideas, or thoughts of another, and representing them as one’s own without proper acknowledgement (from web sites, books, papers, other students, solutions from previous offerings of this course, etc.) and failure to cite sources properly is not acceptable. Sources must always be appropriately referenced, whether the source is printed, electronic, or spoken. My policy is that of zero tolerance. Minor first infraction in HWs will lead to a zero score as well as one letter level (e.g. A to B) reduction in the course grade. Major repeated infractions in HWs will result in “F” grade for the course as well as reporting to the Dean’s Office.