Youngstown State University
Syllabus for Embedded System Design, Fall 2014

Course: ECEN 4856  CRN: 42672
Room: 3030 Moser Hall  Time: Tuesday & Thursday 6:35 - 8:30 PM

Course Instructor:
Jason Zapka
jazapka@ysu.edu
Office: Room 3005
Office Hours: M 10-12, W 10-11
T & Th 3:30-4:30 or By Appointment
330-941-3816
webpage http://www.jazapka.people.ysu.edu/

Description: Fundamentals of small-scale and medium-scale embedded systems. Design techniques for processors, timers, input device interfacing, interrupt controllers, and drive circuits. Real-time operating system programming tools. Hardware-software co-designs. Prereq: ECEN 3731 or ECEN3733. 4 s.h.

Note: this is an elective course in Traditional and Computer/Digital Options


Course Outcomes: After successful completion of this class, the students should be able to design, develop and test practical embedded systems using latest engineering tools, such as Quartus II software.

Course Objectives:
1. Understand basic embedded system architecture
2. Design and model simple embedded system
3. Design sequential circuits with FPGA
4. Understand basic concept of the Middleware and application software
5. Obtain teamwork trainings and be able to function individually and in teams

Tentative Outline of Topics: (date subject to change)

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<td>1-2</td>
<td>Introduction to Embedded Systems</td>
<td>9-10</td>
<td>Parallel Processing</td>
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<td>Examples of Embedded Systems</td>
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<td>Review &amp; Exam II</td>
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<td>System on a programmable chip</td>
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<td>Middleware and Application Software</td>
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<td>5</td>
<td>Board IOs; Memory (ROM, RAM, Cache)</td>
<td>13-14</td>
<td>Design embedded system</td>
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<td>6</td>
<td>Review &amp; Exam I</td>
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<td>Group Presentation &amp; Review</td>
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<td>7-8</td>
<td>Embedded Operating Systems</td>
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<td>Final Exam: Thursday Dec. 11th 6-8 pm</td>
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Course Components & Grading:
A total of 5 labs will be assigned. Each will count 20 points, total of 100 points. Typed reports with cover sheet are required. Late lab reports will be penalized by 10% per day.
Two 50-points exams will be given as indicated above. Each exam covers the material since the previous exam. Exam will be open-book and notes.

One 100-points final exam will be given at the final week. Of the total possible 300 points, a student must earn at least 270 points for an “A”; 240 points for a “B”; 210 points for a “C”; and 180 points for a “D”.

Attendance
Attendance will not be used directly in the calculation of the course grade. However, class attendance is essential for good performance. Each student is responsible for all material presented in class. Attendance is required on all test and assignments-due dates; no make-ups will be given unless prior arrangements are made with the instructor.

Academic Honesty
Academic dishonesty is a very serious issue and will not be tolerated—this course will follow University Policy:
Students who engage in dishonesty in any form on examinations, papers, and course assignments, or who illegally possess examinations shall be charged with academic dishonesty. Furthermore, students shall not submit the work of someone else as their own or utilize ideas taken from other sources without properly citing the source. In addition, work completed in one course that is submitted in another course may constitute academic dishonesty.
Cheating shall include, but is not limited to:
1) Use of any unauthorized assistance in taking quizzes, tests, assignments, or examinations;
2) Dependence upon aid of sources beyond those authorized by the instructor in writing papers, preparing reports, solving problems, or carrying out other assignments; or
3) The acquisition, without permission of tests or other academic material belonging to a member of the University faculty or staff.

• Plagiarism shall include, but is not limited to the use by paraphrase or direct quotation of the published or unpublished work of another person without full and clear acknowledgement. It also includes the unacknowledged use of materials prepared by another person or agency engaged in the selling of term papers or other academic materials.

Source: The Code of Student Rights, Responsibilities, and Conduct

Refer to the YSU Undergraduate Bulletin for additional information on consequences of academic misconduct and other university policies.

Center for Student Progress Disability Services
In accordance with University procedures, if you have a documented disability and require accommodations to obtain equal access in this course; please contact me privately to discuss your specific needs. You must be registered with the Center for Student Progress Disability Services, located at 275 Fifth Avenue, and provide a letter of accommodation to verify your eligibility. You can reach CSP Disability Services at 330-941-1372. More information is also available at http://web.ysu.edu/csp.

YSU Academic Calendar
Please refer to the online calendar at http://web.ysu.edu/gen/ysu/Academic_Calendar_m1587.html for important dates and schedules for this semester.