

**UNIVERSITY OF MARY HARDIN-BAYLOR**  
**COMPUTER SCIENCE CLASS SYLLABUS**  
**Spring, 2010**

**GENERAL INFORMATION**

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Course Number:	<b>CISC 3361</b>
Course Title:	<b>System Programming (Robotics)</b>
Number of Credits:	3
Location of Class:	<b>Davidson Building, Room 101</b>
Meeting Time:	<b>9:30 A.M. – 10:50 A.M. T, TH</b>
Professor:	Dr. Edwin Armstrong.
Office:	Room 106 Davidson Building
Office Hours:	See Professor's schedule posted in Davidson
Office Phone:	(254) 295-5118
Email:	<a href="mailto:earmstrong@umhb.edu">earmstrong@umhb.edu</a>
Class web-page:	<a href="http://tinyRealm.com/">http://tinyRealm.com/</a>

**COURSE DESCRIPTION**

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This course will study the methods used to construct a Robotic System from sub-systems. The course is a seminar-style, hands-on survey of mobile robotics. We will build and modify our own robots while studying current approaches to mobile robot motion, issues in real-time control, active sensing and robot learning. This course provides exposure to digital logic, computer architecture at an application level. the first course CISC 3360 is highly recommended. Assignments will be given out in class and posted on the CISC 3361 web-page, along with the BBS - used for class interaction and help; Web-link: <http://tinyRealm.com/~efa/cisc3361/>

**COURSE OBJECTIVES**

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In CISC 3360 we studied sub-systems and individual system components. This course uses some of those sub-systems and components to build an autonomous robotic system. Some of the topics covered will be:

1. The PIC processor
2. Basic Integrated Circuits
3. Embedded design
4. Robot motion and control
5. Sensor and Actuator use and integration
6. Real-time control
7. Assembly language programming and low-level devices.
8. Some basic Electronics and Logic theory.
9. General Robot construction and practices.

## **COURSE MATERIALS:**

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### **Textbook:**

[Robot Builder's Bonanza](#)  
by Gordon McCom, Myke Predko  
[ISBN #: 978-0071468930](#)  
[Publisher: McGraw-Hill, Edition: 3<sup>rd</sup>, Copyright Year: 2006](#)

### **Other items:**

A flash drive is required for this class (at least a 256 Meg drive, a 1 Gig drive is recommended).

## **COMPUTING LABORATORY**

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Our computer lab will have appropriate software installed to allow you to program your Robot board. You are responsible for maintaining backup copies of all your programs. Our web-page at: <http://tinyRealm.com/> will be used to provide software and a BBS for class interaction. One or more contests will occur during the term, facilities will be provided. These count as part of your class participation.

## **COURSE POLICY AND PROCEDURES**

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1. **Grading:** The final grade calculation will be reached according to the distribution described in UMHB Catalog. The final course grade will be computed by the following percentages:

Class participation & Daily Assignments	20%
Tests (2): + FINAL ( <b>lowest score dropped</b> )	30%
Laboratory Projects (extra points for performance)	50%

2. **Attendance:** The student is expected to attend **ALL** scheduled classes and will be held responsible for all class work and assignments. Continued absences will result in an unsatisfactory grade report for the course. To be counted present, a student must be in the classroom during the scheduled class or lab time for as least 80% of schedule time.
3. **Tests:** All students are required to be present for a test. If an extreme emergency occurs, and you cannot make the test time, the student should make every effort to contact the professor by email, telephone or in person to receive permission to miss the test. Permission will be granted only in the case of extenuating circumstances.
4. **Makeup Tests:** Students desiring a Makeup Test must make arrangements with the professor to take the test. A Makeup Test must be scheduled during office hours **BEFORE** the next scheduled test. If a student fails to take a Makeup Test before the next scheduled test, that student will receive a ZERO for the test missed.
5. **Assignments:** All assignments will be due on the **DUE-DATE (normally Monday's)**. They are due at the beginning of a class period.
6. **Final Exam:** The final exam will be comprehensive. **NO MAKEUP WILL BE GIVEN FOR THE FINAL EXAM.**