**Instrumentations I**

**IST 260 Section 201**  **CRN #** 3973 **Spring 2014**

**Instructor:** Dr. Hamid Chahryar

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**Class Hours: M-W 2:30 pm to 3:45 pm ML 119**

**Office Hours:**  M-W-F 11:00 am to 12:00 pm

T 01:30 pm to 04:00 pm

Appointment during the time other than office hours is possible. Call or

E-mail me.

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| **University Policies** | : By enrolling in this course, you agree to the University Policies listed below.   Please read the full text of each policy be going to   http://www.marshall.edu/academic-affairs and clicking on “Marshall   University Policies.” Or, you can access the policies directly by going to   <http://www.marshall.edu/wpmu/academic-affairs/?page_id=802>  Academic Dishonesty / Excused Absence Policy for Undergraduates /   Computing Services Acceptable Use / Inclement Weather / Dead Week /   Students with Disabilities / Academic Forgiveness / Academic Probation and   Suspension / Academic Rights and Responsibilities of Students / Affirmative   Action / Sexual Harassment |

**Text book:**  LabView 2009 Student Edition By: Robert H. Bishop ISBN-100-13-214129-9 Publisher: Prentice Hall

**Computer Requirements:** Supplemental materials can be found contained within the Blackboard Learn environment (<http://www.marshall.edu/muonline/>). I will be sending class announcements, updates, etc. using your Blackboard account (will discuss during the first lecture). Access to a WWW browser is required. Equipment such as various sensors (data acquisition device) and Sensor DAQ (interface from VERNIER) will be supplied by instructor.

**Course Description:** The course introduces students to modern data gathering methods, laboratory instrumentation, and programming. Focuses range from transportation development, forensics, to environmental issues.

**Credit:**The course is three (3) credit hours. It includes classroom lectures, exams, homework assignments, and projects. Students will participate in projects that illustrate the implementation of control over data acquired externally.

**Pre/co-requisites:**None

**Desired Objectives/Outcomes:**  
By the end of this course, you should be able to:

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| Course Student learning outcome | How practiced in this course | How assessed in this course |
| Students will learn the digital system and math operations in various number system including the digital system. | In class lecture, examples and discussions. | End of discussion, deliverable #1 and Mid-term (Week 1, 2, 3)  Quiz #1, Homework #1 |
| Students will be introduced to electrical, electronic circuits and measurement equipment. students will also be introduced to Analog vs. Digital waves | In class demo and discussions. Applied examples. | End of discussion (week 4,5)  Mid-term  Quiz #2, Homework #2 |
| Students will be introduced to various sensors. | In class lecture and demo. Class discussions. They will acquire data (temperature) and manipulate it through the interface. | End of discussion  project, Mid-term & project report , Week 6 |
| Students will be introduced to 4th generation language. The will be introduced to simple control programs. | Students will acquire data (sound) and analyze it through the interface | End of discussion, Quiz #3, project , Mid-term & project report, Week 7,8 |
| Conditional programming and decision making in 4th generation language | Project will be completed. Class discussion will follow. | End of discussion, Project  Mid-term Week 9,10 |
| Students will learn the loop structure in 4th generation language | In class example, discussion and Projects | End of discussion  Projects, Quiz 4 & Final exam, Week 11, 12 |
| Students will learn arrays and Cluster in 4th generation language | In class project, class discussion | End of discussion, projects & Final exam Week 13, 14 |
| Class Discussion | Class discussion and project wrap up. | End of discussion, projects and Final exam Week 15 |

**Instruction method:**  
There will be 3 contact hours of classroom lecture per week. Projects covering major topics are part of the course. Students may work on their assignments/projects only in the room designated by the IST department where the required equipment and material are available.

**Evaluation method:**  
Evaluation of student's performance will be based on the quality of his/her performance on projects, homework assignments, and quizzes.

**Grading policy:**

4 quizzes (5% each) 20%

2 homework (5% each) 10%

Mid-term, October 9th 15%

8 Projects (5% each including project report) 40%

Final Exam, Refer to schedule 15%

**Assessment of Projects:**

The grading of all homework assignments and projects will take into account:

Although the most important attribute of an assignment is correctness, grading will take into consideration efficiency, documentation, etc.

Although interactions with other students are encouraged, you must compose your own answers, unless otherwise noted.

Individuals who utilize other people’s thoughts or ideas must provide appropriate references to said resources, including any and all web resources consulted. Failure to provide such documentation will result in a failing grade for the assignment, and may result in a failing grade for the course.

**Grade distribution policy:**

Final grade >90 letter grade = A

90>Final grade >=80 letter grade = B

80>Final grade >=70 letter grade = C

70>Final grade >=60 letter grade = D

Final grade <60 letter grade = F

**Additional Policy Statements  
My Academic Dishonesty Policy**

Academic Dishonesty is defined as any act of a dishonorable nature which gives the student engaged in it an unfair advantage over others engaged in the same or similar course of study and which, if known to the classroom instructor in such course of study, would be prohibited. Academic Dishonesty will not be tolerated as these actions are fundamentally opposed to "assuring the integrity of the curriculum through the maintenance of rigorous standards and high expectations for student learning and performance" as described in Marshall University's Statement of Philosophy.

If you are found cheating on projects or plagiarizing answers from the Internet or other sources (among other things), there will be no second chance. Your penalty is that you will receive a failing grade for the course. In those cases in which the offense is particularly flagrant or where there are other aggravating circumstances, additional, non-academic, sanctions may be pursued through the Office of Judicial Affairs. Notice of an act of academic dishonesty will be reported to the Department Chair, Dean of the College of Science, and to the Office of Academic Affairs. Please refer to the Marshall University Undergraduate Catalog for a full definition of academic dishonesty.

**Assignments:**  The course includes a number of projects. All assignments are due BY THE BEGINNING OF CLASS on their due date and must be submitted to Chahryar@marshall.edu. NO LATE ASSIGNMENTS WILL BE ACCEPTED.   Please do not procrastinate in working on your assignments or trying to submit through Blackboard as many others have done in the past. If you wait until the last night to start on the project or the last minute to submit, chances are, you will fail.

**Make-up Exams policy:** There won’t be any make up exam or make up project. Also, Make‑up Quiz will not be given except under unusual circumstances and satisfactory written justification. Any student who misses a quiz due to an unexcused absence will receive a grade of zero for that quiz with no opportunity for make-up or substitution. University excused absences or those occurring with a good reason (and that reason must be given prior to missing the exam – call and leave a message if you have to) will be excused. Make up quiz must be taken within one week of the original scheduled date. The decision whether to give a make-up exam rests with the instructor.

**Quizzes:** There will be in total 4 quizzes in this course. Each quiz will have 5% of your final grade for the total of 20%. The date for each quiz will be announced during the session prior to the quiz itself. If for any reason less than four quizzes were administered, the 20% will be shared equally among those already administered.

**Attendance Policy:** Records of attendance will be kept on a daily basis. Successful completion of the course is very unlikely without regular attendance. Therefore, regular attendance is mandatory. Missing each class session will affect definitely your final grade. Please manage your time wisely. It is your decision and your responsibility.

**Withdrawal Policy:** The University withdrawal policy is followed in this course. The last day to drop an individual course for the Fall Semester is March 28, 2014.

**Special Needs:** Student enrolled in H.E.L.P. or any other program at Marshall University must present his/her enrollment documentations to receive the accommodations required by the program. Verbal request from student, in the absence of such documentation, does not obligate faculty to provide any accommodations such as exam-time extension and/or special computer etc…

**Communication:** The Discussion Tool within Blackboard and E-mail to your MU e-mail address will be used to make any general announcements, last minute changes, etc. It is mandatory that you monitor your Blackboard course messages at least once a day.

**Note about cell phones in class:** In compliance with Marshall University’s cell phone policy, please set your cell phone ringer to "Vibrate Only" mode (or turn it off) before you enter the classroom.

**Important Dates:**

Monday, January 13th First Day of Classes

Monday, January 20th Martin Luther King Jr. Day

March 10th Deadline for submitting Freshmen Mid Term Grades

March 17th, to 22nd Spring Break

March 28th Last Day to drop an individual Course

April 8th Assessment Day (In class assignment)

April 28 to May 2nd Dead Week

May 2nd, Last Class Day