Micah's IU Stuff

Micah's Stuff   F401   R341   W220

W220 Syllabus

W220: Tech. Issues:Computer-Based Education

Instructor: Micah Gideon Modell
Office Hours: School of Education Rm 2263, Mondays from 1pm to 2pm

Introduction

Students surviving this blended class will understand more than just how to write a small but useful program. They will teach each other the history of computing, beginning with the hardware (which they will assemble), operating systems (which they will install) and, ultimately, the evolution of programming and programming languages (which they will work with). This will all contribute to their ability to apply this knowledge and implement an efficient team-based software development lifecycle. In effect, they will be well prepared to support technology integration within their school systems and to teach their own students to be similarly competent.

Assuming you want *they* to be *you*, this document is for *you*.

Course Structure

Group Work:

Everyone will be assigned to a group for the purposes of completing the computing-based assignments. These groups will be permanent so you should get to know each other quickly, know each others' schedules and learn how best to work together. The group tasks will be graded as a group with possible adjustments to be applied at the end of the semester based upon continuous assessment reports (see Grading below).

In Class:

This class meets every Monday from 6pm to 9pm in ED-2025.

Each class will begin with a class activity designed to help you understand the programming challenge for the week. With the activity completed and discussed, we will present the programming challenge itself and we will look for and try to understand documents which might help us to complete these tasks. We will then break off into our groups to plan and begin execution of the task.

Outside Class:

This class includes a mandatory online participation component which will culminate in a quiz at the end of each week. Each week's discussion and quiz will be facilitated in the OnCourse forums component. The results of these quizzes contribute substantially to your grade in this course.

The first of these will be facilitated by me, but subsequent weeks will be run by you (specifically, one of you each week). A schedule will be posted in OnCourse and the schedule below will give you an idea of what your topic will be — check it ASAP so you can begin to prepare (please see Course Materials below for guidance)! Before your week begins you will also receive some further hints as to related content to expect on the quiz (not a complete set, but some general hints). The class average will serve as a multiplier for bonus points awarded to the student instructor for the week (see Grading below).

Grading

The three major components of this course are:

> the group programming projects (45%);
> the online discussions (45%); and
> the teaching (10%).

They each comprise a portion of your grade. The grading of each component is complex and described below. Please do not hesitate to contact me with any questions (after this has been explained in class):

The Programming Projects

Each group will build, install and manage their own server machine for the purposes of this class. This is where we will look for the assignments when it comes time to grade them. We will only grade live code that has been published on the server (and we will go over what is meant by this in class). Each project will be graded and every member of the group will receive that same grade for the project.

Every week, each student in the class must complete an online evaluation of every student in their group (including themselves). This will be done through OnCourse and is a requirement. These evaluations will be reviewed at the end of the course for trends in group performance and the overall **Programming Projects** grade will be modified accordingly (i.e. if the reviews indicate that one student consistently put in twice the effort of the others, points from the others may be reallocated to this star performer — it's OK to have a bad week and make it up later, but you will find it tough to make up for a semester of slacking).

Bonus points are also available per project. In the beginning, I will designate certain bonus tasks which may earn your group extra points, but mostly I look to you to be creative and differentiate your project. You will be rewarded for doing so.

The Online Discussions

Each week, every student is expected to participate in the online discussions. This means at least one substantial response posted in the forums over the course of the week and points will be awarded to each poster

each week by the facilitator (student-facilitator awards will be reviewed and verified). This will comprise the participation component.

The other portion of this grade will be driven by your performance on the weekly quizzes. These quizzes will be <u>norm-referenced</u> to adjust for discrepencies in teaching ability.

The Teaching (bonus)

When it is your turn to teach, you will be expected to seed and nurture the conversation in the forums. At the end of the week, you will be expected to allocate a set number of points amongst your classmates based upon their participation. This allocation will be viewed as strong guidance with respect to the week's participation grades. You will receive feedback on the allocation and on the instruction itself in the form of a completed rubric (in <u>OnCourse</u>).

In addition, each week's average class quiz performance will indicate how many *bonus:good teaching points* you will be awarded.

Bonus points may also be available here if one offers specific quiz questions or prepares and facilitates an in-class activity. Both of these possibilities require at least one week of advanced notice to the instructor.

Course Materials

This course is designed to empower its students to be self-sufficient continuous self-learners and therefore all resources required for in-class projects will be obtained through web searches. These will be performed live in class and/or through the "Pencasts" section of this site (powered by <u>LiveScribe</u>).

However, your outside class activities will require research and you may want a greater level of depth on the in-class activities than this course can directly provide (Linux, subversion, apache, etc.). Fortunately, IU partnerships provide us with access to numerous resources for such purposes and I particularly recommend:

> The resources on the <u>UITS Self-Study Training</u> page, including:
> > <u>Lynda.com</u>
> > <u>STEPS Workshops</u>
> The IU Libraries' Resources, including electronic books from:
> > <u>Books24x7</u> and <u>Books24x7 ITPro</u>
> > <u>netLibrary</u>

I found value in the *...For Dummies* series of books when I was starting out with unix years ago. I cannot vouch for them today, but they would certainly be a good place to start (i.e. <u>Linux for Dummies</u>). Other resources such as operating systems and development tools will take advantage of a mix of free and open source software as well as software and hardware provided by IU.

Academic Misconduct

The class is morally and procedurally bound by IU's policies on academic misconduct, the details of which you can read about at the following website: <u>http://www.indiana.edu/~code/code/index.shtml</u>

In this class, if you are able to gain access to our machine without rebooting it, physically tampering with it or compromising access in any way, you may earn bonus points by bringing this to our attention. You will be asked to explain the actions you took and how you would guard against them in the future and are free to take advantage of any insights gained. However, *this does not imply license to damage the machine (or its files) or to copy the files on it and pass them off as your own work product — such actions would definitely be viewed as academic misconduct.*

Teaching & Learning Philosophy

I empower my students to deeply engage with the subject matter and the possibilities it can provide by placing them into a carefully constructed situation, giving them goals and then I travel with them, serving as a guide where one is needed as they make their way – even if they choose a different path than that which I expect them to take and I encourage them to take advantage of the strength of a team whenever it is warranted. There are many milestones by which they can measure their progress from the starting point, but the destination will always be on the horizon.

Week	Activity	Programming Task	New In-Class Concepts	Discussion Topic
1 1/10/11	Your first program	(did you read the activity?)		What are computers?
2 1/24/11	The Human Machine	Build your server	Hardware components	Disk vs. RAM
3 1/31/11	client-server	Install the OS		My OS is better than yours…
4 2/7/11	<variables and if statements>	Build your first Poll	php, variables, if statements, documentation	My language is better than yours…
5 2/14/11	subversion	Save entries in a file	File I/O, data formats, arrays and methods	Master and Servant
6 2/21/11	Decoding	Simple Visualisation	Loops, conditions and arrays	Image-ine that
7 2/28/11	Repeating yourself	Advanced Visualization	3rd Party Libraries	Not Invented Here
8 3/7/11	Your first program - revisited	Tabs	JavaScript	Multi-tasking vs. Multi-threading
9	OOPs	Object Orientation	Object Oriented Programming and	That waterfall's RAD! It's a string!

3/21/11			Refuactoring	It's an integer! No, it's a variant!
10 3/28/11	File It!	Databases	Database Tables and SQL	Of DBAs, SysAdmins and Architects
11 4/4/11	<sql related>			Deployment Models
12 4/11/11	Secret Decoder Ring	Implement Security Library	Security, Encryption	Top Secret!
13 4/18/11	Code Swap	Administration Pages and Realtime Polling		The Life of Software
14 4/25/11			Your Choice	

Questions? Comments? Concerns? [mail me]
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