Syllabus Spring 2011

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Class Times:  Monday & Thursdays 10am-11:50,  West Hall 118, 112 or 110
  We will often meet in EMPAC or other labs, (110 and 112 and TBA)

Course Description :
This course will cover IT based, multi-modal systems (systems that address human perception and expression) and standards used within the arts and for immersive environments. The course will focus on the major platforms, protocols and applications of interactive and immersive technologies including discussions of the relationships of control, recording, generative systems, and real-time performance in a facility such as EMPAC. An emphasis will be placed on practical issues faced by IT professionals and artists in developing immersive environments for live performance, installation, visualization etc.

The class will be held jointly between ITEC, “IT for Arts and Performance,” and ARTS, “Interactive Arts Programming.” This will provide a wide range of experience in programming, IT concepts, artistic and technical experience. While we will be together for many of the lectures, demonstrations and special presentations, there will be different final projects and weekly assignments for the ARTS and IT sections. Much of the class is based in current information and projects going on at EMPAC, and in class presentations of art works and project development. Your attendance, communication, class participation, discussion and class presentations of individual work are crucial.

ARTS-6965
Graduate students in ARTS-6965 will be expected to propose a more significant final project which may be in conjunction with their Thesis/Dissertation development and research. They will meet independently with Prof. Bahn to coordinate their project and will be given additional assignments, readings and guided development work appropriate to their experience level and their research project for graduate credits.
Statement of Learning Outcomes:
At the successful completion of the course, students will be able to:
- Create computer applications to control and coordinate theatrical systems including audio, lighting, video, and rigging.
- Understand basic lighting, video, audio and rigging systems at EMPAC.
- Conceptualize, propose, plan and realize a creative IT/Arts project.
- ARTS students will develop an awareness of systems and protocols and appreciation for what is involved in them relative to the development of artistic projects.
- IT students will develop the knowledge and technical skills needed to develop and understand low-level performance control systems.

Suggested Texts:


Getting Started with Arduino, Massimo Banzi, O'Reilly Media / Make, December 2008

Getting Started with Processing, A Quick, Hands-on Introduction, Casey Reas, Ben Fry, O'Reilly Media / Make, June 2010

Making Things Talk, Practical Methods for Connecting Physical Objects, Tom Igoe, O'Reilly Media / Make, September 2007

Suggested Hardware:
Arduino microprocessor and basic materials to be described in class (breadboard, LEDs, wires etc.)

Required Software:
Processing : free download http://processing.org/
MAX/MSP/JITTER demo: http://cycling74.com/downloads/
Don’t download max demo until assigned please.

Event reports:
You are required to attend at least 2 EMPAC events and write a one page summary of the technological challenges and how they were solved. These are not reviews of the events.

Projects and Presentations:
A large part of your grade will be based on a significant final artistic piece, or project showing artistic and/or technical control or an EMPAC system or other interactive structure. Projects will be discussed in class and will be different according to your section, ARTS or IT.

Project proposals, demos, discussions and formal presentations stress the importance of the process of research, development and realization. You are evaluated on your communication and engagement in
the process of your development as well as the final result. Also, you are expected to share your experience and background to help the class become a pool of knowledge and experience, a “user’s group” atmosphere where we assist each other in the realization of the final projects.

Class attendance and expected participation:

Class attendance is mandatory. TWO unexcused absences will be “overlooked”, but each subsequent unexcused absence will result in a partial grade reduction. (i.e. A to A- to B+ to B, etc.) Chronic lateness will be viewed as an absence. Class participation will count 10% to your final grade.

Grading:

Since this course serves many different levels and programs, much of your evaluation is based on your communication with the instructors about your difficulties, interests, goals and achievements. We will attempt to create personalized versions of certain assignments and projects to address your level and degree program. Much of your evaluation will be based on your process and participation, and not just your results - so, communication is key!

Class Participation, labwork 15%
2 Event reports 5%

Assignments/presentations 30%
(different assignments in IT and ARTS)

Topics Quiz/report 20%
Final project plan 5%
Final Project 25%

Mitigating risks and cutting off disasters:

Backup your work often. As an IT or Arts professional you have to plan for and mitigate hardware and software glitches and unexpected problems. You alone are responsible for the state of your work state. repeated hardware, software and other technical difficulties are not valid excuses for lost work or incomplete projects/ assignments.

Academic Honesty:

Collaboration between students in this course is strongly encouraged. Likewise, students are encouraged—indeed, to some extent required—to exchange ideas, opinions, and information constantly. You are encouraged to help each other with performance, production, and presentation of projects.

Plagiarism of any kind is in direct violation of the University Policy on Academic Dishonesty as defined in the Rensselaer Handbook, and penalties for plagiarism can be severe. In this class you will
be expected to attribute due credit to the originator of any ideas, words, sounds, or work which you incorporate substantially into your own work. This applies particularly to citation of sources for quotes and ideas included in your compositions.

Intellectual integrity is critical to the foundation of all academic work. Academic dishonesty, therefore, is considered a serious matter and will be addressed as such. As defined in the current Rensselaer Handbook of Student Rights and Responsibilities, examples of academic dishonesty include, but are not limited to: academic fraud, collaboration, copying, cribbing, fabrication, plagiarism, sabotage, and substitution. Additionally, attempts to commit academic dishonesty, or to assist in the commission or attempt of such an act, are also violations of the academic integration policy.

If found in violation of the academic dishonesty policy, students may be subject to two types of penalties. The instructor will administer an academic grade penalty and the student may also enter the Institute judicial process. This may result in additional sanctions such as: warning, probation, suspension, expulsion, or alternative actions defined in the Rensselaer Handbook of Student Rights and Responsibilities.

**Course Schedule:**
This schedule is subject to change according to class level/experience and EMPAC scheduling. **COURSE OUTLINE**

<table>
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<tr>
<th>Week</th>
<th>Topics and assignments</th>
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| 1.   | Mon. January 24 - Introduction - classes meet separately?  
Thurs. January 27 - EMPAC TOUR, meet in EMPAC lobby at 10 AM sharp! |
Thurs. February 3 - ARTS: MAX/MSP lab  
IT: embedding the web, other libraries |
| 3.   | Mon. February 7 - Arduino  
Thurs. February 10 - Arduino hands on, networking, etc. |
| 4.   | Mon. February 14 - PD/OSC  
Thurs. February 17 - OSC lab |
| 5.   | Mon. February 21 - NO CLASS – President’s day  
Thurs. February 24 - Pauline Oliveros lecture on Adaptive Use Technologies |
| 6.   | Mon. February 28 - Audio, Video and MIDI  
Thurs. March 3 - MIDI and Audio Lab |
| 7.   | Mon. March 7 - Rigging and Lighting  
Thurs. March 10 - ARTS: midterm project review  
IT DMX Lab |
| 8.   | Mon. March 14 - SPRING BREAK!  
Thurs. March 17 - SPRING BREAK! |
9. Mon. March 21  Integrated Systems - Isadora  
    Thurs. March 24  IT: Project review  
                    ARTS: Project reports

10. Mon. March 28  Technical Applications in the ARTS  
    Thurs. March 31  IT more technical applications  
                    ARTS: reports on artistic uses of technology

THE FINAL PORTION OF THE CLASS WILL FOCUS ON SPECIAL TOPICS AND LABS RAISED
BY PROJECTS, INDIVIDUAL AND SMALL GROUP LABS, COLLABORATIONS BETWEEN IT
and ARTS TBA.

11. Mon. April 4  TBA  
    Thurs. April 7  TBA

12. Mon. April 11  TBA  
    Thurs. April 14  TBA

13. Mon. April 18  TBA  
    Thurs. April 21  TBA

14. Mon. April 25  TBA  
    Thurs. April 28  TBA

15. Mon. May 2  **FINAL PRESENTATIONS**  
    Thurs. May 5  **FINAL PRESENTATIONS**

16. Mon. May 9  **FINAL PRESENTATIONS**

all work due at end of class May 9.