2016 SISS Syllabus

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| --- | --- | --- |
| **Course Name** | New Problems Require New Solutions | **LANGUAGE** |
| English |
| **Course No.-Class** |  |  | **Major** |  |
| **(Credits/Theory/Practice)** |  |  | **(Day/Time/Classroom)** |  |
| **Method** | Lecture/Lab/Demo | **Type** |  |

**＊Professor**

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| **Name** | **Department** | **Personal****Number** | **Office Number** | **E-Mail** | **Available Hours** |
| Todd Holoubek | Visual/Multimedia design | 01067490910 |  | todd.holo@gmail.com | by Appointment |

**1 Course Description &Objective**

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| **1) Course Description (5~10 lines)** |
| This course utilizes the student’s current skill-set to solve a problem. The classes will begin with an introduction to Physical Computing and Basic Programming. They are free to bring any additional skill to the problem solving process. We will look at issues facing our current generation, choose one issue, and as teams, the students will create their solution. This solution can take any shape. The foundation tools for this course are programming (all languages are acceptable. This class will use arduino as its core tool), embedded systems(Arduino, Raspberry PI), the students collaborative skills, and imaginations. The session will end with a presentation of the students solutions. |
| **2) Course Objective** |
| This course allows students to see their own potential for real world problem solving using their current skills as well as applying new technologies to solution design. Each student will walk away with new skills and a process by which they can apply to any projects they encounter in the future. |

**2 Course Resources**

|  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- |
| Seminar( x) | Presentation(x) | Q & A(x) | SpecialLecture() | Field Trip( ) | Handouts() | Audio/Video/TV(x) | Team Teaching( ) |
| Discussion(x) | Small Group(x ) | ProblemSolving( x) | Experiment Practice( x) | CaseStudy() | ComputerAssisted(x) | OHP/Slide( ) | Other( ) |

**3 Main Textbooks & References**

**1) Textbook**

none

**2) Reference**

**arduino.cc**

**processing.org**

**bektodam.com**

**4. Assigned Books**

none

**5. Assignments**

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| **Assignment** | **NO. of** **Times** | **Due** **Week** | **Weighing** | **Contents** | **Method** |
| Set up Wordpress for documentationSet up Dropbox for file sharingGenerate 3 ideas that solve a problem faced by your generationDocument your Progress on your WordPress\* | 1 | 2 | 10 |  |  |
| Create a teamChoose one solution from your team’s listBuild out the concept for presentation.Document your Progress on your WordPress\* | 1 | 3 | 10 |  |  |
| Create a plan for making that solution a reality.Document your Progress on your WordPress\* | 1 | 5 | 10 |  |  |
| Complete your Prototype for presentationDocument your Progress on your WordPress\* | 1 | 8 | 10 |  |  |
| Iterate your prototype based on feedback from your user testing.Document your Progress on your WordPress\* | 1 | 13 | 10 |  |  |
| Create a presentation complete with KeyNote/PPT and DemoDocument your Progress on your WordPress\* | 1 | 15 | 10 |  |  |
| Final Presentation | 1 | 15 | 25 |  |  |
| WordPress Documentation | 15 | weekly | 15 |  |  |

**＊Additional Explanation for assignments**

**Progress documentation is due every week = 15.**

**6. Grading Policy**

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| --- | --- | --- | --- |
| **Method of****Evaluation** | **No. of Times** | **Content of Evaluation** | **Weighing** |
| **Assignment** | 15 |  | 15 |
| **Mid-tem** | 1 |  | 30 |
| **Final** | 1 |  | 30 |
| **Quiz** |  |  |  |
| **Practices** | 15 |  | 15 |
| **Attendance** | 15 |  | 10 |
| **ETC** |  |  |  |

**※Notes**

**5. hours free absences allowed, and 2 points deduction with each additional absence.**

**6 . Weekly Schedule**

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| --- | --- | --- | --- |
| **Week** | **Theme** | **Method** | **Pages** |
| **1** | Class IntroductionDiscussion - Problem Solving | lecture/discussion |  |
| **2** | Introduction to available tools Arduino - Digital OutputProcess: Ideation 1 | lecture/discussion/demo |  |
| **3** | Arduino - Digital InputProcess: Ideation 2 | lecture/discussion/demo |  |
| **4** | Concept presentationArduino - Analog OutputProcess: Planning 1 | lecture/discussion/demo |  |
| **5** | Arduino - Analog InputProcess: Planning 2 | lecture/discussion/demo |  |
| **6** | Arduino - Motor ControlProcess: Prototyping 1 | lecture/discussion/demo |  |
| **7** | Arduino - SensorsProcess: Prototyping 2 | lecture/discussion/demo |  |
| **8** | Prototype Presentations | lecture/discussion/demo |  |
| **9** | Arduino - Sensors 1Process: User Testing | lecture/discussion/demo |  |
| **10** | Arduino - Sensors 2Process: Prototype Iteration | lecture/discussion/demo |  |
| **11** | Projects review | lecture/discussion/demo |  |
| **12** | Fabrication Lab 1Process: Executing the plan | lecture/discussion/demo |  |
| **13** | Fabrication Lab 2Process: Presentation | lecture/discussion/demo |  |
| **14** | Project Building Lab | lecture/discussion/demo |  |
| **15** | Final Presentations | lecture/discussion/demo |  |