Assumption University
Montfort del Rosario School of Architecture and Design
Semester 2-2018

Course Number:	**IND4401 Seminar in Interior Design: Experimental Interactive Design**
Section I:	Tuesday 9:30-12:30 pm
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COURSE DESCRIPTION

This course is a seminar/workshop on interaction design, which is the study of systems and devices that a user can interact. The practice typically centers on embedding information/digital technology into various outputs in the physical world. The course also discusses about human behaviors, social interactions, and the impact of digital media on built environments. Students will be asked to develop their investigations and interests as well as a space for exploration, experimentation, and implementation.

Prerequisite: None

OBJECTIVE

This class will explore the implications of emerging technologies of sensing, reprocessing and displaying information and their impact on the "body" of the building transformed from a seemingly permanent, inert object to an interactive environment.

Through class discussions and intensive hands-on exercises, each participant will first learn about the history of new media art and interaction design from past to present, in order to evaluate each paradigm and its value. Then the class will proceed to investigate various tools and computational techniques for implementing design projects. Students will be expected to explore the research in the three main areas encompassing the design of interactive environment and architecture: How are sensors/receptors embedded in architectural space? What are the reprocessing criteria for organizing, sorting and interfacing with information received? What are the methods, technologies and materials to display? Overlayed on the three is a spatial and infrastructural network that involves informational and behavioral feedback.

Finally, students are expected to design and build the final projects. The final fabrication will apply research at the convergence of spatial design, lighting technology, information technologies, multi media and audiovisual performances.

COURSE OUTLINE
Jan 8th – May 19th , 2018

Phase I: Lecture

Week 1 (Jan 8th, 2018):	- Class/Workshop Introduction - Introduction to Interaction Design
Week 2 (Jan 15th, 2018):	- Audiovisual Performance and Multimedia in Exhibition Design - Assignment I: Case Studies
Week 3 (Jan 22nd, 2018):	- Survey of Tools and Techniques (Input / Output) (Software / Hardware) - Assignment II: Project proposal
Week 4 (Jan 29th, 2018):	- Special lecture by a guest speaker - Assignment II: Project proposal Presentation
Week 5 (Feb 5th, 2018):	- Custom application by Max/MSP, Computer Vision
Week 6 (Feb 12th, 2018):	**-** Physical Computing (Communication between visual & physical world) **-** Assignment III: Light & Color
Week 7 (Feb 19th, 2018):	**HOLIDAY –NO CLASS--**
Week 8 (Feb 26th, 2018):	- Project development

----------Midterm Exam period----------

Phase II: DIY Workshop

Week 9 (Mar 12th, 2018):	Workshop Preparation
Week 10-14 (Mar 14-17th, 2018):	Workshop "Color and Lighting" with Shibaura Institute of Technology, Tokyo, Japan Venue: Shibaura Institute of Technology

Phase III: *Conclusion*

Week 15 (April 23th, 2018):	- Present about workshop in Japan (After come back from Japan)
Week 16 (April 30h, 2018):	- Final conclusion / Submission

----------Final Exam period----------

DESCRIPTION OF COURSE OUTLINES

Phase I: Lecture

Week 1: Class Introduction

The class starts with a survey of individual introduction, interests, and skills. The lecture discusses the course description and requirement. Introduction to Interactive Programming + Computation and Introduction to DIY Workshop are addressed. The lecture involves a study of interactive installation through its masterpieces. Interactive architecture includes artifacts and spaces that sense and respond to their physical environment. By integrating computational technologies into the material fabric of everyday situations, this work questions the role of context awareness and considers the actions and events that might transpire in these new spaces.

Week 2: Audiovisual Performance and Multimedia in Exhibition Design

This lecture focuses on the topics of Audiovisual Performances, and Multimedia in Exhibition Design. This class also explores the possibilities and challenges of designing alternate physical interfaces. In this class, Students have to present their research (Assignment I: Case Studies).

Week 3: Survey of Tools and Techniques (Input / Output) (Software / Hardware)

The survey of art and architectural projects in the digital/interactive media fields from past to present. The lecture also discusses how those projects are implemented. Students will be examining the contemporary landscape of artists/architects/practitioners through many images, movies and websites. Secondly, students will be asked to write their first program in various programming environments such as ActionScript, Processing. Finally, students will be assigned the second assignment--Project proposal, the study of user interaction within a specific context. There will be a presentation in the following week.

Week 4*:* Special lecture by a guest speaker

Assignment II: Project proposal Presentation

Week 5: Custom application by Max/MSP & Computer Vision

This class discusses the introduction of Computer Vision techniques and Vision & Sound with Max/MSP. Max is a visual programming language for the specialized needs of artists, educators, and researchers working with audio, visual media, and physical computing.

Week 6: Introduction to Physical Computing

The workshop starts by discussing the basic concept of physical computing and how this knowledge can be applied architectural and other design fields. Physical Computing explores new ways computers can interact with the physical world. Using non-traditional sensors instead of a standard keyboard and mouse, input such as light, pressure, sound, and body movement trigger programmed responses from a computer. This response can be a virtual or physical event - interacting back with the "real world." This design and art form is in an experimental stage, and its applications vary widely. Multimedia design solutions, robotics, architecture, art installation, remote and embedded control, performance, game design, and multi-user interfaces are only a few possible outcomes. This class will explore hardware input solutions using Arduino, which, when combined with sensors and multimedia software such as Processing, openFrameworks and Cycling74's Max/MSP/Jitter allow for infinite experimentation.

Week 7-9*:* Project development

Continue working on the project. These two intensive weeks will focus on both technical aspect of implementing the project and the conceptual aspect. The design process and methods are required to document in the Workshop website.

Phase II: Workshop

Week 10-14*:*

Japan Tour and Workshop 12-18 March 2019
Workshop "**Colorful Playground for Children**" with Shibaura Institute of Technology, Tokyo, Japan Venue: Shibaura Institute of Technology
Date: 14-17 March 2019

Schedule: Leaving BKK @Donmueng airport around 2 am on12 March
12 BKK-Tokyo and Tokyo surrounding excursion

13 Tokyo free day(Tokyo Famous bldg /Odaiba/Disney sea as self payment Option)
14 Symposium opening/ Tokyo museum excursion
15 workshop excursion @ Teamlab
16 workshop /welcome party (join with other 2 universities)
17 workshop "Color & lighting" final presentation @ Shibaura Institute of tech.
18 Tokyo shopping @Donki shop/aeon shop and visit site near Narita airport. Then back to Bangkok by evening.

Phase III: *Conclusion*

Week 14-15*:* Seminar on Interaction Design
The final week discusses the future directions on Interaction Design. Present the result from the Japan Workshop and submit the Project documentation (movie/blog).

CLASS READING

- **Physical Computing: sensing and controlling the physical world with computers** by Dan O'Sullivan and Tom Igoe.
- **4dspace: Interactive Architecture (Architectural Design)** by Lucy Bullivant
- **Digital Art (World of Art)** by Christiane Paul.

ADDITIONAL READING

- **Smart Materials and Technologies in Architecture** by Michelle Addington and Daniel L. Schodek.
- **The New Media Reader** by Noah Wardrip-Fruin and Nick Montfort.

WEB RESOURCES

- **http://www.creativeapplications.net/**
- **http://processing.org/**
- **http://www.openframeworks.cc/**
- **http://www.infosthetics.com/**

COURSE FORMAT

This course is a combination of reading assignments, class lectures, DIY workshop, projects, examination, and Final Seminar.

- Lectures by instructors and guest lecturers
- Workshop
- Students' project presentations

Also there are assignments during this semester. For examination purposes, you are responsible for all materials from readings, class lectures, and information that will be announced later.

GRADING

According to the University grading criteria, the meaning of grades are as follows:

A = superior ; A- = excellent ; B+ = very good ; B = good ; B- = fair ; C = acceptable ; D = minimum ; and F = inadequate. For grading purposes, the value of each part will be as follows:

Class Attendance	5 %
Midterm Examination	25 %
Final Examination	30 %
Assignments	40 %

(Case Studies 5%, Light & Color Experiment 5%, Project proposal 10%, Final Project documentation 20%)

TOTAL 100 %

Once the total number of points is calculated, the score is adjusted by a course participation factor. The course participation factor is based on the instructor's evaluation of each student's participation in the course. Course participation is determined by attendance, preparation for class, and discussion in class. This factor can increase or reduce the total number of points by as much as 15%.

DEADLINES

Projects and assignments are due at the beginning of the class as indicated in the assignment handout and will not be accepted after the due date. The only exceptions are when written documentation of personal illness is provided. In these two instances the project/assignment is due during the next regularly scheduled class. In all other cases, late projects and assignments will receive a grade of F.

PARTICIPATION AND ATTENDANCE POLICIES

Students are expected to actively and thoughtfully participate in class discussions by sharing observations, insights, and questions with the instructor and members of the class. Discussion will allow each student to benefit from all other students' insights and to work towards a final interpretation or understanding that may differ from the one he or she reached individually. This requires that assigned reading and homework exercises be completed prior to the class session.

Students are responsible for regular and punctual class attendance and should be in their seats before the start of class. Attendance is taken, and there are 3 absences allowed per semester. Being late for three times will be counted as one absence.

Last day to withdraw with "W": Friday, MAY 3rd, 2018