

Course Syllabus

Course Title:	Emerging Technologies
Course Number:	GWDA313
Class Meetings:	Section A, Monday, 12:30-4:30p, Rm 317 2900 MAIN. The quarter begins on Monday, 4/3/2017 and ends on Saturday, 06/17/2017.
Session/Year:	Sp17
Instructor Name:	Dr. Pete Markiewicz
Email Address:	pmarkiewicz@aii.edu
Office Hours:	Monday, Tuesday, Wednesday, Thursday, 11:30-12:30 Rm. 217 BY APPOINTMENT ONLY.
Phone:	Comeon, it's the 21st century, dude
Class website:	http://www.plyojump.com/courses
Contact me at:	pindiespace@gmail.com
Social Networks	On Facebook or Linkeding (preferred) username: "pindiespace" or search on "Pete Markiewicz"

Emerging Technologies

Course Description:

This courses examines the concepts and methodologies used in emerging technology. In this course students research new interactive media technologies and develop projects around their research.

Course Focus:

In this course, students will study, learn, and implement a component of modern interactive design and programming systems.

Course Corequisite(s): none

Course Length:	11 Weeks
Contact Hours:	44 Hours
Lecture:	22 Hours per quarter
Lab:	22 Hours per quarter
Credit Values:	3 Credits

Quarter Credit Hour Definition:

A quarter credit hour is an amount of work represented in intended learning outcomes and verified by evidence of student achievement that is an institutionally established equivalency that reasonably approximates not less than:

- (1) One hour of classroom or direct faculty instruction and a minimum of two hours of out-of-class student work each week for 10-12 weeks, or the equivalent amount of work over a different amount of time; or*
- (2) At least an equivalent amount of work as required in paragraph (1) of this definition for other academic activities as established by the institution including laboratory work, internships, practical, studio work, and other academic work leading to the award of credit hours.*

Course Competencies:

Upon successful completion of this course, the student should be able to:

- *Recognize technology directions from readings in industry periodicals.*
- *Describe career opportunities using the new technology.*
- *Evaluate professional skills relative to above applications/technologies in possible career paths and projects in the above-mentioned areas.*
- *Compare and contrast types and availability of new emerging technologies and how they are/will effect industry trends.*
- *Application of the technologies necessary for implementation of emerging trends in hands on project.*

Course Focus Competencies:

- *Learn the specific technologies required to implement a specific emerging technology*
- *Create a simple system using features of a specific emerging technology.*
- *Create a document describing an emerging technology project, its relationship to current technology, professional skills, and career opportunities.*
- *Develop a project in the context of emerging technology using a mix of authoring and programming.*

Course Prerequisite(s): *MM3001 Interface Design II*

Instructional Materials and Reference:

Text(s):

- a. HTML5 Games: Creating Fun with HTML5, CSS3, and WebGL, by Jacob Seidlin (2nd Edition), Wiley, ISBN-10: 1118855388, ISBN-13: 978-1118855386, http://www.amazon.com/HTML5-Games-Creating-CSS3-WebGL/dp/1118855388/ref=dp_ob_title_bk

- b. JavaScript: The Good Parts, by Douglas Crockford (2008), ISBN-10: 0596517742 ISBN-13: 978-0596517748. <http://www.amazon.com/JavaScript-Good-Parts-Douglas-Crockford/dp/0596517742/>

Online Resources:

Numerous online tutorials, assigned during Labs.

Method of Instruction:

This course will include (1) lectures on topics in the required textbook and selected documents on the Internet, (2) labwork allowing students to apply concepts introduced during lectures, and (3) homework assignments which allow students to practice programming techniques introduced in class. Homework may include extra-credit options allowing students to go beyond the required programming techniques introduced in class. Homework from the previous week is presented in-class prior to the beginning of the lecture with basic and extra-credit options.

Materials and Supplies: Internet connection, backup media (CD-ROMs or thumbdrives)

Estimated Homework Hours: 4 hours per week

Technology Required: Computer lab with Internet access

Digital Bookshelf & Course eBook:

If your class uses an electronic book, “eBook”, your required textbook for this course is delivered via electronic format. You do not need to purchase a hardcopy textbook. You will be able to access your eBook via eCompanion (<http://myaicampus.com>) beginning no later than the first day of class. Once you have accessed your eBook via eCompanion, you can then also choose to download the eBook to a personal computer using the Digital Bookshelf software (<http://vitalsource.com/downloads>). Please refer to the Ai Digital Bookshelf Student User Guide, available in eCompanion, for specific instructions.

To start using your eBook, enter the eCompanion site for this class. Click on the “Digital Textbook” link on the left-side navigation bar. Then, click on the link for the book.

For support using the Digital Bookshelf, contact Campus Support at 1-866-642-2771 or campus_support@aii.edu. This support group is available SEVEN DAYS A WEEK from 7:00 AM – MIDNIGHT Eastern Time.

Grading Scale:

All assignments must have clear criteria and objectives to meet. All students shall be treated equitably. It will be that student’s right to know his/her grade at any reasonable point that information is requested by that student. The criteria for determining a student’s grade shall be as follows (on a percentage of total points basis):

Grade	Grading Scale	Grade Calculations
A	100 – 93	4.0 points
A-	92 – 90	3.7 points
B+	89 – 87	3.4 points
B	86 – 83	3.0 points
B-	82 – 80	2.7 points
C+	79 – 77	2.4 points
C	76 - 73	2.0 points
C-	72 – 70	1.7 points
D+	69 – 65	1.4 points
D	64 – 60	1.0 points
F	59 and below	0.0 points

Process for Evaluation:

Class Participation	10%
Assignments and Exercises	50%
Mid-Term Project/Examination	15%
Final Project/Examination	<u>25%</u>
Total	100%

***PLEASE NOTE: SHOWING UP TO CLASS AND DOING ALL ASSIGNMENTS, WITHOUT PROGRESS, DOES NOT CONSTITUTE A PASSING GRADE.**

Student Evaluation/Grading Policies:

- Class time will be spent in a productive manner.
- Grading will be done on a point system.
- Points for individual activities will be announced.
- All work must be received by the set deadlines.
- Late work receives a grade of zero.
- On-time projects may be redone with instructor approval.
- ABSOLUTELY NO WORK WILL BE ACCEPTED AFTER THE FINAL CLASS MEETS WEEK 11.

Classroom Policy:

- No food allowed in class or lab at any time. Drinks in re-closeable bottles allowed in classroom.
- Edible items brought to class or lab must be thrown out.
- If student elects to eat/drink outside class or lab door, missed time is recorded as absent.
- Break times are scheduled by the instructor at appropriate intervals.
- No private software is to be brought to lab or loaded onto school computers.
- No software games are allowed in lab (unless in course curriculum).
- Headphones are required if listening to music during lab. No headphones are allowed in lecture.
- Any student who has special needs that may affect his or her performance in this class is asked to identify his/her needs to the instructor in private by the end of the first day of class. Any

resulting class performance problems that may arise for those who do not identify their needs will not receive any special grading considerations.

- Cell phones may NOT be used in the classroom. If you have an emergency that requires you to take a call during class, you MUST inform the instructor before class begins, and step outside the room to take the call or text message.

Attendance Policy:

The Art Institute of Campus is committed to learning-centered, hands-on instruction, which can only be accomplished when students attend class. There are no excused absences. The satisfactory explanation of an absence does not relieve the student from responsibility for the course work assigned and/or due during his/her absences. A student who does not attend class during the first week of school or starts late is still held responsible for his/her absences.

A student who is absent for three cumulative weeks* will be withdrawn from the course and will receive a Withdrawal (W) grade during weeks 1 through 9 of an 11 week term and a Withdrawal/Fail (W/F) grade after week 9 of an 11 week term for that course (after week 4 of a 5.5 week Mid-quarter ground term) unless the student submits an appeal to remain in class that is accepted by the instructor and department director/dean. A student is allowed only one appeal per class. In other words, if a student submits an appeal and it is approved, the next absence will initiate a non-appealable withdrawal from the course. The Attendance Appeal Request Form may be found in the Registrar's Office.

It is your responsibility to stay in communication with your instructor about absences in order to stay current with assignments. You are expected to spend the entire amount of scheduled class time in the classroom. If you are dropped from the class, you may have the opportunity to appeal. It is your responsibility to ensure that your attendance in class is brought to the faculty member's attention if you arrive late.

Students who are not marked present in any of their scheduled classes for fourteen (14) consecutive calendar days before the end of the ninth week of the 11 week term (week 4 of a 5.5 week Mid-quarter ground term), will be withdrawn from the Institute and will receive W's (withdrawals, with no grade penalty), or if the withdrawal occurs after the end of the ninth week of an 11 week term (after week 4 of a 5.5 week Mid-quarter ground term) students will be withdrawn from the Institute and will receive WF's (Failures due to late withdrawal). Calendar days include days that the student does not have any scheduled class. All calendar days that the school is not in session (e.g., school closings and holidays) do not count in the fourteen (14) calendar days as well during the active term. Students who have been withdrawn due to violation of the consecutive absence policy, but are still in good academic standing, if otherwise eligible, will be able to return the following term through the normal readmissions process. Students who have been withdrawn and the withdrawal results in a violation of the satisfactory academic progress policy (SAPP) must follow the procedure for appealing the academic dismissal.

Students are encouraged to make all schedule changes early in the first week of the quarter to minimize absences. Failure to sit in all classes during the first two weeks of school will result in termination from school for the quarter. Detailed information about scheduled adjustment periods can be found on the back of your official schedule or in the local Ai campus catalog.

If you are going to miss class, regardless of the reason, you should notify your instructor. You are responsible for gathering any information from the missed class period in a timely manner.

Ai Unearned F (UF) Grade Definition:

Unearned F Grade: students who failed the course AND did not complete the final assignments in the course. Final assignment include, but is not limited to a final exam, final project, final paper, portfolio presentation, capstone project or any other assignment due in the last week of the course. If a student completed some or all of the other requirements in the course but did not complete the final assignment of the course and failed the course, the F grade will be considered unearned. An unearned F grade will be reflected as a "UF" grade on the transcript. The course's instructor will award this grade when appropriate.

Veteran Affairs Course Attendance Policy:

- Students who receive VA educational benefits are required to pursue each of their courses to be eligible for benefits. In order to receive the full benefit allowance the student must attend all classes in which the student is registered throughout the academic term at the campus.
- A student who is absent from a particular course for a period of 14 consecutive calendar days will be considered not pursuing the course.
- At the end of a quarter, a student must complete their final assignment or take their final exam (these dates must be documented) or not receive a grade of W, WF or an unearned F, or their last date of attendance will be provided to the VA.

Withdraw from a Course:

In order to withdraw from a course (that is, receive a grade of "W"), a student must meet with his or her Academic Director before noon on the Friday of week 9.

Academic Dishonesty :

Students are expected to maintain the highest standards of academic honesty while pursuing their studies at The Art Institutes. Academic dishonesty includes but is not limited to: plagiarism and cheating; misuse of academic resources or facilities; and misuse of computer software, data, equipment or networks.

Plagiarism is the use (copying) of another person's ideas, words, visual images or audio samples, presented in a manner that makes the work appear to be the student's original creation. All work that is not the student's original creation, or any idea or fact that is not "common knowledge," must be documented to avoid even accidental infractions of the conduct code.

Cheating is to gain unfair advantage on a grade by deception, fraud, or breaking the rules set forth by the instructor of the class. Cheating may include but is not limited to: copying the work of others; using notes or other materials when unauthorized; communicating to others during an exam; and any other unfair advantage as determined by the instructor.

Students accused of academic dishonesty will be brought before a Student Conduct Committee. If the committee determines that there has been a violation of the Academic Dishonesty policy, the student will automatically fail the class and, depending on the severity of the infraction, may face further disciplinary action up to and including suspension from classes or expulsion from school.

Disability Services

AiCaLa provides accommodations to qualified students with disabilities. The Disability Services office assists qualified students with disabilities in acquiring reasonable and appropriate accommodations and in supporting equal access to services, programs and activities at AiCaLa.

Students who seek reasonable accommodations should notify the Disabilities Services Coordinator at Ashley Fowler, telephone number 412.518.3301, dss@aii.edu, of their specific limitations and, if known, their specific requested accommodations. Students will be asked to supply medical documentation of the need for accommodation. Classroom accommodations are not retroactive, but are effective only upon the student sharing approved accommodations with the instructor. Therefore, students are encouraged to request accommodations as early as feasible with the Disability Services Coordinator to allow for time to gather necessary documentation. If you have a concern or complaint in this regard, please contact the Director of Student Services in Room 222, telephone number ex. 6156. Complaints will be handled in accordance with the school's Internal Grievance Procedure for Complaints of Discrimination and Harassment.

Student Assistance Program:

The Talk One2One is a pre-paid service, provided through The Art Institute of California – Los Angeles, that offers a menu of services and support accessible 24/7 to assist the student in attaining balance and academic success, including: counseling, budget and debt assistance, information and resource referrals, consultations, and new parent coaching. If you are in need of services, contact Talk One2One at 888-617-3362.

Tutoring Center:

Full-time faculty will be available during office hours to share knowledge, engage in dialogue and/or give advice and guidance to our student body in the Student Success Center. Students may meet with full-time faculty during their office hours by scheduling an appointment with the faculty member.

Commitment to Excellence – Reading/Writing/Comprehension:

While the principal goal of this course is the acquisition of knowledge in the subject area, students should be aware that The Art Institute of California requires that research on a particular topic and clear and effective writing be an integral part of the learning process.

Media Policy:

All media (images, videos, audio, etc.) used for assignments must be legally obtained, and use of that media must not infringe on any copyrights. Violations of this policy in any assignment will result in a failing grade for that assignment. Documentation of media sources will be required for each assignment.

Communication:

We will use eCompanion for communication during the term. It is your responsibility to check the system and your email daily and be prepared for possible changes and announcements. Use the eCompanion network to get homework assignments and to contact your classmates for notes and details if you miss a class. Homework will be turned in during class or through the eCompanion dropbox. Late homework must be turned in to the correct dropbox in eCompanion to be graded.

Library Assignment:

All students will need to utilize the Library for research and reference throughout the quarter. The Library is a valuable source for finding design ideas that will be needed for this course, i.e.: inspiration and design fundamentals for mid-term and final projects; locating popular trends in design, illustration and photography; referencing past award winning designs which may be used as a guide; identifying benchmarks or referencing competent design works.

Student Art Work:

All student work, which has not already been returned during the quarter, will be available for pickup no later than 5:00 pm, Monday of the first week of break. Any work NOT picked up by that date and time will be discarded unless other arrangements have been made. Students must take personal responsibility for their work.

Additional Policy notes for this Instructor:

1. **If you don't understand, come to office hours...**
2. **Office hours are not a second lecture** – they are designed to give you additional help for problems you didn't understand in class.
3. **You are completely responsible** for your own performance in class.

Weekly Outline

Friday, April 14th, and, Monday, May 29th, are Campus Holidays. No classes are scheduled.

Week 1: **Lecture:** Intro to class, Requirements and competencies. Introduction of the current set of emerging tech studied in the course. Relationship of emerging tech to industry careers. Trends in use and adoption of emerging technology. Debugging as a key to developing emerging tech projects.

Lab: Students set up a design and development environment. Students build HTML5 boilerplate with JS polyfills.

Homework: Group research into current status of emerging tech studied in this course.

Week 2: **Lecture:** Review of programming theory (variables, control statements, loops, functions, function interfaces, anonymous functions, closures, objects, events).

Lab: Students set up a command-line environment, download boilerplates, and create basic programs.

Homework: HTML5 Game tutorials I. Read Chap 1, textbook. Develop a specific version of emerging tech relative to that described in the textbook.

Week 3: **Lecture:** Game design documents, and “gameification” of interaction design. Relation of gameification to emerging tech. Design patterns (modules, preloaders, event handlers, dynamic DOM updates, Local Storage). Browser testing and cross-browser compatibility.

Lab: Students work through Chap2. Textbook, demonstrating debugging skills. Students test boilerplates in different browsers.

Homework: Continue work to complete Chap. 2, textbook. Create a boilerplate to replace the basic boilerplate in Chap. 2. Begin creating media assets for final project (individuated version of emerging tech).

Week 4: **Lecture:** OOP programming principles (objects, properties and methods, constructors, getters and setters, JavaScript prototypes, encapsulation, inheritance,

polymorphism. “Gang of Four” design patterns. JavaScript, ActionScript, and UnityScript compared.

Lab: Students turn in their modified boilerplate. Students work through an ActionScript and/or UnityScript project

Homework: Students embark on their Forced Code March for their final project. Work through Chap. 3 of text.

Week 5: **Lecture:** none

Lab: Work on midterm (will take entire class). Demonstrate debugging and command-line skills, effective work with development environments and basic OOP programming.

Homework: Students carry Final project (modified) through Chap 3 of text.

Week 6: **Lecture:** The MVC Design pattern and emerging tech. MVC systems (e.g. AngularJS).

Lab: Students work through MVC tutorials. Students work on Chapter, 4, 5, 6 of text.

Homework: Students continue working on final project through Chapter 6.

Week 7: **Lecture:** Events and DOM events. WPO. Promise design pattern.

Lab: Students work through online event tutorials and a Promise tutorial. Students work on final project through Chap. 7 of text. Students use YSlow, Google Page Speed to evaluate web WPO and sustainability.

Homework: Students continue working on final project through Chapter 7.

Week 8: **Lecture:** Advanced debugging techniques. Unit testing and End2End testing. The AngularJS testing environment.

Lab: Students demonstrate their current progress in class. Students work on adapting Unit and End2End testing for their project.

Homework: Continue work through final project, Chapter 8-12. More advance work in later chapters will result in extra credit.

Week 9: **Lecture:** 3D on the Web. WebGL. Other advanced JS APIs (battery, vibration).

Lab: Students work through a 3D WebGL tutorial via a framework (Three.js, Babylon)

Homework: Continue work through final project, Chapter 8-12. More advance work in later chapters will result in extra credit.

Week 10: **Lecture:** Ajax. Mashup APIs. Remote databases. JSON and XML datasets. NoSQL databases (MongoDB).

Lab: Students complete work on final project.

Homework: Students demonstrate complete work. Project MUST BE DONE by the end of Week 10 in order to pass the course.

Week 11: **Lecture:** none

Lab: Students present their final project results and deliverables.

Homework: none