

# USC Iovine and Young Academy

*Arts, Technology and the Business of Innovation*

## IDSN 530: Technology Essentials

Units: 3.0

Fall 2020: Tuesdays 5:30 – 6:30 pm

**Location:** Online

**Instructor:** Michael Crowley

**Office:** crowley@usc.edu

**IT Help:** 2U Student Support

**Hours of Service:** Available 24/7, 365 days/year

**Contact Info:** [studentsupport@design.usc.edu](mailto:studentsupport@design.usc.edu), 1-855-487-3504

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### Course Description

Technology Essentials establishes a fundamental understanding of engineering and technology across a wide range of areas. Students build theoretical fluency in core concepts, methods, and technologies, and in some cases develop limited technical competencies. The purpose of this foundation is to create technological fluencies that will enable students to:

- Understand the technological aspects of projects, from their essence and goals to scopes and budgets
- Improve interactions and teamwork with engineers on projects and teams
- Better recognize technology opportunities for disruption and innovation in projects and start-ups.

### Learning Objectives and Outcomes

Students will acquire a degree of theoretical fluency in technology and engineering that enables them to understand:

- How computing technologies have disrupted and transformed businesses and industries
- The process of designing and developing a web-based application, from consumer user experience (UX) to back end, through hands-on experiences
- Capabilities of the cloud and its impact on (and opportunities for) technological development, capabilities, and businesses
- The purpose of storing and structuring data, such as in a database
- Core business, design, and development considerations for creating mobile applications and Internet-enabled devices
- The basics and uses of data analytics
- Security and performance considerations that impact all of the above.

**Recommended Preparation:** No prior technology knowledge is required or expected for this class. Those with extensive prior technology education or experience are encouraged to complete IDSN-525 Business Essentials or ISDN-520 Design Essentials in lieu of this course. More in-depth technology instruction is available through the ACAD-590 Directed Research course requirement.

### Course Notes

This course will be conducted online, using a combination of synchronous and asynchronous methods.

### Technological Proficiency and Hardware/Software Required

Students must provide their own laptop. The laptop specifications take into consideration that students will be creating, streaming, and downloading audio and video, communicating using video-conferencing applications, and creating and storing large multimedia files.

	Apple	Windows PC
<b>Laptop (Minimum standards)</b>	<ul style="list-style-type: none"> <li>• 2.6 GHz dual-core Intel Core i5 or 2.0 GHz quad-core Intel Core i7</li> <li>• Minimum 13" display</li> <li>• 250 GB SSD or larger</li> <li>• 16 GB memory</li> </ul>	<ul style="list-style-type: none"> <li>• Intel Core i5 or Intel Core i7</li> <li>• Minimum 14" display</li> <li>• 250 GB SSD or larger</li> <li>• 16 GB memory</li> </ul>
<b>Warranty</b>	<ul style="list-style-type: none"> <li>• Manufacturer warranty or extended warranty coverage (Apple Care)</li> </ul>	<ul style="list-style-type: none"> <li>• Manufacturer warranty or extended warranty coverage</li> </ul>
<b>Operating System</b>	<ul style="list-style-type: none"> <li>• Mac OS X 10.13 or higher</li> </ul>	<ul style="list-style-type: none"> <li>• Windows 7, 10 operating system or higher</li> </ul>
<b>Peripherals</b>	<ul style="list-style-type: none"> <li>• HD webcam, speakers and microphone (Most newer laptops have built-in webcam, speakers and microphone)</li> <li>• Headset</li> <li>• Digital camera (Cameras on newer smartphones are acceptable)</li> <li>• External drive for cloud account for backup and storage</li> </ul>	
<b>Software</b>	<ul style="list-style-type: none"> <li>• Adobe Creative Cloud (Photoshop, Illustrator, and InDesign)</li> <li>• Adobe Acrobat Reader</li> <li>• Microsoft Office Suite</li> <li>• Sophos Endpoint Security (antivirus)</li> <li>• Browser: Most recent version of Firefox, Chrome, Safari, or Internet Explorer</li> </ul>	
<b>Network</b>	<ul style="list-style-type: none"> <li>• Cable modem, DSL, T1/T3 or higher</li> </ul>	

### How to Purchase Software at the discounted Academy Rate through the USC Bookstore:

The following first year software are now available for purchase online through the USC Bookstore at the Academy discounted rate:

<u>Software</u>	<u>IYA Short-Term License at USC Bookstore</u>
Adobe Creative Cloud	\$70 2020-2021 annual license
Apple Logic Pro	\$35 semester license
Solidworks	\$35 semester license
Apple Final Cut Pro	\$35 semester license

1. Visit the USC Bookstore online: <https://www.uscbookstore.com/uscivsoftware>
2. Select the software license(s) you would like to purchase.
3. When you proceed to checkout, add the Promo Code "IYASoftware" (This will override the listed taxes).
4. For shipping, select FedEx Home Delivery (free).

5. Once you complete your online purchase, you will receive a confirmation email/receipt. (Note that even if a shipping charge appears on your invoice, it will not be charged to your credit card. This relates to a known technical problem with the Bookstore's online store.)
6. Upload your receipt [here](#) to receive access to your purchased license.
7. You will be notified by email when the license has been activated

### Required Readings and Supplementary Materials

Required reading will be drawn from textbooks, articles, papers, cases, and online publications (e.g., articles, op-ed essays) available through a host of available outlets; in all instances, the material will be delivered via computer. Students will also be required to view online videos; complete web-based, interactive exercises; and respond to peer and faculty comments (within an online discussion forum or group discussion). Lectures, readings, and viewings will be supplemented with current articles and audio/video content.

### Grading Breakdown

Assignment	Points	% of Grade
Assignments	675	71.05%
Labs	125	13.16%
Section Attendance and Asynchronous Exercises	150	15.79%
<b>TOTAL</b>	<b>950</b>	<b>100%</b>

Assignments	Assigned	Due	Points
Assignment 1: Interests and Hobbies Website	Week 2	W4	100
Assignment 2.1: Interactive Website (GROUP), <i>Proposal and Wireframes</i>	Week 4	W5	50
Assignment 2.2: Interactive Website (GROUP), <i>FrontPage and Style Sheet</i>	Week 5	W7	100
Assignment 2.3: Interactive Website (GROUP), <i>Final Build With Video and jQuery</i>	Week 7	W9	150
Assignment 3: Database Commission	Week 8	W9	50
Assignment 4.1: Mobile Project, App Idea (Individual)	Week 9	W10	25
Assignment 4.2: Mobile Project, Pitch Deck (GROUP)	Week 10	W12	150
Assignment 5: Analytics Paper	Week 14	W15	50
<b>TOTAL</b>			<b>675</b>
Labs	Assigned	Due	Points
Lab 1: Edit Student Information File, Post to Web	Week 1	W2	5
Lab 2: Web Page on Past Projects	Week 2	W3	25
Lab 3: Web Page That Is Mobile Responsive	Week 4	W5	15
Lab 4: jQuery Exercise	Week 5	W6	10
Lab 5: Research on Implementing an API, Plug-in or Library	Week 7	W8	15
Lab 6: Web Page Build in Bootstrap	Week 8	W9	10
Lab 7: Research Into Server Scoping	Week 9	W10	15
Lab 8: AR/VR Proposal	Week 12	W13	15
Lab 9: ML exercise	Week 13	W14	15
<b>TOTAL</b>			<b>125</b>

## Grading Scale

Course final grades will be determined using the following scale:

A	95-100
A-	90-94
B+	87-89
B	83-86
B-	80-82
C+	77-79
C	73-76
C-	70-72
D+	67-69
D	63-66
D-	60-62
F	59 and below

## Assignment Submission Policy

All assignments and labs must be delivered, per instructor guidelines to be distributed, by **noon Pacific Time** on the date (of that section's live session) that deliverable is listed as due. No exceptions. (Early submissions are, of course, encouraged!)

## Late Submissions

Assignments will be accepted after the deadline with the following grade penalties. Do not ask for extensions.

- Submission in the 24 hours after the deadline 10% deduction
- Submission between 24 and 48 hours after the deadline 20% deduction
- Submission between 48 hours and 3 days after the deadline 50% deduction
- Submission more than 3 days after the deadline 100% deduction

*Keep copies of all your files and emails until the end of the semester.*

## Grading Timeline

We will do our best to have everything graded within one week of the due date.

## Correcting a Grading Error or Disputing a Grade

If you don't inform the instructor of missing or incorrect grades within two weeks of those grades being posted, the grades will be assumed correct. Do not wait until the semester's end to check or appeal any grades. If you feel a grade merits re-evaluation, you are encouraged, within one week of the instructor providing a grade and initial feedback, to send the instructor a memo in which you request reconsideration. The memo should include a thoughtful and professional explanation of your concerns. Be aware that the re-evaluation process can result in three types of grade adjustments: positive, none, or negative. (Note: Complaints on the date of a graded assignment's return to you will not be addressed; it is essential to wait one full day prior to raising a concern.)

## Academy Attendance Policy

The Academy maintains rigorous academic standards for its students and on-time attendance at all class meetings is expected. Each student will be allowed two excused absences over the course of the semester for which no explanation is required. Students are admonished to not waste excused absences on non-critical issues, and to use them carefully for illness or other issues that may arise unexpectedly. Except in the case of prolonged illness or other serious issue (see below), no additional absences will be excused. Each unexcused absence will result in the lowering of the final grade by  $\frac{1}{3}$  of a grade (e.g., an A will be

lowered to A-, and A- will be lowered to a B+, etc.). In addition, being tardy to class will count as one-third of an absence. Three tardies will equal a full course absence.

Students remain responsible for any missed work from excused or unexcused absences. Immediately following an absence, students should contact the instructor to obtain missed assignments or lecture notes and to confirm new deadlines or due dates. Extensions or other accommodations are at the discretion of the instructor.

Automatically excused absences normally may not be used for quiz, exam or presentation days. Using an excused absence for a quiz, exam or presentation, such as in the case of sudden illness or other emergency, is at the discretion of the instructor.

In the case of prolonged illness, family emergencies, or other unforeseen serious issues, the student should contact the instructor to arrange for accommodation. Accommodation may also be made for essential professional or career-related events or opportunities. All accommodations remain at the discretion of the instructor, and appropriate documentation may be required.

### **Additional Policies**

Add any additional policies that students should be aware of: late assignments, missed classes, use of technology in the classroom, etc.

**Class notes policy:** Notes or recordings made by students based on a university class or lecture may only be made for purposes of individual or group study, or for other non-commercial purposes that reasonably arise from the student's membership in the class or attendance at the university. This restriction also applies to any information distributed, disseminated, or in any way displayed for use in relationship to the class, whether obtained in class, via e-mail or otherwise on the Internet, or via any other medium. Actions in violation of this policy constitute a violation of the Student Conduct Code, and may subject an individual or entity to university discipline and/or legal proceedings. Again, it is a violation of USC's Academic Integrity Policies to share course materials with others without permission from the instructor.

**No recording and copyright notice:** No student may record any lecture, class discussion or meeting with the instructor without his/her prior express written permission. The word "record" or the act of recording includes, but is not limited to, any and all means by which sound or visual images can be stored, duplicated, or retransmitted whether by an electro-mechanical, analog, digital, wire, electronic or other device or any other means of signal encoding. The instructor reserves all rights, including copyright, to his/her lectures, course syllabi and related materials, including summaries, slides (e.g., Keynote, PowerPoint), prior exams, answer keys, and all supplementary course materials available to the students enrolled in the class whether posted to the LMS or otherwise. They may not be reproduced, distributed, copied, or disseminated in any media or in any form, including but not limited to all course note-sharing websites. Exceptions are made for students who have made prior arrangements with The USC Office of Disability Services and Programs and the instructor.

**Participation:** Students are expected to actively participate in this course. In an online forum, participation includes:

- Careful reading and viewing of assigned materials by the date due
- Regular, substantive contributions to discussions
- Active engagement with online content
- On-time attendance and full attention in synchronous sessions
- Significant collaboration with classmates and teammates

Course grades may be affected for students who do not contribute to the course through active participation. Students should notify the instructor in advance if they are unable to attend class. Those unable to attend will be required to review the online recording for the session missed, and submit thoughtful feedback to the Instructor.

**Contact Hours**

This 3-unit course requires 2,250 minutes of instructional time per semester, which equals 150 minutes (2.5 hours) of instructional time each week. Instructional time may be further broken down into 75 minutes (1.25 hours) of asynchronous time and 75 minutes (1.25 hours) of synchronous time. In addition, it is expected that students will work, on average, an additional 300 minutes (5 hours) per week outside of class—on readings/viewings, homework assignments, field experiences, and individual or team projects. Synchronous class sessions will be offered as regularly scheduled evening or weekend classes, once each week.

## Course Schedule: A Weekly Breakdown

	<b>Topics</b>
<b>Week 0</b>	Importance of Technology: Role of Engineering and Technology Over Time
<b>Week 1</b>	Course Introduction. Introduction to Technologies, IS
<b>Week 2</b>	Web Objects, Hypertext Markup Language (HTML)
<b>Week 3</b>	Web Design, Cascading Stylesheets (CSS)
<b>Week 4</b>	Responsive Web Design, Media Queries, Marketing and SEO
<b>Week 5</b>	Scripting and Interactivity
<b>Week 6</b>	Server-Side Scripting, Templates, APIs
<b>Week 7</b>	Libraries, Frameworks, Content Management Systems (CMS)
<b>Week 8</b>	Data Structures, Database Fundamentals, Structured Query Language (SQL)
<b>Week 9</b>	Servers, Domains, Cloud
<b>Week 10</b>	Introduction to Mobile Apps, UI, Monetization
<b>Week 11</b>	Mobile Development, Internet of Things, IoT Dev
<b>Week 12</b>	Software Development, Video Games, AR, VR and Next Generation New Media
<b>Week 13</b>	Artificial Intelligence, Machine Learning (ML)
<b>Week 14</b>	Analytics, Data Science, ML
<b>Week 15</b>	Security, Performance, Legal Issues. Upcoming Technologies

## Statement on Academic Conduct and Support Systems

### Academic Conduct:

Plagiarism – presenting someone else’s ideas as your own, either verbatim or recast in your own words – is a serious academic offense with serious consequences. Please familiarize yourself with the discussion of plagiarism in SCampus in Part B, Section 11, “Behavior Violating University Standards” [policy.usc.edu/scampus-part-b](http://policy.usc.edu/scampus-part-b). Other forms of academic dishonesty are equally unacceptable. See additional information in SCampus and university policies on scientific misconduct, [policy.usc.edu/scientific-misconduct](http://policy.usc.edu/scientific-misconduct).

### Support Systems:

*Student Health Counseling Services - (213) 740-7711 – 24/7 on call*  
[engemannshc.usc.edu/counseling](http://engemannshc.usc.edu/counseling)

Free and confidential mental health treatment for students, including short-term psychotherapy, group counseling, stress fitness workshops, and crisis intervention.

*National Suicide Prevention Lifeline - 1 (800) 273-8255 – 24/7 on call*  
[suicidepreventionlifeline.org](http://suicidepreventionlifeline.org)

Free and confidential emotional support to people in suicidal crisis or emotional distress 24 hours a day, 7 days a week.

*Relationship and Sexual Violence Prevention Services (RSVP)*  
-213-740-9355 (WELL)

<https://studenthealth.usc.edu/sexual-assault/>

Free and confidential therapy services, workshops, and training for situations related to gender-based harm.

Relationship and Sexual Violence Prevention and Services provides immediate therapy services for situations related to gender- and power-based harm (e.g., sexual assault, domestic violence, stalking). (wording from the site)

*Office of Equity and Diversity (OED) | Title IX - (213) 740-5086*  
[equity.usc.edu](http://equity.usc.edu), [titleix.usc.edu](http://titleix.usc.edu)

Information about how to get help or help a survivor of harassment or discrimination, rights of protected classes, reporting options, and additional resources for students, faculty, staff, visitors, and applicants. The university prohibits discrimination or harassment based on the following protected characteristics: race, color, national origin, ancestry, religion, sex, gender, gender identity, gender expression, sexual orientation, age, physical disability, medical condition, mental disability, marital status, pregnancy, veteran status, genetic information, and any other characteristic which may be specified in applicable laws and governmental regulations.

*USC Policy Reporting to Title IX (213) 740-5086*

<https://policy.usc.edu/reporting-to-title-ix-student-misconduct/>

The university encourages individuals to report prohibited conduct to the *Title IX Office*. Individuals can report to the university *Title IX Coordinator* in the *Office of Equity and Diversity*.

*Bias Assessment Response and Support - (213) 740-2421*

[studentaffairs.usc.edu/bias-assessment-response-support](http://studentaffairs.usc.edu/bias-assessment-response-support)

Avenue to report incidents of bias, hate crimes, and microaggressions for appropriate investigation and response.



*The Office of Disability Services and Programs - (213) 740-0776*

[dsp.usc.edu](http://dsp.usc.edu)

Support and accommodations for students with disabilities. Services include assistance in providing readers/notetakers/interpreters, special accommodations for test taking needs, assistance with architectural barriers, assistive technology, and support for individual needs.

*USC Support and Advocacy - (213) 821-4710*

[studentaffairs.usc.edu/ssa](http://studentaffairs.usc.edu/ssa)

Assists students and families in resolving complex personal, financial, and academic issues adversely affecting their success as a student.

*Diversity at USC - (213) 740-2101*

[diversity.usc.edu](http://diversity.usc.edu)

Information on events, programs and training, the Provost's Diversity and Inclusion Council, Diversity Liaisons for each academic school, chronology, participation, and various resources for students.

*USC Emergency - UPC: (213) 740-4321, HSC: (323) 442-1000 – 24/7 on call*

[dps.usc.edu](http://dps.usc.edu), [emergency.usc.edu](http://emergency.usc.edu)

Emergency assistance and avenue to report a crime. Latest updates regarding safety, including ways in which instruction will be continued if an officially declared emergency makes travel to campus infeasible.

*USC Department of Public Safety - UPC: (213) 740-6000, HSC: (323) 442-120 – 24/7 on call*

[dps.usc.edu](http://dps.usc.edu)

Non-emergency assistance or information.