



IUPUI

**SCHOOL OF INFORMATICS
AND COMPUTING**

DEPARTMENT OF HUMAN-CENTERED COMPUTING

Indiana University-Purdue University
Indianapolis

NEWM N505

Advanced Issues in Emerging Media Environments

Department of Human-Centered Computing
Indiana University School of Informatics and Computing, Indianapolis
Spring 2019

Section No.: 31228 *Credit Hours:* 3
Time: 3:00pm -5:40pm
Location: IT 271, Informatics & Communications Technology Complex 535 West
Michigan Street, Indianapolis, IN 46202 [\[map\]](#)
First Class:
Website: <https://canvas.iu.edu/>
Instructor: Joseph Defazio, Ph.D., Associate Professor, Media Arts and Science program
Office Hours: Tuesday, 10:00am-5:00pm, or by Appointment
Office: IT 465, 535 W. Michigan Street, Indianapolis, IN 46202 [\[map\]](#)
Phone: (317) 278-4148
Email: jdefazio@iupui.edu
Website: <https://soic.iupui.edu/people/joseph-defazio/>
Prerequisites: None

COURSE DESCRIPTION

This course covers theoretical and exploratory investigations of creative activities in emerging media environments, enabling students to enhance their knowledge, experience, and problem-solving skills. Students establish a research framework and discover new knowledge about media design, human factors, and technological issues by designing, conducting, and evaluating empirical studies.

Recommended Text(s):

Jerald, J. (2015). *The VR book: Human-centered design for virtual reality* (1st ed.). Morgan & Claypool Publishers LLC-ACM. (Sold by JVC Books.)

Required Readings (Sample list):

Bolter, J. D., Engeberg, M., & MacIntyre, B. (2013). *Media Studies, Mobile Augmented Reality and Interaction Design*.

Bolter, J. D., & Macintyre, B. (2007). Is it live or is it AR? *IEEE Spectrum*, 44(8).

- Gray, C., & Malins, J. P. (1993). Research procedures/methodology for artists & designers.
- Gubbi, J., Buyya, R., Marusic, S., & Palaniswami, M. (2013). Internet of things (IoT): A vision, architectural elements, and future directions. *Future Generation Computer Systems*, 29(7), 1645–1660.
- MacIntyre, B., Lohse, M., Bolter, J. D., & Moreno, E. (2002). Integrating 2-D video actors into 3-D augmented-reality systems. *Presence*, 11(2), 189–202.
- McFarland, L. A., & Ployhart, R. E. (2015). Social media: A contextual framework to guide research and practice. *Journal of Applied Psychology*, 100(6), 1653–1677.
- Witmer, B. G., & Singer, M. J. (1998). Measuring presence in virtual environments: A presence questionnaire. *Presence: Teleoperators and virtual environments*, 7(3), 225–240.

Teaching and Learning Methods

During this course *with respect to emergent media technology environments*, students will

- Develop research design methods
- Conduct in-depth exploratory research, including exhaustive literature reviews
- Participate in class discussions, including a substantive critical dialog
- Write and present a formal research paper

Course Objectives:

- Engage in empirical research methods needed to review, analyze, evaluate, and report on issues in emerging media technology
- Create an effective research manuscript
- Examine published research and literature on emerging media environments
- Engage in high-level critical thinking skills that lead to potential visionary conclusions
- Analyze and present of the potential impact of creative thinking, design thinking, and innovation

Core Competencies:

The core competencies of this course include the following:

- Research – analyze, design, develop, evaluate, and report on advanced issues in emergent media technology environments
- Demonstrate knowledge and in-depth understanding of emergent media technologies
- Demonstrate effective communication and presentation

Learning Outcomes:

Upon completion of this course, the student will	RBT*	PGPL	Assessment
1. Engage in empirical exploratory research methods needed to review, analyze, evaluate, and report on issues in emerging media technology	5. Evaluate 6. Create	K&S CT EC	Writing, Discourse, and Presentation
2. Examine and demonstrate knowledge gained from published literature on research and emerging media technology topics	5. Evaluate	CT	Exhaustive Literature Review
3. Engage in high-level critical thinking skills and the design of research methods.	5. Evaluate	CT EC	Demonstrate a high-order design process
4. Analyze and present findings and examples of the potential impact in emergent media technology environments.	4. Analyze 5. Evaluate	K&S CT EC	Research Paper

*RBT: Revised Bloom's Taxonomy

Principles of Graduate and Professional Learning (PGPL)

Learning outcomes are assessed in the following areas:

1. Knowledge and skills mastery (K&S)
2. Critical thinking and good judgment (CT)
3. Effective communication (EC)
4. Ethical behavior (EB)

Grade Breakdown:

Attendance	130 points
Participation: Class Discussions	50 points
Assignment 1 – Research Topic	10 points
Assignment 2 – Refined Research Topic	10 points
Assignment 3 – Journal Sources	10 points
Assignment 4 – Annotated Bibliography	50 points
7 - Quizzes (Reading Material Comprehension)	140 points
Formal Research Paper (4/30/19)	200 points

Total Possible: 610 points

Grading Scale:

A = 565 – 610	Excellent or very good achievement and quality of work
B = 500 – 563	Satisfactory achievement and quality of work
F = 0 – 494	Failure

Credit will not be given toward major, minor, or certificate requirements with a grade below B–

COURSE INFORMATION

This course explores a variety of emerging media environment research topics and exploratory research processes, including

- appropriateness,
- conceptual novelty, holism (methods, validity, and scope),
- research and design issues,
- psychology,
- reducibility and unpredictability (ontological categories and concepts),
- security and privacy,
- technical issues in digital media production, and
- usability and user experience.

Potential research topics include 3D technology, cultural heritage, design thinking, ecommerce, education and STEM, gaming and simulations, information technology, innovation, mixed, augmented, and virtual reality, mobile systems, and semantic web technology.

Examples of Emerging Media Environments include

3D Lab and Studio Environments	Bethel VR
AR/VR Lab and Studio Environments	IUPUI VR, Washington Street VR
Games/Simulations Media Lab and Studio Environments	Suicide Prevention Simulation, IUPUI Department of Psychology The effects of a computer-based driving game on hypoglycemia education among adolescents with type-1 diabetes
Advances in Museum Technology Environments Lab	Indiana State Museum, Eiteljorg Museum, Indianapolis Children’s Museum, Indiana Medical History Museum
Digital Applications for Health Education Environments	Medical Animation with Hodei Technology, Renal Network of Indianapolis, MED A.R. Mobile App, Assessment for Childhood Anger in VR, Riley Hospital for Children
Education and Instructional Technology Environments	IUPUI Office of Equal Opportunity Training Modules and Video Tutors, Ivy Tech Community College
Digital Narrative Media Lab and Studio Environments	<i>From Now On</i> is a thought-provoking video-mapping experience Arcanum Research, an organization dedicated to the research of inexplicable phenomena
Integrated Media Communications Lab and Studio Environments	SIGGRAPH 2017 Scavenger AR mobile App, IUPUI Department of Surgery Web Portal, Family Leadership Web Portal

Emergent Media Virtual Research Labs and Studio Environments in SOIC

(Note: Many of these Environments are still in the planning stage.)

The Emergent Technology Research Virtual Labs emphasize the convergence of creative practice, critical thinking, and theoretical investigation. It is designed for students wishing to explore, advance, and present new technologies in emerging technology environments.

3D Lab and Studio Environments

3D Lab and Studio Environments is open to all SOIC student researchers who seek to advance ongoing work and exploration in 3D Technologies.

AR/VR Lab and Studio Environments

AR/VR Lab and Studio Environments is open to all SOIC student researchers who seek to explore, develop, and advance important issues facing AR and VR uses and applications.

Games/Simulations Media Lab and Studio Environments

Games/Simulations Media Lab and Studio Environments is open to all SOIC student researchers who seek to explore and advance design and development processes and applications.

Advances in Museum Technology Environments Lab

The Museum Technology Environments Lab seeks to explore and promote technological advances in exhibits, kiosks, Wi-Fi spaces, and interactive VR/AR experiences.

Digital Applications for Health Education Environments

The Digital Applications for Health Education Environments seeks to explore and promote diverse uses of emergent technologies in health education and medical simulation.

Education and Instructional Technology Environments

The Education and Instructional Technology Environment lab seeks to explore and promote the development and research of emergent technology applications and uses in K-12 and Higher Education.

Digital Narrative Media Lab and Studio Environments

Digital Narrative Media Lab and Studio Environments is open to all SOIC student researchers who seek to explore and advance digital media applications in animation, audio, video technologies.

Integrated Media Communications Lab and Studio Environments

Integrated Media Communications Lab and Studio Environments is open to all SOIC student researchers who seek to explore and advance traditional and mobile platforms of communication. These platforms require the integration of traditional and digital media technologies.

Weekly Schedule (Subject to Change)

The Weekly Schedule is available in a separate file. It is distributed in class and is available in Canvas.

EXPECTATIONS, GUIDELINES, AND POLICIES

Attendance:

A basic requirement of this course is that you will participate in all class meetings, whether online or face-to-face, and conscientiously complete all required course activities and assignments. Class attendance is required for classroom-based courses. It entails being present and attentive for the entire class period. Attendance shall be taken in every class. If you do not sign the attendance sheet while in class, you shall be marked absent. Signing the attendance sheet for another student is prohibited. The instructor is required to submit to the Registrar a record of student attendance, and action shall be taken if the record conveys a trend of absenteeism.

Only the following are acceptable excuses for absences: death in the immediate family (e.g. mother, father, spouse, child, or sibling), hospitalization or serious illness; jury duty; court ordered summons; religious holiday; university/school coordinated athletic or scholastic activities; an unanticipated event that would cause attendance to result in substantial hardship to one's self or immediate family. Absences must be explained with the submission of appropriate documentation to the satisfaction of the instructor, who will decide whether missed work may be made up. Absences that do not satisfy the above criteria are considered unexcused. To protect your privacy, doctor's excuses should exclude the nature of the condition and focus instead on how the condition impacts your attendance and academic performance.

Missing class reduces your grade through the following grade reduction policy: You are allowed two excused or unexcused absences. Each additional absence, unless excused, results in a 5% reduction in your final course grade. More than four absences result in an F in the course. Missing class may also reduce your grade by eliminating opportunities for class participation. For all absences, the student is responsible for all covered materials and assignments.

Incomplete:

The instructor may assign an Incomplete (I) grade only if at least 75% of the required coursework has been completed at passing quality and holding you to previously established time limits would result in unjust hardship to you. All unfinished work must be completed by the date set by the instructor. Left unchanged, an Incomplete automatically becomes an F after one year. <http://registrar.iupui.edu/incomp.html>

Deliverables:

You are responsible for completing each deliverable (e.g., assignment, quiz) by its deadline and submitting it by the specified method. Deadlines are outlined in the syllabus or in supplementary documents accessible through Canvas. Should you miss a class, you are still responsible for completing the deliverable and for finding out what was covered in class, including any new or modified deliverable. In fairness to the instructor and students who completed their work on time,

a grade on a deliverable shall be reduced 10%, if it is submitted late and a further 10% for each 24-hour period it is submitted after the deadline.

CODE OF CONDUCT

All students should aspire to the highest standards of academic integrity. Using another student's work on an assignment, cheating on a test, not quoting or citing references correctly, or any other form of dishonesty or plagiarism shall result in a grade of zero on the item and possibly an F in the course. Incidences of academic misconduct shall be referred to the Department Chair and repeated violations shall result in dismissal from the program.

All students are responsible for reading, understanding, and applying the *Code of Student Rights, Responsibilities and Conduct* and the section on academic misconduct. Refer to *The Code > Responsibilities > Academic Misconduct* at <http://www.indiana.edu/~code/>. All students must also successfully complete the Indiana University Department of Education "How to Recognize Plagiarism" Tutorial and Test. <https://www.indiana.edu/~istd> You must document the difference between your writing and that of others. Use quotation marks in addition to a citation, page number, and reference whenever writing someone else's words (e.g., following the *Publication Manual of the American Psychological Association*). To detect plagiarism instructors, apply a range of methods, including Turnitin.com. <http://www.ulib.iupui.edu/libinfo/turnitin>

Academic Misconduct:

1. **Cheating:** ^[1]_{SEP} Cheating is an attempt to use or provide unauthorized assistance, materials, information, or study aids in any form and in any academic exercise or environment.
 - a. A student must not use external assistance on any "in-class" or "take-home" examination, unless the instructor specifically has authorized external assistance. This prohibition includes, but is not limited to, the use of tutors, books, notes, calculators, computers, and wireless communication devices.
 - b. A student must not use another person as a substitute in the taking of an examination or quiz, nor allow other persons to conduct research or to prepare work, without advanced authorization from the instructor to whom the work is being submitted.
 - c. A student must not use materials from a commercial term paper company, files of papers prepared by other persons, or submit documents found on the Internet.
 - d. A student must not collaborate with other persons on a project and submit a copy of a written report that is represented explicitly or implicitly as the student's individual work.
 - e. A student must not use any unauthorized assistance in a laboratory, at a computer terminal, or on fieldwork.
 - f. A student must not steal examinations or other course materials, including but not limited to, physical copies and photographic or electronic images.
 - g. A student must not submit substantial portions of the same academic work for credit or honors more than once without permission of the instructor or program to whom the work is being submitted.
 - h. A student must not, without authorization, alter a grade or score in any way, nor alter answers on a returned exam or assignment for credit.

2. **Fabrication:** A student must not falsify or invent any information or data in an academic exercise including, but not limited to, records or reports, laboratory results, and citation to the sources of information.
3. **Plagiarism:** Plagiarism is defined as presenting someone else's work, including the work of other students, as one's own. Any ideas or materials taken from another source for either written or oral use must be fully acknowledged, unless the information is common knowledge. What is considered "common knowledge" may differ from course to course.
 - a. A student must not adopt or reproduce ideas, opinions, theories, formulas, graphics, or pictures of another person without acknowledgment.
 - b. A student must give credit to the originality of others and acknowledge indebtedness whenever:^{SEP}
 1. directly quoting another person's actual words, whether oral or written;
 2. using another person's ideas, opinions, or theories;
 3. paraphrasing the words, ideas, opinions, or theories of others, whether oral or written;
 4. borrowing facts, statistics, or illustrative material; or
 5. offering materials assembled or collected by others in the form of projects or collections without acknowledgment
4. **Interference:**^{SEP} A student must not steal, change, destroy, or impede another student's work, nor should the student unjustly attempt, through a bribe, a promise of favors or threats, to affect any student's grade or the evaluation of academic performance. Impeding another student's work includes, but is not limited to, the theft, defacement, or mutilation of resources to deprive others of the information they contain.
5. **Violation of Course Rules:**^{SEP} A student must not violate course rules established by a department, the course syllabus, verbal or written instructions, or the course materials that are rationally related to the content of the course or to the enhancement of the learning process in the course.
6. **Facilitating Academic Dishonesty:**^{SEP} A student must not intentionally or knowingly help or attempt to help another student to commit an act of academic misconduct, nor allow another student to use his or her work or resources to commit an act of misconduct.

OTHER POLICIES

1. **Administrative withdrawal:** Students must participate in all class discussions and conscientiously complete all required course activities and/or assignments. If a student is unable to attend, participate in, or complete an assignment on time, the student must inform the instructor. If a student misses more than half of the required activities within the first 25% of the course without contacting the instructor, the student may be administratively withdrawn from this course. Administrative withdrawal may have academic, financial, and financial aid implications. Administrative withdrawal occurs after the full refund period, and a student who has been administratively withdrawn is ineligible for a tuition refund.
2. **Civility:** To maintain an effective and inclusive learning environment, it is important to be an attentive and respectful participant in lectures, discussions, group work, and other classroom exercises. Thus, unnecessary disruptions should be avoided, such as ringing cell phones, engagement in private conversations, and other unrelated activities. Cell phones, media

players, or any noisy devices should be turned off during a class. Texting, web surfing, and posting to social media are generally not permitted. Laptop use may be permitted if it is used for taking notes or conducting class activities. Students should check with the instructor about permissible devices in class. IUPUI nurtures and promotes “a campus climate that seeks, values, and cultivates diversity in all of its forms and that provides conditions necessary for all campus community members to feel welcomed, supported, included, and valued” (IUPUI Strategic Initiative 9). IUPUI prohibits “discrimination against anyone for reasons of race, color, religion, national origin, sex, sexual orientation, marital status, age, disability, or veteran status” (Office of Equal Opportunity). Profanity or derogatory comments about the instructor, fellow students, invited speakers or other classroom visitors, or any members of the campus community shall not be tolerated. A violation of this rule shall result in a warning and, if the offense continues, possible disciplinary action.

3. **Communication:** For classroom-based courses, the instructor or teaching assistant should respond to emails by the end of the next class or, for online courses, within two Indiana University working days, which excludes weekends and holidays. The instructor should provide weekly office hours or accept appointments for face-to-face, telephone, or teleconferenced meetings, and announce periods of extended absence in advance.
4. **Counseling and Psychological Services (CAPS):** Students seeking counseling or other psychological services should contact the CAPS office at 274-2548 or capsindy@iupui.edu. For more information visit <http://life.iupui.edu/caps/>.
5. **Course evaluations:** Course evaluations provide vital information for improving the quality of courses and programs. Students are urged to complete one course and instructor evaluation for each section in which they are enrolled at the School of Informatics and Computing with the following exceptions: (a) The student has withdrawn from the course; (b) fewer than five students are enrolled in the section (in which case maintaining anonymity is difficult); and (c) the section is a laboratory that must be taken with a course having a different section number. Course evaluations are completed at <https://soic.iupui.edu/app/course-eval/>. Course evaluations are typically open from the eleventh week. Course evaluations are anonymous, which means that no one can view the name of the student completing the evaluation. In addition, no one can view the evaluation itself until after the instructor has submitted the final grades. In small sections, demographic information should be left blank, if it could be used to identify the student.
6. **Disabilities policy:** All qualified students enrolled in this course are entitled to reasonable accommodations for a disability. Notify the instructor during the first week of class of accommodations needed. Students requiring accommodations register with Adaptive Educational Services (AES) and complete the appropriate AES-issued before receiving accommodations. The AES office is located at UC 100, Taylor Hall (Email: aes@iupui.edu, Tel. 317 274-3241). For more information visit <http://aes.iupui.edu>.
7. **Email:** Indiana University uses your IU email account as an official means of communication, and students should check it daily. Although you may have your IU email forwarded to an outside email account, please email faculty and staff from your IU email account.
8. **Emergency preparedness:** Know what to do in an emergency so that you can protect yourself and others. For more information, visit the emergency management website at

<http://protect.iu.edu/emergency>.

9. **IUPUI course policies:** Several campus policies governing IUPUI courses may be found at the following link: http://registrar.iupui.edu/course_policies.html
10. **No class attendance without enrollment.** Only those who are officially enrolled in this course may attend class unless enrolled as an auditor or making up an Incomplete by prior arrangement with the instructor. This policy does not apply to those assisting a student with a documented disability, serving in an instructional role, or administrative personnel. <http://registrar.iupui.edu/official-enrollment-class-attendance.html> Children may *not* attend class with their parents, guardians, or childcare providers.
11. **Religious holidays:** Students seeking accommodation for religious observances must submit a request form to the course instructor by the end of the second week of the semester. For information visit <http://registrar.iupui.edu/religious.html>.
12. **Right to revise:** The instructor reserves the right to make changes to this syllabus as necessary and, in such an event, will notify students of the changes immediately.
13. **Sexual misconduct:** IU does not tolerate sexual harassment or violence. For more information and resources, visit <http://stopsexualviolence.iu.edu/>.
14. **Student advocate:** The Student Advocate assists students with personal, financial, and academic issues. The Student Advocate is in the Campus Center, Suite 350, and may also be contacted at 317 274-4431 or studvoc@iupui.edu. For more information visit <http://studentaffairs.iupui.edu/advocate>.

MISSION STATEMENT

The Mission of IUPUI is to provide for its constituent's excellence in

- Teaching and Learning;
- Research, Scholarship, and Creative Activity; and
- Civic Engagement.

With each of these core activities characterized by

- Collaboration within and across disciplines and with the community;
- A commitment to ensuring diversity; and
- Pursuit of best practices.

IUPUI's mission is derived from and aligned with the principal components—Communities of Learning, Responsibilities of Excellence, Accountability and Best Practices—of Indiana University's Strategic Directions Charter.

STATEMENT OF VALUES

IUPUI values the commitment of students to learning; of faculty to the highest standards of teaching, scholarship, and service; and of staff to the highest standards of service. IUPUI recognizes students as partners in learning. IUPUI values the opportunities afforded by its location in Indiana's capital city and is committed to serving the needs of its community. Thus, IUPUI students, faculty, and staff are involved in the community, both to provide educational programs and patient care and to apply learning to community needs through service. As a leader in fostering collaborative relationships, IUPUI values collegiality, cooperation, creativity, innovation, and entrepreneurship as well as honesty, integrity, and support for open inquiry and dissemination of findings. IUPUI is committed to the personal and professional development of its students, faculty, and staff and to continuous improvement of its programs and services.