

EST 240 Visual Rhetoric and Information Technology, 15 weeks Fall 2019

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Course Description

The main goal of this course is to provide the knowledge and practical skills necessary to analyze, design and develop visual representations of data. Students will explore the theories of visual information communication as well as the underlying scientific phenomena. We will examine such technologies as photography, cinema, Internet, mobile, and virtual reality. Students will learn and apply the software/hardware skills, techniques, and resources of the course in order to create a state-of-the-art information visualization project.

Learning Outcomes

By the end of the course, students will be able to

- 1) Demonstrate an ability to apply data visualization technical tools and knowledge of visual communication to practical systems, such as digital display, and to problem solving, such as data analysis;
- 2) design, understand, build, or analyze selected aspects of the human-made world, such as infographics and immersive media in industry, research, health care and education;
- 3) describe the information envisioning theories;
- 4) explain the scientific fundamentals of visual communication;
- 5) apply universal design principles to create esthetically appealing data visualizations;
- 6) make an informed decision about the quality and usability of visual products;
- 7) build a visualization project to display and analyze data in the fields of technology, science, humanities or social sciences, using the tools drawn from computer science, i.e. computer software and hardware, digital devices and virtual environments.

Course Format:

Readings will be studied in asynchronous Blackboard Discussions that will be opened every Tuesday and closed on Saturday. Monthly assignments are due on Mondays. Mandatory weekly lectures will be held online in web conferencing environment (SBConnect) on Mondays, 7-8 PM.

Readings

Required: Golombisky, K., & Hagen, R. 2013. *White space is not your enemy: A beginner's guide to communicating visually through graphic, web & multimedia design*. Taylor & Francis.

Recommended:

Ware, C. 2017. *Information visualization: perception for design*. Third edition. Elsevier.

Tufte Edward R. 1990. *Envisioning Information*. Graphics Press

Lester, P. M. 2014. *Visual communication: Images with messages*. Cengage Learning. 6th edition

Topics

Week 1. Overview of Knowledge Visualization

Week 2. Envisioning Information Theories

Week 3. Light and the Eye: Scientific Basics of Vision

Week 4. Universal Principles of Design. Applied Perception.

Week 5. Beautiful Evidence: Data Display (graphic illustrations, maps, diagrams, tables, graphs, charts)

Week 6. Images with Messages: Posters, Handouts, Brochures (Photoshop, Illustrator, InDesign, PDF)

Week 7. Slide-ology (PowerPoint, Prezi, slideshow)

Week 8. Video: tutorials (Camtasia, Movie Maker), animation (Flash or Alice), and film production (storyboard, mise en scene, focus, shots, camera angles, transitions, cuts, montage: Premiere Pro)

Week 9. Web Design (Dreamweaver prototyping, Gutenberg diagram, Ogilvy's layout, AIDA marketing model, background, fonts, styles, light source, color wheel, layout sins, movement, interaction)

Week 10. Mobile Design (mobile app architecture, HTML5, CSS3, SQL, JQuery)

Week 11. Engineering Design, Computer Assisted Design (CAD)

Week 12. Immersive Technologies (3D environments, Virtual, Augmented and Mixed Reality: Unity, 360 video). Telepresence, Web-conferencing

Week 13. Copyright, Ethical, and Multicultural Considerations.

Week 14. Big Data Visualization. Visual Persuasion (visual rhetoric, propaganda, advertising, and new technics for visual seduction)

Week 15. Presentations of the Term Project

Course Assessment

Weekly Blackboard Discussions	30% (2 points each)
Monthly Homework Assignments	15% (5 points each)
Online Lecture Attendance	15% (1 point each)
Term Project Content	20%
Term Project Presentation	20%

Weekly Blackboard Discussion on assigned textbook readings (closed by 11:59pm on Saturday) is graded. For help please watch the video on [how to use Blackboard discussions](#).

Active participation means providing meaningful expression and well thought out answers to all the BB Discussion questions (threads) and responding to other students' postings prior to the discussion ending date. A short answer like "I agree or disagree" does not constitute meaningful dialogue and will not be counted toward your participation grade.

You will be expected to work collaboratively with classmates, argue and debate key issues in group discussions, and use students as well as instructors as learning resources.

Monthly Homework Assignments must be submitted via Blackboard by 11:59 pm on Monday (1 – 2 pages). Blackboard timestamps submissions. HW should be saved as a .pdf. For each assignment, please use the following naming convention:

LastName_Assignment#. Do not email me assignments without my permission. You can post your assignments by clicking on the "assignment" tab under the course menu, and clicking the appropriate assignment. Please make sure you submit your assignment with plenty of time, so that you have time to resolve any technical issues BEFORE your assignment is considered late.

Term Project: Evaluate the impact of technology on one of the visual communication areas.

Term Project Presentation: Create a multimedia presentation of your term project, equivalent to 5 - 10 pages of text, and present it via the web conference.

COMPUTING YOUR GRADE

To compute your final course grade, sum up all points earned. For example, if you participated in 14 discussions (28 points), submitted 3 assignments with grades 5, 4, 5 (14 points), attended 12 online lectures, made a term project presentation with grade 18, and your term project was graded 19, then your total is 91.0 or "A-." Your final letter grade will be based on the following grading scale:

Letter Grade = Score	Letter Grade = Score
A = 93-100	C = 73-76.999
A- = 90-92.999	C- = 70-72.999
B+ = 87-89.999	D+ = 67-69.999
B = 83-86.999	D = 60-66.999
B- = 80-82.999	F = < 60
C+ = 77-79.999	

* **PLEASE NOTE:** To be fair to everyone, we need to use these exact cutoffs. Under no circumstances can we change the grade of any one particular student.

Advisories

Each student must pursue his or her academic goals honestly and be personally accountable for all submitted work. Representing another person's work as your own is always wrong. Any suspected instance of academic dishonesty will be reported to the Academic Judiciary. For more comprehensive information on academic integrity, including categories of academic dishonesty, please refer to the academic judiciary website at <http://www.stonybrook.edu/uaa/academicjudiciary/>.

The University at Stony Brook expects students to maintain standards of personal integrity that are in harmony with the educational goals of the institution; to observe national, state, and local laws and University regulations; and to respect the rights, privileges, and property of other people. Faculty is required to report disruptive behavior that interrupts faculty's ability to teach, the safety of the learning environment, and/or students' ability to learn to Judicial Affairs.

Course Content

Course material accessed from Blackboard, SB Connect or a Stony Brook Course website is for the exclusive use of students who are currently enrolled in the course. Content from these systems cannot be reused or distributed without written permission of the instructor and/or the copyright holder.

Duplication of materials protected by copyright, without permission of the copyright holder is a violation of the Federal copyright law, as well as a violation of Stony Brook's Academic Integrity and Student Conduct Codes <http://www.stonybrook.edu/uaa/academicjudiciary/policies.shtml> (you may have to copy and paste the address in a browser).

Blackboard & SBConnect

You can access class information on-line at: <http://blackboard.stonybrook.edu>

For help see: <http://it.stonybrook.edu/services/blackboard>

For problems logging in, go to the helpdesk in the Main Library SINC Site or the Union SINC Site; you can also call: 631-632-9602 or e-mail: helpme@stonybrook.edu

DISABILITY SUPPORT SERVICES (DSS) STATEMENT (must be the following language)

If you have a physical, psychological, medical or learning disability that may impact your course work, please contact Disability Support Services, ECC(Educational Communications Center) Building, Room 128, (631)632-6748. They will determine with you what accommodations, if any, are necessary and appropriate. All information and documentation is confidential.

[In addition, this statement on emergency evacuation is often included, but not required:]

Students who require assistance during emergency evacuation are encouraged to discuss their needs with their professors and Disability Support Services. For procedures and information go to the following website: <http://www.stonybrook.edu/ehs/fire/disabilities>.

ACADEMIC INTEGRITY STATEMENT (must be the following language as approved by the undergrad council):

Each student must pursue his or her academic goals honestly and be personally accountable for all submitted work. Representing another person's work as your own is always wrong. Faculty is required to report any suspected instances of academic dishonesty to the Academic Judiciary. Faculty in the Health Sciences Center (School of Health Technology & Management, Nursing, Social Welfare, Dental Medicine) and School of Medicine are required to follow their school-specific procedures. For more comprehensive information on academic integrity, including categories of academic dishonesty please refer to the academic judiciary website at http://www.stonybrook.edu/commcms/academic_integrity/index.html

CRITICAL INCIDENT MANAGEMENT (must be the following language as approved by the undergrad council):

Stony Brook University expects students to respect the rights, privileges, and property of other people. Faculty are required to report to the Office of University Community Standards any disruptive behavior that interrupts their ability to teach, compromises the safety of the learning environment, or inhibits students' ability to learn. Faculty in the HSC Schools and the School of Medicine are required to follow their school-specific procedures. Further information about most academic matters can be found in the Undergraduate Bulletin, the Undergraduate Class Schedule, and the Faculty-Employee Handbook.