**COURSE INFORMATION:** GRA 3873C RI Eye Tracking: Visual Analysis & Design (4 credits)

**PRE-REQUISITE:** None

**COURSE LOGISTICS:** FAU Arts & Humanities / Building #53, Room 115 / Tues & Thurs 9:00 – 1:50 pm

**INSTRUCTOR CONTACT INFORMATION:**

Tammy Knipp / Building VA #53, Room 114 / E-MAIL: [TKNIPP@FAU.EDU](mailto:TKNIPP@FAU.EDU)

**OFFICE HOURS:** Tuesdays & Thursdays 12:00 noon–1:00 pm and 4:00-5:00 pm & by appt.

**COURSE DESCRIPTION:**

This course introduces students to an eye tracking system as a research tool to explore how subjects process information in the context of the visual arts. Students will explore the reciprocal relationships among art, science, and technology across scales. The final project will include a visual analysis of a research proposal in the formats of a verbal and poster presentation. Theory, research and interdisciplinary practices will be a collaborative format.

**IMPORTANT NOTICE: FAU’s Quality Enhancement Plan (QEP) Program**

This course integrates research, inquiry ideas and activities into course assignments, and engage students in the process of discovery as part of FAU’s Quality Enhancement Plan (QEP) Program: Distinction through Discovery (see the criteria for ‘Research Intensive’ designation explained below). As part of this course, some of your work samples may be collected to evaluate the effectiveness of the Distinction through Discovery program. For more information about the QEP and the undergraduate research initiative, please visit. <http://www.fau.edu/ouri>

This course contains an assignment or multiple assignments designed to help students conduct research and inquiry at an intensive level.  If this class is selected to participate in the university-wide assessment program, students will be asked to complete a consent form and submit electronically some of their research assignments for review.  Visit the Office of Undergraduate Research and Inquiry (OURI) for additional opportunities and information at <http://www.fau.edu/ouri>.

**RESEARCH INTENSIVE CRITERIA:**

The course Eye-Tracking Software Theory and Applications, which was initiated with a grant from the Office of Undergraduate Research and Inquiry, explores the potential for machine-aided analysis of human perception in regard to graphic design and other works of artistic production.

**REQUIRED TEXTS:**

*Eye Tracking in User Experience Design,* 1st Edition

Author: Bergstrom

ISBN-13: 978-0124081383

Publisher: Morgan Kaufmann

**REQUIRED READINGS:** Library Reference Shelf

*Visual Communications,* 2nd or 3rd Edition

Author: Lester

ISBN-13: 978-0534637200

Publisher: Cengage Learning

Context: Visual Theory, Cognition and Perception

*Elements of Graphic Design* (research in cognitive neuroscience and mental imagery)

Author: Kosslyn

ISBN: 0-7167-2362-X

Publisher: W. H. Freeman and Company

Context: Using Graphs to Communicate Quantitative Information

**COURSE OBJECTIVES / LEARNING OUTCOMES:**

1. Acquire knowledge of the history for eye tracking systems and application, including the interpretation of the data and analysis

2. Acquire knowledge and application of the hardware & software of an eye tracking system

3. Acquire knowledge in the following areas: visual cognition & info processing; how eye-tracking systems inform the execution of visual displays; theory & application / research & analysis in the constructs of the visual design; using graphs to communicate quantitative information

4. Acquire knowledge in writing/format of a research paper: Abstract, Keywords, Introduction; Background; Experiment; Visual Analysis with figures and diagrams; Opportunities and Conclusions.

**STUDENT LEARNING OUTCOMES**

**SLO 1: Knowledge:** Students learn the principles and processes of eye tracking and how to use relevant equipment and computer-based protocols.

**SLO 2: Formulate Questions; SLO 3:** Plan of Action:  They develop relevant projects during the course of the semester for the purpose of generating hypotheses that can be tested using the software and pertinent human subjects and sets of relevant works of art and graphic design.

**SLO 4:** Critical Thinking: Limits to the analysis of data-sets and other factors in the experiments, including the students’ own experience and abilities will be considered in the evaluation of all student work.

**SLO 5:** Ethical Conduct: Students also must complete relevant CITI training modules and understand the implications of their work as it pertains to the purview of the Institutional Review Board.

**SLO 6:** Communication: Students present the results of their work to the class, and they are encouraged to apply for presentation at the Undergraduate Research Symposium, as well as other venues. Training in the development of posters and other presentation protocols is covered during the course of the semester.

**ATTENDANCE POLICY:**

3 or more unexcused absences will affect the final grade in this course. 5 unexcused will preclude a letter grade of an F.

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**SCHEDULE OF ACTIVITIES AND CONTENT**

**EXERCISE/ STUDY**

1. Define and provide examples of the following: Hypothesis; Abstract; Critical Theory; Critical Theory

05%

2. Complete Certificate: “CITI” 05%

10%

**PROJECTS**

1. Examination: Select a reputable / credited published experiment based on the application

of an eye-tracking system and present a summary of the analysis in the following formats:

Verbal / Visual presentation 10%

Written Summary: analysis & assessment of the experiment with suggested

alternative applications and critical conclusions 10%

1. Experiment / Research Project: Propose and conduct a research & analysis experiment applying the eye-tracking system. If humans serve as subjects in the experiment, then IRB must approve the study.

Research Paper (format provided) 25%

Verbal/ visual presentation 30%

75%

**REQUIREMENT**

Participate in the Undergraduate Research Symposium: <http://www.fau.edu/ouri/undergrad_symposium.php>

**Class Participation** / Readings: Midterm 7.5% & Final 7.5% 15%

\_\_\_\_\_\_\_\_\_\_\_\_ GRAND TOTAL 100%

0 3 5 7 9 11 13 15 17 19 21 23 25

F F F F D- D D+ C- C C+ (B- / B) (B / B+) (A- / A)

**PROCEDURAL FOR LATE PROJECTS / ASSIGNMENTS:** Project / exercise / study that is not submitted on the designated time / date will automatically be deducted in points (exceptions will be allowed). All projects and studies can be revised and resubmitted.

**INCOMPLETE GRADES:** will ONLY be given due to an emergency — e.g. hospitalization.

**IMPORTANT INFORMATION:** In accordance with university policy, all cell phones and beepers must be turned off during class time – unless otherwise noted.

**STATEMENT OF ACADEMIC INTEGRITY**

Students at Florida Atlantic University are expected to maintain the highest ethical standards. Academic dishonesty, including cheating and plagiarism, is considered a serious breach of these ethical standards, because it interferes with the University mission to provide a high quality education in which no student enjoys an unfair advantage over any other. Academic dishonesty is also destructive of the University community, which is grounded in a system of mutual trust and places high value on personal integrity and individual responsibility. Harsh penalties are associated with academic dishonesty. For more information, see http://www.fau.edu/regulations/chapter4/4.001\_Honor\_Code.pdf.

**STUDENTS WITH DISABILITIES**

In compliance with the Americans with Disabilities Act Amendments Act (ADAAA), students who require reasonable accommodations due to a disability to properly execute coursework must register with Student Accessibility Services (SAS), [www.fau.edu/sas/](http://www.fau.edu/sas/).

**CODE OF ACADEMIC INTEGRITY POLICY STATEMENT**

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**COUNSELING AND PSYCHOLOGICAL SERVICES (CAPS) CENTER**

Life as a university student can be challenging physically, mentally and emotionally. Students who find stress negatively affecting their ability to achieve academic or personal goals may wish to consider utilizing FAU’s Counseling and Psychological Servic es (CAPS) Center. CAPS provides FAU students a range of services – individual counseling, support meetings, and psychiatric services, to name a few – offered to help improve and maintain emotional well - being. For more information, go to

http://www.fau.edu/counseling/

**NOTE:** In accordance with university policy: To eliminate all distractions so as to enhance the level of attention and retention, please do not bring your cell phone, beeper and/or any devise used for text messaging to class. You may want to notify your contacts that you will be unavailable during class time

(561-799-8585), or at the Treasure Coast - CO 128 (772-873-3305), and follow all OSD procedure

**ASSESSMENTS AND SCORING / PERFORMANCE CRITERIA**

**A = Exemplary**

1. Receive an average assessment score of 23-25 pts. (total sum of all assignments)

2. Actively participate in class discussions, referencing all required readings

3. Exemplifies skilled practices for critical thinking and theory

4. Self-reflection during class analysis (critiques): effectively communicates design processes and critical practices

5. No evidence of texting or usage of electronic devices (unless otherwise noted) during class

6. No absences (unless for special circumstances)

**B = Competent**

1. Receive an average assessment score of 19-22 pts. (total sum of all assignments)

2. Participate in class discussions for the majority of the required readings

3. Proficient practices of critical thinking

4. Self-reflection during class analysis (critiques): describes design processes with sufficient support of critical practices

5. No evidence of texting or usage of electronic devices (unless otherwise noted) during class

6. One unexcused absence

**C = Developing**

1. Receive an average assessment score of 15-18 pts. (total sum of all assignments)

2. Minimal participation in class discussions, referencing the required readings

3. Limited usage of critical thinking

4. Self-reflection during class analysis (critiques): describes design processes with minimal usage of critical practices

5. Occasional usage of electronic devices (unless otherwise noted) during class

6. Two- three unexcused absences

**D = Under Developed**

1. Receive an average assessment score of 9-14 pts. (total sum of all assignments)

2. Less than minimal participation in class discussions, referencing the required readings

3. Lack skills for critical thinking

4. Self-reflection during class analysis (critiques): inadequate design processes with no application of critical practices

5. Evidence of texting or usage of electronic devices during class

6. More than three unexcused absences

**F = Failure**

1. Receive an average assessment score of 8 pts. or below (total sum of all assignments)

2. No active participation in class discussions

3. No evidence of critical thinking

4. Self-reflection during class analysis (critiques): did not perform

5. Evidence of texting or usage of electronic devices during class

6. Five or more unexcused absences

**SCHEDULE OF ACTIVITIES**

**Week 1:**

1. Introduction

2. Complete: CITI

**Week 2:**

1. Lecture & assigned readings

2. Due: Definitions and examples of the following: Hypothesis; Abstract; Critical Theory; Critical Theory

**Week 3:**

1. Lecture & assigned readings / Discuss eye-tracking research proposals

2. Demo: eye-tracking system

**Week 4:**

1. Due: Power-Point Presentation: credited published experiment based on the application of an eye-tracking system

2. Due: Written analysis & assessment of the experiment with alternative applications and critical conclusions

**Week 5:**

1. Due: Hypothesis and abstract for the eye-tracking research proposal

2. Submit proposal to the IRB

**Week 6:**

1. Due: Outline (procedures) for experiment

2. Lecture & assigned readings

**Week 7:**

1. Lecture & assigned readings (Visual and Data Analysis)

**Week 8:**

1. Abstract Due: http://www.fau.edu/ouri/qep/symposium.php

2. Due: Data collected from the research

**Week 9:**

Spring break

**Week 10:**

1. Due: Poster for Symposium

**Week 11:**

1. Lecture: The constructs of a power-point presentation for research data / experiments

**Week 12:**

1. Attend the symposium (FAU Boca Raton Campus, Live Oak Pavilion and Grand Palm Room C)

2. Lecture: The constructs of a research paper

**Week 13:**

1. Due: outline for research paper

**Week 14:**

1. Due: Power-point presentation of the experiment

**Week 15:**

1. Due: Power-point presentation of the experiment

**Week 16:**

1. Due: Written paper