USC Viterbi
School of Engineering
Information Technology Program

ITP 181 Video Game Quality Assurance Management

Units: 2
Semester: Spring 2024
When: Wednesdays 1 PM to 2:50 PM
Where: EGG 108

Instructor: Kyle Ackerman
Office: EGG 208
Office Hours: By Appointment
Contact: kyleacke@usc.edu - please include "ITP181" in subject line.

Teaching Assistant: Ashley Kim
Contact: arkim@usc.edu

IT Help: Viterbi IT
Hours of Service:
Monday – Friday, 8:30 a.m. – 5:00 p.m.
Contact Info: DRB 205
(213) 740-0517
engrhelp@usc.edu

Catalogue Description

Survey of game software development through quality assurance and in-depth analysis of the development cycle with a focus on bug testing systems, methodologies, and QA Management.

Course Description

Provides students with a survey of game development through the lens of production and QA management. In addition to teaching the basics of video game production roles and systems, students will get to perform in-depth analysis of the game production cycle with a focus on managing bug-testing systems and methodologies. Lab assignments will involve gameplay and analysis, including the use and management of bug-tracking, and will both teach and reinforce professional communication skills that should be useful in any industry.

Students will also learn more about game development process at USC Games, to prepare to participate in ongoing software development by fellow students. The class will prepare students for professional QA positions, and to better integrate with teams for game development. It is a terrific introduction for those new to game development, who are interested in pursuing a game production track at USC, or who wish to explore possible game development roles of interest.

Learning Objectives

Upon completion of the class, students will be able to:

1. Recognize game software that is not working as intended, be familiar with proprietary and commercially available bug-reporting systems
2. Compose professional electronic communications and thorough, reproducible bug reports
3. Understand how to prioritize, replicate, and clear bugs as part of a software development pipeline

4. Design and implement a testing plan
5. Understand the management and function of a videogame QA team, and issues related to both local and remote QA team management
6. Perform key QA planning, management, and implementation for a student game project

Prerequisite(s): n/a
Co-Requisite(s): n/a
Concurrent Enrollment: n/a
Recommended Preparation:
ITP 180 (Video Game Production), also familiarity with playing video games on console and PC, and with the use of email and web browsers.

Course Notes
Syllabus is posted on Blackboard. Will consist of Lecture 1 hours per week, lab 1 hour per week, including game testing. Lecture and lab attendance are both mandatory. Assignments are done during lab and are due that day by end of lab.

Technological Proficiency and Hardware/Software Required
Students should be familiar with the use of computers and video games. Microsoft Office or Google equivalent is required (and may be downloaded from http://software.usc.edu. Students should have access to a windows gaming device. Console substitution can be arranged with permission from instructor.

Required Readings and Supplementary Materials
Required text is Game Testing: All in One – 3rd Edition by Charles P. Schultz and Robert Denton Bryant (Mercury Learning and Information) ISBN 9781942270768

Recommended reading:
- THE GAME PRODUCTION TOOLBOX by Heather Maxwell Chandler (CRC Press 2020) ISBN-13: 978-1138341715
- GAME DEVELOPMENT ESSENTIALS: GAME QA & TESTING by Luis Levy, Jeannie Novak; Delmar Cengage Learning; ISBN-10: 1435439473 - ISBN-13: 978-1435439474
- INTRODUCTION TO GAME DEVELOPMENT, edited by Steve Rabin; Charles River Media; Second Edition, ISBN-13: 978-1-58450-679-9; ISBN-10: 1-58450-679-2
- SECRETS OF THE GAME BUSINESS, edited by François Dominic Laramée; Charles River Media; ISBN 1-58450-282-7

Description and Assessment of Assignments

Weekly Assignments
Weekly assignments will include drafting communications, testing plans and bug reports. Clear formats will be provided in spreadsheet or word processor format and assignments are expected to adhere to the format. Weekly assignment grades are divided as follows: 30% Follow professional communication standards as covered in lecture and demonstrations (including spelling, grammar, and punctuation), 30% Completeness of fields and diagrams, 30% Clarity and reproducibility of reports and plans, 10% comprehensiveness and detail. You must keep a backup copy of all lab work through the end of the semester.

Examinations

Midterm and final examinations are expected to be 70% multiple-choice and fill-in-the-blank questions, and 30% essays. Essays will be evaluated as 30% ideas, 30% organization, 30% supporting evidence, and 10% style (including grammar, punctuation, and spelling).

Participation
Participation is an important component of the course, and students are expected to participate enthusiastically in lectures, student presentations and critique. This includes classroom discussions and answering questions.

Grading Breakdown

The following percentage breakdown will be used in determining the grade for the course.

Assignment	Points	% of Grade
Weekly assignments	250	50%
Midterm exam	100	20%
Final exam	100	20%
Participation	50	10%
TOTAL		100%

Grading Scale

Course final grades will be determined using the following scale

A	93+
A-	90- <93
B+	87- <90
B	83- <87
B-	80- <83
C+	77- <80
C	73- <77
C-	70- <73
D+	67- <70
D	63- <67
D-	60- <63
F	less than 60

Assignment Submission Policy

Details on Blackboard or Shared Drive submission of assignments will be shared on a by-assignment basis on Blackboard. It is your responsibility to submit your assignments on or before the due date (due date is normally by the end of the weekly lab period). Assignments turned in one day late will have 20% of the total points deducted from the graded score. Assignments turned in two days late will have 50% of the total points deducted from the graded score. After two days, submissions will not be accepted, and you will receive a 0.

Grading Timeline

Standard timeline is one week. Notify instructor if grades are not posted within 10 days of assignment due date.

Additional Policies

The only acceptable excuses for missing an assignment deadline or taking an incomplete in the course are personal illness or family emergency. Attendance is recorded during each lecture and lab. If you are going to be absent from class, email a valid excuse to instructor more than one hour prior to class for an absence

to be excused. Athletes likewise must notify instructor in advance of the absence and are still expected to turn in all work. As noted above, assignment is still due on the day of lab.

ITP230 Course Schedule: A Weekly Breakdown

Precise content of class lectures and assignments subject to update, guest speaker availability, or other unforeseen circumstances. Draft subject to change based on revised course materials.

	Topics/Daily Activities	Readings and Homework	Deliverable/ Due Dates
Week 1	Intro to course and to QA. QA and QA Management		Bug reporting and e-mail communication
Week 2	"Being a Game Tester;" Budget, Headcount, Schedule; Defects	Game Testing Ch 1 & 2	Screenshot, Defect Report and Site access matrix
Week 3	Error Types	Game Testing Ch 3	Installation instructions, in-game defect report reproducibility
Week 4	QA functions, employment, and management. Establishing standards	Game Testing Ch 4	Following testing instructions – identifying errors in instructions for multiplayer connection
Week 5	Test phases and test plan	Game Testing Ch 5	Matrix testing thought questions, work estimate, stratified sampling
Week 6	Testing process and bug writing	Game Testing Ch 6	Test Plan
Week 7	Test effectiveness	Game Testing Ch 7	Multiplayer Intermittent Error Lab
Week 8	Combinatorial testing	Game Testing Ch 8	Combinatorial Testing Matrix
Week 9	MIDTERM EXAM	Review for midterm	Midterm Exam
SPRING BREAK			
Week 11	Test Flow Diagrams and Player Usage Profiles	Game Testing Ch 9 & Ch 10	Test Flow Diagram
Week 12	Test trees and Ad Hoc testing	Game Testing Ch 11 & 12	Test Tree Exercise
Week 13	Defect Triggers and Operating Regions	Game Testing Ch 13	

Week 14	Regression Testing	Game Testing Ch 14	Regression Testing
Week 15	Exploratory Game Testing and Automation Testing	Game Testing Ch 15	Persona-Based Exploratory Testing
Week 16	Machine Learning and Neural Networks applied to Testing		
FINAL		To prepare for final, review lectures, readings, and lab assignments	Date: see usc.edu

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. Other forms of academic dishonesty are equally unacceptable. See additional information in SCampus and university policies on scientific misconduct, policy.usc.edu/scientific-misconduct.

Support Systems:

Counseling and Mental Health - (213) 740-9355 – 24/7 on call
studenthealth.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
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), press "0" after hours – 24/7 on call
studenthealth.usc.edu/sexual-assault
Free and confidential therapy services, workshops, and training for situations related to gender-based harm.

Office of Equity and Diversity (OED) - (213) 740-5086 | Title IX – (213) 821-8298
equity.usc.edu, titleix.usc.edu
Information about how to get help or help someone affected by harassment or discrimination, rights of protected classes, reporting options, and additional resources for students, faculty, staff, visitors, and applicants.

Reporting Incidents of Bias or Harassment - (213) 740-5086 or (213) 821-8298
usc-advocate.symplicity.com/care_report
Avenue to report incidents of bias, hate crimes, and microaggressions to the Office of Equity and Diversity |Title IX for appropriate investigation, supportive measures, and response.

The Office of Disability Services and Programs - (213) 740-0776
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 Campus Support and Intervention - (213) 821-4710
campussupport.usc.edu
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

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, 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
Non-emergency assistance or information.

Office of the Ombuds - (213) 821-9556 (UPC) / (323-442-0382 (HSC)
ombuds.usc.edu
A safe and confidential place to share your USC-related issues with a University Ombuds who will work with you to explore options or paths to manage your concern.