New Program Proposal:
Undergraduate Degree Program

Form 2A

This form should be used to seek SUNY's approval and the State Education Department's (SED) registration of a proposed new academic program leading to an associate's and/or bachelor's degree. Approval and registration are both required before a proposed program can be promoted or advertised, or can enroll students. The campus Chief Executive or Chief Academic Officer should send a signed cover letter and this completed form (unless a different form applies[1]), which should include appended items that may be required for Sections 1 through 6, 9 and 10 and MPA-1 of this form, to the SUNY Provost at program.review@suny.edu. The completed form and appended items should be sent as a single, continuously paginated document.[2] If Sections 7 and 8 of this form apply, External Evaluation Reports and a single Institutional Response should also be sent, but in a separate electronic document. Guidance on academic program planning is available at http://www.suny.edu/provost/academic_affairs/app/main.cfm.

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NOTE: Please update this Table of Contents automatically after the form has been completed. *To do this, put the cursor anywhere over the Table of Contents, right click, and, on the pop-up menus, select "Update Field" and then "Update Page Numbers Only." The last item in the Table of Contents is the List of Appended and/or Accompanying Items, but the actual appended items should continue the pagination.*

[1] Use a different form if the proposed new program will lead to a graduate degree or any credit-bearing certificate; be a combination of existing registered programs (i.e. for a multi-award or multi-institution program); be a breakout of a registered track or option in an existing registered program; or lead to certification as a classroom teacher, school or district leader, or pupil personnel services professional (e.g., school counselor).

[2] This email address limits attachments to 25 MB. If a file with the proposal and appended materials exceeds that limit, it should be emailed in parts.

Section 1. General Information		
Item	**Response** ***(type in the requested information)***	
a) Institutional Information	Date of Proposal:	
	Institution's 6-digit SED Code:	**261000 SUNY College of Technology Canton**
	Institution's Name:	**SUNY Canton**
	Address:	**34 Cornell Drive, Canton NY 13617**
	Department of Labor/Regent's Region:	**North Country**
b) Program Locations	List each campus where the entire program will be offered (with each institutional or branch campus 6-digit SED Code): **261000 SUNY College of Technology Canton**	
	List the name and address of off-campus locations (i.e., extension sites or extension centers) where courses will offered, **or check here [X] if not applicable**:	
c) Proposed Program Information	Program Title:	**Game Design And Development**
	Award(s) (e.g., A.A., B.S.):	**Bachelor of Science**
	Number of Required Credits:	Minimum [121] If tracks or options, largest minimum [ ]
	Proposed HEGIS Code:	**0799.00**
	Proposed 6-digit CIP 2010 Code:	**11.0804**
	If the program will be accredited, list the accrediting agency and expected date of accreditation:	
	If applicable, list the SED professional licensure title(s)[3] to which the program leads:	
d) Contact Persons for This Proposal	Name and title: **Kathleen Mahoney, Assistant Professor** Telephone: 315-386-7719 E-mail: mahoneyk@canton.edu Name and title: **Dr. Qi Zhang, Assistant Professor** Telephone: 315-386-7675 E-mail: zhangq@canton.edu	
e) Chief Executive or Chief Academic Officer Approval	**Signature affirms that the proposal has met all applicable campus administrative and shared governance procedures for consultation, and the institution's commitment to support the proposed program.** ***E-signatures are acceptable.*** Name and title: **Douglas M. Scheidt, Ph. D., Provost and Vice President for Academic Affairs** Signature and date:	
	If the program will be registered jointly[4] with one or more other institutions, provide the following information for each institution:	
	Partner institution's name and 6-digit SED Code: Name and title of partner institution's CEO: Signature of partner institution's CEO (or **append** a signed letter indicating approval of this proposal):	

[3] If the proposed program leads to a professional license, a specialized form for the specific profession may need to accompany this proposal.
[4] If the partner institution is non-degree-granting, see SED's CEO Memo 94-04.

Section 2. Program Information

2.1. Program Format

Check all SED-defined format, mode and other program features that apply to the **entire program**.

a) Format(s): [x] Day [ ] Evening [ ] Weekend [ ] Evening/Weekend [ ]Not Full-Time

b) Modes: [x] Standard [ ] Independent Study [ ] External [ ] Accelerated [ ] Distance Education
NOTE: *If the program is designed to enable students to complete 50% or more of the course requirements through distance education, check Distance Education, see Section 10, and append a Distance Education Format Proposal.*

c) Other: [ ] Bilingual [ ] Language Other Than English [ ] Upper Division [ ] Cooperative [ ] 4.5 year [ ] 5 year

2.2. Diploma Program

NOTE: *This section is not applicable to a program leading to an associate's or a bachelor's degree.*

2.3 Program Description, Purposes and Planning

a) What is the description of the program as it will appear in the institution's catalog?

The Bachelor of Science in Game Design and Development is a comprehensive program focusing on the design and development of modern video games. Students will learn the most recent technologies and programming skills to create video games on multiple platforms and devices. They will learn the theories and fundamentals of the game development life cycle, such as prototyping, producing, designing, programming, level creation, art production, and testing. Through this program, students will gain a high degree of hands-on experience with the design and development of modern video games. They will also receive intensive training in developing and applying an algorithmic approach to problem solving through using structured and object-oriented programming techniques, as well as designing and building gaming databases. Courses in the Bachelor of Science in Game Design and Development program provide a focus on video game design and development, imaginary storytelling, and production needs of the modern gaming industry. Graduates of the Game Design program will have hands-on skills to pursue a career creating content for everything from home computers and mobile devices, to emerging platforms like cloud gaming. Studies include game software development as well as production processes used by top studios to design and produce best-selling games. The capstone project for this program is the design and development of a real world video game application. Throughout the program, students will collect samples of their work and create a professional portfolio used in pursuing a job in gaming and other interactive entertainment industry.

b) What are the program's educational and, if appropriate, career objectives, and the program's primary student learning outcomes (SLOs)? ***NOTE: SLOs are defined by the Middle States Commission on Higher Education in the Characteristics of Excellence in Higher Education as "clearly articulated written statements, expressed in observable terms, of key learning outcomes: the knowledge, skills and competencies that students are expected to exhibit upon completion of the program."***

1. Communication

- Create a comprehensive examination of the design process and manage a professional game design, development, and production workflow.
- Select correct software, programming and design tools or processes in order to produce deliverables that meet

project expectations and professional standards.
- Deconstruct and analyze work to evaluate the technical and aesthetic quality.
- Present working prototypes and listen to, evaluate, and respond critically to the ideas of others.

2. Critical Thinking
- Learn proper object-oriented concepts and programming for game development
- Recognize the underlying principles guiding the relevant visual, audio, interactive, and narrative aesthetics of an animation or a game
- Synthesize trends, theories, movements and advancements in technology in the development of new ideas.
- Develop innovative algorithms and software, as well as creatively using software package and programming methods, translating new gaming ideas into real world software products.

3. Professional Competence
- Develop a professional degree of technical proficiency in developing software and effectively using computer hardware and software packages appropriate to the game development industry.
- Demonstrate leadership, collaboration and team building skills.
- Develop and present a professional portfolio.
- Identify industry game design and development roles and the specific skill sets required by each role, in order to develop a successful career path.

4. Inter Intra Personal Skills
- Convey ideas, information and intentions effectively and in a manner that is appropriate to the topic, situation and audience during presentation and critique.
- Research, organize, evaluate, and document gathered information for presentational purposes.
- Write effectively in a style that is well-organized, easy to follow, and supported by sufficient and appropriate evidence.

c) How does the program relate to the institution's and SUNY's mission and strategic goals and priorities?

SUNY Canton Game Design and Development Bachelor of Science relates to SUNY Canton's and SUNY's mission of generating growth and revitalizing communities through developing knowledge economy. It closely aligns with five of the Six Big Ideas of the SUNY's strategic goals and the Power of SUNY.

First, the **Entrepreneurial Century**. The game design and development industry makes $60 billion a year, which is bigger than Hollywood. An economic impact study conducted by Economists Incorporated and released by Entertainment Software Association in 2014 shows that the U.S. video game industry increased in size by more than 9 percent – four times the growth rate of the U.S. economy during the period of 2009 to 2012 and this trend is further expanding. The students in gaming design program of SUNY Canton will learn highly marketable High-Tec knowledge and skills that can be translated into tangible and measurable benefits through developing careers or starting new video gaming firms. This will shift demands an entrepreneurial mindset, which will lead to employment opportunities for future graduates in our geographic area. Through internet innovation and online gaming, these local start-ups can join much larger global gaming market, which will further improve the local economy in a cost-effective way.

Second, the **Seamless Education Pipeline**. The computer gaming industry is entering a new, fast growing, and more sophisticated era — and so is computer gaming education. The skills and experiences that once served the working adults well are now overshadowed by the enormous technological changes. To remain competitive and expand their opportunities in the fast paced video gaming field, many working professionals and game designers return to school to further their education, learning new knowledge and hot skills to update their existing technical literacy. The game design program at SUNY Canton will effectively help them to close the gaps that impede their success.

Third, the **Vibrant Community**. The program is designed for students who want to learn inventive experiences for the next generation of games, which will equip students with the necessary skills to pursue a career creating content for everything from home consoles and computers, to emerging platforms like cell phones and other handheld devices. The graduates of SUNY Canton's game design program will own the knowledge, leadership and skills to

start small gaming businesses in our local area and can work for larger firms remotely and take advantage of students for internships and future employees in various fields, such as entertainment, software, digital media and arts, education, healthcare, as well as research. The more diverse the number of businesses in the community, the more opportunity for growth in the community and the more graduates will stay in the immediate area.

Fourth, a **Healthier New York**. Computer and video games now serve as tools in the fight to preserve well-being, heal the injured, and train the professionals who respond to medical emergencies. Today's multi-touch game technology gives researchers the ability to develop low-cost applications with the potential to treat sufferers of autism, cerebral palsy, and other developmental disabilities more efficiently, and in some cases more effectively, than traditional methods. The University of Maryland Medical Center's Advanced Simulation, Training, Research, and Innovation Center utilizes video game technology for medical training, i.e., surgical residents face an emergency scenario and must perform the necessary procedure on a simulated patient through virtual reality computer programs. The SUNY Canton's career-oriented and practical technology emphasized game design graduates will actively participate in the real-world development of innovative computer game software and related technologies such as virtual reality and animation that can be used in hospitals and medical centers of New York State to effectively improve people's healthcare and everyday life at a reduced cost.

Fifth, **SUNY and the World**. Video games are a thriving industry both in the US and abroad, and the number of careers pertaining to the creation of video games has increased exponentially. Seizing on this trend, a growing number of students with diverse nationalities have decided to pursue a career in gaming industry. The SUNY Canton's game design program will be the first Game Design and Development Bachelor of Science that SUNY offers, which will provide students with technology and career oriented training and create a globally competent student body. Courses of this program will provide a comprehensive focus on the game play, story development, and production needs of the industry. This new program will enroll and retain national and international students in SUNY Canton to learn cutting-edge technologies of gaming design and development as well as Liberal Arts and Sciences. The SUNY Canton's game design program will nurture a culturally fluent and cross-national mindset to improve competitiveness of New York State, and will give students the opportunity to major in a global coming industry.

What is the program's importance to the institution, and its relationship to existing and/or projected programs and its expected impact on them?

The new game design program will enrich SUNY Canton's educational capability and enhance its reputation in computing technology and digital entertainment. All these will increase the number of student enrollment and retention as well as the students' major selection opportunities. As described above, game design is a large field, drawing from the fields of computer science and programming, creative writing, and graphic design. It has close relationship with the SUNY Canton's existing programs such as Graphic and Multimedia Design (*GMMD*) and Information Technology.

These three programs are complementary and can benefit each other. The new game design program will share some common courses as well as teaching and experimental resources with the existing programs, which will greatly reduce the new program's launching cost. At the same time, the new game design program will have very positive impact on the two existing programs by introducing students with new curriculums, projects and career path in the competitive high-tech job market. Taking advantage of the close relationship with the two existing programs, SUNY Canton's game design program will provide students with excellent resources to learn cutting-edge technologies of digital media, information, software as well as video game design and development. The graduates will take a creative lead in imagining and bringing it to life video game worlds and will be well prepared to start their own gaming firms or serve on a development team when working in a big studio.

As applicable, how does the program reflect diversity and/or international perspectives?

The SUNY Canton's new game design program focuses on teaching students cutting-edge technologies in game design, digital media, information, and software development, which encourages multicultural game design and innovative software development for global customers. Game design and development usually involve a comprehensive team of designers and developers that coordinate the complex task of creating a new video game.

Duties include designing characters, levels, puzzles, art and animation as well as writing computer code. All these tasks are ingrained in a multi-culture based development process for audiences of various ages and backgrounds.

Game designers and developers are by definition, global citizens developing games for a geographically diverse community. The development team usually includes designers and developers with various age, race, nationality and background. Furthermore, according to 2015 data from the Entertainment Software Association (ESA), 155 million Americans play video games, and women age 18 and older represent a significantly greater portion of gamers (33%) than boys age 18 and younger (15%). Due to the bright career perspectives, multi-culture connections, strong interests and motivations, diverse job opportunities and global customers, students with diverse age, race, gender, nationality, and cultural background will be attracted and will enroll in this new program, which reflects its diversities as well as international perspectives.

d) How were faculty involved in the program's design, and describe input by external partners, if any (e.g., employers and institutions offering further education?

The faculty involved in the design of the SUNY Canton Bachelor of Science Game Design and Development included

- Qi Zhang, Assistant Professor of Game Design and Development, Virtual Reality and Computer Graphics
- Kathleen Mahoney, Assistant Professor of Graphic and Multimedia Design
- Minhua Wang, Associate Professor of Computer Information Science
- Eric Y. Cheng, Associate Professor, Department Chair of Decision Systems
- Christopher Sweeney, Associate Professor of Graphic and Multimedia Design

e) How did input, if any, from external partners (e.g., educational institutions and employers) or standards influence the program's design? If the program is designed to meet specialized accreditation or other external standards, such as the educational requirements in Commissioner's Regulations for the profession, append a side-by-side chart to show how the program's components meet those external standards. If SED's Office of the Professions requires a specialized form for the profession to which the proposed program leads, append a completed form at the end of this document.

f) Enter anticipated enrollments for Years 1 through 5 in the table below. How were they determined, and what assumptions were used? What contingencies exist if anticipated enrollments are not achieved?

Year	Anticipated Headcount Enrollment			Estimated FTE
	Full-time	Part-time	Total	
1	15	5	20	20
2	30	5	35	55
3	45	5	50	105
4	60	5	65	170
5	75	5	80	238

Anticipated enrollments for the program are approximately 15 students per year for the first 5 years. This was determined by interest of current students in the potential program as well as availability of similar programs in the geographic area (none). Anticipated enrollment also reflects technology in terms of hardware and software. As the program develops and more resources are available, there is the opportunity to grow at a more dramatic rate. This program is closely aligned to the Graphic and Multimedia Design program and if anticipated enrollments are not achieved, it is possible to have students transfer into the program. However, there is much interest from students who chose other programs due to the lack of a Game Design program and we do not see any issues meeting anticipated enrollments.

g) Outline all curricular requirements for the proposed program, including prerequisite, core, specialization (track, concentration), internship, capstone, and any other relevant component requirements, but do not list each General Education course.

Lower Division	
Course Title	**Credits**
CITA 152 Computer Logic	3
GMMD 101 Intro to Media Studies	3
GAME 110 Fundamentals of Game Design	3
CITA 180 Introduction to Programming	3
GAME 130 Game Design and Prototyping	3
GAME 210 Object-Oriented Design for Game Development	3
GAME 230 3D Modeling and Texturing for Games	3
GAME 240 3D Graphics for Game Development	3
CITA 215 Database Apps and Concepts	3
GAME 250 Game Mechanics and Dynamics	3
CITA 204 System Analysis and Design	3
Liberal Arts and Sciences	43
Total	76

Upper Division (as applicable)	
Course Title	**Credits**
GAME 350 Aesthetics and Immersion	3
GAME 370 Digital Media and Interaction	3
GMMD 420 Animation Techniques	3
GMMD 330 Web Design and Development	3
CITA 342 Visual Programming	3
GAME 390 Orientation to Capstone Project	1
GMMD 432 Virtual Worlds	3
GAME 450 Mobile Game Development	3
GAME 470 Emerging Gaming Applications	3
GAME 490 Capstone	3
Liberal Arts and Sciences Upper Level	21
Total	49

h) Program Impact on SUNY and New York State

1) ***Need:*** What is the need for the proposed program in terms of the clientele it will serve and the educational and/or economic needs of the area and New York State? How was need determined? Why are similar programs, if any, not meeting the need?

The need for the proposed program in terms of clientele it will serve is that there is no other Bachelor of Science in Game Design and Development in the SUNY system. Game Design is a rapidly developing industry with many independent as well as corporate opportunities within New York State and beyond. The program will serve the educational and economic needs of the area by developing an untapped career choice for many of today's creative students. The economic needs of this geographic area now are the ability to work remotely from this area. The economic needs of this area in the future will be interns and recent graduates willing to stay for positions in small firms with growth potential. There are no similar programs meeting the needs of students and employers.

2) ***Employment:*** *For programs designed to prepare graduates for immediate employment, use the table below to list potential employers of graduates that have requested establishment of the program and state their specific number of positions needed. If letters from employers support the program, they may be appended at the end of this form.*

	Need: Projected positions	
Employer	**In initial year**	**In fifth year**
Arkadium, New York, NY	1	3-5
New York Times Crosswords, New York NY	1	3-5
Fuel Youth Games, Ottawa Ca	2	4-6

3) ***Similar Programs:*** Use the table below to list similar programs at other institutions, public and independent, in the service area, region and state, as appropriate. Expand the table as needed. ***NOTE:*** *Detailed program-level information for SUNY institutions is available in the Academic Program Enterprise System (APES) or Academic Program Dashboards. Institutional research and information security officers at your campus should be able to help provide access to these password-protected sites. For non-SUNY programs, program titles and degree information – but no enrollment data – is available from SED's Inventory of Registered Programs.*

Institution	**Program Title**	**Degree**	**Awarded**
Finger Lakes Community College	Game Programming and Design	AS	8
Rensselaer Polytechnic Institute	Games and Simulation Arts and Sciences	BS	30

The College of Saint Rose	Game Design	Cert	0
Bramson ORT College	Game Design and Programming	AS	4
Rochester Institute of Technology	Game Design and Development	BS	

4) ***Collaboration:*** Did this program's design benefit from consultation with other SUNY campuses? If so, what was that consultation and its result? No
5) ***Concerns or Objections:*** If concerns and/or objections were raised by other SUNY campuses, how were they resolved? No concerns or objections
6) ***Undergraduate Transfer:*** The State University views as one of its highest priorities the facilitation of transfer for undergraduate students. To demonstrate adequate planning for transfer under SUNY's student mobility policy, **Section 9** of this form on **SUNY Undergraduate Transfer** must be completed for programs leading to Associate in Arts (A.A.) and Associate in Science (A.S.) and for baccalaureate programs anticipating transfer enrollment.

2.4. Admissions

a) What are all admission requirements for students in this program? Please note those that differ from the institution's minimum admissions requirements and explain why they differ.

Admission Requirements

- Prepared to take Composition and the Spoken Word (ENG 101)
- NYS English Regents score ≥ 75; or
- Having taken the SAT
- Transfer student who has already passed a college level English course

- Student must be qualified to enter at least College Algebra (MATH 121)
- Computer or technology courses are recommended
- Transfer students to this program must have a 2.0 GPA for admission.
- Transfer students from other institutions and majors have to complete certain bridge courses that could extend their graduation date.

b) What is the process for evaluating exceptions to those requirements?

The process of evaluating exceptions is based on an admission counselor first determining that a potential student should be considered. The next person to evaluate this potential student will be the Admission Director in concert with the School Dean.

c) How will the institution encourage enrollment in this program by persons from groups historically underrepresented in the institution, discipline or occupation?

The Canino School of Engineering already has several events including Engineering Week and *Women in Engineering* designed specifically for high school girls to encourage enrollment in STEM programs. There are many young female gamers who would love to learn about the field of game design. The institution may not have any issues enrolling students historically underrepresented in the institution, discipline or occupation. Students in the predominantly female nursing program can take gaming courses geared toward the healthcare industry. Virtual Reality software for medical education and training, patient care and surgery will be part of the curriculum.

2.5. Academic and Other Support Services

Summarize the academic advising and support services available to help students succeed in the program.

Support services include library resources as well as the tutoring center within the school. Having an ISA with a background in computer science, information technology or another related discipline available to help students will be an excellent support. Kamal Turner tutors students when he can. A lab with extended hours would also make it possible for students to learn by doing.

2.6. Prior Learning Assessment

If this program will grant credit based on Prior Learning Assessment, describe the methods of evaluating the learning and the maximum number of credits allowed, **or check here [x] if not applicable**.

2.7. Program Assessment and Improvement

Describe how this program's achievement of its objectives will be assessed, in accordance with *SUNY policy*, including the date of the program's initial assessment and the length (in years) of the assessment cycle. Explain plans for assessing achievement of students' learning outcomes during the program and success after completion of the program. **Append** at the end of this form, **a plan or curriculum map** showing the courses in which the program's educational and, if appropriate, career objectives – from Item 2.3(b) of this form – will be taught and assessed. ***NOTE:*** *The University Faculty Senate's Guide for the Evaluation of Undergraduate Programs is a helpful reference.*

This program's achievement of its objectives will be assessed in accordance with SUNY policy based on vision and mission statements, program design, description and program outcomes, and use of program evaluation and assessment findings.

The **mission statement** of the Game Design Program at SUNY Canton is to develop the students' ability to design and develop new generation video games, and prepares them to pursue their ambitions and dreams in the realm of entertainment, such as game programmers, modelers, animators, level designers, texture mappers and story developers. This program will recruit, enroll and retain students interested in the Game Design industry and prepare them for employment and further study in the computer game design and development field. To achieve this goal, the curriculum will be designed to reflect the gaming industry's practical demand through developing an academically rigorous technical program coupled with a deep understanding of the artistic and creative elements of the evolving field of study for career-oriented application and practice.

The **program is designed** to utilize a real world critique environment to assess student-learning outcomes through assignments within courses. Students will be given written papers, quizzes and exams, and real-world meaningful game design and development projects. These diverse evaluation of skills and knowledge will ensure that students are prepared for internships and full time positions as designers, software developers, and production editors in the field of entertainment and gaming industry. Students will be expected to follow the sequence of design and development from prototyping to aesthetics to design, development, testing, production, manufacturing and marketing. Syllabi will include a clear set of student learning outcomes.

The **program outcome** can be assessed and evaluated through a program evaluation plan that will be developed in year one and monitored and evaluated annually. Critical questions can be addressed such as identifying stakeholders and the knowledge and competencies that the students are expected to acquire. Curricula can be created to support institutional and program goals. A curriculum map detailing the program has been added to this form.

Section 3. Sample Program Schedule and Curriculum

Complete the **SUNY Undergraduate Sample Program Schedule** to show how a typical student may progress through the program. Either complete the blank Schedule that appears in this section, or complete an Excel equivalent that computes all sums for you, and can be found at http://www.suny.edu/provost/academic_affairs/app/forms.cfm. Terms 5-8 may be deleted for programs leading to associate's degrees.

NOTES: *The **Undergraduate Schedule** must show **all curricular requirements** and demonstrate that the program conforms to SUNY's and SED's policies.*

- *It must show how a student can complete all program requirements within SUNY credit limits, unless a longer period is selected as a format in Item 2.1(c): two years of full-time study (or the equivalent) and 64 credits for an associate degree, or four years of full-time study (or the equivalent) and 126 credits for a bachelor's degree. Bachelor's degree programs should have at least 45 credits of upper division study, with 24 in the major.*
- *It must show how students in A.A., A.S. and bachelor's programs can complete, within the first two years of full-time study (or 60 credits), no fewer than 30 credits in approved SUNY GER courses, with at least 3 credits each in Basic Communication and Mathematics, plus no fewer than three credits each in at least 5 of the following 8 categories: Natural Science, Social Science, American History, Western Civilization, Other World Civilizations, Humanities, the Arts and Foreign Languages.*
- *It must show how students can complete Liberal Arts and Sciences (LAS) credits appropriate for the degree.*
- *When a SUNY Transfer Path applies to the program, it must show how students can complete the number of SUNY Transfer Path (TPath) courses shown in the Transfer Path Requirement Summary within the first two years of full-time study (or 60 credits), consistent with SUNY's Student Seamless Transfer policy and MTP 2013-03.*
- *Requests for a program-level waiver of SUNY credit limits, SUNY GER and/or a SUNY Transfer Path require the campus to submit a Waiver Request – a different form – with compelling justification(s).*

EXAMPLE FOR ONE TERM: Undergraduate Sample Program Schedule

Term 2: Fall 20xx	Credits per classification						
Course Number & Title	**Cr**	**GER**	**LAS**	**Maj**	**TPath**	**New**	**Prerequisite(s)**
ACC 101 Principles of Accounting	4			4	4		
MAT 111 College Mathematics	3	M	3	3			MAT 110
CMP 101 Introduction to Computers	3						
HUM 110 Speech	3	BC	3			X	
ENG 113 English 102	3	BC	3				
Term credit total:	16	6	9	7	4		

Special Cases for the Sample Program Schedules:

- *For a program with multiple tracks or with multiple schedule options (such as full-time and part-time options), use one Program Schedule for each track or schedule option. Note that licensure qualifying and non-licensure qualifying options cannot be tracks; they must be separate programs.*
- *When this form is used for a multi-award and/or multi-institution program that is not based entirely on existing programs, use the schedule to show how a sample student can complete the proposed program.* ***NOTE:*** *A different form (for program revisions) should be used for new multi-award and/or multi-institution programs that are based entirely on existing programs.*
- *SUNY policy governs the awarding of two degrees at the same level.*
- *Minors require neither SUNY approval nor SED registration.*

a) If the program will be offered through a nontraditional schedule (i.e., not on a semester calendar), what is the schedule and how does it impact financial aid eligibility? **NOTE:** Consult with your campus financial aid administrator for information about nontraditional schedules and financial aid eligibility.

The schedule will be traditional and the schedule will not affect financial aid.

b) For each existing course that is part of the proposed undergraduate major (including cognates and restricted electives, but not including general education), append a catalog description at the end of this document.

See attached appended items. Page 19.

c) For **each new course** in the undergraduate program, **append a syllabus** at the end of this document. **NOTE:** Syllabi for all courses should be available upon request. Each syllabus should show that all work for credit is college level and of the appropriate rigor. Syllabi generally include a course description, prerequisites and corequisites, the number of lecture and/or other contact hours per week, credits allocated (consistent with SUNY policy on credit/contact hours), general course requirements, and expected student learning outcomes.

See attached appended items. Page 23.

d) If the program requires external instruction, such as clinical or field experience, agency placement, an internship, fieldwork, or cooperative education, **append** a completed External Instruction form at the end of this document.

SUNY Undergraduate Sample Program Schedule (*OPTION: You can paste an Excel version of this schedule AFTER this line, and delete the rest of this page.)*
Program/Track Title and Award: Game Design and Development

a) Indicate **academic calendar type**: [x] Semester [ ] Quarter [ ] Trimester [ ] Other (describe):
b) **Label each term in sequence**, consistent with the institution's academic calendar (e.g., Fall 1, Spring 1, Fall 2)
c) **Name of SUNY Transfer Path, if one exists: At this time, there is not a transfer path**
d) Use the table to show **how a typical student may progress through the program**; copy/expand the table as needed. **Complete all columns that apply to a course.**

Term 1: Fall 1	See KEY.						
Course Number & Title	**Cr**	**GER**	**LAS**	**Maj**	**TP**	**New**	**Co/Prerequisites**
ENG 102 Oral and Written Expression (BC)	3	BC	x				
MATH 121 College Algebra (4 credits) Or equivalent MATH Elective (M)	4	M	x				
CITA 152 Computer Logic	3			x			
GMMD 101 Intro to Media Studies (H)	3	H		x			
GAME 110 Fundamentals of Game Design	3			x		x	
Term credit totals:	16	10	7	9			

Term 2: Spring 1	See KEY.						
Course Number & Title	**Cr**	**GER**	**LAS**	**Maj**	**TP**	**New**	**Co/Prerequisites**
ENG 202 Creative Non-Fiction	3		x				ENG 101 or 102
MATH Elective (M)	3	M	x				
CITA 180 Intro to Programming	4			x			CITA 152 (C or Better) MATH 106 (C or Better)
SOCI 101 Intro to Sociology (SS)	3	SS	x				
GAME 130 Game Design and Prototyping	3			x		x	GAME 110
Term credit totals:	16	6	9	7			

Term 3: Fall 2	See KEY.						
Course Number & Title	**Cr**	**GER**	**LAS**	**Maj**	**TP**	**New**	**Co/Prerequisites**
ENG 221 Creative Writing (AR)	3	AR	x				ENG 101/102, one lit course
GER Elective (NS, AH, WC, OW, FL)	3	WC	x				
GER Elective (NS, AH, WC, OW, FL)	3	OW	x				
GAME 210 Object-Oriented Design for Game Development	3			x		x	CITA 180, 152, GAME 110, 130
CITA 215 Database Apps and Concepts	3			x			CITA 152
Term credit totals:	15	9	9	6			

Term 4: Spring 2	See KEY.						
Course Number & Title	**Cr**	**GER**	**LAS**	**Maj**	**TP**	**New**	**Co/Prerequisites**
GER Elective (NS, AH, WC, OW, AR, FL)	3	NS	x				
GER Elective (NS, AH, WC, OW, AR, FL)	3	AH	x				
GAME 230 3D Modeling and Texturing	3			x			GAME 110, 130
GAME 240 3D Graphics for Game Development	3			x	x		CITA 180, 152 GAME 230
GAME 250 Game Mechanics and Dynamics	3			x		x	GAME 110, 210
Term credit totals:	15	6	6	9			

Term 5: Fall 3	See KEY.						
Course Number & Title	**Cr**	**GER**	**LAS**	**Maj**	**TP**	**New**	**Co/Prerequisites**
ENGL 301 Professional Writing	3		x				ENG 10 or 102
LAS Elective	3		x				
UL LAS Elective	3		x				
CITA 342 Visual Programming	3			x		x	CITA 180
GAME 350 Aesthetics and Immersion	3			x		x	GAME 110, 130
Term credit totals:	15		9	6			

Term 6: Spring 3	See KEY.						
Course Number & Title	**Cr**	**GER**	**LAS**	**Maj**	**TP**	**New**	**Co/Prerequisites**
ENGL 315 Short Fiction: The Art of the Tale	3	AR	x				ENG 101/102, one lit course
UL LAS Elective	3		x				
CITA 204 System Analysis and Design	3			x			CITA 163, 180, 215
GAME 370 Digital Media and Interaction	3			x		x	GAME 110, GAME 130
GMMD 432 Virtual Worlds	3			x			CITA 342, ENG 393/394, ENG 221/315
Term credit totals:	15	0	6	9			

Term 7: Fall 4	See KEY.						
Course Number & Title	**Cr**	**GER**	**LAS**	**Maj**	**TP**	**New**	**Co/Prerequisites**
UL LAS Elective	3		x				
UL LAS Elective	3		x				
SOCI 250 Sociology of Mass Media	3		x				SOCI 101
GAME 450 Mobile Game Development	3			x			
GMMD 420 Animation Techniques	3			x			GMMD 303, 331, 421
GAME 390 Orientation to Capstone Project	1			x	x		
Term credit totals:	16	0	9	7			

Term 8: Spring 4	See KEY.						
Course Number & Title	**Cr**	**GER**	**LAS**	**Maj**	**TP**	**New**	**Co/Prerequisites**
UL LAS Elective	3		x				
UL LAS Elective	3		x				
GMMD 330 Web Design and Development	3			x		x	GMMD 102, CITA 180
GAME 470 Emerging Gaming Applications	3			x		x	GAME 250, 320
GAME 490 Capstone	3			x		x	GAME 390
Term credit totals:	15	0	6	9			

Program Totals (in credits):	**Total Credits: 123**	**SUNY GER: 33**	**LAS: 61**	**Major: 61**	**Elective & Other: 30**	**Upper Division: 53**	**Upper Division Major: 28**	**Number of SUNY GER Categories:**
								10

KEY Cr: credits **GER:** SUNY General Education Requirement (Enter Category Abbreviation) **LAS:** Liberal Arts & Sciences (Enter credits) **Maj:** Major requirement (Enter credits) **TP:** SUNY Transfer Path Courses (Enter credits) **New:** new course (Enter X) **Co/Prerequisite(s):** list co/prerequisite(s) for the noted courses **Upper Division:** Courses intended primarily for juniors and seniors **SUNY GER Category Abbreviations (the first five listed in order of their frequency of being required by SUNY campuses):** Basic Communication (BC), Math (M), Natural Sciences (NS), Social Science (SS), Humanities (H), American History (AH), The Arts (AR), Other World Civilizations (OW), Western Civilization (WC), Foreign Language (FL).

Section 4. Faculty

a) Complete the **SUNY Faculty Table** on the next page to describe current faculty and to-be-hired (TBH) faculty.

b) **Append** at the end of this document position descriptions or announcements for each to-be-hired faculty member.

NOTE: *CVs for all faculty should be available upon request. Faculty CVs should include rank and employment status, educational and employment background, professional affiliations and activities, important awards and recognition, publications (noting refereed journal articles), and brief descriptions of research and other externally funded projects. New York State's requirements for faculty qualifications are in Part 55.2(b) of the Regulations of the Commissioner of Education.*

c) What is the institution's definition of "full-time" faculty?

SUNY Faculty Table

Provide information on current and prospective faculty members (identifying those at off-campus locations) who will be expected to teach any course in the major. Expand the table as needed. Use a separate Faculty Table for each institution if the program is a multi-institution program.

(a)	(b)	(c)	(d)	(e)	(f)
Faculty Member Name and Title/Rank (Include and identify Program Director with an asterisk.)	**% of Time Dedicated to This Program**	**Program Courses Which May Be Taught (Number and Title)**	**Highest and Other Applicable Earned Degrees (include College or University)**	**Discipline(s) of Highest and Other Applicable Earned Degrees**	**Additional Qualifications: List related certifications, licenses and professional experience in field.**
PART 1. Full-Time Faculty					
Qi Zhang, Assistant Professor *	100%	CITA152, 180, 215, 342, 204 GAME 110, 130 210, 250, 230, 320, 370, 450, 390, 490	Ph.D. of Engineering Science, University of Western Ontario.	Computer Graphics, Visualization, Virtual Reality, and Computer Gaming	
Kathleen Mahoney, Assistant Professor	30%	GAME 110, 130, 250, 350, 390, 470, 490	MFA (Terminal Degree) Pratt Institute, Brooklyn, NY.	Digital Arts concentration in Emerging Arts	
Minhua Wang, Associate Professor	30%	CITA 152, 180, 215, 342, 204 GMMD 342, 470	Master of Science in Math Science and Computer Science, Shanghai University.	Networking and Cyber Security, Gaming	
Christopher Sweeney, Associate Professor	25%	GMMD 101, GAME 350	Ph.D. of English	Media and Visual Culture	
Part 2. Part-Time Faculty					
Part 3. Faculty To-Be-Hired (List as TBH1, TBH2, etc., and provide title/rank and expected hiring date.)					
TBH1 (Assistant Professor) Fall 2018	100%				

Section 5. Financial Resources and Instructional Facilities

a) What is the resource plan for ensuring the success of the proposed program over time? Summarize the instructional facilities and equipment committed to ensure the success of the program. Please explain new and/or reallocated resources over the first five years for operations, including faculty and other personnel, the library, equipment, laboratories, and supplies. Also include resources for capital projects and other expenses.

b) Complete the five-year SUNY Program Expenses Table, below, consistent with the resource plan summary. Enter the anticipated academic years in the top row of this table. List all resources that will be engaged specifically as a result of the proposed program (e.g., a new faculty position or additional library resources). If they represent a continuing cost, new resources for a given year should be included in the subsequent year(s), with adjustments for inflation or negotiated compensation. Include explanatory notes as needed.

SUNY Program Expenses Table

Note: this budget is a five year plan, and we have applied/will apply external grants and contributions for additional support, such as State University of New York Expanded Investment and performance Fund, grants from the National Science Foundation (NSF), as well as Industrial Collaborator Contributions

(OPTION: You can paste an Excel version of this schedule AFTER this sentence, and delete the table below.)

Program Expense Categories	Expenses (in dollars)					
	Before Start	**Academic Year 1:**	**Academic Year 2:**	**Academic Year 3:**	**Academic Year 4:**	**Academic Year 5:**
(a) Personnel (including faculty and all others)	75,000	76,5000	78,030	153,030	156,090	159,150
(b) Library						
(c) Equipment	967,580	60,000	20,000	10,000	60,000	20,000
(d) Laboratories						
(e) Supplies	5,000	5,000	5,000	5,000	5,000	5,000
(f) Capital Expenses						
(g) Other (Specify):						
(h) Sum of Rows Above	**1,047,580**	**141,500**	**103,030**	**168,030**	**221,090**	**184,150**

category	manufacturer	item	link	quantity	price each	total
Computers	Apple	Mac Pro Workstation for Gaming	http://store.apple.com/us/buy-mac/mac-pro?product=ME253LL/A&step=config#	25	$9,668.00	$241,700.00
		Monitors	apple.com	25	$1,000.00	$25,000.00
	Dell	Windows Workstation for Gaming	http://configure.us.dell.com/dellstore/config.aspx?oc=cto3apt7910&model_id=precision-t7910-workstation&c=us&l=en&s=bsd&cs=04	25	$6,296	$157,400
		Dual Monitors	UltraSharp 27 Monitor with PremierColor	50	$850	$42,500
		Dedicated Game Servers	Dell R930 Rack Server	2	$17,740	$35,480
Software	Adobe	Creative Suite	http://www.adobe.com/	50	300/year	$75,000
	Unity	Unity Pro / IOS Pro / Android	https://store.unity3d.com/education	25	4,500	$112,500

		Pro for Project Implementation				
	Wacom	Tablets	27 inch Cintiq Touch Creative Pen Display	50	$3,000	$150,000.00
Presentation	Smartboard	Smartboard	Smart SB885ix2	1	$8,000	$8,000
			Crestron Station	1	$100,000.00	$100,000
Misc		Game Design and Development Lab Equipment and Furniture			$20,000	$20,000
					Total	$967,580

Section 6. Library Resources

a) Summarize the analysis of library collection resources and needs *for this program* by the collection librarian and program faculty. Include an assessment of existing library resources and accessibility to those resources for students enrolled in the program in all formats, including the institution's implementation of SUNY Connect, the SUNY-wide electronic library program.

b) Describe the institution's response to identified collection needs and its plan for library development.

Section 7. External Evaluation

SUNY requires external evaluation of all proposed bachelor's degree programs, and may request an evaluation for a proposed associate degree or certificate program in a new or emerging field or for other reasons.

Is an external evaluation required? [] No [x] Yes

If yes, list below all SUNY-approved evaluators who conducted evaluations (adding rows as needed), and **submit a separate electronic document to accompany this form** that contains each original, signed *External Evaluation Report* as well as the single *Institutional Response* to all reports, as described in Section 8. ***NOTE:*** *To select external evaluators, a campus sends 3-5 proposed evaluators' names, titles and CVs to the assigned SUNY Program Reviewer, expresses its preferences and requests approval.*

Evaluator #1	**Evaluator #2**
Name: Atia Quadri Title: Assistant Professor Institution: Rochester Institute of Technology Building 7 Room 2264 One Lomb Memorial Drive, Rochester NY 14623-5603 saqpph@mail.rit.edu 585-475-6175	Name: Steve Graham Title: Associate Professor Institution: Dakota State University 820 N Washington Ave, Madison, SD 57042 steve.graham@dsu.edu 605-256-5819

Section 8. Institutional Response to External Evaluator Reports

As applicable, send a single *Institutional Response* to all *External Evaluation Reports* in the same file that contains the verbatim, signed *External Evaluation Reports*.

Section 9. SUNY Undergraduate Transfer

The State University views as one of its highest priorities the facilitation of transfer.

a) For a **proposed Associate in Arts (A.A.) or an Associate in Science (A.S.) degree,** demonstrate that the program's graduates will be able to transfer into at least two parallel SUNY baccalaureate programs and complete them within two additional years of full-time study, per SUNY policy, by listing the transfer institutions below and **appending** at the end of this document**:**

- Two completed *SUNY Transfer Course Equivalency Tables*, one for each transfer institution; and
- A letter from the Chief Academic Officer of each transfer institution asserting acceptance of the completed Transfer Course Equivalency Table.

Baccalaureate Degree Institution	Baccalaureate Program SED Code and Title	Degree

b) For a **proposed baccalaureate program,** document articulation with at least two parallel SUNY associate degree programs for seamless transfer, by **appending documentation of articulation**, such as *SUNY Transfer Course Equivalency Tables* and/or letters of support from Chief Academic Officers at associate degree institutions or their designees. **If transfer does not apply to this program, please explain why.**

c)

Associate Degree Institution	Associate Program SED Code and Title	Degree
Finger Lakes Community College	32464, Game Programming and Design	AAS
SUNY Canton	0581-01, Computer Information Systems	AAS

NOTE: *Transfer course equivalency tables are needed, despite SUNY Transfer Paths, to ensure that all courses in an A.A. or A.S. program will be accepted for transfer. Official SED program titles and codes can be found on NYSED's Inventory of Registered Programs at http://www.nysed.gov/heds/IRPSL1.html.*

Section 10. Application for Distance Education

a) Does the program's design enable students to complete 50% or more of the course requirements through distance education? [x] No [ ] Yes. If yes, **append** a completed *SUNY Distance Education Format Proposal* at the end of this proposal to apply for the program to be registered for the distance education format.

b) Does the program's design enable students to complete 100% of the course requirements through distance education? [x] No [ ] Yes

Section MPA-1. Need for Master Plan Amendment and/or Degree Authorization

a) Based on Guidance on Master Plan Amendments, please indicate if this proposal requires a Master Plan Amendment.
[x] No [ ] Yes, a completed *Master Plan Amendment Form* is **appended** at the end of this proposal.

b) Based on *SUNY Guidance on Degree Authorizations* (below), please indicate if this proposal requires degree authorization.

[x] No [ ] Yes, once the program is approved by the SUNY Provost, the campus will work with its Campus Reviewer to draft a resolution that the SUNY Chancellor will recommend to the SUNY Board of Trustees.

SUNY Guidance on Degree Authorization
Degree authorization is required when a proposed program will lead to a new degree (e.g., B.F.A., M.P.H.) at an existing level of study (i.e., associate, baccalaureate, first-professional, master's, and doctoral) in an existing disciplinary area at an institution. Disciplinary areas are defined by the New York State Taxonomy of Academic Programs. Degree authorization requires approval by the SUNY Provost, the SUNY Board of Trustees and the Board of Regents.

List of Appended and/or Accompanying Items

a) Appended Items: If materials required in selected items in Sections 1 through 4 and Sections 9, 10 and MPA-1 of this form apply to this proposal, they should be appended as part of this document, after this page, with continued pagination. In the first column of the chart below, please number the appended items, and append them in number order.

Number	Appended Items	Reference Items
	For multi-institution programs, a letter of approval from partner institution(s)	Section 1, Item (e)
	For programs leading to professional licensure, a side-by-side chart showing how the program's components meet the requirements of specialized accreditation, Commissioner's Regulations for the profession, or other applicable external standards	Section 2.3, Item (e)
	For programs leading to licensure in selected professions for which the SED Office of Professions (OP) requires a specialized form, a completed version of that form	Section 2.3, Item (e)
	OPTIONAL: For programs leading directly to employment, letters of support from employers, if available	Section 2, Item 2.3 (h)(2)
001 Page 18	*For all programs*, a plan or curriculum map showing the courses in which the program's educational and (if appropriate) career objectives will be taught and assessed	Section 2, Item 7
002 Page 19	*For all programs*, a catalog description for each existing course that is part of the proposed undergraduate major (including cognates and restricted electives)	Section 3, Item (b)
003 Page 23	*For all programs with new courses in the major*, syllabi for all new courses in a proposed undergraduate major	Section 3, Item (c)
	For programs requiring external instruction, a completed *External Instruction Form* and documentation required on that form	Section 3, Item (d)
	For programs that will depend on new faculty, position descriptions or announcements for faculty to-be-hired	Section 4, Item (b)
005 Page 68	*For all A.A. and A.S. programs*, Transfer Equivalency Tables and letters of support from at least two SUNY baccalaureate institutions; *for baccalaureate programs that anticipate transfer student enrollment*, documentation of seamless transfer with at least two SUNY two-year programs	Section 9
	For programs designed to enable students to complete at least 50% of the course requirements at a distance, a *Distance Education Format Proposal*	Section 10
	For programs requiring an MPA, a *Master Plan Amendment Form*	Section MPA-1

b) Accompanying Items - External Evaluations and Institutional Response: If Sections 7 and 8 of this form indicate that external evaluation is required as part of this proposal, please send a separate electronic document to program.review@suny.edu that contains the original, signed *External Evaluation Reports* and a single *Institutional Response* to all reports. The file name should indicate the campus, program title, award and content of the file (e.g., BuffaloU-English-PhD-ExEval).

Section 2, Item 7
002 – Catalog Map

For all programs, a curriculum map showing the courses in which the program's educational and (if appropriate) career objectives will be taught and assessed

Section 3, Item (b)

002 – Catalog Descriptions for Existing Courses

For all programs, a catalog description for each existing course that is part of the proposed undergraduate major (including cognates and restricted electives)

SEMESTER 1 - Fall

ENGL 101 EXPOSITORY WRITING ***Fall/Spring, 3 credit hours GER 10*** This course is designed to help students communicate effectively, with an emphasis on academic writing and critical reading skills. Students will develop critical thinking skills, rhetorical knowledge, basic research skills, knowledge of conventions, and communication ethics. This course is an alternate to ENGL 102 Academic Communication: students cannot take both.

OR

ENGL 102 ORAL AND WRITTEN EXPRESSION ***Fall/Spring, 3 credits GER 10*** This course is designed to help students effectively communicate orally and in writing. Students will develop presentation skills, critical thinking skills, rhetorical knowledge, basic research skills, knowledge of conventions, and communication ethics. This course is an alternate to ENGL 101 College Writing: students cannot take both.

MATH 111 SURVEY OF MATHEMATICS ***Fall/Spring, 3 credit hours GER 1*** A study of various mathematical topics including an introduction to quantitative reasoning skills, truth table logic, sets, probability, geometry or matrices and linear programming (dependent on demand). This course is designed for non-technical oriented students. It is appropriate for students in liberal arts. Three hour lecture per week. Prerequisite: Intermediate Algebra (MATH 106) with a grade of C or better, or for students who have taken 2 NYS high school regents math courses with a grade of 75 or above on the second New York State Regents mathematics examination, or permission of instructor.

OR

MATH 121 COLLEGE ALGEBRA ***Fall/Spring, 4 credit hours GER 1*** This course provides basic algebraic concepts and an introduction to trigonometric and logarithmic functions. Emphasis is placed on equations and inequalities; polynomials, rational, exponential and logarithmic functions; and graphing and data analysis including modeling and linear regression. Additional topics include complex numbers; radical functions; right triangle trigonometry; systems of equations; and elementary transcendental functions. Four hours lecture per week. Prerequisite: Intermediate Algebra (MATH 106) with a grade of C or better, or for students who have taken 2 NYS high school regents math courses with a grade of 75 or above on the second New York State Regents mathematics examination, or permission of instructor. Cannot be taken for credit by students with credit in Pre-Calculus Algebra (MATH 123).

CITA 152 COMPUTER LOGIC ***Fall/Spring, 3 credit hours*** This course provides a background in logical problem solving skills used in computing. Topics include problem solving techniques, number systems, programming concepts, relational and logical operators. Three hours lecture per week. Prerequisite: Leveled into at least into and Oral and Written Expression (ENGL 102) Co requisite: Intermediate Algebra (MATH 106) or completion of a higher-level math course; or permission of instructor.

GMMD 101 INTRODUCTION TO MEDIA STUDIES ***Fall/Spring, 3 credit hours GER 7*** This course will introduce students to the process of media analysis. Emphasis will be placed on key terms for adopting a critical eye towards mass media and the development of media literacy in both traditional (print, radio, film, television) and emerging (digital and web-based) forms. Three hours lecture per week.

ENGL 202 CREATIVE NON-FICTION ***Fall/Spring, 3 credits*** This course will provide opportunities for the student to continue developing and refining skills in writing from the basics of Expository Writing or Oral and Written Expression. Through their study of creative non-fiction forms—memoirs, nature writing, lyrical essays, magazine features, webpage content, etc.—students will learn to write essays that are not only persuasive but enjoyable. Each

student will design writing situations according to interests and will develop imaginative essays of creative nonfiction. A liberal arts writing intensive course. Three hours lecture per week. Prerequisites: Expository Writing (ENGL 101) OR Oral and Written Expression (ENGL 102) OR an equivalent course OR permission of instructor.

SEMESTER 2 - Spring

ENGL 221 CREATIVE WRITING ***Fall/Spring, 3 credit hours GER 8*** This course is an introduction to creative writing and its publication. Students hone their written communication skills through the discipline of creative writing, as well as develop a deeper understanding of the literary arts. Emphasis is placed upon the writing of poems and short stories, but other forms of creative work may be utilized and discussed. We cover basic technical problems and formal concepts of creative writing. Students also study works by accomplished writers to see how those writers define and master their craft. At the end of the semester, students seek publication of their work in various formats. This writing intensive course meets 3 hours per week. Pre-requisites include Expository Writing OR Oral and Written Expression and one literature course OR permission of the instructor. Three hours lecture per week. Prerequisites: Expository Writing (ENGL 101) or Oral and Written Expression (ENGL 102), and one literature course, or permission of instructor.

MATH ELECTIVE

CITA 180 INTRODUCTION TO PROGRAMMING ***Fall/Spring, 4 credit hours*** This course develops methodologies and techniques for program creation and implementation. Writing high-quality, internally- documented, well-structured programs utilizing appropriate data structures is emphasized. Prerequisite: Computer Logic (CITA 152) with a grade of C or better and at least Intermediate Algebra (MATH106) with a grade of C or better, or permission of instructor.

SOCI 101 INTRODUCTION TO SOCIOLOGY ***Fall/Spring, 3 credit hours GER 3*** This course provides an introduction to the discipline of sociology, including historic development, reliance on scientific method, core concepts and theories, and units of analysis from the dyad to society. Three hours lecture per week.

SEMESTER 3 - Fall

GER ELECTIVE ***Fall/Spring, 3 credit hours***
GER ELECTIVE ***Fall/Spring, 3 credit hours***
GER ELECTIVE ***Fall/Spring, 3 credit hours***

SEMESTER 4 - Spring

GER ELECTIVE ***Fall/Spring, 3 credit hours***
GER ELECTIVE ***Fall/Spring, 3 credit hours***

CITA 215 DATABASE SYSTEMS WITH WEB APPLICATIONS ***Spring, 3 credit hours*** Database management systems are studied in the context of an SQL-based product. Topics include: logical organization versus physical organization; relational, network and hierarchical models; normalization; and the creation of a web-based user-interface to manipulate tables. A term project is assigned. Two hours lecture, two hours laboratory per week. Prerequisite: Computer Logic (CITA 152) or permission of instructor.

SOCI 250 SOCIOLOGY OF THE MASS MEDIA ***Fall/Spring, 3 Credit hours*** The course will begin by exploring the component and the basic concepts of mass media. Special emphasis is on the social construction power of the mass media. The positive role of the mass media will be explored as well as the negative impact. The social control function of the mass media will be explained. The course is aimed at providing a critical assessment of the social construction power of the mass media with an emphasis on images, content and context as presented in the mass media. The course will explore the images of various segments of American society as presented in the mass media including racial/ethnic groups, gender and sexual orientation, age and class. Three hours lecture per week. Prerequisite: Introduction to Sociology (SOCI 101) or permission of instructor.

SEMESTER 5 - Fall

ENGL 301 PROFESSIONAL WRITING AND COMMUNICATION ***Fall, 3 credit hours*** This course aims to prepare students to work as communication professionals for the global marketplace. Emphasis is on technical writing, business writing, and publishing. Students will design and produce technical documents, including, but not limited to, memos, reports, instructions, presentations, and websites, responding to specific audiences and purposes in the business world. Students should be familiar with desktop publishing and electronic presentations. Three hours lecture per week. Prerequisites: Expository Writing (ENGL 101) or Oral and Written Expression (ENGL 102) and completion of at least 45 credit hours,; or permission of instructor.

LAS ELECTIVE ***Fall/Spring, 3 credit hours***
LAS ELECTIVE ***Fall/Spring, 3 credit hours***

SEMESTER 6 - Spring

ENGL 315 SHORT FICTION: THE ART OF THE TALE ***Fall/Spring, 3 credit hours GER 8*** The short story genre is explored by reading selections from various writers around the world. Students also write their own short stories in order to gain perspective on the literary form of the short story, the range of ideas expressed within that form, and the creative process used to produce that form. Three hours lecture per week. Prerequisites: Expository Writing (ENGL 101) OR Oral and Written Expression (ENGL 102) AND one literature course AND 30 credit hours earned with a cumulative GPA of 2.0 or permission of instructor.

LAS ELECTIVE ***Fall/Spring, 3 credit hours***

LAS ELECTIVE ***Fall/Spring, 3 credit hours***

CITA 204 SYSTEMS ANALYSIS AND DESIGN ***Spring, 3 credit hours*** A course designed to guide the student through the evolution of a system; an analysis of the present flow of information; and the specifications, selection and implementation of information processing systems. The scope of a system development study will transcend mere knowledge of specific systems to include a study of the total management system. Three hours lecture per week. Prerequisites: Survey of Information Technology (CITA 163), Introduction to Programming (CITA 180), and Database Systems with Web Applications (CITA 215), or permission of instructor.

GMMD 420 ANIMATION TECHNIQUES ***Spring, 3 credit hours*** This course develops an overview of the techniques and history of 2D and 3D animation, including stop-motion and tweened animation. Students engage in hands-on projects involving the development of hand-drawn and computer- generated animation. Emphasis is placed on under- standing the place of animation in the context of the film, television, internet, and gaming industries, project management, and the development of a personal animation style. Three hours lecture per week. Prerequisites: Digital Illustration and Typography (GMMD 331), Experimental Digital Video (GMMD 412), Experimental Digital Photography (GMMD 303), or permission of the instructor.

SEMESTER 7 - Fall

UL LAS ELECTIVE ***Fall/Spring, 3 credit hours***

UL LAS ELECTIVE ***Fall/Spring, 3 credit hours***

GMMD 330 WEB DESIGN AND DEVELOPMENT ***Fall/Spring, 3 credit hours*** Students will be introduced to basic code, web development strategies, and current industry standards. Students will learn how to create and edit HTML and CSS with web authoring tools. Special emphasis will be placed on file management and image design. The course will culminate in a final project utilizing the design process. Three hours lecture per week. Prerequisites: Introduction to

Design (GMMD 102), Introduction to Programming (CITA 180) or equivalent, or permission of the instructor.

CITA 342 VISUAL PROGRAMMING AND DEVELOPMENT TOOLS ***Fall, 3 credit hours*** An introduction to the development of computer applications using rapid development tools such as Visual Basic or Visual C++. Emphasis will be on designing and managing graphical user inter- faces, procedures, file-management, debugging and testing. Two hours lecture and two hours lab per week. Prerequisite: Introduction to Programming (CITA 180) or permission of instructor.

SEMESTER 8 - Spring

UL LAS ELECTIVE ***Fall/Spring, 3 credit hours***

GMMD 432 VIRTUAL WORLDS ***Spring, 3 credit hours*** This course examines gaming concepts, non- linear narrative, delivery systems and software for the entertainment industry. Working with 2D and 3D visual concepts, virtual reality, interactivity and sound the student will develop media for the entertainment industry. Environments, characters, gaming strategies, role playing concepts, navigation and feedback will be part of the information presented within the course. Three lecture hours per week. Pre- requisites: Visual Programming and Development Tools (CITA 342), Classical Theater (ENGL 393) or Contemporary Theater (ENGL 394), Creative Writing (ENGL 221) or Short Fiction (ENGL 315) and senior level status, or permission of instructor.

003 – Syllabi for New Courses

For all programs with new courses in the major, syllabi for all new courses in a proposed undergraduate major

STATE UNIVERSITY OF NEW YORK
COLLEGE OF TECHNOLOGY
CANTON, NEW YORK

COURSE OUTLINE

GAME 110 Fundamentals of Game Design

Prepared By: Kathleen Mahoney

THE STATE UNIVERSITY OF NEW YORK AT CANTON

CANINO SCHOOL OF ENGINEERING TECHNOLOGY

DECISION SYSTEMS

September 2015

A. **TITLE**: Fundamentals of Game Design

B. **COURSE NUMBER:** GAME 110

C. **CREDIT HOURS:** 3

D. **WRITING INTENSIVE COURSE**: No

E. **COURSE LENGTH:** 15 weeks

F. **SEMESTER(S) OFFERED:** Fall

G. **HOURS OF LECTURE, LABORATORY, RECITATION, TUTORIAL, ACTIVITY:**
2 lecture hours per week, 2 lab hours per week

H. **CATALOG DESCRIPTION:**

This course is a comprehensive examination of design processes and addresses the social implications, interactions and usability of game design. The course focuses on the principles and design decisions game designers make. The course also discusses the societal and cultural impact of gaming. Students learn the processes of game design from concept to completion.

I. **PRE-REQUISITES/CO-REQUISITES:**

Junior/senior level students, or permission of instructor

J. **GOALS (STUDENT LEARNING OUTCOMES):**
By the end of this course, the student will be able to:

Course Objective	***Institutional SLO***
a. Create a comprehensive examination of the design process and manage a professional workflow.	**1. Communication** **2. Crit. Thinking** **3. Prof. Competence**
b. Utilize the design process to improve an existing game, utilizing thumbnail, storyboard, proposal to go beyond the obvious and predefined.	**2. Crit. Thinking** **3. Prof. Competence**
c. Develop a professional degree of technical proficiency developing algorithms and software appropriate to the industry.	**1. Communication** **3. Prof. Competence**
d. Evaluate methods of designing and producing games from concept to completion.	**2. Crit. Thinking** **3. Prof. Competence**
e. Research game designers and current trends in game design.	**1. Communication** **2. Crit. Thinking**
f. Apply gaming principles of narrative, dynamics and mechanics to a final project.	**2. Crit. Thinking** **3. Prof. Competence**

K. TEXTS:

Fundamentals of Game Design (3rd Edition) by Ernest Adams. ISBN-13: 978-0321929679 ISBN-10: 0321929675

L. REFERENCES:

M. EQUIPMENT: : PC and Macintosh Computer Lab with Microsoft Office, Unity and Adobe Creative Suite installed.

N. GRADING METHOD: A-F

O. MEASUREMENT CRITERIA/METHODS:

- Projects as Assigned
- Final Project
- Exams
- Paper
- Tutorials
- Progress
- Participation

P. DETAILED COURSE OUTLINE:

1. Introduction and Syllabus, Ethics, Plagiarism and Copyright
2. Game Analysis
    a. Game Analysis Techniques
    b. Gameplay
    c. Narrative
3. Game Dynamics and Mechanics
    a. Game Mechanics Analysis
    b. Level Design
    c. Obstacles
    d. Game Dynamics
    e. Challenges
4. GUI (Graphic User Interface)
    a. 3D Modeling
    b. Characters
5. Reward Systems Analysis
6. Interface/Input Analysis
7. Advanced Game Systems
8. Document Recreation
9. The Business of Marketing Games
10. Testing
    a. Game Prototyping
    b. Game Demos
11. Final Project Presentation

Q. LABORATORY OUTLINE:

None

STATE UNIVERSITY OF NEW YORK
COLLEGE OF TECHNOLOGY
CANTON, NEW YORK

COURSE OUTLINE

GAME 130 Game Design and Prototyping

Prepared By: Kathleen Mahoney

THE STATE UNIVERSITY OF NEW YORK AT CANTON

CANINO SCHOOL OF ENGINEERING TECHNOLOGY

DECISION SYSTEMS

September 2015

A. **TITLE**: Game Design and Prototyping

B. **COURSE NUMBER:** GAME 130

C. **CREDIT HOURS:** 3

D. **WRITING INTENSIVE COURSE**: No

E. **COURSE LENGTH:** 15 weeks

F. **SEMESTER(S) OFFERED:** Fall

G. **HOURS OF LECTURE, LABORATORY, RECITATION, TUTORIAL, ACTIVITY:**
2 lecture hours per week, 2 lab hours per week

H. **CATALOG DESCRIPTION:**

This is a studio-based course investigating the tools, materials, and foundational aspects of game design and preparation for production. This course presents the process with industry-standard software used to design, develop and manufacture games. This course presents the methodology and critical awareness for problem solving inherent in all gaming fields. Through the discussion, examination and execution of a variety of game design and production exercises, students develop their understanding of composition and theory. The course stresses a focus on incorporating skills learned in GAME 110 Fundamentals of Game Design and CITA 180 Introduction to Programming. Students learn about the design process and project management.

I. **PRE-REQUISITES/CO-REQUISITES:**

Junior/senior level students, or permission of instructor

J. **GOALS (STUDENT LEARNING OUTCOMES):**
By the end of this course, the student will be able to:

Course Objective	***Institutional SLO***
a. Recognize the underlying principles guiding the relevant visual, audio and interactive aesthetics of a game	**2. Crit. Thinking** **3. Prof. Competence**
b. Learn proper design process and production procedures.	**2. Crit. Thinking** **3. Prof. Competence**
c. Deconstruct and analyze work to evaluate the technical and aesthetic quality.	**1. Communication** **3. Prof. Competence**
d. Learn proper manufacturing techniques.	**2. Crit. Thinking** **3. Prof. Competence**
e. Research game designers and current trends in game design.	**1. Communication** **2. Crit. Thinking**
f. Apply gaming principles of narrative, dynamics and mechanics to a final project.	**2. Crit. Thinking** **3. Prof. Competence**

K. TEXTS:

Fundamentals of Game Design (3rd Edition) by Ernest Adams (Author). ISBN-13: 978-0321929679 ISBN-10: 0321929675 Edition: 3rd

N. REFERENCES:

O. EQUIPMENT: PC and Macintosh Computer Lab with Microsoft Office, Unity and Adobe Creative Suite installed.

N. GRADING METHOD: A-F

O. MEASUREMENT CRITERIA/METHODS:

- Projects as Assigned
- Final Project
- Exams
- Paper
- Tutorials
- Progress
- Participation

P. DETAILED COURSE OUTLINE:

1. Introduction and Syllabus, Ethics, Plagiarism and Copyright
2. Design
    a. MDA Framework
    b. Formal Abstract Design Tools
3. Implementation, Experimental Gameplay
4. Phases of Development
5. Rapid Prototyping
6. Scripting
7. Vertical Slice
    a. Visual Abstraction
    b. Interaction Abstraction
8. Research Methods
9. Concept to completion, Flow Theory
10. Goal Based Research
11. Testing
12. Post Production
13. Final Project Presentations

Q. LABORATORY OUTLINE:

None

STATE UNIVERSITY OF NEW YORK
COLLEGE OF TECHNOLOGY
CANTON, NEW YORK

COURSE OUTLINE

GAME 210 Object-Oriented Design for Game Development

Prepared By: Qi Zhang

THE STATE UNIVERSITY OF NEW YORK AT CANTON

CANINO SCHOOL OF ENGINEERING TECHNOLOGY

DECISION SYSTEMS

September 2015

A. **TITLE**: Object-Oriented Design for Gaming

B. **COURSE NUMBER:** GAME 210

C. **CREDIT HOURS:** 3

D. **WRITING INTENSIVE COURSE**: No

E. **COURSE LENGTH:** 15 weeks

F. **SEMESTER(S) OFFERED:** Fall and spring

G. **HOURS OF LECTURE, LABORATORY, RECITATION, TUTORIAL, ACTIVITY:**

2 lecture hours per week, 2 lab hours per week

H. **CATALOG DESCRIPTION:**

This course provides an introductory overview of the object-oriented programming for computer game development. Topics include classes and objects, object-oriented design and development, software engineering for games, component model for game development, cross-platform development, game objects, design-driven control, interactive development techniques, and game development roles. Mastery of object-oriented design and software development allows students to tune their own game scenarios/levels without the need of engineering support, and write reusable code that will be reused. Over this course, the students will know the rigors of an object-oriented language used in common game design and development. This course includes programming assignments and a game design project, which will give students an opportunity to practice different roles inside a game development team, and help them to gain practical knowledge of developing game projects through using object-oriented software design pipelines.

I. **PRE-REQUISITES/CO-REQUISITES:**

Junior/senior level students, or permission of instructor

J. **GOALS (STUDENT LEARNING OUTCOMES):**
By the end of this course, the student will be able to:

Course Objective	***Institutional SLO***
a. Gain practical knowledge of object-oriented design ideas and pipelines	**2. Crit. Thinking** **3. Prof. Competence**
b. Apply proper knowledge and skills of object-oriented programming to game design and development	**2. Crit. Thinking** **3. Prof. Competence**
c. Demonstrate hands-on techniques and skills of testing and troubleshooting	**1. Communication** **3. Prof. Competence**

d. Explore proper object-oriented design, component model, and design-driven control techniques.	**2. Crit. Thinking** **3. Prof. Competence**
e. Implement algorithms of object-oriented game design and interactive development techniques for game development.	**1. Communication** **2. Crit. Thinking**
f. Apply principles of the object-oriented programming and software engineering to a final project.	**2. Crit. Thinking** **3. Prof. Competence**

K. TEXTS:

Object-Oriented Game Development (1st Edition) by Julian Gold (Author). Publisher: Addison Wesley (1 April 2004). ISBN-10: 032117660X ISBN-13: 978-0321176608

P. REFERENCES:

Practical C++ Programming with Game Development by Scott Tozer (Author). Publisher: The Readers Sanctuary Publications (26 Oct. 2014). ASIN: B00OXDZGUE

Introduction to Programming with Greenfoot: Object-Oriented Programming in Java with Games and Simulations by Michael Kölling (Author). Publisher: Pearson; 2 edition (26 Feb. 2015). ISBN-10: 0134054296, ISBN-13: 978-0134054292.

Q. EQUIPMENT: PC Computer Lab with Microsoft Office, Unity, Visual Studio, and NVidia graphics hardware installed.

N. GRADING METHOD: A-F

O. MEASUREMENT CRITERIA/METHODS:

- Assignments
- Projects
- Quizzes
- Exams
- Participation

P. DETAILED COURSE OUTLINE:

1. Introduction
    a. Introduction of the high-level overview of object-oriented programming for game design and development
    b. Introduction to the Computer Lab and related graphics hardware and software for game development
    c. Syllabus
2. Object-oriented design (OOD)
    a. Event-based programming
    b. Resource management
    c. Animation

3. Object-oriented programming (OOP)
    a. Physics
4. The game development process
5. Software engineering for games
    a. Components in a game or game engine.
    b. Open source game engine components.
6. Object-oriented design for games I
7. Object-oriented design for games II
8. The component model for game development
9. Cross-platform development
10. Game objects
11. Design-driven control
12. Iterative development techniques
13. Game development roles
    a. Designer
    b. Programmer
    c. Level Designer
    d. Character Designer
14. Case study
15. Final Project Due

Q. LABORATORY OUTLINE:

None

STATE UNIVERSITY OF NEW YORK
COLLEGE OF TECHNOLOGY
CANTON, NEW YORK

COURSE OUTLINE

GAME 230 3D Modeling and Texturing for Games

Prepared By: Qi Zhang

THE STATE UNIVERSITY OF NEW YORK AT CANTON

CANINO SCHOOL OF ENGINEERING TECHNOLOGY

DECISION SYSTEMS

September 2015

A. **TITLE**: 3D Modeling and Texturing for Games

B. **COURSE NUMBER:** GAME 230

C. **CREDIT HOURS:** 3

D. **WRITING INTENSIVE COURSE**: No

E. **COURSE LENGTH:** 15 weeks

F. **SEMESTER(S) OFFERED:** Fall and spring

G. **HOURS OF LECTURE, LABORATORY, RECITATION, TUTORIAL, ACTIVITY:**

2 lecture hours per week, 2 lab hours per week

H. **CATALOG DESCRIPTION:**

This course provides an introductory overview of the critical elements of digital figure modeling and texturing. Topics include two mainstream algorithms: the first one is used in specific modeling, such as smoothing, polygon decimation, vertex merging, edge loop selections and edge loop inserts; the second one is used in specific texturing, such as texturing mapping, cube mapping, mipmap, displacement mapping, environment mapping, and image analogy. The students will learn the MAYA software package and MAYA's Embedded Language (MEL). Through using the software package and related programing language, the students will practice translating design concepts into physical models and digital representations. In addition, several complex video game production software packages will also be introduced in this course. The students will practice the learned 3D modeling and texturing knowledge, algorithms, and skills through finishing a final project.

I. **PRE-REQUISITES/CO-REQUISITES:**

Junior/senior level students, or permission of instructor

J. **GOALS (STUDENT LEARNING OUTCOMES):**
By the end of this course, the student will be able to:

Course Objective	***Institutional SLO***
a. Gain comprehensive knowledge of critical elements for digital figure modeling and texturing	**2. Crit. Thinking** **3. Prof. Competence**
b. Demonstrate knowledge and hands-on skills of using proper algorithms for specific modeling	**2. Crit. Thinking** **3. Prof. Competence**
c. Apply proper graphic algorithms to specific texturing	**1. Communication** **3. Prof. Competence**
d. Explore practical knowledge and experience of using MAYA's Embedded Language (MEL)	**2. Crit. Thinking** **3. Prof. Competence**

e. Practice translating design concepts into physical modelling and digital representation	**1. Communication** **2. Crit. Thinking**
f. Apply principles and techniques of 3D modeling and texturing to a final project.	**2. Crit. Thinking** **3. Prof. Competence**

K. TEXTS:

Maya for Games: Modeling and Texturing Techniques with Maya and Mudbox (1st Edition) by Michael Ingrassia (Author). Publisher: Focal Press; Pap/DVD edition (19 Nov. 2008). ISBN-13: 978-0240810645 ISBN-10: 0240810643

3D Modeling: 101: Introduction to Modeling & Texturing Paperback by John Norman Rose (Author): ISBN-10: 1469913461 ISBN-13: 978-1469913469

R. REFERENCES:

Computer Graphics: From Pixels to Programmable Graphics Hardware (Chapman & Hall/CRC Computer Graphics, Geometric Modeling, and Animation Series) by Alexey Boreskov (Author), Evgeniy Shikin (Author). Publisher: Chapman and Hall/CRC (15 Nov. 2013). ISBN-10: 1439867305, ISBN-13: 978-1439867303

S. EQUIPMENT: PC Computer Lab with Alias MAYA (Autodesk), Adobe Photoshop, MudBox, and SoftImage, Visual Studio, and NVidia graphics hardware installed.

N. GRADING METHOD: A-F

O. MEASUREMENT CRITERIA/METHODS:

- Assignments
- Projects
- Exams
- Participation

P. DETAILED COURSE OUTLINE: (must use the outline format listed below)

1. Introduction
    a. Introduction to high-level overview of 3D modeling, graphics, visualization, and texturing, as well as their applications in computer games
    b. Introduction to the Computer Lab and related graphics and visualization hardware and software
    c. Syllabus
2. Character development
    a. for games
    b. for animation
3. Critical elements of digital figure modeling
    a. Texturing
    b. Rigging
    c. Rendering
4. Algorithms used in modeling I:

    a. Smoothing, polygon decimation, vertex merging
5. Algorithms used in modeling II:
    a. Edge loops selections and edge loop inserts
6. Algorithms used in texturing I:
    a. Texturing mapping, cube mapping, and mipmap
7. Algorithms used in texturing I:
    a. Displacement mapping, environment mapping, and image analogy
8. MAYA's Embedded Language (MEL) I
9. MAYA's Embedded Language (MEL) II
10. Translate design concepts into physical modeling and digital representation
11. Introduce several complex computer graphics production software packages
12. Project introduction and proposal
13. Techniques for machinima projects
14. Game asset production pipeline
15. Final Project Due

Q. LABORATORY OUTLINE:

None

STATE UNIVERSITY OF NEW YORK
COLLEGE OF TECHNOLOGY
CANTON, NEW YORK

COURSE OUTLINE

GAME 240 3D Graphics for Game Development

Prepared By: Qi Zhang

THE STATE UNIVERSITY OF NEW YORK AT CANTON

CANINO SCHOOL OF ENGINEERING TECHNOLOGY

DECISION SYSTEMS

September 2015

A. **TITLE**: 3D Graphics for Game Development

B. **COURSE NUMBER:** GAME 240

C. **CREDIT HOURS:** 3

D. **WRITING INTENSIVE COURSE**: No

E. **COURSE LENGTH:** 15 weeks

F. **SEMESTER(S) OFFERED:** Fall and spring

G. **HOURS OF LECTURE, LABORATORY, RECITATION, TUTORIAL, ACTIVITY:**

2 lecture hours per week, 2 lab hours per week

H. **CATALOG DESCRIPTION:**

This course provides an introductory of 3D graphics for game development. It introduces GPU programming and presents a variety of algorithms for programmable stages along with the knowledge required to configure game developing stages. It offers a wealth of elaborate 3D visual presentations and includes additional theoretical and technical details in separate shaded boxes and optional sections. This course includes programming assignments, projects and exams. It will give students a deep understanding of the 3D computer graphics and game development, as well as applying 3D graphics algorithms and pipelines to model game characters and develop computer games. Over this course, students will gain knowledge and hands-on skills of 3D graphics, and they will also learn the rigors of an object-oriented language used in common game design and development

I. **PRE-REQUISITES/CO-REQUISITES:**

Junior/senior level students, or permission of instructor

J. **GOALS (STUDENT LEARNING OUTCOMES):**
By the end of this course, the student will be able to:

Course Objective	***Institutional SLO***
a. Apply 3D modeling and computer graphics techniques to game production	**2. Crit. Thinking** **3. Prof. Competence**
b. Explore hands-on skills of vertex processing, rasterization, and fragment processing	**2. Crit. Thinking** **3. Prof. Competence**
c. Demonstrate practical knowledge and skills of software testing and troubleshooting	**1. Communication** **3. Prof. Competence**
d. Design and implement related algorithms for illumination, parametric curves and surfaces	**2. Crit. Thinking** **3. Prof. Competence**

e. Practice advanced techniques of texturing, modeling, and character animation	**1. Communication** **2. Crit. Thinking**
f. Apply principles of 3D computer graphics, 3D modeling, and virtual reality to a final project.	**2. Crit. Thinking** **3. Prof. Competence**

K. TEXTS:

3D Graphics for Game Programming by JungHyun Han (Author). Publisher: Chapman and Hall/CRC (25 Feb. 2011). ISBN-10: 1439827370 ISBN-13: 978-1439827376

T. REFERENCES:

Mathematics for 3D Game Programming and Computer Graphics by Eric Lengyel (Author). Publisher: Delmar Cengage Learning; 3rd Revised edition (22 Jun. 2011). ISBN-10: 1435458869, ISBN-13: 978-1435458864.

Introduction to 3D Game Programming with DirectX12 (Computer Science) by Frank D. Luna (Author). Publisher: Mercury Learning & Information; Pap/DVD edition (28 Mar. 2016). ISBN-10: 1942270062, ISBN-13: 978-1942270065

U. EQUIPMENT: PC Computer Lab with Microsoft Office, Unity, Visual Studio, and NVidia graphics hardware installed.

N. GRADING METHOD: A-F

O. MEASUREMENT CRITERIA/METHODS:

- Assignments
- Projects
- Quizzes
- Exams
- Participation

P. DETAILED COURSE OUTLINE:

1. Introduction
    a. Introduction to the high-level overview of 3D graphics and virtual reality, as well as their relationship to modern gaming design and development
    b. Introduction to the Computer Lab as well as related computer graphics hardware equipment
    c. Syllabus
2. Modeling in game production
3. Review of Autodesk Maya software
4. Vertex processing
    a. Collision Detection
5. Rasterization
6. Fragment Processing and output merging
    a. Physics Engines

7. Illumination and shading
    a. Modeling
    b. Transformations
8. Parametric curves and surfaces
9. Shader models
10. Image texturing
11. Bump mapping
12. Advanced texturing
13. Character animation
14. Physics-based simulation
15. Case study
16. Final Project Presentations

Q. LABORATORY OUTLINE:

None

STATE UNIVERSITY OF NEW YORK
COLLEGE OF TECHNOLOGY
CANTON, NEW YORK

COURSE OUTLINE

GAME 250 Game Mechanics and Dynamics

Prepared By: Kathleen Mahoney

THE STATE UNIVERSITY OF NEW YORK AT CANTON

CANINO SCHOOL OF ENGINEERING TECHNOLOGY

DECISION SYSTEMS

October 2014

A. **TITLE**: Game Mechanics and Dynamics

B. **COURSE NUMBER:** GAME 250

C. **CREDIT HOURS:** 3

D. **WRITING INTENSIVE COURSE**: No

E. **COURSE LENGTH:** 15 weeks

F. **SEMESTER(S) OFFERED:** Spring

G. **HOURS OF LECTURE, LABORATORY, RECITATION, TUTORIAL, ACTIVITY:**
2 lecture hours per week, 2 lab hours per week

H. **CATALOG DESCRIPTION:**

This is a studio-based course investigating the tools, materials, and foundational aspects of game design. This course expands on the process learned in Game Design and Prototyping as well as industry standard software used to design, develop and manufacture games. Students continue to read a variety of the top story writing in games and study topics related to theory and practice. Students learn about the design process and project management including consumer expectations, marketing requirements and budget limitations.

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I. **PRE-REQUISITES/CO-REQUISITES:**

Junior/senior level students, or permission of instructor

J. **GOALS (STUDENT LEARNING OUTCOMES):**
By the end of this course, the student will be able to:

Course Objective	***Institutional SLO***
a. Develop game projects using professional gaming software.	**2. Crit. Thinking** **3. Prof. Competence**
b. Learn proper design process procedures.	**2. Crit. Thinking** **3. Prof. Competence**
c. Learn proper testing and troubleshooting techniques.	**1. Communication** **3. Prof. Competence**
d. Learn proper manufacturing techniques.	**2. Crit. Thinking** **3. Prof. Competence**
e. Research game designers and current trends in game design.	**1. Communication** **2. Crit. Thinking**
f. Apply gaming principles of narrative, dynamics and mechanics to a final project.	**2. Crit. Thinking** **3. Prof. Competence**

K. TEXTS:

Game Development Essentials: Gameplay Mechanics by Troy Dunaway and Jeanine Novak,
ISBN-13: 978-1418052690ISBN-10: 1418052698

V. REFERENCES:

W. EQUIPMENT: PC and Macintosh Computer Lab with Microsoft Office, Unity and Adobe Creative Suite installed.

N. GRADING METHOD: A-F

O. MEASUREMENT CRITERIA/METHODS:

- Projects as Assigned
- Final Project
- Exams
- Paper
- Tutorials
- Progress
- Participation

P. DETAILED COURSE OUTLINE:

1. Introduction and Syllabus, Ethics, Plagiarism and Copyright
2. The Early Stages of the Design Process
3. Implementation
4. Features and Complexity
5. Phases of Development
    a. Consumer Expectations
    b. Marketing Requirements
    c. Budget Limitations
6. Mechanics
7. Dynamics
8. Aesthetics
9. Research Methods
10. Vertical Slice
11. Testing
12. Flow and Game Balance
13. Implementation of Scope
14. Toys, and Puzzle Games
15. Final Project Presentations

Q. LABORATORY OUTLINE:

None

STATE UNIVERSITY OF NEW YORK
COLLEGE OF TECHNOLOGY
CANTON, NEW YORK

COURSE OUTLINE

GAME 350 Aesthetics and Immersion

Prepared By: Kathleen Mahoney

THE STATE UNIVERSITY OF NEW YORK AT CANTON

CANINO SCHOOL OF ENGINEERING TECHNOLOGY

DECISION SYSTEMS

September 2015

A. **TITLE**: Aesthetics and Immersion

B. **COURSE NUMBER:** GAME 350

C. **CREDIT HOURS:** 3

D. **WRITING INTENSIVE COURSE**: Yes

E. **COURSE LENGTH:** 15 weeks

F. **SEMESTER(S) OFFERED:** Fall, Spring

G. **HOURS OF LECTURE, LABORATORY, RECITATION, TUTORIAL, ACTIVITY:**
2 lecture hours per week, 2 lab hours per week

H. **CATALOG DESCRIPTION:**

This course explores designing visuals, adding sound and creating experiences that are more than just functional. It focuses on artistry and design of the experience of the game. Students examine how and why the user connects to the game and how to create that connection. Students study the aesthetics of games and how to create games that immerse players. They examine how to evoke emotions such as fun, excitement, and anticipation. They observe how the first few minutes of the gaming experience is crucial to continuation of the game.

I. **PRE-REQUISITES/CO-REQUISITES:**

Junior/senior level students, or permission of instructor

J. **GOALS (STUDENT LEARNING OUTCOMES):**
By the end of this course, the student will be able to:

Course Objective	***Institutional SLO***
a. Create an innovative experience that is more than just functional.	**2. Crit. Thinking** **3. Prof. Competence**
b. Research, examine and analyze how and why the user connects to the game.	**2. Crit. Thinking** **3. Prof. Competence**
c. Study aesthetics and immersion as related to game design and play.	**1. Communication** **3. Prof. Competence**
d. Evaluate methods of designing and producing games from concept to completion.	**2. Crit. Thinking** **3. Prof. Competence**
e. Identify steps, develop and mange a successful professional workflow.	**1. Communication** **2. Crit. Thinking**
f. Apply gaming principles to a final project including sound and visuals.	**2. Crit. Thinking** **3. Prof. Competence**

K. TEXTS:

- **Aesthetic Theory and the Video Game** by Graeme Kirkpatrick (Author)
  ISBN-10: 0719077176 ISBN-13: 978-0719077173

- **The Art of Videogames** by Grant Tavinor (Author)
  ISBN-13: 978-1405187886 ISBN-10: 1405187883

X. REFERENCES:

Y. EQUIPMENT: : PC and Macintosh Computer Lab with Microsoft Office, Unity and Adobe Creative Suite installed.

N. GRADING METHOD: A-F

O. MEASUREMENT CRITERIA/METHODS:

- Projects as Assigned
- Final Project
- Exams
- Paper
- Tutorials
- Progress
- Participation

P. DETAILED COURSE OUTLINE:

1. Introduction and Syllabus, Ethics, Plagiarism and Copyright
2. The Science of Addiction
3. Storyboarding
   a. Linear Narrative
   b. Non-linear Narrative
4. Feedback Loops
5. Communicating Visually
6. Critical First 5 minutes
7. Creating that Critical First 5 minutes
8. Immersion
   a. Sound
   b. Environment
   c. Aesthetics
9. Emergent vs. Intended Aesthetics
10. Communicating across Teams About Aesthetics
11. Final Project Presentations

Q. LABORATORY OUTLINE:

None

STATE UNIVERSITY OF NEW YORK
COLLEGE OF TECHNOLOGY
CANTON, NEW YORK

COURSE OUTLINE

GAME 370 Digital Media and Interaction

Prepared By: Qi Zhang

THE STATE UNIVERSITY OF NEW YORK AT CANTON

CANINO SCHOOL OF ENGINEERING TECHNOLOGY

DECISION SYSTEMS

September 2015

A. **TITLE**: Digital Media and Interaction

B. **COURSE NUMBER:** GAME 370

C. **CREDIT HOURS:** 3

D. **WRITING INTENSIVE COURSE**: No

E. **COURSE LENGTH:** 15 weeks

F. **SEMESTER(S) OFFERED:** Fall and spring

G. **HOURS OF LECTURE, LABORATORY, RECITATION, TUTORIAL, ACTIVITY:**

2 lecture hours per week, 2 lab hours per week

H. **CATALOG DESCRIPTION:**

This course explores how digital media is created and utilized within computer games, virtual reality, and simulations. It covers the concepts and principles from the basic digital media to the whole game development life cycle. In addition, the fundamental frameworks for the design and development of popular digital media environments are also introduced in this course. Class topics include sound, video, text, images, character modeling, animation, visualization, computer graphics, virtual reality, game world and level generation, as well as current and emerging digital media interaction techniques. Students will gain comprehensive knowledge and hands-on skills of digital media design and development and integration into the video games. They are required to work in teams to produce a multimedia project. Students will apply the concepts and principles learned from the lecture to developing a video game, including storyboards, design documents, game development, and a playable demo.

I. **PRE-REQUISITES/CO-REQUISITES:**

Junior/senior level students, or permission of instructor

J. **GOALS (STUDENT LEARNING OUTCOMES):**

By the end of this course, the student will be able to:

Course Objective	***Institutional SLO***
a. Demonstrate techniques and skills of building a digital media environment	**2. Crit. Thinking** **3. Prof. Competence**
b. Apply proper knowledge of sound, video, text and images to digital media products	**2. Crit. Thinking** **3. Prof. Competence**
c. Show practical knowledge and skills of dynamic contextual advertising and sound modeling	**1. Communication** **3. Prof. Competence**
d. Implement algorithms for character modeling and animation	**2. Crit. Thinking** **3. Prof. Competence**

e. Practice game world and level generation as well as current and emerging interaction techniques.	**1. Communication** **2. Crit. Thinking**
f. Apply principles and related concepts of digital media and video graphics to a final project.	**2. Crit. Thinking** **3. Prof. Competence**

K. TEXTS:

The Art of Game Design: A Book of Lenses, Second Edition 2nd Edition by Jesse Schell (Author). Publisher: A K Peters/CRC Press; 2 edition (November 6, 2014)
ISBN-10: 1466598646, ISBN-13: 978-1466598645

Z. REFERENCES:

Digital Games and Learning: Research and Theory by Nicola Whitton (Author). Publisher: Routledge (4 April 2014). ISBN-10: 041562939X, ISBN-13: 978-0415629393

Animation, Embodiment, and Digital Media: Human Experience of Technological Liveliness by Kenny Chow (Author). Publisher: Palgrave Macmillan (20 Sept. 2013). ISBN-10: 1137283076, ISBN-13: 978-1137283078

AA. EQUIPMENT: PC Computer Lab with Microsoft Office, Unity, Visual Studio, and NVidia graphics hardware installed.

N. GRADING METHOD: A-F

O. MEASUREMENT CRITERIA/METHODS:

- Writing assignments
- Coding assignments and labs
- Projects
- Quizzes
- Participation

P. DETAILED COURSE OUTLINE:

1. Introduction
    a. Introduction to the high-level overview of digital media, video graphics, media interaction and computer games
    b. Introduction to the Computer Lab as well as related computer graphics and visualization hardware and software
    c. Syllabus
2. Sound
    a. Objects
    b. Collisions
    c. Background Noise
    d. Advancing Stages
3. Video
    a. Narrative Introductions

4. Text and images
    a. Typography
    b. Aesthetics
5. Characters
    a. Modeling
    b. Rigging
    c. Animation
6. Interactive programming
7. Game world
8. User cognition and perception
9. 2D and 3D level generation
10. Interactive digital media systems
    a. Digital media in gaming
    b. Sound and character animation
11. Dynamic contextual advertising and video simulation
12. Final Project Presentations

Q. LABORATORY OUTLINE:

None

STATE UNIVERSITY OF NEW YORK
COLLEGE OF TECHNOLOGY
CANTON, NEW YORK

COURSE OUTLINE

GAME 450 Mobile Game Development

Prepared By: Kathleen Mahoney

THE STATE UNIVERSITY OF NEW YORK AT CANTON

CANINO SCHOOL OF ENGINEERING TECHNOLOGY

DECISION SYSTEMS

September 2015

A. **TITLE**: Mobile Game Development

B. **COURSE NUMBER:** GAME 450

C. **CREDIT HOURS:** 3

D. **WRITING INTENSIVE COURSE**: No

E. **COURSE LENGTH:** 15 weeks

F. **SEMESTER(S) OFFERED:** Spring

G. **HOURS OF LECTURE, LABORATORY, RECITATION, TUTORIAL, ACTIVITY:**
2 lecture hours per week, 2 lab hours per week

H. **CATALOG DESCRIPTION:**

This course is a studio-based course investigating the tools, materials, and foundational concepts of designing games for mobile technologies. Mobile Game Development will present the methodology and critical awareness for problem solving inherent in all mobile-based media fields. This course is an introduction to mobile application frameworks, including user interface, sensors, event-handling, data-management and network communication. Through the discussion, examination and execution of a variety of mobile based game designs, students develop their understanding of composition, timeline and theory.

I. **PRE-REQUISITES/CO-REQUISITES:**

Junior/senior level students, or permission of instructor

J. **GOALS (STUDENT LEARNING OUTCOMES):**
By the end of this course, the student will be able to:

Course Objective	***Institutional SLO***
a. Construct a mobile application using industrial strength programming language features.	**2. Crit. Thinking** **3. Prof. Competence**
b. Design user interactive programs using specific software patterns.	**2. Crit. Thinking** **3. Prof. Competence**
c. Learn proper production techniques.	**1. Communication** **3. Prof. Competence**
d. Construct a mobile application using a framework targeting a problem domain specific to mobile applications.	**2. Crit. Thinking** **3. Prof. Competence**
e. Research mobile game application designers.	**1. Communication** **2. Crit. Thinking**
f. Apply gaming principles of narrative, dynamics and mechanics to a final project.	**2. Crit. Thinking** **3. Prof. Competence**

K. **TEXTS:**

- **iPhone Programming: The Big Nerd Ranch Guide (Big Nerd Ranch Guides)** by Joe Conway and Aaron Hillegass
- Beginning iOS 5|6 Development: Exploring the iOS SDK by David Mark, Jack Nutting, Jeff LaMarche. Published by Apress 2012|2013. ISBN13: 978-1-4302-3605-4

BB. REFERENCES:

CC. EQUIPMENT: PC and Macintosh Lab, coordination with Library to test mobile games on ipads

N. GRADING METHOD: A-F

O. MEASUREMENT CRITERIA/METHODS:

- Projects as Assigned
- Final Project
- Exams
- Paper
- Tutorials
- Progress
- Participation

P. DETAILED COURSE OUTLINE:

1. Introduction and Syllabus, Ethics, Plagiarism and Copyright
2. Event Driven Programming
    a. Target-Action
    b. Notifications
    c. Dynamic Dispatch
3. Model View Controller (MVC) pattern in User Interface Design.
4. Mobile Application Issues
    a. Design Process
    b. Game Controls
5. Development Tools
6. Frameworks, Language Features – C, C++, C#
7. Basic Interaction
8. Navigation Controllers
9. Multi-touch, Virtual Keyboard, Gestures (Swipe, Pinch, Shake)
10. Common UI's for mobile devices
11. Data Persistence
12. Remote Data-Storage and Communication
13. Developers and App Store License Agreements
14. Final Project Presentations

Q. LABORATORY OUTLINE:

None

STATE UNIVERSITY OF NEW YORK
COLLEGE OF TECHNOLOGY
CANTON, NEW YORK

COURSE OUTLINE

GAME 470 Emerging Gaming Applications

Prepared By: Qi Zhang

THE STATE UNIVERSITY OF NEW YORK AT CANTON

CANINO SCHOOL OF ENGINEERING TECHNOLOGY

GAME DESIGN AND DEVELOPMENT

August 2015

A. **TITLE**: Emerging Gaming Applications

B. **COURSE NUMBER:** GAME 470

C. **CREDIT HOURS:** 3

D. **WRITING INTENSIVE COURSE**: No

E. **COURSE LENGTH:** 15 weeks

F. **SEMESTER(S) OFFERED:** Fall and spring

G. **HOURS OF LECTURE, LABORATORY, RECITATION, TUTORIAL, ACTIVITY:**
2 lecture hours per week, 2 lab hours per week

H. **CATALOG DESCRIPTION:**

Gaming technologies evolve in amazingly rapid speeds. This course introduces the real observable proof of the speedy advancement of digital technology over the years, especially in gaming industry. It explores features of the future of gaming, such as immersive gaming, virtual reality, computer graphics, real-time visualization, secondary screens for gaming, smart-glass, cross-play, open-source gaming, game development, augmented reality, as well as mobile gaming and cloud gaming. Through learning the course, the students will have a big picture of the features of the future gaming and the trend of gaming industry development.

I. **PRE-REQUISITES/CO-REQUISITES:**
Junior/senior level students, or permission of instructor

J. **GOALS (STUDENT LEARNING OUTCOMES):**
By the end of this course, the student will be able to:

Course Objective	***Institutional SLO***
a. Gain knowledge of new digital technology development, especially in gaming industry	**2. Crit. Thinking** **3. Prof. Competence**
b. Explore the features and functions of the future gaming	**2. Crit. Thinking** **3. Prof. Competence**
c. Create new gaming features, such immersive gaming, smart-glass and cloud gaming	**1. Communication** **3. Prof. Competence**
d. Demonstrate knowledge of gaming development trends, such as open-source gaming and cloud gaming	**2. Crit. Thinking** **3. Prof. Competence**
e. Practice advanced technologies of future gaming development	**1. Communication** **2. Crit. Thinking**
f. Apply principles and knowledge of new gaming development and trend to a final project.	**2. Crit. Thinking** **3. Prof. Competence**

K. TEXTS:
None

DD. REFERENCES:

EE. EQUIPMENT: Mac or PC Computer Lab with Microsoft Office, Unity, Visual Studio, and NVidia graphics hardware installed.

N. GRADING METHOD: A-F

O. MEASUREMENT CRITERIA/METHODS:

- Assignments
- Projects
- Quizzes
- Participation

P. DETAILED COURSE OUTLINE: (must use the outline format listed below)

1. Introduction
    a. Introduction to the high-level overview of future gaming as well as related hardware and software
    b. Introduction to the Computer Lab and related computer graphics support equipment
    c. Syllabus
2. Introduce the speedy advancement of digital technology, especially in gaming industry
3. Explore features of the future of gaming
4. Immersive gaming and virtual reality
5. Secondary screens for gaming
6. Smart-glass
7. Cross-play
8. Open-source gaming
9. Game development
10. Augmented reality
11. Cloud gaming
12. The features of the future gaming
13. Trends of gaming industry development
14. Gaming software package review
15. Final Project Due

Q. LABORATORY OUTLINE:

None

STATE UNIVERSITY OF NEW YORK
COLLEGE OF TECHNOLOGY
CANTON, NEW YORK

COURSE OUTLINE

GAME 490 Capstone

Prepared By: Kathleen Mahoney

THE STATE UNIVERSITY OF NEW YORK AT CANTON

CANINO SCHOOL OF ENGINEERING TECHNOLOGY

DECISION SYSTEMS

September 2015

A. **TITLE**: Capstone 1

B. **COURSE NUMBER:** GAME 490

C. **CREDIT HOURS:** 3

D. **WRITING INTENSIVE COURSE**: No

E. **COURSE LENGTH:** 15 weeks

F. **SEMESTER(S) OFFERED:** Fall

G. **HOURS OF LECTURE, LABORATORY, RECITATION, TUTORIAL, ACTIVITY:**

2 lecture hours per week, 2 lab hours per week

H. **CATALOG DESCRIPTION:**

This course is a capstone experience course in the Game Design program, allowing students to develop skills in group communication and teamwork as they plan, design, develop, produce and defend a culminating research project. Through regular research, critiques and planning sessions with Game Design faculty, the senior capstone project is created and developed. The final game product will be publicly reviewed and played in addition to the student will create a demo reel of designs from previous coursework.

I. **PRE-REQUISITES/CO-REQUISITES:**

Junior/senior level students, or permission of instructor

J. **GOALS (STUDENT LEARNING OUTCOMES):**
By the end of this course, the student will be able to:

Course Objective	***Institutional SLO***
a. Synthesize material from previous learning experiences.	**2. Crit. Thinking** **3. Prof. Competence**
b. Design, develop and present a final capstone game professionally in a public forum.	**1. Communication** **3. Prof. Competence**
c. Implement time management, delegation, and group dynamics for a shared responsibility.	**1. Communication** **3. Prof. Competence** **4. Inter/Intra Personal Skills**
d. Fully develop and realize a planned game project from previously developed research and presentation.	**2. Crit. Thinking** **3. Prof. Competence**
e. Employ contemporary marketing strategies in tandem with project development.	**1. Communication** **3. Prof. Competence**
f. Finalize professional student portfolio in the form of a book and demo reel.	**2. Crit. Thinking** **3. Prof. Competence**

K. TEXTS:

NA

FF. REFERENCES:

GG. EQUIPMENT: PC and Macintosh Computer Lab with Microsoft Office, Unity and Adobe Creative Suite installed.

N. GRADING METHOD: A-F

O. MEASUREMENT CRITERIA/METHODS

- Regular Critiques
- Final Project
- Exams
- Paper
- Portfolio Presentation and Review
- Peer Evaluation
- Public Demonstration of and Review of Senior Game

P. DETAILED COURSE OUTLINE:

1. Introduction and Syllabus, Ethics, Plagiarism and Copyright
2. Understanding Theory, Design Management
   Development of Capstone Project Concept
3. Research Proposal
4. Develop the Problem
5. Synthesizing Information
6. Review of Methods
7. Review and Critique of Project
8. Critical Thinking Skills
9. Responding to the Questions
10. Portfolio/Demo Reel Development
11. Professional Models
12. Evolving Media
13. Presenting and Implementing Projects
14. Presentation Options
15. Final Project Presentations

Q. LABORATORY OUTLINE:

None

Transfer Course Equivalency Table

Form 2F

The State University views as one of its highest priorities the facilitation of transfer.

- For a **proposed Associate in Arts (A.A.) or Associate in Science (A.S.) program** document that the program's graduates will be able to transfer into at least two registered SUNY baccalaureate degree programs that are parallel, and complete them within two additional years of full-time study, per SUNY policy, by **appending** the following documentation to the program proposal:
  - At least two completed *SUNY Transfer Course Equivalency Tables*, one for each transfer institution; and
  - A letter from the Chief Academic Officer of each transfer institution asserting acceptance of the completed Transfer Course Equivalency Table.

- For a **proposed baccalaureate program**, document that a SUNY transfer student with associate's degree in a parallel program will be able complete the proposed program within two additional years of full-time study, per SUNY policy, by **appending** documentation to the program proposal. Documentation may consist of completed *SUNY Transfer Course Equivalency Tables* and/or a letter from the Chief Academic Officer of each associate degree institution confirming seamless articulation for its graduates of parallel programs. **If transfer does not apply to this program, please explain why in the Program Proposal form.**

KEY
for the Transfer Course Equivalency Table

Each associate degree course should appear on the same row as the baccalaureate program course with which it is deemed to be equivalent.

Course # — Indicate the departmental identifier and course number (e.g. PHI 101).

Course Title — Indicate the title of the course (e.g., Introduction to Philosophy).

SUNY GER – Check (X) if the course will count toward the SUNY General Education Requirement.

SUNY Transfer Path – Check (X) if the course will count as a SUNY Transfer Path course.

Credits and Equivalency — Indicate the number of credit hours granted for completing that course as well as the number accepted by the baccalaureate institution. For the baccalaureate institution, also enter **None** if the credits will not count toward graduation.

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SUNY TRANSFER COURSE EQUIVALENCY TABLE

Finger Lakes Community College **32464, Game Programming and Design AAS**						**SUNY Canton** **0799.00, Game Design and Development BS**				
Course #	**Course Title**	**SUNY GER**	**Major or SUNY Transfer Path**	**Credits Granted**		**Course #**	**Equivalent Course Title**	**SUNY GER**	**Major or SUNY Transfer Path**	**Credits Accepted**
ENG 101	Composition I	x		3		ENGL 101 ENGL 102	Expository Writing (GER 10) or Oral and Written Expression (GER 10)	x		3
COM 110	Public Speaking	x		3						
CSC 103	Computing Sciences Portal.		x	2		CITA 152	Computer Logic		x	3
CSC 115	Introduction to Programming and Computing		x	3		CITA 180	Introduction to Programming		x	3
CSC 141	Introduction to the Game Industry		x	3						
MAT 152	Pre-Calculus.	x		3		MATH 111	Survey of Math (GER 1)	x		3
ENG 102	Introduction to Literature.	x		3		ENG 202	Creative Non-Fiction (GER 7)	x		3
CSC 190	Data Structures I		x	3						
CSC 241	Fundamentals of Game Design		x	3		GAME 101	Fundamentals of Game Design		x	3
PHY 118	College Physics I.	x		4			GER Elective	x		3
	Social Science Elective	x		3			GER Elective	x		3
COM 215	Script Writing		x	3		ENG 295	Narrative Form in Video Games	x		3
CSC 200	Data Structures II.		x	4						
CSC 216	Introduction to C#.		x	3		CITA 342	Visual Programming		x	3
CSC 242	Introduction to 3D Computer Animation.		x	3						
PHY 245	Physics of Animation.		x	4						
MAT 220	Discrete Mathematics	x		3			Mathematics Elective (GER 1)	x		3
CSC 251	Applied Database Concepts		x	3		CITA 215	Database Apps and Concepts		x	3
CSC 252	Multimedia Development.		x	3		GAME 103	Game Design and Prototyping		x	3
CSC 255	Game Programming Team Capstone Project.		x	3		GAME 202	Game Mechanics and Dynamics		x	3
PE 122	Concepts of Wellness.			2						
	Total Credits			64			**Total Credits Transferred**			39
							Remaining Credits Needed for Graduation after Transfer			83

Transfer Course Equivalency Table

Form 2F

The State University views as one of its highest priorities the facilitation of transfer.

- For a **proposed Associate in Arts (A.A.) or Associate in Science (A.S.) program** document that the program's graduates will be able to transfer into at least two registered SUNY baccalaureate degree programs that are parallel, and complete them within two additional years of full-time study, per SUNY policy, by **appending** the following documentation to the program proposal:
  - at least two completed *SUNY Transfer Course Equivalency Tables*, one for each transfer institution; and
  - a letter from the Chief Academic Officer of each transfer institution asserting acceptance of the completed Transfer Course Equivalency Table.

- For a **proposed baccalaureate program**, document that a SUNY transfer student with associate's degree in a parallel program will be able complete the proposed program within two additional years of full-time study, per SUNY policy, by **appending** documentation to the program proposal. Documentation may consist of completed *SUNY Transfer Course Equivalency Tables* and/or a letter from the Chief Academic Officer of each associate degree institution confirming seamless articulation for its graduates of parallel programs. **If transfer does not apply to this program, please explain why in the Program Proposal form.**

KEY
for the Transfer Course Equivalency Table

Each associate degree course should appear on the same row as the baccalaureate program course with which it is deemed to be equivalent.

Course # — Indicate the departmental identifier and course number (e.g. PHI 101).

Course Title — Indicate the title of the course (e.g., Introduction to Philosophy).

SUNY GER – Check (X) if the course will count toward the SUNY General Education Requirement.

SUNY Transfer Path – Check (X) if the course will count as a SUNY Transfer Path course.

Credits and Equivalency — Indicate the number of credit hours granted for completing that course as well as the number accepted by the baccalaureate institution. For the baccalaureate institution, also enter **None** if the credits will not count toward graduation.

SUNY TRANSFER COURSE EQUIVALENCY TABLE

		SUNY Canton, 261000 00437 CIS AAS					SUNY Canton, 261000 0799.00, Game Design and Development BS				
Course #		Course Title	SUNY GER	Major or SUNY Transfer Path	Credits Granted		Course #	Equivalent Course Title	SUNY GER	Major or SUNY Transfer Path	Credits Accepted
BSAD 100		Introduction to Business			3						
CITA 152		Computer Logic		x	3		CITA 152	Computer Logic		x	3
CITA 163		Survey of Information Technology		x	3						
ENGL 101 ENGL 102		Expository Writing (GER 10) or Oral and Written Expression (GER 10)	x		3		ENGL 101 ENGL 102	Expository Writing (GER 10) or Oral and Written Expression (GER 10)	x		3
		Mathematics Elective (GER 1)	x		3		MATH 111	Survey of Math (GER 1)	x		3
CITA 170		Computer Concepts and Operating Systems			3						
CITA 171		Operating Systems Fundamentals			3						
CITA 202		Computer User Support			3						
SPCH 104		Introduction to Speech			3						
		Math/Science Elective (GER)	x		3			GER Math Elective	x		3
ACCT 104		Survey of Accounting			3						
CITA 220		Data Communications and Network Technology		x	3						
CITA 221		Data Communications and Network Technology Lab		x	3						
ECON 101 ECON 102		Macroeconomics (GER 3) or Microeconomics (GER 3)	x		3			GER Elective	x		3
		Program Elective*		x	3		CITA 180	Introduction to Programming		x	4
		Program Elective*		x	3		CITA 215	Database Apps and Concepts		x	3
CITA 250		Information Security		x	3						
		Social Science Elective	x		3			GER Elective	x		3
		Program Elective*		x	3		CITA 204	System Analysis and Design		x	3
		General Elective			3			LAS Elective			3
		General Elective			3			LAS Elective			3
		Total Credits			63			**Total Credits Transferred**			37
								Remaining Credits Needed for Graduation after Transfer			85

* Students are recommended to take CITA 180, CITA 215, and CITA 204 as program electives.

External Instruction Form

Form 2E

This form is required when external instruction is part of the degree requirements in an academic program. External instruction includes internships, field work, clinical placements, cooperative education, service learning, and the like, which are offered in cooperation with external partners, such as business and industry, health care facilities, public agencies, or schools.

1. Use the table below (expanded as necessary) to summarize proposed arrangements for required external instruction in an academic program. List all proposed arrangements. The number of placements listed below should equal or exceed the number of students expected to be in the initial cohort of a new program.

Name and Title of Contact Person	Name and Address of Placement Site	Number(s) of placements per year
Amamda Agulnick HR Director	ESI Design 1115th Ave New York, NY www.esidesign.com	1-2
Shabnam Rezaei CEO	Oznoz Entertainment 15 Maiden Lane Ste 1108 New York, NY www.oznoz.com	1-2
Scott Simpson CEO	Bitheads, Inc 1309 Carling Avenue, Ottawa, Ontario, Canada K1Z 7L3 www.playbrains.com	1-2
Christofer Sundberg CEO	Avalanche Studios 536 Broadway New York NY http://avalanchestudios.com/	1-2

2. For clinical placements for programs leading to professional licensure in a health profession, **append** documentation to demonstrate each site's commitment to a numerical range of students each year, and the time period of its commitment. The documentation should be signed by the responsible official at each proposed clinical site.

3. In the table below, list the individual(s) at the campus (or at each campus, in the case of multi-institution programs) who will have responsibility for oversight and administration of external instruction.

Name	Title	Email Address
Kathleen Mahoney	Assistant Professor	mahoneyk@canton.edu
Qi Zhang	Assistant Professor	zhangq@canton.edu

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