UNIVERSITY AT ALBANY
State University of New York

Office of the Provost and Senior Vice President for Academic Affairs

April 29, 2021

Shadi Shahedipour-Sandvik, Ph.D.
Provost-in-Charge
State University of New York
System Administration
State University Plaza
Albany, NY 12246

Dear Dr. Shahedipour-Sandvik,

On behalf of the faculty at the University at Albany and our College for Emergency Preparedness, I am pleased to resubmit our proposal for an update to our Informatics BS. We submitted this proposal last year and were provided with suggested edits from your team. After consultation with the faculty of that department, we are pleased to resubmit the registration form with edits provided by the Informatics department.

Please note that in addition to the registration 3A form, we have included two addendums. Addendum 1 is the syllabi required with the registration, addendum 2 is a rational and campus shared governance forms that were approved to lead to the creation of a new concentration within our existing Informatics BS.

This proposal has been considered and approved through our campus governance system. Should there be a need for additional information or clarification to facilitate processing, please contact Kaitlyn Beachner at kbeachner@albany.edu.

Thank you for your consideration and assistance.

Sincerely,

Carol Kim, Ph.D.
Provost and Senior Vice President for Academic Affairs

Attachment

c. Dean Robert Griffin, College of Emergency Preparedness, Homeland Security and Cybersecurity
Vice Provost JoAnne Malatesta, Undergraduate Education

University Hall, Suite 308
1400 Washington Avenue, Albany, NY 12222
PH: 518-956-8030 FX: 518-956-8043
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Program Revision Proposal: Changes to an Existing Program

Form 3A

Version 2016-10-13

SUNY approval and SED registration are required for many changes to registered programs. To request a change to a registered program leading to an undergraduate degree, a graduate degree, or a certificate that does not involve the creation of a new program,[1] a Chief Executive or Chief Academic Officer must submit **a signed cover letter and this completed form** to the SUNY Provost at *program.review@suny.edu*.

Section 1. General Information		
a) Institutional Information	Institution's 6-digit SED Code:	210500
	Institution's Name:	University at Albany
	Address:	*1400 Washington Avenue, Albany, NY 12222*
b) Program Locations	List each campus where the entire program will be offered (with each institutional or branch campus 6-digit SED Code):	
	List the name and address of off-campus locations (i.e., extension sites or extension centers) where courses will offered, **or check here [ ] if not applicable**:	
c) Registered Program to be Changed	Program Title:	Informatics
	SED Program Code	37307
	Award(s) (e.g., A.A., B.S.):	B.S.
	Number of Required Credits:	Minimum [120] If tracks or options, largest minimum [ ]
	HEGIS Code:	**0799.00**
	CIP 2010 Code:	11.0104
	Effective Date of Change:	Fall 2021
	Effective Date of Completion[2]	Fall 2021
d) Campus Contact	Name and title: Kaitlyn Beachner, Staff Associate for Undergraduate Programs Telephone: 518-442-3149 E-mail: kbeachner@albany.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: Dr. Carol Kim, Ph.D., Provost and Senior Vice President for Academic Affairs Signature and date: 4/29/2021	
	If the program will be registered jointly[3] with one or more other institutions, provide the following information for <u>each</u> institution:	
	Partner institution's name and 6-digit SED Code: Name, title, and signature of partner institution's CEO (or **append** a signed letter indicating approval of this proposal):	

Section 2. Program Information

[1] To propose changes that would create a new program, Form 3B, Creating a New Program from Existing Program(s), is required.

[2] If the current program(s) must remain registered until enrolled students have graduated, the anticipated effective date by which continuing students will have completed the current version of the program(s).

[3] If the partner institution is non-degree-granting, see SED's CEO Memo 94-04.

Section 2.1. Changes in Program Content

[ ] No changes in program content. *Proceed to Section 2.2.*

a) Check all that apply. Describe each proposed change and why it is proposed.

[X]Cumulative change from SED's last approval of the registered program of one-third or more of the minimum credits required for the award (e.g., 20 credits for associate degree programs, 40 credits for bachelor's degree programs)
[ ] Changes in a program's focus or design
[X]Adding or eliminating one or more options, concentrations or tracks
[ ] Eliminating a requirement for program completion (such as an internship, clinical placement, cooperative education, or other work or field-based experience). Adding such requirements must remain in compliance with SUNY credit cap limits.
[ ] Altering the liberal arts and science content in a way that changes the degree classification of an undergraduate program, as defined in Section 3.47(c)(1-4) of Regents Rules

b) Provide a side-by-side comparison of all the courses in the existing and proposed revised program that clearly indicates all new or significantly revised courses, and other changes.

Informatics B.S. Requirements (Proposed in 2014, approved in 2015):	**2021 Proposed Changes to Informatics B.S. Requirements:**
Combined major-minor degree: 54 credits *Required Core: 42 credits*	*Combined major-minor degree: 54 credits* *Required Core: 42 credits*
IINF 100X – Information in the 21st Century	IINF 100X – Information in the 21st Century
IINF 301 – Emerging Trends in Information and Technology	IINF 301 – Emerging Trends in Information and Technology
IINF 499 – Senior Seminar in Informatics	CINF 499 – Senior Seminar in Informatics
IINF 201 – Introduction to Web Technologies	CINF 201 – Introduction to Web Technologies
IINF 202 – Introduction to Data and Databases	CINF 202 – Introduction to Data and Databases
IINF 203 – Introduction to Network and Systems	CINF 203 – Introduction to Network and Systems
IINF 305 – Digital Project Management	CINF 305 – Digital Project Management
ICSI 105 – Computing & Information Or ICSI 201- Introduction to Computer Science	CINF 108 – Programming for Problem Solving *- Created and offered a new course for this requirement.* ~~ICSI 105 Computing and Information~~ Or ICSI 201 – Introduction to Computer Science
Any AMAT Course between 100 – 299 (except AMAT 108 Elementary Statistics)	Any AMAT Course between 100 – 299 (except AMAT 108 Elementary Statistics)
IINF 200 – Research Methods for Informatics Or ASOC 220 – Introduction to Social Research	CINF 200 – Research Methods for Informatics Or ASOC 220 – Introduction to Social Research
AMAT 108 - Elementary Statistics (3) Or ASOC 221- Statistics for Sociologists (3)	AMAT 108 - Elementary Statistics (3) Or ASOC 221- Statistics for Sociologists (3)
Experiential Learning (9 Credits): *Students will be advised into experiences that complement the chosen concentration. Classes may be repeated twice for a total of 6 credits. Students must do at least two different courses. Online IT Students only may complete INF 469 (9 credits) to fulfill this requirement.* IINF 465 – Senior Capstone Project (3)	***Experiential Learning (9 Credits):*** *Students will be advised into course-related experiences that complement their chosen concentration.* ~~*Some classes may be repeated twice for a total of 6 credits but fully online students only may complete CINF 469 (9 Credits) to fulfill this requirement.*~~ *Some classes may be repeated to count for a total of 6 credits toward this requirement. At least two different experiences are*

IINF 466 – Undergraduate Research (3) IINF 467 – Technology – based Community Support (3) IINF 468 – Undergraduate Internship (3) IINF 469 Undergraduate Internship for Online IT Students (3) EAPS 487 – Mentoring (3)	*required to complete this requirement. Fully-online students are an exception to this, and only they may complete C INF 469 (9 credits) to fulfill this requirement.* CINF 398 Field Experience in Informatics *(repeatable)* CINF 465 Senior Capstone in Informatics *(repeatable)* CINF 466 Independent Research *(repeatable)* CINF 467 Technology-Based Community Support *(repeatable)* CINF 468 Undergraduate Internship *(repeatable)* CINF 469 Undergraduate Internship for Fully Online Students CINF 495 Special Topics in Research, Applied, and Experiential Learning *(repeatable)* CEHC 350 Cybersecurity Case Analysis - The Threat Within CEHC 390 Internship Experience in Emergency Preparedness, Homeland Security & Cybersecurity CEHC 410 Capstone Project in Emergency Preparedness, Homeland Security & Cybersecurity EAPS 390 Internship in Higher Education (as appropriate) EAPS 487 or EAPS 456, EAPS 457 Peer Education *(as appropriate)* *(repeatable)* RSSW 390 Community and Public Service Program II *(as appropriate)* UUNI 390 Internships for Juniors and Seniors
Concentrations (at least 12 credits) *Students select one concentration.* ***Interactive User Experience*** IINF 302 Human-Computer Interactive Design IINF 362 Intermediate Interactive Design And select two from: IINF 308 Programming for Informatics IINF 363 Digital Design IINF 401 Case Studies in Digital Citizenship IINF 462 Current Technologies in Web Design IINF 496 Special Topics (as appropriate, repeatable) ICSI 107 Web Programming ICSI 124X Computer Security Basics ADOC 324 Introduction to Documentary Photography ADOC 330 Foundations of Documentary Web/Hypermedia Production ADOC 406 Practicum in Historical Documentary Filmmaking ADOC 407 Readings and Practicum in Digital History and Hypermedia	***Concentrations (at least 12 credits)*** *Select one concentration.* ***Interactive User Experience*** *(offered fully online)* CINF 302 Human-Computer Interactive Design CINF 362 Intermediate Interactive Design Select two courses from: ADOC/AJRL 324 Introduction to Documentary Photography ADOC/AHIS 330 Foundations of Documentary Web/Hypermedia Production ADOC/AHIS 406 Practicum in Historical Documentary Filmmaking ADOC/AHIS 407 Readings and Practicum in Digital History and Hypermedia CINF 124X Cybersecurity Basics *– Created a new course to replace ICSI 124X.* CINF 308 Programming for Informatics CINF 363 Digital Design CINF 401 Case Studies in Digital Citizenship CINF 462 Current Technologies in Interactive Design CINF 496 Intermediate Special Topics in Informatics (as appropriate, repeatable)

	~~ICSI 107 Web Programming~~ ~~ICSI124X Computer Security Basics~~
Cyber-security: ICSI 124X Computer Security Basics IINF 306 Information Security & Assurance And select two from: IINF 401 Case Studies in Digital Citizenship IINF 452 Computer and Network Security IINF 453 Information Security and Privacy IINF 454 Human Aspects of Cyber-security IINF 455 Prevention and Protection Strategies in Cyber-security IINF 496 Special Topics *(as appropriate, repeatable)* ICSI 300Z Social, Security and Privacy Implications of Computing ICSI 424 Information Security ICSI 426 Cryptography	***Cybersecurity:*** *(offered fully online)* ~~ICSI 124X Computer Security Basics~~ CINF 124X Cybersecurity Basics – *Created a new course to replace ICSI 124X.* CINF 306 Information Security and Assurance *Select two courses from:* CEHC 399 Selected Topics in Emergency Preparedness, Homeland Security & Cybersecurity *(as appropriate, repeatable)* CEHC 449 Cybersecurity: Long Term Planning and Risk Management CEHC 450 Cybersecurity Policy, Law & Institutions CEHC 455 Principle and Practice of Cybersecurity CEHC 469 Cyber Threats and Intelligence CINF 401 Case Studies in Digital Citizenship CINF 452 Computer and Network Security CINF 453 Information Security and Privacy CINF 454 Human Aspects of Cybersecurity CINF 455 Prevention and Protection Strategies in Cybersecurity CINF 496 Intermediate Special Topics in Informatics *(as appropriate, repeatable)* ICSI 300Z Social, Security, and Privacy Implications of Computing ICSI 424 Information Security ICSI 426 Cryptography
Computer Networking: IINF 303 Intermediate Networking *(currently IINF 423)* IINF 304 Intermediate Hardware and Operating Systems *(currently IINF 424)* *And select two from:* IINF 306 Information Security and Assurance IINF 403 Advanced Networking and Security IINF 404 Advanced Systems and Security IINF 452 Computer and Network Security IINF 470 Physical Computing IINF 496 Special Topics (as appropriate, repeatable)	~~Computer Networking~~ - This concentration is discontinued.
Social Media: IINF 307 Current Topics in Social Media ICSI 131 Introduction to Data Analytics: Seeking Information in Data with Computation And select two from: IINF 308 Programming for Informatics IINF 363 Digital Design IINF 401 Case Studies in Digital Citizenship IINF 496 Special Topics *(as appropriate, repeatable)*	***Social Media*** ~~ICSI 131 Introduction to Data Analytics: Seeking Information in Data with Computation~~ CINF 131 Introduction to Data Analytics: Seeking Information in Data with Computation - *Created a new course in this topic, replacing the discontinued one.* CINF 307 Current Topics in Social Media

ICSI 432 Network Science ASOC 210 Sociology of Culture ASOC 255 Mass Media ASOC 270 Social and Demographic Change ADOC 224 Nonfiction Media Storytelling	Select two courses from: ADOC/AHIS 224 Nonfiction Media Storytelling ASOC 210 Sociology of Culture ASOC 255 Mass Media ASOC 270 Social and Demographic C EHC 399 Selected Topics in Emergency Preparedness, Homeland Security & Cybersecurity *(as appropriate, repeatable)* CINF 308 Programming for Informatics CINF 363 Digital Design CINF 401 Case Studies in Digital Citizenship CINF 496 Intermediate Special Topics in Informatics *(as appropriate, repeatable)* ICSI 432 Network Science
Data Analytics: ICSI 131 Introduction to Data Analytics: Seeking Information in Data with Computation IINF 300 Probability and Statistics for Data Analytics And select two from: IINF 407 Modern Issues in Databases IINF 408 Analysis, Visualization, and Prediction in Analytics IINF 451 Bayesian Data Analysis and Signal Processing IIST 433 Information Storage and Retrieval ICSI 431 Data Mining ICSI 432 Network Science ICSI 436 Machine Learning	***Data Analytics*** *(offered fully online)* ~~ICSI 131 Introduction to Data Analytics: Seeking Information in Data with Computation~~ CINF 131 Introduction to Data Analytics: Seeking Information in Data with Computation *- Created a new course in this topic, replacing the discontinued one.* CINF 300 Probability and Statistics for Data Analytics Select two courses from: C EHC 399 Selected Topics in Emergency Preparedness, Homeland Security & Cybersecurity (as appropriate, repeatable) CINF 407 Modern Issues in Databases ~~CINF 408 Analysis, Visualization, and Prediction in Analytics~~ CINF 428 Analysis, Visualization, and Prediction in Analytics *- renumbering of IINF 408* CINF 451 Bayesian Data Analysis and Signal Processing CINF 496 Intermediate Special Topics in Informatics (as appropriate, repeatable) ICSI 431 Data Mining ICSI 432 Network Science ICSI 436 Machine Learning IIST 433 Information Storage and Retrieval
Software Development: ICSI 201 Introduction to Computer Science ICSI 310 Data Structures ICSI 418Y Software Engineering *And select one from:* IINF 455 Prevention and Protection Strategies in Cyber-security ICSI 405 Object Oriented Programming Principles and Practice	***Software Development*** ~~ICSI 418Y Software Engineering~~ CINF 308 Programming for Informatics *- replaces ICSI 418Y Software Engineering* ICSI 201 Introduction to Computer Science ~~ICSI 310 Data Structures~~ ICSI/IECE 213 Data Structures *- ICSI 213 is the renumbering of their Data Structures course, previously ICSI 310.* ~~And select one from:~~

	~~IINF 455 Prevention and Protection Strategies in Cyber-security~~ ~~ICSI 405 Object-Oriented Programming Principles and Practice~~ CINF 405 Advanced Concepts in Software Development *– This new course is now required, replacing the previous options.*
Information Technology *(online only):* IINF 302 Human-Computer Interactive Design IINF 303 Intermediate Networking *(currently IINF 423)* IINF 306 Information Security & Assurance IINF 308 Programming for Informatics	***Information Technology*** *(offered fully online)* CINF 302 Human-Computer Interactive Design CINF 303 Intermediate Networking ~~(currently IINF 423)~~ CINF 306 Information Security and Assurance CINF 308 Programming for Informatics
Self-Designed (with Departmental Approval only): *Student must provide a proposal of courses to take to support the proposed self-designed concentration that includes at least four (4) courses. At least 9 credits of a self-designed concentration should be taken while enrolled in the INF BS program. Proposal must be approved by INF faculty before the student can declare it.*	***Self-Designed (with Departmental Approval only)*** *Student must provide a proposal of courses to take to support the proposed self-designed concentration that includes at least four courses. At least 9 credits of a self-designed concentration should be taken while enrolled in the Informatics B.S. program. A proposal must be approved by CEHC faculty before the student can declare it.*
	Game Design & Development *- New concentration* CINF 171: eSports & the Digital Gaming ecosystem CINF 363: Digital Design CINF 371: Digital Game Design and Development 1 *Choose one course from:* CINF 471: Digital Game Design & Development 2 CINF 496: Intermediate Special Topics in Informatics ETAP 534: Introduction to Games for Learning: Theory and Practice ETAP 535: Introduction to Game Design for Educators ETAP 540: Learning and Teaching Computer Science Principles

c) For each new or significantly revised course, **provide** a syllabus at the end of this form, and, on the ***SUNY Faculty Table*** provide the name, qualifications, and relevant experience of the faculty teaching each new or significantly revised course. 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.*

d) What are the additional costs of the change, if any? If there are no anticipated costs, explain why.

Additional costs associated with this proposal are related to the high-powered computers necessary for the Game Design and Development concentration. CEHC currently manages the University's eSports team and facility and can support the initial cohort of the concentration (30 students). Should we meet our out year projections, we would anticipate expenses associated with the expansion of the lab.

Section 2.2. Other Changes

Check all that apply. Describe each proposed change and why it is proposed.

[ ] Program title
[ ] Program award
[ ] Mode of delivery
NOTES: *(1) If the change in delivery enables students to complete 50% of more of the program via distance education, submit a Distance Education Format Proposal* as part of this proposal. *(2) If the change involves adding an accelerated version of the program that impacts financial aid eligibility or licensure qualification, SED may register the version as a separate program.*
[ ] Format change(s) (e.g., from full-time to part-time), based on SED definitions, for the **entire** program
1) State proposed format(s) and consider the consequences for financial aid
2) Describe availability of courses and any change in faculty, resources, or support services.
[ ] A change in the total number of credits in a certificate or advanced certificate program
[ ] Any change to a registered licensure-qualifying program, or the addition of licensure qualification to an existing program. **Exception:** Small changes in the required number of credits in a licensure-qualifying program that do not involve a course or courses that satisfy one of the required content areas in the profession.

Section 3. Program Schedule and Curriculum

a) For **undergraduate programs**, complete the ***SUNY Undergraduate Program Schedule*** to show the sequencing and scheduling of courses in the program. If the program has separate tracks or concentrations, complete a ***Program Schedule*** for each one.

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 in the categories of Basic Communication and Mathematics, and 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 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 –with compelling justification(s).*

EXAMPLE FOR ONE TERM: Undergraduate 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		

b) *For* ***graduate programs****, complete the* ***SUNY Graduate Program Schedule****. If the program has separate tracks or concentrations, complete a* ***Program Schedule*** *for each one.*

NOTE: *The* ***Graduate Schedule*** *must include all curriculum requirements and demonstrate that expectations from Part 52.2(c)(8) through (10) of the Regulations of the Commissioner of Education are met.*

SUNY Undergraduate 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:_____Informatics, BS_____

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: _____ See Transfer Path Requirement Summary for details**

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**	**TPath**	**New**	**Co/Prerequisites**
CINF 100X Information in the 21st Century	3		3	3			
CINF 108 Programming for Problem Solving	3			3			
AMAT 108 Elementary Statistics OR ASOC 221 Statistics for Sociologists	3	M		3			
Social Sciences Gen Ed	3	SS	3				
Arts Gen Ed	3	AR	3				
Term credit totals:	15	12	9	9			

Term 2:Spring 1	See KEY.						
Course Number & Title	**Cr**	**GER**	**LAS**	**Maj**	**TPath**	**New**	**Co/Prerequisites**
CINF 201 Introduction to Web Technologies	3		3	3			CINF 100
UUNI 110 – Writing and Critical Inquiry	3	BC	3				
Natural Sciences Gen Ed	3	NS	3				
Elective, Liberal Arts	3		3				
Elective, Liberal Arts	3		3				
Term credit totals:	15	6	15	3			

Term 3: Fall 2	See KEY.						
Course Number & Title	**Cr**	**GER**	**LAS**	**Maj**	**TPath**	**New**	**Co/Prerequisites**
CINF 202 Introduction to Data and Databases	3			3			CINF 108, ICSI 101, 105, 110 or ICSI/I CEN/ I ECE 201 or B ITM 215; not open to students who are taking or have completed ICSI 410 or 411 or B ITM 331
CINF 203 Introduction to Network and Systems	3			3			
AMAT 100 Precalculus Mathematics, OR AMAT 104 Topics in Contemporary Mathematics, OR AMAT 106 Survey of Calculus, OR AMAT 112 Calculus	3	M	3	3			
Foreign Language 1 Gen Ed	3	FL	3				
International Perspectives Gen Ed	3	IP	3				
Term credit totals:	15	6	9	9			

Term 4: Spring 2	See KEY.						
Course Number & Title	**Cr**	**GER**	**LAS**	**Maj**	**TPath**	**New**	**Co/Prerequisites**
CINF 200 Research Method for Informatics OR ASOC 220 Introduction to Social Research	3			3			CINF 100
CINF 301X Emerging Trends in Information and Technology	3		3	3			
Concentration Course	3			3			
US Historical Perspectives Gen Ed	3	HIS	3				
Humanities Gen Ed	3	HUM	3				
Term credit totals:	15	6	9	9			

Term 5: Fall 3	See KEY.						
Course Number & Title	**Cr**	**GER**	**LAS**	**Maj**	**TPath**	**New**	**Co/Prerequisites**
Concentration Course	3			3			
CINF 305 Digital Project Management	3			3			CINF 201, 202
Elective, 300+	3						
Elective, 300+	3						
Elective, 300+, if needed	3						

Term 6:Spring 3	See KEY.						
Course Number & Title	**Cr**	**GER**	**LAS**	**Maj**	**TPath**	**New**	**Co/Prerequisites**
Concentration Course 300+	3			3			
CINF Experiential course 300+	3			3			
Elective, 300+ liberal arts	3		3				
Elective. 300+	3						
Elective	3						

Term credit totals:	15			6			
Term 7: Fall 4	See KEY.						
Course Number & Title	**Cr**	**GER**	**LAS**	**Maj**	**TPath**	**New**	**Co/Prerequisites**
CINF Concentration Course 300+	3			3			
CINF Experiential course 300+	3			3			
Elective, liberal arts	3		3				
Elective, liberal arts	3		3				
Elective, 300+	3						
Term credit totals:	15		6	6			

Term credit totals:	15		3	6			
Term 8:Spring 4	See KEY.						
Course Number & Title	**Cr**	**GER**	**LAS**	**Maj**	**TPath**	**New**	**Co/Prerequisites**
CINF 499W Senior Seminar in Informatics	3		3	3			Informatics seniors only
CINF Experiential Course 300+	3			3			
Elective, liberal arts	3		3				
Elective, 300+	3						
Elective	3						
Term credit totals:	15		6	6			

Propgram Totals (in credits):	**Total Credits: 120**	**SUNY GER: 30**	**LAS: 60**	**Major: 54**	**Elective & Other: 66**	**Upper Division: 45**	**Upper Division Major: 24**	**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) **TPath:** 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:** American History (AH), Basic Communication (BC), Foreign Language (FL), Humanities (H), Math (M), Natural Sciences (NS), Other World Civilizations (OW), Social Science (SS), The Arts (AR), Western Civilization (WC)

SUNY Graduate Program Schedule ***OPTION:*** ***You can insert an Excel version of this schedule AFTER this line, and delete the rest of this page.)***

Program/Track Title and Award:_____

a) Indicate **academic calendar** type: [ ] 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) Use the table to show **how a typical student may progress through the program**; copy/expand the table as needed.

d) Complete the last row to show program totals and comprehensive, culminating elements. **Complete all columns that apply to a course.**

Term 1:				**Term 2:**			
Course Number & Title	**Credits**	**New**	**Co/Prerequisites**	**Course Number & Title**	**Credits**	**New**	**Co/Prerequisites**
Term credit total:				Term credit total:			
Term 3:				**Term 4:**			
Course Number & Title	**Credits**	**New**	**Co/Prerequisites**	**Course Number & Title**	**Credits**	**New**	**Co/Prerequisites**
Term credit total:				Term credit total:			
Term 5:				**Term 6:**			
Course Number & Title	**Credits**	**New**	**Co/Prerequisites**	**Course Number & Title**	**Credits**	**New**	**Co/Prerequisites**
Term credit total:				Term credit total:			
Term 7:				**Term 8:**			
Course Number & Title	**Credits**	**New**	**Co/Prerequisites**	**Course Number & Title**	**Credits**	**New**	**Co/Prerequisites)**
Term credit total:				Term credit total:			

Program Total:	**Total Credits:**	**Identify the required comprehensive, culminating element(s), such as a thesis or examination, including course number(s), if applicable:**

New: X if new course **Prerequisite(s)**: list prerequisite(s) for the listed courses

Section 4. SUNY Faculty Table

a) If applicable, provide information on faculty members who will be teaching new or significantly revised courses in the program. Expand the table as needed.

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

(a) Faculty Member Name and Title and/or Rank at the Institution (Include and identify Program Director.)	(b) % of Time Dedicated to This Program	(c) Program Courses Which May Be Taught (Number and Title)	(d) Highest and Other Applicable Earned Degrees (include College or University)	(e) Discipline(s) of Highest and Other Applicable Earned Degrees	(f) Additional Qualifications: List related certifications and licenses and professional experience in field.
PART 1. Full-Time Faculty					
Philip B. Eppard, Full Professor	25	INF 100, INF 200			
Carol Anne Germain, Full Librarian and Associate Professor	75	INF 100, INF 301, INF 499	PhD, University at Albany	Informatics	
Program Director TBD	50				
George Berg, Associate Professor	75	INF 124, INF 203, INF 466, INF 465	PhD, Northwestern University	Computer Science	Former Department Chair of Computer Science, Univ at Albany. Former Department Chair of Informatics; Univ at Albany
Michael Leczinsky, Professor of Practice	100	INF 301, INF 171, INF 363, INF 371, INF 471	MS, University at Albany, May 2020	Curriculum Design & Instructional Technology	Holds **Graduate Certificate of Online Teaching & Learning,** Music Technology and Production professional certificate
Norman Gervais, Professor of Practice	75	INF 108, INF 201, INF 203, INF 300, INF	PhD, University at Albany	Informatics	
Lenore Horowitz, Professor of Practice	100	INF 108, INF 308, INF 202	PhD, University at Albany	Informatics	
Gary Ackerman, Associate Professor	12.5	INF 301, EHC 410	PhD, Kings College	War Studies	Former Research Director and then Special Projects Director at START and the Director of the Center for Terrorism and Intelligence Studies. Former Director of the Weapons of Mass Destruction Terrorism Research Program at the Center for Nonproliferation Studies in Monterey, Calif.

(a) Faculty Member Name and Title and/or Rank at the Institution (Include and identify Program Director.)	(b) % of Time Dedicated to This Program	(c) Program Courses Which May Be Taught (Number and Title)	(d) Highest and Other Applicable Earned Degrees (include College or University)	(e) Discipline(s) of Highest and Other Applicable Earned Degrees	(f) Additional Qualifications: List related certifications and licenses and professional experience in field.
					Former chief of operations of the South Africa-based African-Asian Society.
Part 2. Part-Time Faculty					
Part 3. To-Be-Hired Faculty (List as TBH1, TBH2, etc., and provide expected hiring date instead of name.)					

Informatics BS – Syllabi:

Informatics:

INF 108
CINF 124X
CINF 131
CINF 171
CINF 308
CINF 363
CINF 371
CINF 398
CINF 405
CINF 463
CINF 464
CINF 471
CINF 496

CEHC Syllabi:

CEHC 350
CEHC 390
CEHC 399
CEHC 410
CEHC 449
CEHC 450
CEHC 455
CEHC 469

Educational Syllabi:

ETAP 534
ETAP 540
ETAP 535
EAPS 390

Computer Science Syllabi:

ICSI/IECE 213

University Wide Internship Syllabi:

UUNI 390

I INF 108-0001 (6661): *Programming for Problem Solving* (3 credit hours)

Face-to-Face Meeting Information: **Tuesdays 10:15AM - 11:35AM in room PH224**

Instructor: Lenore Horowitz

Office location: Draper 141B (Downtown Campus)

Downtown (Draper) Office hours: Wednesdays 12:00 – 2:00 pm (or by appointment)

Uptown (Humanities B16) Office Hour: Tuesdays 11:45 – 1:45 pm (or by appointment)

Contact information: lhorowitz@albany.edu OR Blackboard Email

Instructor Login Schedule: I log into the course Monday through Friday (and usually Sundays!). I generally answer email messages and check for questions in the Blackboard *Ask a Question* forum in the morning.

Email: For private communication with me, please use Email in Blackboard or visit me during my office hours. You can find a link for it in the left hand Blackboard course toolbar. Anything other than private communications should be posted in the appropriate course areas. This includes general questions about the course or its content.

Peer Educators & Tutoring:

Israel Ali, ieali@albany.edu
Office Hours: TBD

Joe Ecroyd, jecroyd@albany.edu
Office Hours: TBD

UA A+ Tutoring: IINF 108, Programming for Problem Solving: TBD

Course Essentials

Course description from Undergraduate Bulletin

Ever thought about a problem and said "There should be an app for that"? This course provides an introduction to computer programming using modern programming languages as a way to solve problems. It focuses on programming concepts and fundamentals within the context of solving real world problems.

Prerequisites

None.

Course Approach

I believe (and research shows) that students learn best from interacting with texts and with other learners, engaging in challenging tasks, being held accountable for their work, and receiving and giving frequent feedback on their progress. Furthermore, permanent teams that work together throughout the semester are found to become cohesive enough to evolve into truly effective learning teams. As a result, I have designed this course with these elements in mind.

Why Blended-Learning?

Blended learning or 'hybrid learning,' is learning that combines the best of online learning and face-to-face instruction for the purpose of enhancing learning. In fact it seems to be the ideal solution all-around as it appeals to all learning styles, circumstances, needs and demands. It combines the support of classroom learning with the flexibility of online learning. For students, blended courses offer the conveniences of online learning combined with the social and instructional interactions that may not lend themselves to online delivery. A blended approach contributes hugely to student satisfaction and success in courses. Students tend to be engaged more and have the ability to direct their individual learning experience to some degree. Also since different learners have different learning styles, a blended approach is more likely to cater to those varying needs. Of course there are also numerous benefits for the instructor – instant feedback, and the ability to quickly assess learner performance and needs based on reporting, testing or quizzing via Blackboard.

Our course is conducted both online and face-to-face line. During our weekly face-to-face meetings, you'll participate in team activities. The online portion of this course will allow you to review course content and readings, practice writing programs, participate in discussions via the discussion board, take quizzes to check your understanding of the course content, and prepare for upcoming class meetings. Watch the Blackboard course calendar closely for specific information on the course meeting details and key deadlines for each week.

The Process

The course content is divided into four modules of study, with each module focused on a common thematic element of programming for problem solving. You will do much of the processing and analysis of course elements in teams into which you will be placed on the first day of class and will stay in for the entire length of the course. Your interactions and performance in your team will be crucial to your success in the course. For each module of study, we will go through a similar set of steps:

1. You will read portion of texts on your own and will take a short Readiness Assessment Test (RAT) on that section at the beginning of the module of study. You will actually take each RAT twice—once on your own (iRAT) and once as a team (tRAT). (Both grades count—see *Grading and Evaluation* for details.)
2. As the module progresses, you will continue reading through the assigned texts and will engage in activities, both on your own and as a member of your team, that are designed to help you gain problem solving and programming skills.
3. You will do a substantial amount of work, both individually and as a team, as a means of solving programmatic problems.
4. As you work through the readings and activity sequence, there will be mini-lectures to help fill in gaps in your understanding.

Course Goals

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

- Analyze and design solutions for computational real-world problems.
- Create, modify, and explain simple and complex computer programs.
- Apply basic data structures in a computer program.
- Construct and implement algorithms in a computer program.

Blended Course Map:

Start with referring to the Course Calendar (this can be found in the Blackboard course left menu bar) which will have the ***final*** (official) due dates.

- New modules start toward the end of the week. Modules will open in Blackboard the week before the module begins.
- The RATs are scheduled at the beginning of a new module only. Individual RATs will open on Sunday at 4pm and close on Monday at 11:59 pm online (in Blackboard). Team RATs will be administered first thing in class on Tuesdays.
- Team assignments are usually due on Tuesdays.
- Individual assignments are due on Fridays.
- Individual homeworks are due on Fridays.
- Tests will be administered online and are normally scheduled for Saturdays.

The course is divided into four modules. In each module there are eight folders:

1. Required Readings: readings due throughout the module.
2. RATs: directions and online quiz.
3. Sunday Sessions: these contain information, practice and directions for the week ahead.
4. Tuesday Slides: these contain additional guidance, information and directions for in-class. The slides will guide you through team and individual activities (usually due the same day at 11:59pm). The slides will be made available to you on Tuesday after class.
5. Team/Class Assignments: if there is a team/class assignment due (see Tuesday Slides) it will be listed here. This is where you attach your file(s) for the activity described to you. These open on the day indicated in the calendar.

6. Individual Assignments: there is normally one Individual assignment due each module. This is where you attach your file(s) for the assignment described. These open several days BEFORE the due date indicated in the calendar. Individual assignments are due on Fridays by 11:59pm.
7. Individual Homework: these are smaller individual tasks that will provide you with more practice learning how to code. Individual homeworks are due on Fridays by 11:59pm.
8. References: I will put Python references, "cheat sheets" and detailed instructions on how to do something, like, install software, here.

Grading and Evaluation

The final course grade breakdown for the course is:

- RATs: 15% (Your final RAT score is an average of your individual (iRAT) and team scores (tRAT) for each RAT)
- Individual Assignments: 30%
- Individual Homeworks: 10%
- Tests: 30% (3 tests, 10% each)
- Team Activities: 10%
- Team Member Performance: 5%

Safety Valves:
1. Drop lowest RAT score
2. Late pass on 2 Individual Assignments
3. Drop lowest Individual Homework score
4. Drop lowest Team Activity score

(more information under Course Requirements)

A-E graded:

93 – 100% A	77 – 79% C+	60 – 62% D-
90 – 92% A-	73 – 76% C	0 – 59% E
87 – 89% B+	70 – 72% C-	
83 – 86% B	67 – 69% D+	
80 – 82% B-	63 – 66% D	

Grades will be posted in Blackboard as point values. It is your responsibility to check and verify your grade. You have ***one week after a grade is posted*** to discuss concerns or mistakes with the instructor. After one week the grade becomes permanent.

As noted above, grades are weighted. A separate file (not in Blackboard) of weighted calculated grades is maintained throughout the semester which is representative of final grades; the point values in Blackboard ***do not*** represent your weighted grade but you can easily perform these calculations using the grade breakdown percentages here.

Required Readings

Required course readings will be assigned from the following text.

Programming for Problem Solving, L. G. Horowitz, 2018, Self-published OER, freely available on the Internet at https://courses.lumenlearning.com/suny-albany-programmingforproblemsolving/ . [Available in paperback in the UAlbany Bookstore for $10, ISBN- 978-1-64176-046-1**. IT IS HIGHLY RECOMMENDED THAT YOU PURCHASE A COPY OF THE TEXTBOOK**.]

eBook link: https://courses.lumenlearning.com/suny-albany-programmingforproblemsolving-v2/

Additional Materials

Students will require access to a computer, a version of **Python3.x**, a text-editor, a current web browser, and the Internet. (NOTE: not needed until MODULE #2)

Course Requirements

Attendance

Your in-class and online performance is key to your success in this course. Attendance, itself, is not graded. Instead, graded team/class activities and assignments constitute an important part of the course grade. You will not likely be able to maintain a passing average without consistent attendance both online and in the classroom. Missing class or scheduled online tasks means you will earn a zero for the team/class activities or assignments missed. Because of the nature of the assignments, no make-up opportunities will be available.

Missing an assignment or activity that happened at the beginning of class before you arrive, at the end of class after you leave early, or scheduled online also earns a zero. No make-up opportunities will be available.

Readiness Assessment Tests (RATs)

At the beginning of each module of study, you will take a short test to assess your comprehension of the first of the required readings. You will take each RAT twice: once as an individual (called the iRAT, administered online) and once as a team (called the tRAT, administered in class). Your individual and team scores will be averaged to create your final score on each RAT. Because the process of completing the RAT as a team is essential to the experience of the course, ***there will be no opportunities for make-up RATs***. You will have the option of dropping your lowest RAT score at the end of the course; this may be used to accommodate an absence or a poor performance. After the "Getting Started" module, iRATs will open at 4pm on Sunday and close 11:59pm on Monday.

Once your team has completed the team test, your team has the opportunity to file an appeal. The purpose of the appeal process is to allow your team to identify questions where you disagree with the question key, question wording, or ambiguous information in the readings. The appeals will be reviewed outside of class. Only teams are allowed to appeal questions (no individual appeals).

Safety Valve: Drop lowest RAT score.

Individual Assignments

You will have one individual assignment due each module. Individual assignments are due on Fridays.

Individual assignments are considered due by the time and date specified in Blackboard. There are no make-up opportunities for missed assignments. While in an ideal world I would expect to receive all of your assignments at the due date and time, I realize that my scheduling of these assignments sometimes coincides with other responsibilities—both academic and otherwise—that you are obligated to fulfill. For that reason, you have a "no excuses needed late pass" for late submission of ***two*** of the individual assignments assigned for the course. You can use this pass to turn in an assignment no more than two days (i.e., 48 hours) late. Because you already have this built-in extension for two individual assignments, there is no need to ask for additional extensions on the remaining assignments. You are welcomed and encouraged to contact me for help while you are working on your assignments.

Safety Valve: No excuses late pass, within 48 hours of due date, for two assignments.

Individual Homework

You will have frequent individual homework tasks assigned over the length of the course. You will spend time applying and honing problem-solving and programming skills. These are short, low stakes, individual tasks meant to provide you with practice coding. Most of these tasks will be graded. You will have the option of dropping your lowest Individual Homework score at the end of the course; this may be used to accommodate a missed due date or a poor performance. Individual homeworks are due on Fridays.

Safety Valve: Drop lowest homework score.

It is imperative to understand that problem solving and computer programming is not a spectator sport. To get good at it, you need to **practice**, and the primary vehicle for that are the in-class/online activities and individual homework assignments.

Submitting Assignments/Homework:

- Individual assignments & homework assignments are due at 11:59 pm on Fridays.
- You are to model the examples provided for you in mini-lectures, in class, and as well as examples covered in the required readings, do not use code that is has not been covered in this course (for example, code you find on the internet). Code in assignments and homework is expected to have been written by you (that is, don't copy things you find on the internet or from a friend). Finding and identifying appropriate code is a different skill than authoring and is not an acceptable substitution.
- Assignments & homework must be submitted through Blackboard. All deadlines are enforced. If you have trouble with the submission system in Blackboard, e-mail me your assignment/homework before the deadline and contact UAlbany ITS.

- You may submit as often as you like before the due date and time. The last version of each file that you submit will be graded.
  - Once you have submitted a file, you do not need to resubmit it unless it has changed.
- If the deadline is approaching, submit! It is much better to submit an incomplete assignment/homework for partial credit than no assignment/homework for zero credit.

Tests

There will be three tests during the semester. These tests will be administered online on the date indicated in Blackboard. There are generally no make-up opportunities for missed tests, though if the scheduled test date does not work for you we can work out a day ***BEFORE*** the scheduled date to complete the test. See the University's Medical Excuse Policy: http://www.albany.edu/health_center/medicalexcuse.shtml and the Attendance and Timely Compliance with Course Requirements in the Undergraduate Academic Regulations policy: http://www.albany.edu/undergraduate_bulletin/regulations.html . The exact format of these tests will be announced well in advance of each test date.

Team/Class Activities

A major component of your participation in the course will be involvement in team/class activities both online and in-class. You will complete some tasks on an individual basis and be involved in many team activities.

Everyone is expected to participate in class by being active in your team.

For online activities, teams must perform "in the open." "Team rooms" in Blackboard Groups are created so we can "witness" your team activities in action. Some teams may prefer another platform, like Google Drive, then I ask that the teams give me access as a team member, to the site they set up. Do not conduct team activities solely through e-mail. If you do use e-mail to any extent, in addition to the "team room", I ask that you "Cc" me as well. If you start a new discussion/blog in your Blackboard Group be sure to identify yourself to your team members and us so you can be credited for participation. Finally, we visit the team rooms from time to time, sometimes posting a message asking if you need anything or are having any issues.

Participation includes meaningful exchange of information with team members which will enhance and/or correct another member's contribution. Participation is not merely being present and/or agreeing with contributions.

Note*:* Completing these activities is crucial to your success in this course. Because of the nature of the assignments, no make-up opportunities will be *offered for these assignments, and no late assignments will be accepted*. However, because circumstances can conspire against our best intentions, sometimes you will find that you can't make it to a scheduled activity. For this reason, *there is 1 drop opportunity for graded team activities* built into the course. If you miss a graded team activity it will be possible to drop the failing grade you would automatically receive for completing the team assignment. If you do not need to drop the one grade for a missed team assignment, you will be able to drop the lowest score you receive.

Safety Valve: Drop lowest team activity score.

Team Member Performance

Because your work in your teams is crucial to your success in this course as well as that of your teammates, you will be held accountable for your contribution to your team. Your team members will give you feedback on your performance (peer evaluations) three times during the semester.

Other Course Information

Withdrawal from the course

The drop date for this class is Monday November 4th for undergraduate students. That is the last date you can drop a course and receive a 'W'. It is your responsibility to take action by this date if you wish to drop the course. In particular, grades of "incomplete" will not be awarded to students because they missed the drop deadline.

Incompletes

As per the Undergraduate Bulletin, the grade of Incomplete (I) will be given "only when the student has nearly completed the course requirements but because of circumstances beyond the student's control the work is not

completed." This is a temporary grade requested by the student and assigned by the instructor. A student granted an incomplete will make an agreement specifying what material must be made up, and a date for its completion. Incompletes may NOT be resolved by auditing or registering again for a subsequent offering of the course. The date for the completion of the work may not be longer than one month before the end of the semester following that in which the incomplete is received. Once the work is completed, the instructor assigns the appropriate academic grade.

The instructor may extend an incomplete for a maximum of one semester beyond the original deadline providing that the student has made contact with the instructor to request the extension. Additional extensions are NOT permitted.

Any grade of I existing after the stated deadline shall be automatically changed to E or U according to whether or not the student is enrolled for A–E or S/U grading except for extenuating circumstances approved by the Office of the Vice Provost for Undergraduate Education, these converted grades may not be later changed.

Important: Incompletes will not be given to students who have not fulfilled their classwork obligations and who, at the end of the semester, are looking to avoid failing the course. This is asking for special treatment.

Academic Integrity

It is every student's responsibility to become familiar with the standards of academic integrity at the University. Claims of ignorance, of unintentional error, or of academic or personal pressures are not sufficient reasons for violations of academic integrity. See Academic Integrity [http://www.albany.edu/undergraduate_bulletin/regulations.html]

According to the Undergraduate Academic Regulations and the Standards of Academic Integrity, faculty and students both need "*to trust that its members do not misrepresent their data, take credit for another's ideas or labor, misrepresent or interfere with the work of other scholars, or present previous work as if it were new. Acts of academic dishonesty undermine the value and credibility of the institution as a whole. In particular, students who plagiarize or falsify their work not only fail to adhere to the principles of scholarly inquiry and fail their peers by taking undeserved credit or reward, but they also fail to demonstrate their learning.*" Furthermore, plagiarism is defined as "*presenting as one's own work as the work of another person. Some examples of plagiarism include copying, paraphrasing, submission of another student's work as one's own, the use of completed projects/work*... ". In addition unauthorized collaboration is considered to be academically dishonest and therefore unacceptable. This is defined as "*collaborating on projects, papers, or other academic exercises when this is forbidden by the instructor. The default faculty assumption is that work submitted for credit is entirely one's own. At the same time, standards on appropriate and inappropriate collaboration as well as the need for collaboration vary across courses and disciplines. Therefore, students who want to confer or collaborate with one another on work receiving academic credit should seek the instructor's permission to collaborate*."

The following is a list of the types of behaviors that are defined as examples (not an exhaustive list) of academic dishonesty and are therefore unacceptable.

- Plagiarism (including the copying of code you have not written)
- Allowing other students to see or copy assignments/homeworks/tests.
- Examining or copying another student's assignments/homeworks/tests.
- Submitting the same work for multiple assignments/classes with prior consent from the instructor.
- Getting answers or help from people or other sources (e.g. textbooks, websites, blogs) without acknowledging them.
- Unauthorized collaboration.

Any incident of academic dishonesty in this course, no matter how "minor" will result in

1. No credit for the affected assignment.
2. A written report will be sent to the appropriate University authorities (*e.g.* the Dean of Undergraduate Studies).
3. One of -
    - A final mark reduction by *at least* one-half letter grade (*e.g.* B → B-, C- → D+),

- A Failing mark (E) in the course, and referral of the matter to the University Judicial System for disposition.

CEHC Grievance Policy & Procedure:

According to the CEHC Grievance Policy:

- A "grievance" shall include any complaint alleging wrongdoing made by students, faculty, staff, or administrators in the College of Emergency Preparedness, Homeland Security and Cybersecurity (CEHC) against other students, faculty, staff or administrators. "Faculty" shall include any individuals with appointments enabling them to be designated instructors of record, and "students" shall include any enrolled students.
- A "grievance" shall include, but not be limited to, any challenge to the resolution of a dispute over matters of academic honesty (such as plagiarism and cheating) and professional ethics or grades assigned for courses. It shall also include any allegation of improper treatment, including improper treatment on the grounds of age, color, creed, disability, marital status, military status, national origin, race, sex, gender identity, or sexual orientation. In grievances concerning grades, grievances may be filed only as to any final grade or other final disposition for a course. Dropping of a course shall constitute a final disposition for a course so as to allow grievances over grades or other matters occurring prior to the "drop."
- All grievances concerning grades must be adjudicated by the CEHC grievance committee and process. All other grievances may be referred to the University-level community standards process (or other appropriate process). Nothing in this policy prohibits the aggrieved party from pursing University-level adjudication at any time.
- III. Any grievance must be filed within five months of the time the complainant was informed of the matter which is the subject of the grievance. "File" shall mean the submission of a statement from the complainant to either the Dean of the CEHC or the Chair of the CEHC Grievance Committee. The statement shall 1) detail the event or events to which the complainant is objecting, 2) identify the person or persons the complainant alleges is responsible, and 3) identify the remedy or remedies sought to address the complaint.

For the full CEHC Grievance Policy, please contact cehc@albany.edu.

Responsible Use of Information Technology at UAlbany

Students are encouraged to read the University at Albany Policy for the Responsible Use of Information Technology available at the ITS Web Site:
https://wiki.albany.edu/display/public/askit/Responsible+Use+of+Information+Technology+Policy

Time Management

For every credit hour that a course meets, students should expect to work 3 additional hours individually (3 x 3= 9). For a three-credit course you should expect to work 9 hours individually outside of class related work every week. Manage your time effectively to complete readings, assignments, and projects.

Available Support Services

Reasonable accommodation

Reasonable accommodations will be provided for students with documented physical, sensory, systemic, medical, cognitive, learning and mental health (psychiatric) disabilities. If you believe you have a disability requiring accommodation in this class, please notify the Disability Resource Center (518- 442-5490; drc@albany.edu, www.albany.edu/disability). Upon verification and after the registration process is complete, the DRC will provide you with a letter that informs the course instructor that you are a student with a disability registered with the DRC and list the recommended reasonable accommodations.

Course Outline and Schedule

The following schedule of topics and goals is ***preliminary and may be changed as the course progresses***. The final schedule/calendar and specific individual and team assignments (and necessary materials) will be provided in Blackboard.

Module	TENTATIVE DATES	Module Goals
Getting Started	Start: 8/12 class: 8/27 End: 8/30	• Successfully use Blackboard tools. • Identify & recognize goals & details of the syllabus via the Readiness Assessment Process. • Practice & experiment with Blackboard Groups, Blogs, Tests, Surveys and Assignments. • Introduce yourself to your team.
1: How to Think Like an Engineer.**	Start: 8/31 iRAT: 9/2 tRAT: 9/3 class: 9/3 class: 9/10 End: 9/13	• Generate and test algorithms to solve computational problems. • Explain the process for generating computational algorithms. • Describe the problem being solved in a computational algorithm. • Evaluate computational algorithms for exactness, correctness, termination, generalizability and understandability. • Explain the role of programming in the field of Informatics.
2: Writing Simple Programs.	Start: 9/14 iRAT: 9/16 tRAT: 9/17 class: 9/17 class: 9/24 class: 10/1 End: 10/1 **Test #1: 10/5**	• Create, modify, and explain computer programs following the input/process/output pattern. • Form valid Python identifiers and expressions. • Write Python statements to output information to the screen, assign values to variables, and accept information from the keyboard. • Read and write programs that process numerical data and the Python math library. • Read and write programs that process textual data using built-in functions and the Python String library.
3: Graphics: Designing and developing graphics programs. Making Decisions.	Start: 10/5 iRAT: 10/7 tRAT: 10/8 class: 10/8 class: 10/22 class: 10/29 class: 11/5 End: 11/8 **Test #2: 11/9**	• Create objects in programs and call appropriate methods to perform simple graphical computations. • Write simple interactive graphics programs using the graphics library. • Apply fundamental concepts of computer graphics in a computer program. • Read and write programs that define functions and use function calls and parameter passing in Python. • Read and write programs using the Python IF and IF/ELIF/ELSE statements to implement a simple decision structures.
4: Control Structures: Looping in computing. Data and Information Processing in Python.	Start: 11/9 iRAT: 11/11 tRAT: 11/12 class: 11/12 class: 11/19 class: 11/26 class: 12/3 End: 12/6 **Test#3**: 12/10	• Write simple exception handling code to catch simple Python run-time errors. • Read and write programs using the Python FOR and WHILE statements to implement a simple loop structures. • Construct and implement algorithms that use decision and loop structures. • Apply basic file processing concepts and techniques for reading and writing text files in Python.

** Don't forget that individual homework and assignments are due on Fridays.

INF 124X: *Cybersecurity Basics* (3 cr)

Spring 2018

I tell my students, 'When you get these jobs that you have been so brilliantly trained for, just remember that your real job is that if you are free, you need to free somebody else. If you have some power, then your job is to empower somebody else. This is not just a grab bag candy game.' – Toni Morrison

Course Staff

Instructor: George Berg
Email: gberg@albany.edu

- Office Hours:
  Tuesdays and Thursdays: 2:50 – 3:50 in the Campus Center. Ground floor near the rear grand staircase.
- Wednesdays: 2:50 – 3:50 in Draper XXX.
- Phone: 1-518-437-4937
- Twitter: @GBerg_UAlbany
- FB: @GeorgeBergUAlbanyCS

Course Description

C INF 124X *Cybersecurity Basics* (3)

An introduction to security in computer and network systems for a general audience. The operation of computers and networks is explained to show how they are the basis for attacks. The course will confer a basic but comprehensive understanding of how cybersecurity attacks (e.g., viruses, worms, denial of service) work. It will also cover aspects of privacy and other human elements of cybersecurity. Takes a general approach that will result in students prepared to learn about and defend themselves from current and future attacks.

Prerequisite(s): None.

Expected Student Outcomes

This is a course in computer and network security for people who do not (yet) have a background in the topic. It is meant for people with little or no background in computers.

The goals of this course are to help students learn

- how modern computers and networks work, and how attacks on these systems use their own workings against them.
- how to protect their computers, the information they contain, and the networks that link them.

The second goal is the primary one, and the most complicated. Computer hardware, software and the networks they operate on are all changing, as are the attacks on them. There is no simple, single source to help a person defend himself. For this reason, any person who owns a computer needs to become knowledgeable about computer security. It shouldn't have to be that way, but that is the way of the world for the foreseeable future.

In this course, students will learn how to use resources like the Internet to

- learn the steps they need to protect their computers
- search for possible attacks that may be affecting their computers
- evaluate information they have found (*e.g.* is it true? Is it really part of a trick which is itself an attack?)
- apply information they have found
- write up their results, appropriately using and referencing their sources (This is a university course after all).

The emphasis of the course will be on students actively learning these things. This is particularly critical for computer security, as specific details that are relevant today will be obsolete in the very near future. It is more important to discover *how to learn* about computer security than to have a rote mastery of a static list of details.

This course assumes no previous experience with computers, just a willingness to learn, to contribute to the class, and to work hard.

Upon successful completion of INF 124X, you will have gained the ability to:

- Demonstrate individual competence in
  - The form and function of computer hardware, software, operating systems, and networks.
  - How attacks exploit the nature and design of hardware, software, operating systems, and networks.
  - Cybersecurity concepts.
    - Cryptology
    - Authentication
    - Network Defenses
  - How to find and discern reliable and actionable information on computer security.

- **Apply** the above concepts in assignments.
- Be **persistent** in solving medium complexity problems.
- Develop coherent problem solving skills.
- **Work** effectively in teams.

General Education

This course also includes material and instruction to help you learn the general education competencies in **Critical Thinking** and **Information Literacy**. Critical thinking competency is obtained by various kinds of problem solving. This includes analyzing an problem, transforming it into algorithms and then possibly code to attempt a solution, and then critically analyzing, testing, editing and debugging the solution. Information literacy has several components. One component is knowing how computer algorithms and systems work, and how to solve problems with them. This is because computer software and hardware are at the heart of modern digital information and related topics. In addition, information literacy mean knowing how to find and assess sources in your own problem solving – you must know how to find certain information from resources other than a text book, to be able effectively to use sources, and cite them appropriately. This is key in cybersecurity, as it is a dynamic, rapidly changing field.

This course also meets the UAlbany **CHALLENGES for the 21st Century** General Education Requirement. Courses meeting Challenges for the 21st Century enable students to demonstrate:

1. Knowledge and understanding of the historical roots, contemporary manifestations, and potential future courses of important challenges students may encounter as they move into the world beyond the university;
2. Familiarity with these challenges in areas such as cultural diversity and pluralism, science and technology, social interaction, ethics, global citizenship, and/or others;
3. An integrated understanding of how challenges often affect individuals and societies simultaneously in many of these areas;
4. An appreciation for interdisciplinary approaches to understanding contemporary and future challenges.

Class Meetings

Lecture

The lecture meets twice week: Tuesdays and Thursdays, 1:15 – 2:35 PM in (Lecture Center) LC 25.

Class Staff

In addition to the professor, the class has a staff to help you learn. This includes graduate students who assist as Teaching Assistants or Graders, and undergraduates who serve as Peer Educators. They have various roles, but together they run the lab sections, assist with the lecture, hold office hours to assist with questions and problems, and grade assignments.

I'll provide more detail (e.g. assignments, office hours) as we get into the semester.

Required Text

There is no required text for this class.

Recommended Text

There is no recommended text for this class.

Additional Readings

There will be readings that will be available to the students online or via Blackboard. When these readings are assigned, the class will be told where they can be found.

TEAM-BASED LEARNING (TBL)

This course uses Team-based Learning (TBL). This section describes how we will be using TBL in this class.

AN ABSOLUTELY CRUCIAL POINT: The course is divided into learning modules. You ***must*** do the readings for each module ***before*** the unit's start. This is because each unit starts with a Readiness Assessment Test (RAT). Readings must be done before the RAT tests for the module (dates given in the syllabus below). The RAT tests are based solely upon the readings, and not on lecture or other in-class preparation beforehand.

Teams

This course will be using a Team-Based-Learning (TBL) format (http://www.teambasedlearning.org). This instructional method aims to help develop your learning skills and will be done in a way that will hold teams accountable for using course content to make decisions that will be reported publically and subject to cross-team discussion/critique. You will be assigned to a team with approximately 6 members. Teams will be formed during the first week of the term. Teams will work together for most in-class activities throughout the semester.

Your grade will be influenced by team performance on team-based assignments. While in many courses, group work can be structured unfairly, such that some students end up doing all the work while everyone shares in the credit, two factors will prevent that from happening in this class. First, nearly all graded team

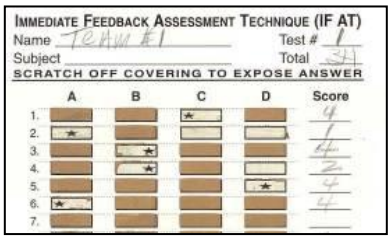
work will be preceded by one or more preparatory assignments, for which each individual will be accountable (*e.g.* the RATs), thus ensuring that individual team members are each prepared to contribute to the team effort. Second, each individual's contribution to team work will be assessed by his or her teammates several times during the semester.

Phase 1 – Preparation: You will complete **specified readings** to begin each module

Phase 2 – Readiness Assurance Test: At the first class meeting of each module, you will be given a **Readiness Assurance Test** (RAT). The RAT test (10 multiple-choice questions) measures your comprehension of the assigned readings, and helps you learn the material needed to begin problem solving in phase 3. The purpose of phase 2 is to ensure that you and your teammates have sufficient foundational knowledge to begin learning how to apply and use the course concepts in phase 3. **RATs are closed book and based on the assigned readings.**

- **Individual RAT (iRAT)** – You individually complete a 10 question multiple-choice test based on the readings.

- **Group/Team RAT (gRAT)** - Following the iRAT, the same multiple-choice test is re-taken with your team. These tests use a "scratch and win" type answer cards known as an IF-AT. You negotiate with your teammates, and then scratch off the opaque coating hoping to reveal a star that indicates a correct answer. *Your team is awarded **10** points if you uncover the correct answer on the **first** scratch, **6** points for **second** scratch, and **2** point for **third** scratch.* No points are awarded for fourth or fifth.


IMMEDIATE FEEDBACK ASSESSMENT TECHNIQUE (IF AT)
Name Team #1 Test # 1
Subject Total 34
SCRATCH OFF COVERING TO EXPOSE ANSWER

	A	B	C	D	Score
1.			★		4
2.	★				1
3.		★			4
4.		★			2
5.				★	4
6.	★				4
7.					

- **Appeals Process** - Once your team has completed the team test, your team has the opportunity to complete an appeal. The purpose of the appeal process is to allow your team to identify questions where you disagree with the question key or question wording or ambiguous information in the readings. Instructors will review the appeals outside of class time and report the outcome of your team appeal at the next class meeting. Only teams are allowed to appeal questions (no individual appeals).

- **Feedback and Mini-lecture** - Following the RATs and Appeal Process, the instructor may provide a short clarifying lecture on any difficult or troublesome concepts.

Phase 3 - In-Class Activities: You and your team use the foundational knowledge, acquired in the first two phases, to make decisions that will be reported publically and subject to cross-team discussion/critique. We will use a variety of methods to have you report your team's decision at the end of each activity. The

presentation of your team responses is critical to the team grade. You should expect each team member to present individually and for the entire team to present with smooth transitions.

Grading

Category	**Assignment Type**	**Weight Within Category**	**Category Weight in the Course**
Individual Grades			(45% – 70%)*
	iRAT Tests	25%	
	Individual Assignments	35%	
	Midterm Exam	15%	
	Final Exam	25%	
Team Grades			(20% – 45%)*
	gRAT Tests	50%	
	Team Exercises	50%	
Class Participation and Peer Evaluation			(10% – 25%)*
	Peer Evaluation	75%	
	Class Participation (Instructor Determined)	25%	
_____			_____
Total			**100%**

* The class will determine the grade weights on 01/25/2018. Student teams will negotiate the exact proportions of individual grades, team grades, and peer evaluation for the course, with in the ranges given above. For example, they may agree on individual grades at 50%, team grades at 30%, and peer evaluation at 20% of a students' course grade. The percentages *must* total to 100%, of course.

Policies

Attendance: Your in-class performance is key to your success in this course. Attendance, itself, is not explicitly graded (but it does factor into class participation). Instead, graded in-class activities and assignments constitute an important part of the course grade. Keeping a passing average on these is not possible without consistent attendance. Missing class means the student earns an automatic zero for all individual and team activities or assignments missed. No make-up opportunities will be available.

Tardiness: Missing an assignment or activity that happens before a student arrives or after a student leaves also earns a zero. No make-up opportunities will be available. Tardiness also factors into class participation.

If you know that it will be difficult for you to consistently get to class on time and stay for the entire period, you should take this course at a time that better fits your schedule. Missing or being late frequently will guarantee a low grade for the course.

Make-up Policy: There are generally no make-up opportunities for missed assignments except in extenuating circumstances. Instead of asking to make up missed work, please use the course 'safety valves' described below.

Since there will be situations in your life when missing a class meeting is simply unavoidable, this course has 2 no-fault safety valves.

Safety Valve 1: The lowest iRAT and gRAT is dropped (Peer Evaluations, individual Assignments, and Exams are *not* dropped). A missed assignment will count against this (*i.e.* a zero from a miss would be your low score; you don't get a miss and a drop).

Safety Valve 2: If you become seriously ill during the semester, or become derailed by unforeseeable life problems, and have to miss so many assignments that it will ruin your grade, schedule a meeting with the instructor in order to make arrangements for you to drop the course to save your grade point average. Don't wait until it's too late to do this when you get in trouble.

Late Assignments: Out of class assignments are due on the due date, by the assigned time. Late individual assignments will be accepted, but at the cost of a full letter grade for missing the deadline, and an additional letter grade for each additional 24 hours late. In-class assignments may be done only on the days they are scheduled.

Withdrawal from the Course: The **drop date** for the Spring 2018 semester is **XXX for undergraduate students in full semester courses.** That is the last date you can drop a course and receive a 'W'. It is your responsibility to take action by this date if you wish to drop the course. In particular, grades of "incomplete"

will not be awarded to students because they missed the drop deadline. Given that dropping a course can have financial aid implications, please see your advisor or the Financial Aid office before dropping a course so you understand the implications that action can have on your aid.

Electronic Devices: For some team activities, you will need to use a phone/tablet/laptop. Other than that, make sure your devices are put away during class unless we are using them in a team exercise. *Non-class device use will count negatively against the entire class's participation grade.*

Students with Disabilities: Students who feel that they have disabilities that require special arrangements for them to take the course *must* register with the Disability Resource Center. Students are eligible for special services to which both the Center and the professor agree. In general, *it is the student's responsibility* to contact the professors at least one week before the relevant assignment to make arrangements. You can contact the Disability Resource Center in Campus Center 137, or at 442-5490, if needed.

Incompletes: As per both the Graduate and Undergraduate Bulletins, the grade of Incomplete (I) will be given "only when the student has nearly completed the course requirements but because of circumstances beyond the student's control the work is not completed." A student granted an incomplete will make an agreement specifying what material must be made up, and a date for its completion. The incomplete will be converted to a normal grade on the agreed upon completion date based upon whatever material is submitted by that time.

Important: Incompletes will *not* be given to students who have not fulfilled their classwork obligations, and who, at the end of the semester, are looking to avoid failing the course. This is asking for special treatment.

Responsible Use of Information Technology: Students are required to read the University at Albany Policy for the Responsible Use of Information Technology available at the ITS website: https://wiki.albany.edu/display/public/askit/Responsible+Use+of+Information+Technology+Policy

Academic Integrity

In this class, some course work and examinations are *individual* exercises. The individual work that you do must be *yours* – not that of other students, friends, tutors, *etc*. While it may seem like the easy way out of doing the assignments to copy them from others, this strategy will backfire on the tests, when you will not know the material you would have learned from doing the assignments. You may of course form study groups, discuss assignments and techniques in general terms, *etc*., but the assignments themselves *must* be your own work. In particular, two or more people may not create an individual assignment together and submit it for credit. *Please ask if you have any questions about academic integrity.*

I am also personally offended by cheating, in part because it hurts the honest students in the class. We will try our hardest to catch cheaters. If we catch a student cheating, we will not go easy on him or her. Given that, is it really worth it?

The Graduate and Undergraduate Bulletins state the university's policies on academic integrity. You will be held to these policies. You are expected to be familiar with them.

A (non-exhaustive) list of unacceptable activities is:

- Allowing other students to see or copy your assignments.
- Examining or copying another student's assignments.
- Allowing other students to see or copy your work during an exam.
- Examining or copying another student's work during an exam.
- Getting answers or help from people, or other sources (*e.g.* research papers, web sites) without acknowledging them.
- Defacing or deleting class shared documents.
- Lying to the Professor about issues of academic integrity.

Any incident of academic dishonesty in this course, no matter how "minor" will result in

- No credit for the affected assignment.
- A written report will be sent to the appropriate University authorities.
- One of -
    - A final mark reduction by *at least* one-half letter grade (*e.g.* B → B-, C- → D+),
    - A Failing mark (E) in the course, and referral of the matter to the University Judicial System for disposition.

Policies from Undergraduate Bulletin: http://www.albany.edu/undergraduate_bulletin/regulations.html

Timeline

Class	Date	Readings (due *before* class)	Activities
Module 0: Introduction			
	01/23		Classes Start
1	01/23		Course Introduction, Pedagogy
2	01/25	Syllabus	iRAT, gRAT, Team Exercise
Module 1: Computer Hardware and Attacks			
3	01/30	Module Readings assigned in Blackboard	iRAT, gRAT, Team Exercise
4	02/01		Team Exercises
5	02/06		Team Exercises
6	02/08		Team Exercises, Peer Evaluation One
Module 2: Computer Software and Attacks			
7	02/13	Module Readings assigned in Blackboard	iRAT, gRAT, Team Exercise
8	02/15		Team Exercises
9	02/20		Team Exercises
10	02/22		Team Exercises
11	02/27		Team Exercises
Module 3: Computer Operating Systems and Attacks			
12	03/01	Module Readings assigned in Blackboard	iRAT, gRAT, Team Exercise
13	03/06		Team Exercises
14	03/08		Team Exercises
	03/13		No Class – Spring Break
	03/15		No Class – Spring Break
15	03/20		Team Exercises
16	03/22		Midterm Review, Peer Evaluation Two

17	03/27		Midterm Examination – In Class
Module 4: Computer Networks and Attacks			
18	03/29	Module Readings assigned in Blackboard	iRAT, gRAT, Team Exercise
19	04/03		Team Exercises
20	04/05		Team Exercises
	04/09		Undergraduate Drop Deadline.
21	04/10		Team Exercises
22	04/12		Team Exercises
23	04/17		Team Exercises
Module 5: Application Areas and the Future in Cybersecurity			
24	04/19	Module Readings assigned in Blackboard	iRAT, gRAT, Team Exercise
25	04/24		Team Exercises
26	04/26		Team Exercises, Peer Evaluation Three
27	05/01		Team Exercises
28	05/03		Team Exercises
29	05/08		Final Exam Review
	05/09		Last Day of Classes
	05/10		Final Exams Begin
	05/17		Final Examination 1-3 PM
	05/17		Final Exams End
Examinations			
Midterm	03/27	**Covers Modules 0-3**	Midterm Examination, in Class
Final	05/17	**Comprehensive**	Final Examination, Thursday May17, 1 – 3 PM

Miscellaneous

Extra credit opportunities

During the semester the university and others hold events that may be of interest to students in this course. If you attend an event and write a summary and reflection piece on the event (specified in individual assignments) you may receive extra credit worth up to 1% of the course value. A maximum of 5% of extra credit can be accrued this way. There are no other extra credit mechanisms available in this course.

INF 131: *Introduction to Data Analytics (3 cr)*

Fall 2018

Course Staff

Instructor: Jeff Yates
Email: jyates@albany.edu

- Office Hours: Before and after class and by appointment.
- Phone: 1-518-221-2826

Course Description

This course will offer an introduction to the key terms, concepts and methods in data analysis, with an emphasis on developing critical analytical skills through hands-on exercises of actual data analysis tasks. In addition, students will learn and practice basic programming skills to use software tools such as R and Excel in data analysis. Most importantly, this course aims to help students look at the data and their analysis from new points of view, and be able to find relevant patterns in large data sets with appropriate analysis steps. This ability becomes particularly important when facing large amounts of data, be they from natural or social science, engineering or business.

Prerequisite(s): None.

Expected Student Outcomes

By the end of this course, you will be able to

- Define and use key terms, concepts and methods in data analysis;
- Critically read and interpret data analysis results in science, engineering, and media;
- Utilize computation tools to perform basic data analysis on data sets from practical problems;
- Write summaries on data analysis results.
- **Apply** the above concepts in assignments.
- Be **persistent** in solving medium complexity problems.
- Develop coherent problem solving skills.
- **Work** effectively in teams.

General Education

This course also includes material and instruction to help you learn the general education competencies in **Critical Thinking** and **Information Literacy**. Critical thinking competency is obtained by various kinds of problem solving. This includes analyzing an assignment, transforming it into algorithms and then code to attempt a solution, and then critically analyzing, editing and debugging the code. Information literacy has several components. One component is knowing how computer algorithms and software work, and how to solve problems with them. This is because computer software is at the heart of modern digital information and related topics. In addition information literacy mean knowing how to find and assess sources in your own problem solving - you must know how to find certain information from resources other than the text book, effectively be able to use the source, and cite the source appropriately.

Class Meetings

Lecture

- The lecture meets twice week: Tuesdays and Thursdays, 8:45 am – 10:05 am in SL-G03.

Class Staff

[Draft Note: Not sure if there will be SA/Graders for this class]

Required Text

We will use the following textbook:

Joel H. Levine and Thomas B. Roos, *Introduction to Data Analysis: the Rules of Evidence, Volume 1-2*

The whole book can be read or downloaded from

www.dartmouth.edu/~mss/docs/Volumes_1-2.pdf

OR

http://qss.dartmouth.edu/sites/qss.dartmouth.edu/files/Volumes_1-2.pdf

Recommended Text

STATISTICAL TECHNIQUES IN BUSINESS+ECONOMICS. | Edition: 17TH 18, Author: LIND,
ISBN: 9781259666360

The R Software

Since we will be using MS Excel and the R software for the analytical calculations, you will need access to this software for your assignments either through the university computers or on your own device. The R language runs on all popular operating systems therefore finding a suitable platform to run the software should not be difficult.

The R software is loaded on the Macs in SL-G03 so that lab is an option for you as well. To download and install the software for your personal use go to the following link. Choose your operating system from the choices at the top of the download page.

https://cran.r-project.org/

Additional Readings

There may be readings that will be available to the students online or via Blackboard. If these readings are assigned, the class will be told where they can be found.

Team Based Learning

This course uses Team-based Learning (TBL). This section describes how we will be using TBL in this class. Research shows that people learn best from concrete experience, interacting with texts and with other learners/readers, engaging in challenging hand-on tasks, being held accountable for their work, and receiving frequent feedback on their progress. As a result, this course has been designed to provide all of those dimensions using the Team-Based Learning (TBL) approach. This will be realized through the semester long project as well as the group quizzes that are explained below.

For more on Team Based Learning you can visit: www.teambasedlearning.org

Course Grading

The course has many grading components which will give ample opportunity to score well with diligent and consistent effort. There will be a combination of quizzes, assignments and a final exam.

The grading for the course will be weighted as follows:

Group Quizzes	25%
Individual Quizzes	15%
Assignments	25%
Final Exam	25%
Participation	10%

Quizzes

For each quiz you will first take the quiz individually. Your individual quiz grade will be yours alone. Then you will meet with your team and take the quiz with your team. Your team grade will count as the group quiz and each team member will receive the grade that the team earned. If you are absent for the quiz you will have an opportunity to make it up provided you clear your absence with ahead of time in the case of planned absences. For unplanned absences you will discuss with me the nature of the absence. It granted a make-up quiz your individual score will count as both individual and group.

Assignments

After each lecture there will be team based assignments you will do both inside of class and outside of class. All team members will receive the same grade on team assignments. Teams may present the results of their assignment in class, time permitting.

As with all team based work it is expected that everyone will contribute equally. If team dynamics are such that some individuals are not contributing equally the participation grade may be affected.

Teams will be selected week 2 and this is the team that you will be with for the entire semester.

Policies

Attendance: Your in-class performance is key to your success in this course. Attendance, itself, is not explicitly graded (but it does factor into class participation). Instead, graded in-class activities and assignments constitute an important part of the course grade. Keeping a passing average on these is not possible without consistent attendance. Missing class means the student earns an automatic zero for all individual and team activities or assignments missed. No make-up opportunities will be available.

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If you know that it will be difficult for you to consistently get to class on time and stay for the entire period, you should take this course at a time that better fits your schedule. Missing or being late frequently will guarantee a low grade for the course.

Make-up Policy: There are generally no make-up opportunities for missed assignments except in extenuating circumstances. Instead of asking to make up missed work, please use the course 'safety valves' described below.

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Late Assignments: Out of class assignments are due on the due date, by the assigned time. Late individual assignments will be accepted, but at the cost of a full letter grade for missing the deadline, and an additional letter grade for each additional 24 hours late.
In-class assignments may be done only on the days they are scheduled.

***Withdrawal from the Course**:* Check the University Schedule for the drop date for the Fall 2018 semester. It is your responsibility to take action by this date if you wish to drop the course. In particular, grades of "incomplete" will not be awarded to students because they missed the drop deadline. Given that dropping a course can have financial aid implications, please see your advisor or the Financial Aid office before dropping a course so you understand the implications that action can have on your aid.

Electronic Devices: For some team activities, you will need to use a tablet/laptop. Other than that, make sure your devices are put away during class unless we are using them in a team exercise. *Non-class device use will count negatively against the entire class's participation grade.*

Students with Disabilities: Students who feel that they have disabilities that require special arrangements for them to take the course *must* register with the Disability Resource Center. Students are eligible for special services to which both the Center and the professor agree. In general, *it is the student's responsibility* to contact the professors at least one week before the relevant assignment to make arrangements. You can contact the Disability Resource Center in Campus Center 137, or at 442-5490, if needed.

Incompletes: As per both the Graduate and Undergraduate Bulletins, the grade of Incomplete (I) will be given "only when the student has nearly completed the course requirements but because of circumstances beyond the student's control the work is not completed." A student granted an incomplete will make an agreement specifying what material must be made up, and a date for its completion. The incomplete will be converted to a normal grade on the agreed upon completion date based upon whatever material is submitted by that time.

Important: Incompletes will *not* be given to students who have not fulfilled their classwork obligations, and who, at the end of the semester, are looking to avoid failing the course. This is asking for special treatment.

Responsible Use of Information Technology: Students are required to read the University at Albany Policy for the Responsible Use of Information Technology available at the ITS website: https://wiki.albany.edu/display/public/askit/Responsible+Use+of+Information+Technology+Policy

Academic Integrity

In this class, some course work and examinations are *individual* exercises. The individual work that you do must be *yours* – not that of other students, friends, tutors, *etc*. While it may seem like the easy way out of doing the assignments to copy them from others, this strategy will backfire on the tests, when you will not know the material you would have learned from doing the assignments. You may of course form study groups, discuss assignments and techniques in general terms, *etc*., but the assignments themselves *must* be

your own work. In particular, two or more people may not create an individual assignment together and submit it for credit. *Please ask if you have any questions about academic integrity.*

I am also personally offended by cheating, in part because it hurts the honest students in the class. We will try our hardest to catch cheaters. If we catch a student cheating e.g. using Chegg for assignments, we will not go easy on him or her. Given that, is it really worth it?

The Graduate and Undergraduate Bulletins state the university's policies on academic integrity. You will be held to these policies. You are expected to be familiar with them.

A (non-exhaustive) list of unacceptable activities is:

- Allowing other students to see or copy your assignments.
- Examining or copying another student's assignments.
- Allowing other students to see or copy your work during an exam.
- Examining or copying another student's work during an exam.
- Paying to get your assignments done on Chegg.com.
- Getting answers or help from people, or other sources (*e.g.* research papers, web sites) without acknowledging them.
- Defacing or deleting class shared documents.
- Lying to the Professor about issues of academic integrity.

Any incident of academic dishonesty in this course, no matter how "minor" will result in

- No credit for the affected assignment.
- A written report will be sent to the appropriate University authorities.
- One of -
    - A final mark reduction by *at least* one-half letter grade (*e.g.* B → B-, C- → D+),
    - A Failing mark (E) in the course, and referral of the matter to the University Judicial System for disposition.

Policies from Undergraduate Bulletin: http://www.albany.edu/undergraduate_bulletin/regulations.html

Proposed Lesson Plan Timeline

The roadmap planned for this course is below. Slight modifications may be made as necessary during the semester. Note that we will be following the major topics in the PDF text however there additional material in the form of PowerPoint presentations, Excel and R exercises.

Topic/Lecture	Week
Lecture: Introduction to Data Analytics and Statistics	1 – Aug 28th /Aug 30th

Assignment: Intro to Applying Statistics to Data Analytics	
Team Assignments	2 – Sep 4th/Sep 6th
Lecture: Describing Data with Graphs, Tables and Frequency Distributions	
Introduction to R	
Assignment: Data Analysis Tables and Frequency Distributions	
Lecture: Describing Data: Mean, Median, Mode, Dispersion	3 – Sep 11th/Sep 13th
R and Excel Examples	
Assignment: Describing Data	
Quiz: Describing Data with Graphs, Tables and Frequency Distributions	4 – Sep 18th/Sep 20th
Lecture: Describing Data: Mean, Median, Mode, Dispersion (cont.)	
R and Excel Examples	
Assignment: Calculating Descriptive Statistics	
Lecture: Displaying Data with Plots, Measuring Skewness	5 – Sep 25th/Sep 27th
R and Excel Examples	
Assignment: Dot Plots, Stem and Leaf, Box Plots	
Quiz: Mean, Median, Mode, Dispersion	6 – Oct 2nd/Oct 4th
Lecture: Displaying Data with Plots, Measuring Skewness	
Assignment: Dot Plots, Stem and Leaf, Box Plots	
Continuous Probability Distributions	7 – Oct 9th/Oct 11th
R and Excel Examples	
Assignment: Calculating and Understanding Distributions	
Continuous Probability Distributions (cont.)	8 – Oct 16th/Oct 18th
Assignment: Areas Under The Curve	
Quiz: Dot Plots, Stem and Leaf, Box Plots	

Sampling Methods and Central Limit	9 – Oct 23rd/Oct 25th
R and Excel Examples	
Assignment: Sampling Methods	
Sampling Methods and Central Limit (cont.)	10 – Oct 30th/Nov 1st
Assignment: Sampling Methods	
Hypothesis Testing	11 – Nov 6th/Nov 8th
Assignment: Hypothesis Testing	
R and Excel Examples	
Quiz: Sampling Methods and Central Limit	
Hypothesis Testing (cont.)	12 – Nov 13th/Nov 15th
Assignment: Hypothesis Testing	
Correlation Analysis And Regression	13 – Nov 20th
R and Excel Examples	
Assignment: Correlation Analysis and Regression	Nov 22nd No Classes
Correlation Analysis And Regression (cont.)	14 – Nov 27th/Nov 29th
Assignment: Correlation Analysis and Regression	
Decision Theory	15 – Dec 4th/Dec 6th
Final Exam	To Be Announced

C INF 171 eSports & the Digital Gaming Ecosystem (3 credits)

Spring 2020

Face to Face

Thursdays, 8:45PM-11:35PM,

Husted 004, Downtown Campus

COURSE INSTRUCTOR	Michael C. Leczinsky, Professor of Practice
CONTACT INFO	**All course questions: Use "Ask a Question" in Blackboard.** Private communication with me regarding non-pubic / sensitive matters: mleczinsky@albany.edu
OFFICE HOURS	Face to Face: 12-2:30PM Tuesdays Online: Sunday, 6:30-7:30PM Additional times by appointment. Office: Draper 340

INTRODUCTION

This class will examine the eSports and digital gaming industries through a variety of perspectives including game development, competitive gaming, content creation, design, broadcasting, networking, digital citizenship and entrepreneurship. Students will participate in hands on activities in the University's new eSports arena and game lab, as well as individual and team-based scholarship.

OBJECTIVES

After taking this course, students should be able to:

- Understand key terms and concepts within the eSports & gaming field.
- Develop a historical perspective of the eSports & gaming industries.
- Develop an understanding of current practices within eSports & gaming.
- Develop skills to make informed predictions about potential future progressions within the field.
- Apply information and knowledge in wide variety of situations.
- Summarize technical concepts in a plain and succinct manner.
- Evaluate the reputability of information gathered from a wide variety of sources.
- Apply information and knowledge gathered in executing open-ended creative projects.
- Interface, collaborate and engage with team members of various backgrounds and skill levels.

- Develop an understanding for various types of digital games.
- Demonstrate the ability to play various games.
- Create Internet broadcasts, video content, stream gameplay, and utilize basic graphic design skills.
- Teach others and play in co-operative environments.
- Troubleshoot hardware and software.
- Demonstrate best practices for digital citizenship and responsible use.
- Produce and host eSports events.

The instructor will help you meet these objectives through fostering an open, supportive environment, wherein you will develop:

- Verbal and written communication skills as you engage in class activities and work on assignments.
- Hands-on skills working with hardware, equipment and physical materials in the labs.
- Teamwork skills as you participate in team based learning (TBL).
- Critical reading skills as you progress through readings in multiple formats.
- Problem solving and troubleshooting skills.
- Project management skills as you execute projects of various scopes.
- Critical thinking skills.

Pre-requisites:

None

REQUIRED MATERIALS

For this course you will need the following materials:

1. Textbook: Understanding Esports: An Introduction to the Global Phenomenon, Lexington Books, 2019, ISBN-10: 1498589804 - ISBN-13: 978-1498589802

2. Approximately $100 budget for software. We will be utilizing various games and software throughout the semester and you will need a budget to purchase a license via Steam or through another source. More information on selected titles to be discussed in class.

More information on Steam: https://store.steampowered.com/

You will be unable to complete your coursework without your own materials. Software piracy is not acceptable in any form.

Please do not order materials until they have been discussed in class.

CEHC Showcase / Events

The CEHC Showcase was designed as an opportunity for students to highlight and present interesting projects, research, and concepts they are learning within their courses. It also provides students with an opportunity to showcase their findings to others and develop highly desired presentation and people skills. All students in INF 196 are required to present at this event and should reserve that time in their schedule. Showcase is held at the end of the semester; the date and time will be shared in class.

Students in INF196 will also be presenting two eSports events during the semester. These are required, mandatory events open to the UAlbany campus community and will be held in the evening. All students must contribute and attend.

ASSIGNMENTS AND GRADING

Grade Breakdown:

Readiness Assurance Tests: 25%

Homework & Individual Assignments: 45%

Team Assignments: 15%

Peer Evaluation: 5%

Final Project (multiple stages): 10%

Most Blackboard assignments automatically post to the "Blackboard Course Calendar" - however not all of them do. Because of this, the "Blackboard Course Calendar" is supplemental to our "Module at a Glance" where every due date will appear. **It is your responsibility to check "Module at a Glance" for all due dates.**

I do not accept assignments via email. All assignments must be submitted on Blackboard.

Tests & Quizzes: 25%

Students are required to complete all readings before the first day of a module. The Reading Assessment Tests (RAT) will be based on these readings. All readings can be found on Blackboard.

Individual Assignments: 45%

Each student will have to complete a series Homework assignments. The HWs will consist of a couple types of assignments.

1. Discussion forum assignments & participation.

2. Journal assignments.

3. Hands-on project based work.

4. Additional assignments to be announced.

In Class Activities / Team Assignments: 15%

Each team will be required to complete a series of activities, as a team. Each team member will receive the same grade.

Peer Evaluation: 5%

Because so much of the work we will be doing depends on a constructive team environment you will have the opportunity to evaluate your teammates.

Final Project: 10%

Each student will complete a final project where they independently explore a topic related to course content. Milestones for the project will be spread throughout the semester. The final project should reflect a semester's worth of work.

The area of focus you pick is up to you, as long as it relates to the course content in some way. This is meant to challenge you but to also enable you to identify and explore an area that is interesting to **you**. If you need to change your topic, you need to complete the previously assigned milestones.

The final project has several major components, including:

1) **Research**
2) **Development**
3) **Documentation**
4) **A tangible final product**
5) **A presentation of work at CEHC Showcase**

Extra Credit (up to 5 points)

There may be bonus opportunities this semester. I encourage you to take advantage of as many as you are able. You can earn up to a total of 5 extra bonus points. Keep in mind that this is enough to raise your grade a half letter grade.

Attendance

Attendance is mandatory in every class and students are expected to arrive on time. Your in-class and online performance is key to your success in this course. You must log on to this course at multiple times throughout each week. Graded in-class activities and assignments constitute an important part of the course grade. It is not possible to maintain a passing average without consistent attendance. Missing class means the student earns an automatic zero for the activities or assignments missed. Because of the nature of the assignments, no make-up opportunities will be available. It is the student's responsibility to find out about any future homework, readings or assignments assigned during classes they might have missed.

If you miss two classes, your final letter grade may be reduced by <u>one full letter grade</u>. Each subsequent absence will reduce your grade by a half letter grade.

Lab Attendance

Although the instructor does not schedule this, students will be required to work on their projects outside of class time in the lab. Lab hours will be posted. Please plan your schedule accordingly.

Tardiness

Missing an assignment or activity that happened before a student arrives or after a student leaves also earns a zero. No make-up opportunities will be available.

If you know that it will be difficult for you to consistently get to class on time and stay for the entire period, you should take this course at a time that better fits your schedule. Being late frequently will guarantee a low grade for the course.

If you are tardy three times, it counts as one absence.

If you are late to class, it is your responsibility to see me after class to register your attendance. I will not interrupt class to mark tardy students. If you are tardy and do not see me, you will not receive credit for attending class.

If you know that it will be difficult for you to consistently log on to Blackboard multiple times throughout each week, you should take this course at a time that better fits your schedule.

Grading Scale

Your final grade will be based on a scale of 100. The grading scale will be as follows:

A	A-	B+	B	B-	C+	C	C-	D+	D	D-	E
100-94	93-89	88-85	84-82	81-79	78-76	75-73	72-70	69-67	66-63	62-60	59-0

Course Policies

Make-Up Policy

Missed assignments receive no credit. As many of the assignments build on previous course work and require interaction with teammates, it is nearly impossible to schedule make-up opportunities. Since there will be occasions in your life when missing a class meeting or missing a deadline for an assignment is simply unavoidable (illness, personal crisis), this course has a few built-in safety valves. These are your tools to use in managing your life during the course of the semester. Please manage these carefully.

Safety Valve One: Your lowest weekly homework assignment will be dropped. Final project milestones assignments are not eligible to be dropped.

Safety Valve Two: Your lowest test / quiz score will be dropped.
Be careful not to waste your safety valves carelessly early in the semester, since you may need your droppable grades to offset any unforeseen low scores or difficulties later in the semester.

Safety Valve Three: If you become seriously ill during the semester, or become derailed by unforeseen life problems, and have to miss so many assignments that it will ruin your grade, you

and the instructor are encouraged to meet to discuss withdrawal from the course with the proper documentation to save your GPA. Don't wait until too late to arrange a meeting if you see that you're getting into trouble.

Withdrawal: It is your responsibility to take action if you wish to drop the course. In particular, grades of "incomplete" will not be awarded to students because they missed the drop deadline. Details on withdrawal deadlines can be found at:
http://www.albany.edu/registrar/academic_calendar.php

Incompletes: As per the Undergraduate Bulletin, the grade of Incomplete (I) will be given "only when the student has nearly completed the course requirements but because of circumstances beyond the student's control the work is not completed." A student granted an incomplete will make an agreement specifying what material must be made up, and a date for its completion. The incomplete will be converted to a normal grade on the agreed upon completion date based upon whatever material is submitted by that time. ***Important: Incompletes will not be given to students who have not fulfilled their classwork obligations, and who, at the end of semester are asking for special treatment.***

Academic Integrity

It is every student's responsibility to become familiar with the standards of academic integrity at the University. Claims of ignorance, of unintentional error, or of academic or personal pressures are not sufficient reasons for violations of academic integrity. See
http://www.albany.edu/undergraduate_bulletin/regulations.html

Unless explicitly stated by the instructor, all course work is considered individual exercises. Copying the work of others is a violation of university rules on academic integrity. Individual course work is also key to your being prepared and performing well on assignments. Forming study groups and discussing assignments and techniques in general terms is encouraged, but the final work must be your own work. For example, two or more people may not create an assignment together and submit it for credit. If you have specific questions about this or any other policy, please ask.

The following is a list of the types of behaviors that are defined as examples of academic dishonesty and are therefore unacceptable. Attempts to commit such acts also fall under the term academic dishonesty and are subject to penalty. No set of guidelines can, of course, define all possible types or degrees of academic dishonesty; thus, the following descriptions should be understood as examples of infractions rather than an exhaustive list.

- Plagiarism
- Allowing other students to see or copy your assignments or exams
- Examining or copying another student's assignments or exams
- Lying to the professor about issues of academic integrity
- Submitting the same work for multiple assignments/classes without prior consent from the instructor(s)
- Each assignment must be unique and cannot contain copy / paste from previous assignments.
- Getting answers or help from people, or other sources (e.g. research papers, web sites) without acknowledging them.
- Forgery

- Sabotage
- Unauthorized Collaboration (just check first!)
- Falsification
- Bribery
- Theft, Damage, or Misuse of Library or Computer Resources

Any incident of academic dishonesty in this course, no matter how "minor" will result in:

1. No credit for the affected assignment.
2. A written report will be sent to the appropriate University authorities (e.g. the Dean of Undergraduate Studies)
3. One of -
   - A final mark reduction by at least one-half letter grade (e.g. B → B-, C- → D+),
   - A Failing mark (E) in the course, and referral of the matter to the University Judicial System for disposition.

Policies from Undergraduate Bulletin:
http://www.albany.edu/undergraduate_bulletin/regulations.html

All students are required to follow University Community Standards and Game Lab / Class Code of Conduct. https://www.albany.edu/communitystandards/

Students with game sanctions, bans, chat restrictions or other disciplinary actions will have difficulty completing this course. These elements will impact your course grade and prohibit you from taking part in class activities.

Inappropriate behavior or language of any type in class, on campus, off campus, in-game or in virtual spaces is not permitted and may result in immediate loss of privileges of hardware, software and labs.

Responsible Use of Information Technology

Students are required to read the University at Albany Policy for the Responsible Use of Information Technology available at the ITS Web Site:
http://www.albany.edu/its/policies_responsible_use_of_IT.htm

Students who misuse or damage equipment will be required to provide replacements.

Time Management: For every credit hour that a course meets, students should expect to work a minimum of 3 additional hours outside of class every week (3 x 3= 9). For a three-credit course you should expect to work 9 hours outside of class every week. Manage your time effectively to complete readings, assignments, and projects.

Reasonable accommodation

Reasonable accommodation will be provided for students with documented physical, sensory, cognitive, learning and psychiatric disorders. If you believe you have a disability requiring

accommodation in this class, please notify the Director of Disability Resource Center (Campus Center 137, 442-5490). That office will provide the course instructor with verification of your disability, and will recommend appropriate accommodations. In general, it is the student's responsibility to contact the instructor at least one week before the relevant assignment to make arrangements.

Course Overview

Please note that the professor reserves the right to alter this syllabus and preliminary outline with timely notice to students. Any changes to the class schedule or assignments will be announced in class and/or posted on Blackboard in sufficient time to avoid misunderstandings. In occasions where you have to miss class, make sure to consult the syllabus and to log on to Blackboard so that you are aware of what is going on in class. Also, make sure to consult your teammates, the peer educator and the professor in the case of any confusion.

Course Introduction + Orientation
Course Overview

Lab Orientation
Lab policy & procedure

What is eSports?
Overview of sports & games
Video game history
eSports history
Code of Conduct, Digital Citizenship, Responsible Use

The Ethical and Social Dimensions of Digital Gaming

Gaming
Types of games
- Free to play
- Paid
- Console vs. PC

Solo, multiplayer & co-op games
Hardware, software & networking

More Than Just Gameplay
Producing an eSports Event
- In person vs. online

Running an eSports Team or Program
Entrepreneurship
Monetization
Intellectual Property
Branding
Project management
Collaboration
Logistics

Content

Content Creators

Content Platforms

- Twitch
- YouTube
- Facebook
- Mixer

Video Editing

Broadcasting / Streaming

Social Media

Design

INF 308: Programming for Informatics (3 Credits)

Semester: Fall 2019
Day/Time/Location: Fully online (BlackBoard)
Pre-requisites/Co-requisites: CINF 100 and CINF108 or I CSI/I ECE 201
Instructor: Nim Dvir
Read more about me on my university web page -- albany.edu/~nd115232/
Contact: ndvir@albany.edu
Important -- When emailing, please add [INF496] at the beginning of the subject line
Office Location and Hours: Thursday, 3 pm - 5 pm, or by appointment
Last update date: July 30, 2019

Course Description, Purpose and Goals

This course focuses on computer programming in the Informatics environment. During the course students will learn the fundamentals of programming, including an introduction to algorithms, object-oriented design, and data structures. Additional topics include basic interface design, security, networking, use of databases, and mobile and other non-traditional computing platforms.

Upon completion of the course, students should be able to accomplish the following outcomes:

- Create, modify, and explain complex computer programs
- Analyze real-world problems and then design and implement computational solutions for them
- Use and apply appropriate data structures in a computer program
- Construct and implement complex computational algorithms
- Explain and identify a suitable programming paradigm to build the structure and elements of a computer program
- Design and implement computer programs that interact with networks and databases

The Course Environment

This course is offered in a fully online learning format. The instructor will be available on Thursdays, 3 pm - 5 pm, and by appointment. Students will complete classwork and assignments independently using the Blackboard Learning System (BLS). If they are not familiar with Blackboard, they may please visit the Blackboard help pages for students: http://ondemand.blackboard.com/students.htm and https://help.blackboard.com/en-us/Learn/9.1_SP_12_and_SP_13/Student

Required Readings

The course is based on free/open-source materials, which mean that students are not required to purchase anything. During the course we will use two open-source textbooks:

- Programming for Problem Solving / Lenore G. Horowitz
  - **https://courses.lumenlearning.com/suny-albany-programmingforproblemsolving-v2/**
- Python for Everybody - Exploring Data In Python 3 / Charles R. Severance
  - **https://www.py4e.com/book.php**

Readings will be posted Blackboard and are listed in the schedule. Each week will have a few assigned lessons, accessed through links posted under "course content" in the weekly folders. Additional readings and exercises will be added during the semester.

Software Packages

This course is based on Python-based technology and its supporting libraries. Python is recognized as a leading open-source environment for manipulating and visualizing data. We will be using **Python 3** (and not 2!). Make sure you install the right version!

- Installing Python - This lesson will walk you through the installation steps, including installing Python and text editor. You can use whichever editor is most convenient for you; Just make sure you are able to submit Python files (.py).

Recommended / Additional Readings

The Python community has developed a large set of materials for self- study and shared ideation, available at https://www.python.org . Links to other helpful readings will be posted on BlackBoard

Deliverables & Grading

This course is A-E graded. The final grade will be determined based on the following:

- **Weekly assignments - 60% (about 5% each)**
  Each module/week includes assignment(s) in which the students are asked to write a program or an algorithm that solves a specific problem. Instructions will be provided in the course content.
- **Mid-course project and final project - 40% (20% each)**
  In the mid-course and final projects students will apply the topics learned to solve various problems. Originality and individual work are key.
- **Bonus - 10%**
  I will offer up to 10 bonus points for students who wish to improve their final grade. Some ways to earn bonus points: participation in the weekly discussion board (for example, correcting errors in classmates' programs or submitting work early), answering classmates questions, creating programs that stand out in their originality, efficiency or attention to details; And anything else that exceeds the scope of the course (original ideas are very welcome).

Your final grade will be based on a scale of 100 points:

A	A-	B+	B	B-	C+	C	C-	D+	D	D-	E
100-94	93-89	88-85	84-82	81-79	78-76	75-73	72-70	69-67	66-63	63-60	60-0

Submissions

Submissions should be made through BlackBoard only and are due before the next week starts (by EOD) or as instructed. Submissions are in the following forms:

- *Program file*

Each program should be submitted as a .py file which should include comments that explain the different steps taken. Students should submit their work even if their program does not execute flawlessly. Partial credit will be given to programs with issues, in particular, if the comments recognize and explain areas that need more work.

- *Discussion posts*

Some week submissions are in the form of posts to a discussion board. These often include a program file, a screenshot of the output and whatever else asked in the assignment Instructions. By using a discussion board, students have access to their classmates' work, as well as examples provided by the instructor. Therefore, students are exposed to various programming applications and different ways of thinking. Bonus points will be given to students who use this platform to give helpful feedback to their peers.

Missed Exams and Assignments: The course missed assignment policy follows the University's Medical Excuse Policy: https://www.albany.edu/health_center/medicalexcuse.shtml.

Withdrawal from the Course: The drop date for the fall 2019 semester is 11/4 for undergraduate students. That is the last date you can drop a course and receive a 'W'. It is your responsibility to take action by this date if you wish to drop the course. In particular, grades of "incomplete" will not be awarded to students because they missed the drop deadline.

Course Structure & Schedule

Week	Date	Class topics	Readings	Deliverables
1	8/26	**Introduction to the course** **Why Program?**	**The syllabus!** **Why Program?** https://www.py4e.com/lessons/intro **How to Think Like an Engineer** https://courses.lumenlearning.com/suny-albany-programmingforproblemsolving-v2/chapter/how-to-think-like-an-engineer/	Weekly assignment (WA) #1
2	9/3 (Tuesday, 9/2 labor day break)	**Programming Revisited**	**Installing Python** https://www.py4e.com/lessons/install **Writing Simple Programs** https://courses.lumenlearning.com/suny-albany-programmingforproblemsolving-v2/chapter/writing-simple-programs/ **Variables, expressions, and statements** https://www.py4e.com/lessons/memory	WA #2

3	9/9	**Functions and Control Structures**	**Conditional Execution** https://www.py4e.com/lessons/logic **Functions** https://www.py4e.com/lessons/functions **Loops and Iterations** https://www.py4e.com/lessons/loops **Control Structures** https://courses.lumenlearning.com/suny-albany-programmingforproblemsolving-v2/chapter/control-structures-making-decisions-and-looping-in-computing-data-and-information-processing-in-python/	WA #3
4	9/16	**Strings**	**Strings** https://www.py4e.com/lessons/strings	WA #4
5	9/23	**File processing**	**Files** https://www.py4e.com/lessons/files **Reading CSV files in Python** https://pythonprogramming.net/reading-csv-files-python-3/	WA #5
6	9/30	**Data collections**	**Lists** https://www.py4e.com/lessons/lists **Dictionaries** https://www.py4e.com/lessons/dictionary **Tuples** https://www.py4e.com/lessons/tuples	WA #6
7	10/7	**Extracting data using regular expressions**	**Regular Expressions** https://www.py4e.com/lessons/regex **Python Regular Expression Quick Guide** https://www.py4e.com/lectures3/Pythonlearn-11-Regex-Handout.txt	WA #7
8	10/14 (fall break)	**Mid-course project**		Mid-course project (10/20)
9	10/21	**Databases I**	**Databases** https://www.py4e.com/lessons/database **Python for Everybody Database Handout** https://www.py4e.com/lectures3/Pythonlearn-15-Database-Handout.txt	WA #8
10	10/28	**Databases II**	**Databases** https://www.py4e.com/lessons/database **Python for Everybody Database Handout** https://www.py4e.com/lectures3/Pythonlearn-15-Database-Handout.txt	WA #9
11	11/4	**Network Programming**	**Network Programming** https://www.py4e.com/lessons/network	WA #10

12	11/11	**Data Visualization I**	**Graphics: Designing and Developing Graphics Programs** https://courses.lumenlearning.com/suny-albany-programmingforproblemsolving-v2/chapter/graphics-designing-and-developing-graphics-programs/ **Data Visualization** https://www.py4e.com/lessons/dataviz	WA #11
13	11/18	**Data Visualization II**	**Graphics: Designing and Developing Graphics Programs** https://courses.lumenlearning.com/suny-albany-programmingforproblemsolving-v2/chapter/graphics-designing-and-developing-graphics-programs/ **Data Visualization** https://www.py4e.com/lessons/dataviz	WA #12
14	11/25	**Final projects review**		Thanksgiving Break - 11/27-1/12
15	12/2	**Wrap-up**		Final project (12/9)

Additional Information

Disability Policy: Reasonable accommodations will be provided for students with documented physical, sensory, systemic, medical, cognitive, learning and mental health (psychiatric) disabilities. If you believe you have a disability requiring accommodation in this class, please notify the Disability Resource Center (518- 442-5490; drc@albany.edu). Upon verification and after the registration process is complete, the DRC will provide you with a letter that informs the course instructor that you are a student with a disability registered with the DRC and list the recommended reasonable accommodations.

Academic Integrity: Every student has the responsibility to become familiar with the standards of academic integrity at the University. Faculty members must specify in their syllabi information about academic integrity and may refer students to this policy for more information. Nonetheless, student claims of ignorance, unintentional error, or personal or academic pressures cannot be excuses for violation of academic integrity. Students are responsible for familiarizing themselves with the standards and behaving accordingly, and UAlbany faculty are responsible for teaching, modeling and upholding them. Anything less undermines the worth and value of our intellectual work, and the reputation and credibility of the University at Albany degree.
It is every student's responsibility to become familiar with the standards of academic integrity at the University. Claims of ignorance, of unintentional error, or of academic or personal pressures are not sufficient reasons for violations of academic integrity. See http://www.albany.edu/undergraduate_bulletin/regulations.html

Course work and examinations are considered individual exercises. Copying the work of others is a violation of university rules on academic integrity. Individual course work is also key to your being prepared and performing well on tests and exams. Forming study groups and discussing assignments and techniques in general terms is encouraged, but the final work must be your own work. For example, two or more people may not create an assignment together and submit it for credit. If you have specific questions about this or any other policy, please ask. The following is a list of the types of behaviors that are defined as examples of academic dishonesty and are therefore unacceptable. Attempts to commit such acts also fall under the term academic dishonesty and are subject to penalty. No set of guidelines can, of course, define all possible types or degrees of academic dishonesty; thus, the following descriptions should be understood as examples of infractions rather than an exhaustive list.

- Plagiarism

- Allowing other students to see or copy your assignments or exams
- Examining or copying another student's assignments or exams
- Lying to the professor about issues of academic integrity
- Submitting the same work for multiple assignments/classes without prior consent from the instructor(s)
- Getting answers or help from people, or other sources (*e.g.* research papers, web sites) without acknowledging them.
- Forgery
- Sabotage
- Unauthorized Collaboration (just check first!)
- Falsification
- Bribery
- Theft, Damage, or Misuse of Library or Computer Resources

Any incident of academic dishonesty in this course, no matter how "minor" will result in

- No credit for the affected assignment.
- A written report will be sent to the appropriate University authorities (*e.g.* the Dean of Undergraduate Studies)
- One of -
    - A final mark reduction by *at least* one-half letter grade (*e.g.* B → B-, C- → D+),
    - A Failing mark (E) in the course, and referral of the matter to the University Judicial System for disposition.

All course material and documents developed by the instructor are copyrighted and may not be reproduced or distributed without express written permission.

CEHC Grievance Policy & Procedure:

According to the CEHC Grievance Policy:

> **I. … a "grievance" shall include any** complaint alleging wrongdoing made by students, faculty, staff, or administrators in the College of Emergency Preparedness, Homeland Security and Cybersecurity (CEHC) against other students, faculty, staff or administrators. "Faculty" shall include any individuals with appointments enabling them to be designated instructors of record, and "students" shall include any enrolled students.
>
> A "grievance" shall include, but not be limited to, any challenge to the resolution of a dispute over matters of academic honesty (such as plagiarism and cheating) and professional ethics or grades assigned for courses. It shall also include any allegation of improper treatment, including improper treatment on the grounds of age, color, creed, disability, marital status, military status, national origin, race, sex, gender identity, or sexual orientation. In grievances concerning grades, grievances may be filed only as to any final grade or other final disposition for a course. Dropping of a course shall constitute a final disposition for a course so as to allow grievances over grades or other matters occurring prior to the "drop."
>
> All grievances concerning grades must be adjudicated by the CEHC grievance committee and process. All other grievances may be referred to the University-level community standards process (or other appropriate processes). Nothing in this policy prohibits the aggrieved party from pursuing university-level adjudication at any time.
>
> **III. Any grievance must be filed within five months** of the time the complainant was informed of the matter which is the subject of the grievance. "File" shall mean the submission of a statement from the complainant to either the Dean of the CEHC or the Chair of the CEHC Grievance Committee. The statement shall 1) detail the event or events to which the complainant is objecting, 2) identify the person or persons the complainant alleges is responsible, and 3) identify the remedy or remedies sought to address the complaint.

For the full CEHC Grievance Policy, please contact cehc@albany.edu.

Responsible Use of Information Technology:
https://wiki.albany.edu/display/public/askit/Responsible+Use+of+Information+Technology+Policy

Respect for Diversity

It is my intent that students from all diverse backgrounds and perspectives be well served by this course, that students' learning needs be addressed both in and out of class, and that the diversity that students bring to this class be viewed as a resource, strength, and benefit. It is my intent to present materials and activities that are respectful of diversity: gender, sexuality, disability, age, socioeconomic status, ethnicity, race, and culture. Your suggestions are encouraged and appreciated. Please let me know ways to improve the effectiveness of the course for you personally or for other students or student groups. In addition, if any of our class meetings conflict with your religious events, please let me know so that we can make arrangements for you.[1]

Absence due to religious observance: New York State Education Law (Section 224-a) - Campuses are required to excuse, without penalty, individual students absent because of religious beliefs, and to provide equivalent opportunities for make-up examinations, study, or work requirements missed because of such absences. Faculty should work directly with students to accommodate religious observances. Students should notify the instructor of record in a timely manner.

Time Management

For every credit hour that a course meets, students should expect to work 3 additional hours outside of class every week (3 x 3= 9). For a fully online three-credit course, you should expect to work 12 hours every week! Manage your time effectively to complete readings, assignments, and projects.

[1] Respect for Diversity statement from https://www.brown.edu/sheridan/teaching-learning-resources/inclusive-teaching/statements

INF 363: Digital Design (3 cr)

Instructor: Michael C. Leczinsky

Semester: Fall 2018
Office hours: Mondays 2-5 pm, Draper 340
Contact information: mleczinsky@albany.edu

Course Description

An introductory course applying design theory to the development and delivery of digital media with emphasis on digital imagery, video, interactivity and music. Topics may include consumption of digital media on a variety of devices, creation, acquisition, editing and processing of digital content.

Students will develop an appreciation for the role that each media element may contribute to the final user experience. Students will cultivate an understanding of how public policy issues apply to technology, in particular copyright, privacy and freedom of expression.

Prerequisites

The prerequisite course for INF 363 is INF 201.

The course will build on many of the concepts from this course and add several more.

Team-Based Learning (TBL)

The first week of the course, you will be assigned to a team that will work together throughout the semester. Course grades will be influenced by team performance on in-class assignments. While in many courses, group work can be structured unfairly, such that some students end up doing all the work while everyone shares in the credit, two factors will prevent that from happening in this class. First, nearly all graded team work will be preceded by one or more preparatory assignments, for which each individual will be accountable. Second, at the midterm point and at the end of the semester, you will be asked to evaluate the "helpfulness" of your team members and assign a grade that counts as part of their grade for INF 363.

TBL courses are divided into sections. This course will have seven sections (see calendar breakdown below). Each section begins with a reading assignment. The first class in each section includes a group and individual test on that material. The next classes are filled with activities that highlight the important features of the material to be covered in that section.

Additionally, each section includes an assignment to be completed individually to apply the materials learned during the section.

Phase 1 – Preparation: You will complete specified readings for each module ahead of class for that particular unit.

Phase 2 – Readiness Assurance Test: At the first class meeting of each module, you will be given a **Readiness Assurance Test** (RAT). The RAT test (10 multiple-choice questions) measures your comprehension of the assigned readings, and helps you learn the material needed to begin problem solving in phase 3. Once the test period is over, the instructor may give a short mini-lecture to clarify concepts that are not well understood as evidenced by the individual test scores. The purpose of phase 2 is to ensure that you and your teammates have sufficient foundational knowledge to begin learning how to apply and use the course concepts in phase 3. **RATs are closed book and based on the assigned readings.**

- **Individual RAT (iRAT)** – You individually complete a 10 question multiple-choice test based on the readings.
- **Team RAT (tRAT)** - Following the iRAT, the same multiple-choice test is re-taken with your team. These tests use a "scratch and win" type answer cards known as an IF-AT. You negotiate with your teammates, and then scratch off the opaque coating hoping to reveal a star that indicates a correct answer. Your team is awarded 10 points if you uncover the correct answer on the first scratch, 6 points for second scratch, and 2 point for third scratch.
- **Appeals Process** - Once your team has completed the team test, your team has the opportunity to complete an appeal. The purpose of the appeal process is to allow your team to identify questions where you disagree with the question key or question wording or ambiguous information in the readings. Instructors will review the appeals outside of class time and report the outcome of your team appeal at the next class meeting. Only teams are allowed to appeal questions (no individual appeals).
- **Feedback and Mini-lecture** - Following the RATs and Appeal Process, the instructor may provide a short clarifying lecture on any difficult or troublesome concepts.

Phase 3 - In-Class Activities: You and your team use the foundational knowledge, acquired in the first two phases to make decisions that will be reported publicly and subject to cross-team discussion/critique. We will use a variety of methods to have you report your team's decision at the end of each activity. The presentation of your team responses are critical to the team grade. You should expect each team member to present individually and for the entire team to present with smooth transitions. Students will use multimedia resources such as Powerpoint to enhance their presentations and class discussions.

Course Goals

By the end of the semester, you should be able to:

1. **General**
    a. Communicate clearly and collaborate with others.
    b. Employ creative thinking.
2. **Use Principles of Design**
    a. Apply principles of visual design to different forms of media.
    b. Appreciate the stages of media forms as technological evolution.
    c. Approach media design from a purpose-driven perspective.
    d. Analyze, critique, and create different types of informational and artistic visualizations.
3. **Address Social and Policy Issues**
    a. Develop familiarity with copyright law and its application to the digital age.
    b. Cultivate appreciation for the privacy rights of users.
    c. Recognize the role of elements of media in social and political dialog.
4. **Use Development Tools**
    a. Become familiar with available hardware, software and resources.
    b. Develop expertise on the use of software tools for acquiring and editing digital media: images, audio and video.
    c. Appreciate the different requirements of delivery platforms such as mobile and desktop devices.
    d. Develop mastery of information visualization tools including presentation software.
    e. Develop efficient workflows.

Required Readings & Materials

1. 100 Things Every Designer Needs to Know About People
Susan M. Weinschenk, Ph.D.
ISBN-13: 978-0321767530

2. A subscription to Skillshare.com – details posted to Blackboard.

3. Additional required readings will be assigned.

Additional Materials

Students will require access to a computer, a modern generation browser, and the Internet. Students will also need appropriate materials for in class activities such as a notebook, writing implements and a USB drive. A basic unlined sketchbook is recommended.

Grading

10% iRAT
10% tRAT
5% Peer assessment
15% In-class tasks (individual and team activities completed during class time)
30% Individual Tasks / Homework
30% Final Project, Paper, Presentation & Milestones

Your final grade will be based on a scale of 100 points:

A	A-	B+	B	B-	C+	C	C-	D+	D	D-	E
100-94	93-89	88-85	84-82	81-79	78-76	75-73	72-70	69-67	66-63	63-60	60-0

iCEHC Mini Showcase

iCEHC Mini Showcase was designed as an opportunity for students within the informatics field to highlight and present interesting projects, research, and concepts they are learning within their courses. It also provides students with an opportunity to showcase their findings to others and develop highly desired presentation and people skills. The INF Mini-Showcase is Dec. 5. All students in INF 363 will be presenting at this event and should reserve that time in their schedule.

Final Project

Students in INF 363 will propose a creative project and once approved, will work throughout the semester to produce the following:

1. A creative project that draws together a variety of elements of the class.
2. A four page (2000 word) written paper (plus additional documentation and supporting materials).
3. In class presentations of work.
4. A presentation to the campus community at the INF Showcase.

Details will be posted to Blackboard.

Course Policies

Attendance

Attendance is mandatory in every class and students are expected to arrive on time. Your in-class and online performance is key to your success in this course. You must log on to this course at multiple times throughout each week. Graded in-class activities and assignments constitute an important part of the course grade. It is not possible to maintain a passing average without consistent attendance. Missing class means the student earns an automatic zero for the activities or assignments missed. Because of the nature of the assignments, no make-up opportunities will be available. It is the student's responsibility to find out about any future homework, readings or assignments assigned during classes they might have missed.

If you miss two classes, your final letter grade may be reduced by <u>one full letter grade</u>. Each subsequent absence will reduce your grade by a half letter grade.

Tardiness

Missing an assignment or activity that happened before a student arrives or after a student leaves also earns a zero. No make-up opportunities will be available.

If you know that it will be difficult for you to consistently get to class on time and stay for the entire period, you should take this course at a time that better fits your schedule. Being late frequently will guarantee a low grade for the course.

If you are tardy three times, it counts as one absence.

If you are late to class, it is your responsibility to see me after class to register your attendance. I will not interrupt class to mark tardy students. If you are tardy and do not see me, you will not receive credit for attending class.

If you know that it will be difficult for you to consistently log on multiple times throughout each week, you should take this course at a time that better fits your schedule.

Make-up Policy

<u>Missed assignments receive no credit.</u> As many of the assignments build on previous course work and require interaction with teammates, it is nearly impossible to schedule make-up opportunities. Since there will be occasions in your life when missing a class meeting or missing a deadline for an assignment is simply unavoidable (illness, personal crisis), this course has a few built-in safety valves. These are your tools to use in managing your life during the course of the semester. Please manage these carefully.

Safety Valve One: Your lowest weekly homework assignment will be dropped. Final project milestones, or Careers in IT assignments are not eligible to be dropped.

Safety Valve Two: Your lowest test / quiz score will be dropped.

Be careful not to waste your safety valves carelessly early in the semester, since you may need your droppable grades to offset any unforeseen low scores or difficulties later in the semester.

Safety Valve Three: If you become seriously ill during the semester, or become derailed by unforeseen life problems, and have to miss so many assignments that it will ruin your grade, you and the instructor are encouraged to meet to discuss withdrawal from the course with the proper documentation to save your GPA. Don't wait until too late to arrange a meeting if you see that you're getting into trouble.

Extra Credit

Extra credit can be earned in a number of ways. All require consultation with the instructor before they are commenced. All extra-credit opportunities are capped at no more than 5 points (5%) of your overall grade.

Community: INF sponsors several events throughout the semester. Any student who attends one or more of those events may receive extra credit.

Other extra credit opportunities may be available. Details to follow.

Withdrawal from the course

It is your responsibility to take action if you wish to drop the course. In particular, grades of "incomplete" will not be awarded to students because they missed the drop deadline. Details on withdrawal deadlines can be found at: http://www.albany.edu/registrar/academic_calendar.php

Cell phones & laptops

Please make sure your electronic devices are turned off before entering the classroom unless we are doing a class exercise where they are helpful. Use of phones, tablets, computers, etc. for non-class purposes during class will count against you in your class participation grade. While you may be using computers in class, texting, using Facebook, *etc*., are not appropriate uses of class time and your instructor-evaluated grade will suffer for it.

Incompletes

As per the Undergraduate Bulletin, the grade of Incomplete (I) will be given "only when the student has nearly completed the course requirements but because of circumstances beyond the student's control the work is not completed." A student granted an incomplete will make an agreement specifying what material must be made up, and a date for its completion. The incomplete will be converted to a normal grade on the agreed upon completion date based upon whatever material is submitted by that time.

Important: Incompletes will not be given to students who have not fulfilled their classwork obligations, and who, at the end of the semester, are looking to avoid failing the course. This is asking for special treatment.

Academic Integrity

It is every student's responsibility to become familiar with the standards of academic integrity at the University. Claims of ignorance, of unintentional error, or of academic or personal pressures are not sufficient reasons for violations of academic integrity. See http://www.albany.edu/undergraduate_bulletin/regulations.html

Course work and examinations are considered individual exercises. Copying the work of others is a violation of university rules on academic integrity. Individual course work is also key to your being prepared and performing well on tests and exams. Forming study groups and discussing assignments and techniques in general terms is encouraged, but the final work must be your own work. For example, two or more people may not create an assignment together and submit it for credit. If you have specific questions about this or any other policy, please ask.

The following is a list of the types of behaviors that are defined as examples of academic dishonesty and are therefore unacceptable. Attempts to commit such acts also fall under the term academic dishonesty and are subject to penalty. No set of guidelines can, of course, define all possible types or degrees of academic dishonesty; thus, the following descriptions should be understood as examples of infractions rather than an exhaustive list.

- Plagiarism
- Allowing other students to see or copy your assignments or exams
- Examining or copying another student's assignments or exams
- Lying to the professor about issues of academic integrity
- Submitting the same work for multiple assignments/classes without prior consent from the instructor(s)
- Getting answers or help from people, or other sources (*e.g.* research papers, web sites) without acknowledging them.
- Forgery
- Sabotage
- Unauthorized Collaboration (just check first!)
- Falsification
- Bribery
- Theft, Damage, or Misuse of Library or Computer Resources

Any incident of academic dishonesty in this course, no matter how "minor" will result in

2. No credit for the affected assignment.
3. A written report will be sent to the appropriate University authorities (*e.g.* the Dean of Undergraduate Studies)
4. One of -
    - A final mark reduction by *at least* one-half letter grade (*e.g.* B → B-, C- → D+),
    - A Failing mark (E) in the course, and referral of the matter to the University Judicial System for disposition.

Policies from Undergraduate Bulletin:
https://wiki.albany.edu/display/public/askit/Responsible+Use+of+Information+Technology+Policy

Responsible Use of Information Technology

Students are required to read the University at Albany Policy for the Responsible Use of Information Technology available at the ITS Web Site:
http://www.albany.edu/its/policies_responsible_use_of_IT.htm

Style Manuals and Guidelines

Written assignments and papers should be word-processed and double-spaced in Microsoft Word. Students are required to cite sources, if any are used in their written reports, according to the American Psychological Association (APA) style manual.

- American Psychological Association. 2001. *Publication manual of the American Psychological Association*, 5th Edition. Washington, DC: American Psychological Association.

The style manual is available in the reference sections of many mainstream bookstores and reserve sections of University Libraries, including the Dewey Library.

Time Management

For every credit hour that a course meets, students should expect to work 3 additional hours outside of class every week (3 x 3= 9). For a three-credit course you should expect to work 9 hours outside of class every week. Manage your time effectively to complete readings, assignments, and projects.

Note carefully the intermittent nature of the workload in this course. You will be expected to complete an entire sections' reading before the first class, when you will be tested both individually and as a team on it. Outside assignments will then be relatively light until the next section begins. Each section also culminates with an individual assignment which draws together the material from that section. This assignment is due before the next section begins. Thus, after the first section, you will have both reading for the new section AND an assignment for the prior section due on the same day—the first class in the new section.

Available Support Services

Reasonable accommodation

Reasonable accommodation will be provided for students with documented physical, sensory, cognitive, learning and psychiatric disorders. If you believe you have a disability requiring accommodation in this class, please notify the Director of Disability Resource Center (Campus Center 137, 442-5490). That office will provide the course instructor with verification of your disability, and will recommend appropriate accommodations. In general, it is the student's responsibility to contact the instructor at least one week before the relevant assignment to make arrangements.

Course Outline and Schedule

The following schedule of lecture topics and reading assignments is preliminary and may be changed as the semester progresses. The final schedule and specific homework and lab assignments and materials will be provided in Blackboard. Students are expected to have read the listed material before it is covered in class.

Unit 1
Introduction
How does design impact business? What is the impact of design on society and culture? What does the future hold?

Technical / Implementation / Tools / Practice
Discussion of design technologies.
Overview and discussion of tools. Hardware, software, services & resources.
Adobe Suite, open source alternatives.

Unit 2
Theory / Science / Psychology Part 1
What is design? How does design work? What does it mean in a digital context? How can design be leveraged in product design or as a process? What sort of products and services can be developed or improved through design?

Design principles
Gestalt Principles
Color theory
User-Driven Design
Typography / Fonts

Theory / Science / Psychology

MIDTERM POINT - TEST

Unit 3
Theory / Science / Psychology Part 2
Continuation of Unit 1

Design principles
Gestalt Principles
Color theory
User-Driven Design
Typography / Fonts

Theory / Science / Psychology

Unit 4
Survey of Design in Media Part 1

Visual Media
Print
Graphic Design
Signage
Digital / Interactive Signage

Data
Infographics
Visualization
Sonification

Unit 5
Survey of Design in Rich Media Part 2

Digital Media
Web
Apps

Blogging
Podcasting
Sound Design
Web Video

Physical World
3D Printing
Rapid Prototyping
Small scale manufacturing
Makers & DIY

Live / Time Based
Presentation
Experiences
Events
Virtual Reality

INF 371 Digital Game Design & Development 1 (3 credits)

Semester: Fall 2020

Face to Face

Meeting Information: **Tuesdays / Thursdays 2:45pm-4:05pm**

Husted 004

COURSE INSTRUCTOR	Michael C. Leczinsky, Professor of Practice
CONTACT INFO	**All course questions: Use "Ask a Question" in Blackboard.** Private communication with me regarding non-pubic / sensitive matters: mleczinsky@albany.edu
OFFICE HOURS	Face to Face: 12-2:30PM Tuesdays Online: Sunday, 6:30-7:30PM Additional times by appointment. Office: Draper 340

INTRODUCTION

This lab-based course provides an introduction to game development. Students will examine games of various types and utilize industry standard software to develop several games and software projects. Students will work collaboratively in a team based studio environment. Students will utilize various emerging technologies and work primarily in 2D. 3D and Virtual Reality, Mixed Reality and Augmented Reality will be introduced.

OBJECTIVES

After taking this course, students should be able to:

- Understand key terms and concepts within the eSports & gaming field.
- Develop a historical perspective of the eSports & gaming industries.
- Develop an understanding of current practices within eSports & gaming.
- Develop skills to make informed predictions about potential future progressions within the field.
- Apply information and knowledge in wide variety of situations.
- Summarize technical concepts in a plain and succinct manner.
- Evaluate the reputability of information gathered from a wide variety of sources.
- Apply information and knowledge gathered in executing open-ended creative projects.
- Interface, collaborate and engage with team members of various backgrounds and skill levels.
- Develop an understanding for various types of digital games.

- Demonstrate the ability to play various games.
- Create Internet broadcasts, video content, stream gameplay, and utilize basic graphic design skills.
- Teach others and play in co-operative environments.
- Troubleshoot hardware and software.
- Demonstrate best practices for digital citizenship and responsible use.
- Produce and host eSports events.

The instructor will help you meet these objectives through fostering an open, supportive environment, wherein you will develop:

- Verbal and written communication skills as you engage in class activities and work on assignments.
- Hands-on skills working with hardware, equipment and physical materials in the labs.
- Teamwork skills as you participate in team based learning (TBL).
- Critical reading skills as you progress through readings in multiple formats.
- Problem solving and troubleshooting skills.
- Project management skills as you execute projects of various scopes.
- Critical thinking skills.

Pre/Co-Requisites

INF 363

REQUIRED MATERIALS

For this course you will need the following materials:

1. Textbook: Level Up! The Guide to Great Video Game Design Paperback – Wiley; 2 edition (April 28, 2014). **ISBN-10:** 1118877160 - **ISBN-13:** 978-1118877166

2. Software:

Unity (Free): https://www.unity.com/
Construct 2/3 (Free): https://www.construct.net/

3. Approximately $100 budget for software. We will be utilizing various game development tools, add-ons, plugins and software throughout the semester. More information on selected software to be discussed in class.

You will be unable to complete your coursework without your own materials. Software piracy is not acceptable in any form.

Please do not order materials until they have been discussed in class.

CEHC Showcase / Events

The CEHC Showcase was designed as an opportunity for students to highlight and present interesting projects, research, and concepts they are learning within their courses. It also provides students with an opportunity to showcase their findings to others and develop highly desired presentation and people skills. All students in INF 196 are required to present at this event and should reserve that time in their schedule. Showcase is held at the end of the semester; the date and time will be shared in class.

Students in INF196 will also be presenting two eSports events during the semester. These are required, mandatory events open to the UAlbany campus community and will be held in the evening. All students must contribute and attend.

ASSIGNMENTS AND GRADING

Grade Breakdown:

Readiness Assurance Tests: 25%

Homework & Individual Assignments: 45%

Team Assignments: 15%

Peer Evaluation: 5%

Final Project (multiple stages): 10%

Most Blackboard assignments automatically post to the "Blackboard Course Calendar" - however not all of them do. Because of this, the "Blackboard Course Calendar" is supplemental to our "Module at a Glance" where every due date will appear. **It is your responsibility to check "Module at a Glance" for all due dates.**

I do not accept assignments via email. All assignments must be submitted on Blackboard.

Tests & Quizzes: 25%

Students are required to complete all readings before the first day of a module. The Reading Assessment Tests (RAT) will be based on these readings. All readings can be found on Blackboard.

Individual Assignments: 45%

Each student will have to complete a series Homework assignments. The HWs will consist of a couple types of assignments.

1. Discussion forum assignments & participation.

2. Journal assignments.

3. Hands-on project based work.

4. Additional assignments to be announced.

In Class Activities / Team Assignments: 15%

Each team will be required to complete a series of activities, as a team. Each team member will receive the same grade.

Peer Evaluation: 5%

Because so much of the work we will be doing depends on a constructive team environment you will have the opportunity to evaluate your teammates.

Final Project: 10%

Each student will complete a final project where they independently explore a topic related to course content. Milestones for the project will be spread throughout the semester. The final project should reflect a semester's worth of work.

The area of focus you pick is up to you, as long as it relates to the course content in some way. This is meant to challenge you but to also enable you to identify and explore an area that is interesting to **you**. If you need to change your topic, you need to complete the previously assigned milestones.

The final project has several major components, including:

1) **Research**
2) **Development**
3) **Documentation**
4) **A tangible final product**
5) **A presentation of work at CEHC Showcase**

Extra Credit (up to 5 points)

There may be bonus opportunities this semester. I encourage you to take advantage of as many as you are able. You can earn up to a total of 5 extra bonus points. Keep in mind that this is enough to raise your grade a half letter grade.

Attendance

Attendance is mandatory in every class and students are expected to arrive on time. Your in-class and online performance is key to your success in this course. You must log on to this course at multiple times throughout each week. Graded in-class activities and assignments constitute an important part of the course grade. It is not possible to maintain a passing average without consistent attendance. Missing class means the student earns an automatic zero for the activities or assignments missed. Because of the nature of the assignments, no make-up opportunities will be available. It is the student's responsibility to find out about any future homework, readings or assignments assigned during classes they might have missed.

If you miss two classes, your final letter grade may be reduced by <u>one full letter grade</u>. Each subsequent absence will reduce your grade by a half letter grade.

Lab Attendance

Although the instructor does not schedule this, students will be required to work on their projects outside of class time in the lab. Lab hours will be posted. Please plan your schedule accordingly.

Tardiness

Missing an assignment or activity that happened before a student arrives or after a student leaves also earns a zero. No make-up opportunities will be available.

If you know that it will be difficult for you to consistently get to class on time and stay for the entire period, you should take this course at a time that better fits your schedule. Being late frequently will guarantee a low grade for the course.

If you are tardy three times, it counts as one absence.

If you are late to class, it is your responsibility to see me after class to register your attendance. I will not interrupt class to mark tardy students. If you are tardy and do not see me, you will not receive credit for attending class.

If you know that it will be difficult for you to consistently log on to Blackboard multiple times throughout each week, you should take this course at a time that better fits your schedule.

Grading Scale

Your final grade will be based on a scale of 100. The grading scale will be as follows:

A	A-	B+	B	B-	C+	C	C-	D+	D	D-	E
100-94	93-89	88-85	84-82	81-79	78-76	75-73	72-70	69-67	66-63	62-60	59-0

Course Policies

Make-Up Policy

Missed assignments receive no credit. As many of the assignments build on previous course work and require interaction with teammates, it is nearly impossible to schedule make-up opportunities. Since there will be occasions in your life when missing a class meeting or missing a deadline for an assignment is simply unavoidable (illness, personal crisis), this course has a few built-in safety valves. These are your tools to use in managing your life during the course of the semester. Please manage these carefully.

Safety Valve One: Your lowest weekly homework assignment will be dropped. Final project milestones assignments are not eligible to be dropped.

Safety Valve Two: Your lowest test / quiz score will be dropped.
Be careful not to waste your safety valves carelessly early in the semester, since you may need your droppable grades to offset any unforeseen low scores or difficulties later in the semester.

Safety Valve Three: If you become seriously ill during the semester, or become derailed by unforeseen life problems, and have to miss so many assignments that it will ruin your grade, you

and the instructor are encouraged to meet to discuss withdrawal from the course with the proper documentation to save your GPA. Don't wait until too late to arrange a meeting if you see that you're getting into trouble.

Withdrawal: It is your responsibility to take action if you wish to drop the course. In particular, grades of "incomplete" will not be awarded to students because they missed the drop deadline. Details on withdrawal deadlines can be found at:
http://www.albany.edu/registrar/academic_calendar.php

Incompletes: As per the Undergraduate Bulletin, the grade of Incomplete (I) will be given "only when the student has nearly completed the course requirements but because of circumstances beyond the student's control the work is not completed." A student granted an incomplete will make an agreement specifying what material must be made up, and a date for its completion. The incomplete will be converted to a normal grade on the agreed upon completion date based upon whatever material is submitted by that time. ***Important: Incompletes will not be given to students who have not fulfilled their classwork obligations, and who, at the end of semester are asking for special treatment.***

Academic Integrity

It is every student's responsibility to become familiar with the standards of academic integrity at the University. Claims of ignorance, of unintentional error, or of academic or personal pressures are not sufficient reasons for violations of academic integrity. See
http://www.albany.edu/undergraduate_bulletin/regulations.html

Unless explicitly stated by the instructor, all course work is considered individual exercises. Copying the work of others is a violation of university rules on academic integrity. Individual course work is also key to your being prepared and performing well on assignments. Forming study groups and discussing assignments and techniques in general terms is encouraged, but the final work must be your own work. For example, two or more people may not create an assignment together and submit it for credit. If you have specific questions about this or any other policy, please ask.

The following is a list of the types of behaviors that are defined as examples of academic dishonesty and are therefore unacceptable. Attempts to commit such acts also fall under the term academic dishonesty and are subject to penalty. No set of guidelines can, of course, define all possible types or degrees of academic dishonesty; thus, the following descriptions should be understood as examples of infractions rather than an exhaustive list.

- Plagiarism
- Allowing other students to see or copy your assignments or exams
- Examining or copying another student's assignments or exams
- Lying to the professor about issues of academic integrity
- Submitting the same work for multiple assignments/classes without prior consent from the instructor(s)
- Each assignment must be unique and cannot contain copy / paste from previous assignments.
- Getting answers or help from people, or other sources (e.g. research papers, web sites) without acknowledging them.
- Forgery

- Sabotage
- Unauthorized Collaboration (just check first!)
- Falsification
- Bribery
- Theft, Damage, or Misuse of Library or Computer Resources

Any incident of academic dishonesty in this course, no matter how "minor" will result in:

1. No credit for the affected assignment.
2. A written report will be sent to the appropriate University authorities (e.g. the Dean of Undergraduate Studies)
3. One of -
   - A final mark reduction by at least one-half letter grade (e.g. B → B-, C- → D+),
   - A Failing mark (E) in the course, and referral of the matter to the University Judicial System for disposition.

Policies from Undergraduate Bulletin:
http://www.albany.edu/undergraduate_bulletin/regulations.html

All students are required to follow University Community Standards and Game Lab / Class Code of Conduct. https://www.albany.edu/communitystandards/

Students with game sanctions, bans, chat restrictions or other disciplinary actions will have difficulty completing this course. These elements will impact your course grade and prohibit you from taking part in class activities.

Inappropriate behavior or language of any type in class, on campus, off campus, in-game or in virtual spaces is not permitted and may result in immediate loss of privileges of hardware, software and labs.

Responsible Use of Information Technology

Students are required to read the University at Albany Policy for the Responsible Use of Information Technology available at the ITS Web Site:
http://www.albany.edu/its/policies_responsible_use_of_IT.htm

Students who misuse or damage equipment will be required to provide replacements.

Time Management: For every credit hour that a course meets, students should expect to work a minimum of 3 additional hours outside of class every week (3 x 3= 9). For a three-credit course you should expect to work 9 hours outside of class every week. Manage your time effectively to complete readings, assignments, and projects.

Reasonable accommodation

Reasonable accommodation will be provided for students with documented physical, sensory, cognitive, learning and psychiatric disorders. If you believe you have a disability requiring

accommodation in this class, please notify the Director of Disability Resource Center (Campus Center 137, 442-5490). That office will provide the course instructor with verification of your disability, and will recommend appropriate accommodations. In general, it is the student's responsibility to contact the instructor at least one week before the relevant assignment to make arrangements.

Course Overview

Please note that the professor reserves the right to alter this syllabus and preliminary outline with timely notice to students. Any changes to the class schedule or assignments will be announced in class and/or posted on Blackboard in sufficient time to avoid misunderstandings. In occasions where you have to miss class, make sure to consult the syllabus and to log on to Blackboard so that you are aware of what is going on in class. Also, make sure to consult your teammates, the peer educator and the professor in the case of any confusion.

Course Introduction + Orientation
Course Overview
Code of Conduct, Digital Citizenship, Responsible Use

Lab Orientation
Lab policy & procedure

Overview of Digital Gaming, Training and Simulation

Construct 2/3, Unity
Games
Training
Simulation
Industrial
Apps

Game Development
Development workflow
Art & Design
Audio
Writing for games
Level design
Animation
User Testing
Iteration
Software & Apps

Business of Games
Entrepreneurship
Intellectual Property
Branding
Project management
Collaboration
Logistics

Projects

CINF 398 Field Experience in Informatics (3 cr)

INSTRUCTOR

Annie Connors

Email: aeconnors@albany.edu

Office: Draper Hall 103

Office Hours: MW, 11 am – 1 pm

Office Phone: 518-442-1478

COURSE DESCRIPTION

This course provides academic structure and oversight to service-learning and community engagement components available as options in other Informatics. The goal of the field experience course is to improve students' understanding of a topic explored during a semester length course. Courses will typically include guest speaker events, field excursions, and class session on-site (i.e. Montreal, New York City, etc.) The course topic will change from semester to semester based on the topic of the semester length course. A version of the course could be used to offer a stand-alone course with service learning, community service, internship and other community engagement activities as a central theme.

PRE-REQUISITES

None

COURSE OBJECTIVES

1. Provide mentored practical observation and hands-on application opportunities for students to apply and reinforce learned competencies, knowledge and skills taught in the Informatics coursework.
2. Provide practical experience to students within one or more selected areas within a professional setting relating to the field of Informatics.
3. Reinforce an understanding of fieldwork through assignments and/or hands-on projects.
4. Provide an element of professional skills exposure to aid in career development and/or advancement.

COURSE REQUIREMENTS

Attendance & Course Expectations

Attendance at all scheduled guest speaker events, field excursions, and class sessions is mandatory. Failure to attend a session (unless for a reason supported by the University's excused absence policy) will negatively affect your grade. This class is based on the premise that everyone in this course has something to learn, and everyone in this class has something to offer. Prior experience in software development/social media/data analytics/cybersecurity/information technology, involvement in researching/practicing emerging technology, involvement in student groups: all of these experiences shape how you approach problems and the body of knowledge you can bring to the table.

Informatics is an inherently interdisciplinary field that relies on the coordination of multiple entities, often with diverse goals and objectives. You will have the opportunity to hone those collaborative

problem-solving skills in class through frequent group activities and class discussions, preparing you to enter your professional careers. The interactive nature of the course will work best when everyone comes to class having done the readings, prepared to discuss them, and stays engaged during the entire period.

For details on the University's excused absence policy, including what counts as an excused absence, go to the SUNY Albany Undergraduate Academic Regulations page at http://www.albany.edu/undergraduate_bulletin/regulations.html. It is your responsibility to ensure that you make up course material missed on the day(s) you were absent. If you will be absent on the day an assignment is due it is your responsibility to connect with the instructor of the course in advance. If you know that you will be absent for the graded in class activities, you need to notify the instructor in advance as soon as possible.

Assignments

Students will have the opportunity to practice their written communication skills and course mastery through paper assignments and either online or in-person discussion:

Attendance 10 points per day (110 total):

Students are expected to participate in each day's activities. You will earn 10 points for each day they attend the scheduled activities.

Reflection Journals 40 points:

Reflection is a critical component of this course. It is a large part of what will help transform the field experience into a high-impact learning experience. Students will be required to submit five journal entries this semester. For each one, participants will be asked to reflect on their experience in a way that relates to the topics presented through readings, guest speakers, and/or excursions scheduled throughout the length of the course.

The journals should be more than a simple log of activities, though students may include that information as well.

Think about how this experience is helping you learn and grow. Have you had any moments that have made you re-evaluate a preconceived notion? What critical incidents have you observed or been part of? Maybe they have changed your perspective or confirmed what you believed at the outset of this experience.

Minimum requirements for a satisfactory Journal Entry:

• Responses are expected to be thoughtful, with each entry containing a minimum of 350 words.

• Typewritten, double-spaced with a 12 pt. font (Times New Roman or similar size)

• Please make sure to check thoroughly for grammatical, typographical and spelling errors. Entries containing a plethora of these errors will not be accepted.

Reflection Paper & Presentation 100 points:

Linking the information gathered during the field experiences, students will be asked to reflect on the fieldwork, excursions, speakers, and readings. The paper will be 3-4 pages in length and the presentation can be in any multimedia format or creative medium the student wishes – video, PowerPoint, website, etc.

Both the paper and presentation will address the following;

- *Describe the experience (what did you hear, see, read, or do?).*
- *How has the experience enabled you to apply or transfer your learning to a new setting or circumstance?*
- *How has this experience built upon what you have learned from your educational experiences in the classroom?*
- *What aspect of the experience contributed most to your learning and why?*
- *In what ways has this experience increased your curiosity or awareness about new content or issues?*
- *How do you see yourself now compared to who you were at the beginning of this experience?*
- *What did you learn about yourself and/or others due to participating in this experience?*
- *Did you develop any new insights regarding your career plans as a result of this experience?*
- *How would you describe this learning experience to a potential employer in a way that synthesizes knowledge and skills gained?*

GRADING SCHEME & SCALE

Final course grades are issued on the scale described below. Grades .5 and above will be rounded up and grades less than .5 will be rounded down.

A 100-93%	B- 83-80%	D+ 70-68%
A- 92-90%	C+ 79-77%	D 67-64%
B+ 89-87%	C 76-74%	D- 63-60%
B 86-84%	C- 73-71%	E <60%

REQUIRED TEXTS AND READINGS

Readings will be assigned for students to complete prior to the field experience. These will be posted on Blackboard where students will be able to view and download them.

Blackboard

Materials for the class will be posted on the class Blackboard webpage. The readings that are assigned for class will be available on the Blackboard page for this class. Information about assignments will also be posted on Blackboard. You will also be submitting your assignments via Blackboard.

COURSE SCHEDULE: READINGS AND ASSIGNMENTS

The following is an itinerary of activities during the field experience.

You must complete all of the preliminary readings before the field experience. They are required both to complete the paper and to provide you with the necessary background for context for understanding and interpreting the field.

Time in this course will be spent in a combination of guest speakers, field experiences and cite visits, interactions with professionals and class discussions. Class sessions will be held intermittently, and are meant to serve as opportunities for you to reflect with your peers on the experiences you are having and connect it to the pre-course readings. Classes are very discussion-based. You will have opportunities every class to engage with the readings and apply the concepts. Therefore, you will be best equipped to actively participate in class if you have completed the reading assignments in advance of the discussions/classes.

CLASS	**DESCRIPTION OF ACTIVITIES**
Pre-Field Experience	
	Students will complete assigned readings and an initial journal indicating their expectations and predictions for the course and fieldwork.
1	
	Class Discussion, guest speaker
2	
	Field experience and Guest Speaker
3	
	Guest Speaker/field experience and Class Discussion
4	
	Field experience and Guest Speaker
5	
	Cite visit and Class Discussion
6	
	Guest Speaker and field experience
7	
	Guest Speaker or field experience and Class Discussion

8	
	Excursion or Guest Speaker
9	
	Excursion or Guest Speaker
10	
	Guest Speaker and field experience
11	
	Guest Speaker or field experience and Class Discussion.
Post- Field Experience	
	Reflection paper & Presentation

COURSE POLICIES

Submission Process

Students will submit their assignments online via blackboard. The instructor will allow for two late assignments to be submitted without prior consent. All additional assignments that are submitted late without the instructor's prior knowledge and permission will receive 80% of points possible towards your final grade. No assignments can be submitted for grading after the last day of classes for the semester.

If you missed the due date because of an excused absence, the excused days will not count as days late in calculating the assignment grade. If you believe that there are circumstances that warrant an extension on an assignment, but are unsure if it counts as a University approved absence or accommodation, talk to the instructor (in person or by e-mail) before the assignment is due to discuss what, if any, accommodations are appropriate. You must approach the instructor with the issue **before the due date**.

Unexpected Illness/Absence

In order to seek accommodation due to unexpected illness**,** please seek a note from the

Office of Undergraduate Studies (Lecture Center 30 Phone: 518-442-3950) as they are responsible for excused absence certification. Any further required action for the course will take place once the student has provided the instructor with the appropriate documentation.

Religious Observance

The instructor will work to accommodate class conflict issues arising from religious observance. If you have a conflict due to religious observance, let them know as soon as possible so that appropriate arrangements can be made to make up missed assignments. Please consult the specific university policy

on accommodating religious observance at this link for more details:
http://www.albany.edu/undergraduate_bulletin/regulations.html

Reasonable Accommodation

Reasonable accommodations will be provided for students with documented physical, sensory, systemic, medical, cognitive, learning and mental health (psychiatric) disabilities. If you believe you have a disability requiring accommodation in this class, please notify the Disability Resource Center (518-442-5490; drc@albany.edu). Upon verification and after the registration process is complete, the DRC will provide you with a letter that informs the course instructor that you are a student with a disability registered with the DRC and list the recommended reasonable accommodations.

More detailed information on this policy and a link to email the Disability Resource Center can be found at this link: http://www.albany.edu/disability/current.shtml

Additional Resources

SUNY Albany Library Homepage:

http://library.albany.edu

SUNY Albany Tutoring Services:

http://www.albany.edu/carss/i_need_tutoring.shtml

http://www.albany.edu/oaae/tutoring_oaae.shtml

http://www.albany.edu/advisingplus/50962.php

Student Counselling Services Offered by SUNY Albany:
http://www.albany.edu/counseling_center/index.shtml

ACADEMIC HONESTY

All work students submit to this course is expected to be their own original product. Plagiarism in any form is completely unacceptable. You should always cite source material in your work. If you are uncertain if you should cite something, then **you should cite it**. Students are expected to use American Psychological Association (APA) guidelines for formatting for their citations.

Information on APA citation guidelines can be found here:

https://owl.english.purdue.edu/owl/resource/560/01/

http://www.apastyle.org/

If you have questions about a citation issue, or on issues of paraphrasing versus direct quotations, please visit your instructor during office hours or set up an appointment and they will be happy to help you. Copying the work of current or previous students and claiming it as your own will not be tolerated. Further details on the university's policies regarding academic honesty can be found at:
http://www.albany.edu/undergraduate_bulletin/regulations.html

The posting of class material (including but not limited to exams, study guides, and assignments) to the Internet, whether for a fee or not, is expressly prohibited.

CLASS COMMUNICATION

The instructor may need to send out notifications to the class about readings and assignments throughout the semester. This communication will take place via email and through the course Blackboard page. Students are required to have a SUNY Albany email account and to check it regularly to

ensure that you receive those notifications. If you use an email account other than your student e-mail address, it is your responsibility to regularly check your university email or have messages from your university email forwarded to your regular email address.

The instructor will regularly check e-mail during business hours (9am to 5pm). If you e-mail them, then they will respond to your message within two business days. For example. If you email them on Monday, they will reply to your message by Wednesday. If you email them on Friday, they will reply by Tuesday.

CORRESPONDENCE AND PROFESSIONALISM

As stated in the section on course objectives, this course is intended in part to help prepare you for a career in the field of informatics. This includes not only supporting your intellectual growth through the course material, but also supporting your development as professionals as you move through your time here at the university and in your careers. An important part of professionalism is how you interact with your colleagues and coworkers both in the classroom and in your correspondence.

All e-mails need to have a brief subject line telling the reader what your message is about. You should begin your e-mails addressing the recipient by their name and appropriate title. Your e-mails should include the course number, should be written in complete sentences and in a professional tone, and should be proofread for typos. You should conclude your e-mail with a salutation and your name.

TECHNOLOGY IN THE CLASSROOM

Technology in the classroom can be both a tool and a distraction. The classroom policies for this course reflect this.

Cell phones: Phones will not be allowed in class. Phones must be turned off or silent during class, and you may not use them during the class period unless the instructor specifically indicates that you may do so.

Computers: Many students prefer to take notes using computers rather than taking handwritten notes during class, and prefer to use electronic versions of the readings rather than printed out hard copies. To accommodate those different preferences, computers are permitted in class. However, do not use your computers for purposes other than classroom activity (checking social media, etc.). Your screen is visible to students behind and beside you, and it could be distracting to your classmates. It is the student's responsibility to use their computers in a way that is respectful to their classmates. If it becomes clear that a student is not using their computer for work purposes or is using it in a way that is disruptive to the class, I will ask the student to put the computer away and may not permit the student to bring it to future classes.

INF 405 & 505:

Advanced Concepts in Software Development (3 cr)

Fall 2020

I tell my students, 'When you get these jobs that you have been so brilliantly trained for, just remember that your real job is that if you are free, you need to free somebody else. If you have some power, then your job is to empower somebody else. This is not just a grab bag candy game.' – Toni Morrison

Course Staff

Instructor: George Berg

- Email: gberg@albany.edu
- Office Hours:
  - **Office hours may vary weekly owing to various factors. Please check the class calendar on Blackboard to make sure he will be in.**
  - The normally scheduled office hours are:
    - Face-to-Face: Online via Zoom:
      - TBD
    - Online (And Zoom links to join):
      - TBD
  - For other times, please contact me, and we can make an appointment.
- Phone: 1-518-949-3437 (Voice, voicemail, and text)
- Twitter: @GBerg_UAlbany
- FB: @GeorgeBergUAlbanyCS
- Instagram: @gberg_ualbany

Course Description

INF 405 *Advanced Concepts and Practices in Software Development* **(3 credits)**
A course in advanced software development techniques and practice. This will build on students' previous experience to enable them to create larger, more complicated projects. In addition to advanced language,

library, etc. features, this course will emphasize concepts such as object-oriented design and development, software engineering, design thinking, etc. These will increase the scale of projects can achieve as well as increase their chances of successful development.

Prerequisites

The Prerequisite course for INF 405 is INF 308, *Programming for Informatics*, or CSI 213, *Data Structures*, or permission of the Instructor.

The primary perquisite concepts necessary to attempt this course with a reasonable chance of success are:

- Knowledge and experience with a modern programming language equivalent to two full university level courses.
- Experience writing, debugging, and testing computer programs.

This course will build on these concepts and add several more.

Expected Student Outcomes

This is a senior/graduate level course that covers the wide range of skills and concepts that are necessary to design, implement, code, and test medium and large scale computer software projects.

Course Goals

By the end of the semester, you should be able to

- As an individual, successfully **design**, **implement** and **test** medium size computer programs in a modern programming language.
- As part of a *team*, successfully **design**, **implement** and **test** medium size computer programs in a modern programming language.
- **Evaluate** medium and large computer programs via a methodical testing regimen.
- **Demonstrate** a knowledge of how coding standards can improve the success of software projects.
- **Demonstrate** a knowledge of and ability to analyze the importance of end-user usability in programming projects.
- **Apply** the above concepts in assignments.
- Be **persistent** in solving medium to high complexity problems.
- **Develop** coherent problem-solving skills.
- **Work** effectively in teams.

Class Meetings

Lecture

The lecture meets twice a week: TBD.

Required Text

The required text for the course is:

- Allbee, Brian, *Hands-on Software Engineering with Python*. Packt Publishing. 2018. ISBN-13: 978-1788622011.
    - Buy/Rent the book from wherever you feel you can get your best deal.

Recommended Text

There is no additional recommended text for this class.

Readings

In addition to the required text, there will be readings that will be available to the students online or *via* Blackboard. When these readings are assigned, the class will be told where they can be found.

TEAM-BASED LEARNING (TBL)

This course uses Team-based Learning (TBL). This section describes how we will be using TBL in this class.

AN ABSOLUTELY CRUCIAL POINT: The course is divided into learning modules. You ***must*** do the readings for each module ***before*** the unit's start. This is because each unit starts with a Readiness Assessment Test (RAT). Readings must be done before the RAT tests for the module (dates given in the syllabus below). The RAT tests are based solely upon the readings, and not on lecture or other in-class preparation beforehand.

Teams

This course will be using a Team-Based-Learning (TBL) format (http://www.teambasedlearning.org). This instructional method aims to help develop your learning skills and will be done in a way that will hold teams accountable for using course content to make decisions that will be reported publicly and subject to cross-team discussion/critique. You will be assigned to a team with approximately 6 members. Teams will be formed during the first week of the term. Teams will work together for most in-class activities throughout the semester.

Your grade will be influenced by team performance on team-based assignments. While in many courses, group work can be structured unfairly, such that some students end up doing all the work while everyone shares in the credit, two factors will prevent that from happening in this class. First, nearly all graded team work will be preceded by one or more preparatory assignments, for which each individual will be accountable (*e.g.* the RATs), thus ensuring that individual team members are each prepared to contribute to the team effort. Second, each individual's contribution to team work will be assessed by his or her teammates several times during the semester. This Peer Evaluation is done online (e.g. via a service such as TEAMMATES). In Peer Evaluation each student is asked to evaluate various aspects of her team mates' engagement and

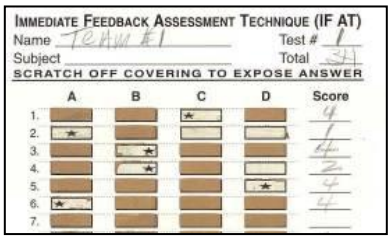
participation in the group activities in class. They are also given opportunities to provide constructive suggestions about the elements of the team mates' contributions that are already positive, or that could be improved. By using a constructive framework, and evaluating early and several times, students receive feedback that gives them an opportunity to learn to work in group settings more effectively.

Phase 1 – Preparation: You will complete **specified readings** to begin each module

Phase 2 – Readiness Assurance Test: At the first class meeting of each module, you will be given a **Readiness Assurance Test** (RAT). The RAT test (10 multiple-choice questions) measures your comprehension of the assigned readings, and helps you learn the material needed to begin problem solving in phase 3. The purpose of phase 2 is to ensure that you and your teammates have sufficient foundational knowledge to begin learning how to apply and use the course concepts in phase 3. **RATs are closed book and based on the assigned readings.**

- **Individual RAT (iRAT)** – You individually complete a 10 question multiple-choice test based on the readings.

- **Group/Team RAT (gRAT)** - Following the iRAT, the same multiple-choice test is re-taken with your team. These tests use a "scratch and win" type answer cards known as an IF-AT. You negotiate with your teammates, and then scratch off the opaque coating hoping to reveal a star that indicates a correct answer. *Your team is awarded **10** points if you uncover the correct answer on the **first** scratch, **6** points for **second** scratch, and **2** point for **third** scratch.* No points are awarded for fourth or fifth.


IMMEDIATE FEEDBACK ASSESSMENT TECHNIQUE (IF AT)
Name Team #1 Test # 1
Subject Total 34
SCRATCH OFF COVERING TO EXPOSE ANSWER

	A	B	C	D	Score
1.			★		4
2.	★				1
3.		★			4
4.		★			2
5.				★	4
6.	★				4
7.					

- **Appeals Process** - Once your team has completed the team test, your team has the opportunity to complete an appeal. The purpose of the appeal process is to allow your team to identify questions where you disagree with the question key or question wording or ambiguous information in the readings. Instructors will review the appeals outside of class time and report the outcome of your team appeal at the next class meeting. Only teams are allowed to appeal questions (no individual appeals).

- **Feedback and Mini-lecture** - Following the RATs and Appeal Process, the instructor may provide a short clarifying lecture on any difficult or troublesome concepts.

Phase 3 - In-Class Activities: You and your team use the foundational knowledge, acquired in the first two phases, to make decisions that will be reported publicly and subject to cross-team discussion/critique. We will use a variety of methods to have you report your team's decision at the end of each activity. The

presentation of your team responses is critical to the team grade. You should expect each team member to present individually and for the entire team to present with smooth transitions.

INF 405 and 505 Grading

Category	Assignment Type	Weight Within Category	Category Weight in the Course
Individual Grades			(45% – 70%)*
	iRAT Tests	25%	
	Individual Assignments	75%	
Team Grades			(20% – 45%)*
	gRAT Tests	35%	
	Team Exercises	65%	
Class Participation and Peer Evaluation			(10% – 25%)*
	Peer Evaluation	75%	
	Class Participation (Instructor Determined)	25%	
_____			_____
Total			**100%**

* The class will determine the grade weights on mm/dd/2020. Student teams will negotiate the exact proportions of individual grades, team grades, and peer evaluation for the course, with in the ranges given above. For example, they may agree on individual grades at 50%, team grades at 30%, and peer evaluation at 20% of a students' course grade. The percentages *must* total to 100%, of course.

The above formula is the definitive grading scheme. Any "Total," "Weighted Total," *etc*. given by Blackboard does not reflect the actual grading scheme, *and should be ignored.*

The University at Albany/CEHC Showcase event(s) are <date>. All INF 405 and 505 students will be expected to participate in the showcase either in person or virtually (if they absolutely cannot attend in person), and there will be an online assignment covering Showcase in the context of this class due a few days later. Details will be forthcoming later on in the semester but mark your calendars.

Grades are assigned based upon the percentage of points achieved by the student in the course, as weighted per the above table. The overall course will not be curved, although the professor retains the right curve

individual assignments if the grade distribution is extreme enough to unfairly weight the overall course against the students. Major letter grades will be assigned by the following thresholds:

Percentage Score	Grade
90 – 100%	A
80 – up to 90%	B
70 – up to 80%	C
60 – up to 70%	D
Below 60%	E

INF 505

This same course is offered as INF 405 and as INF 505. The latter is an enhanced version intended for graduate students. Students in INF 505 will do all the work in INF 405. In addition, INF 505 students will do substantially augmented team projects relative to INF 405, and make a presentation at the UAlbany Student Showcase on <date>.

For the term project, INF 505 students have a set of additional set of deadlines (included in the class schedule, below).
The milestones for the project are:

- Project Topic Proposal (due <date>)
- Project Outline Proposal (due <date>)
- Showcase Presentation Outline Proposal (due <date>)
- Showcase presentation (due <date>)
- Project final writeup (due <date>)

The University at Albany/CEHC Showcase event(s) are <date> As mentioned above all INF 505 students will be expected to participate in the showcase either in person with a presentation. Additional details will be forthcoming later on in the semester but mark your calendars.

Succeeding as a Person, and as a Student (and in INF 405/505)

Being a successful student is more than doing well in your classes. It means that you are well, both mentally and physically. If you feel that you (or maybe someone you know on campus) are not doing well, you should definitely seek help for that situation.

Student Health Services: If you are feeling ill, or there is some other physical condition that is bothering you should go visit student health services. (https://www.albany.edu/health_center/). Your health and well-being are critical to your quality of life; you should take steps to preserve it.

Campus Counseling Center: Almost everyone at one time or another runs into problems that they cannot handle by themselves. In those situations, there is no shame or stigma associated with seeking help. On this campus, the Campus Counseling and Psychological Services (https://www.albany.edu/counseling_center/) is there to help. Whether your issue is stress, depression, sleep, or something else entirely, their staff have a number of ways to help you out. And remember, that you are not alone in these kinds of situations.

Student Emergency Fund: Are you (or again maybe someone you know on campus) facing an unforeseen financial hardship or emergency? These kinds of situations can be a serious obstacle to a student's being able to stay and successfully complete their degree. The University has a Student Emergency Fund program that may be able to help (https://www.albany.edu/studentaffairs/emergencyfund.shtml). These grants may be able to help.

UAlbany library: The University Libraries (https://library.albany.edu/) are much more than a book and journal repository. They offer a conducive place to study, and offer arrange of information services. Not really relevant to this class, but maybe in general, the University Library has **Library Research Resources** (http://libguides.library.albany.edu/c.php?g=537164&p=3677741) that can be of immense help with projects involving various kinds of research.

IT Services: Even if you are not in a technical degree program, every modern student uses digital technology and is affected by it (if you don't see that now, you will at the end of this course). The University Information Technology Services (ITS) offers a wide range of help and services for students (https://www.albany.edu/its/svc_list.php).

In General: It may not be cool or sexy, but a key to success is simply to be *reliable*. If you make a promise to your family or friends, keep it. The easiest way to succeed in a class is to attend class every time, do the reading, and complete the assignments. Not only do you get credit for attendance and the assignments, but this work helps you learn, and will pay off on subsequent assignments, tests, etc., as well as in grades, and in future career and grad school opportunities. Like the old Nike ad says, "Just do it!"

In addition, it is important to know what is expected of you, so that you can manage those expectations and balance them against your other commitments, energy, etc. For instance, a 3-credit UAlbany class implies an average nine-hour commitment each week (three in class, six outside for reading, assignments, study, etc.) So, you should budget an average of six hours per week for each of your classes. Sometimes it will take more, often less. But, that way you can avoid surprise time crunches.

Course Policies

Attendance: Your in-class performance is key to your success in this course. Attendance, itself, is not explicitly graded (but it does factor into class participation). Instead, graded in-class activities and assignments constitute an important part of the course grade. Keeping a passing average on these is not possible without consistent attendance. Missing class means the student earns an automatic zero for all individual and team activities or assignments missed. No make-up opportunities will be available.

Tardiness: Missing an assignment or activity that happens before a student arrives or after a student leaves also earns a zero. No make-up opportunities will be available. Tardiness also factors into class participation.

If you know that it will be difficult for you to consistently get to class on time and stay for the entire period, you should take this course at a time that better fits your schedule. Missing or being late frequently will guarantee a low grade for the course.

Make-up Policy: There are generally no make-up opportunities for missed assignments except in extenuating circumstances. Instead of asking to make up missed work, please use the course 'safety valves' described below.

Since there will be situations in your life when missing a class meeting is simply unavoidable, this course has 2 no-fault safety valves.

Safety Valve 1:

1. The lowest iRAT is dropped.
2. The lowest gRAT is dropped.
3. The lowest individual assignment is dropped.
4. The lowest team assignment is dropped.

Peer Evaluations are *not* dropped.
A missed assignment will count against these (*i.e.* a zero from a miss would be your low score; you don't get a miss and a drop).

Safety Valve 2: If you become seriously ill during the semester, or become derailed by unforeseeable life problems, and have to miss so many assignments that it will ruin your grade, schedule a meeting with the instructor in order to make arrangements for you to drop the course to save your grade point average. Don't wait until it's too late to do this when you get in trouble.

Excused Absences: Some absences (e.g. military duty, jury duty, court appearances, documented medical illnesses and appointments, student athlete obligations, significant academic or professional opportunities, critical family emergencies) can be counted as excused absences. For these (the above and others; check with

the professor if you have questions) to count, you must apply for an excused absence. Please apply using the Google form:

https://forms.gle/u8SdSmmq2ywxPg3A6

Note that you may have to login with your Google credentials to access the form, especially if you want to upload supporting documentation for your request.

The Professor will reply to your request. Accepted excused absences will not count against the student (i.e. those assignments will not count when calculating the student's course average). Denied requests and all other absences will count as unexcused. For unexcused absences, students will miss without credit all assignments for the day missed.

Late Assignments: Out of class assignments are due on the due date, by the assigned time. Late individual assignments will be accepted, but at the cost of a full letter grade for missing the deadline, and an additional letter grade for each additional 24 hours late. In-class assignments may be done only on the days they are scheduled.

Withdrawal from the Course: The **drop date** for the Fall 2020 semester is

- **<Date> for undergraduate students in full semester courses, and**
- **<Date> for graduate students.**

That is the last date you can drop a course and receive a 'W'. It is your responsibility to take action by this date if you wish to drop the course. In particular, grades of "incomplete" will not be awarded to students because they missed the drop deadline. Given that dropping a course can have financial aid implications, please see your advisor or the Financial Aid office before dropping a course so you understand the implications that action can have on your aid.

Electronic Devices: For some team activities, you will need to use a phone/tablet/laptop. Other than that, make sure your devices are put away during class unless we are using them in a team exercise. *Non-class device use will count negatively against the entire class's participation grade.*

Headphone/earbud use is *prohibited* during class.

Students with Disabilities: Students who feel that they have disabilities that require special arrangements for them to take the course *must* register with the Disability Resource Center. Students are eligible for special services to which both the Center and the professor agree. In general, *it is the student's responsibility* to contact the professors at least one week before the relevant assignment to make arrangements. You can contact the Disability Resource Center in Campus Center 137, or at 442-5490, if needed.

Incompletes: As per the Undergraduate Bulletin, the grade of Incomplete (I) will be given "only when the student has nearly completed the course requirements but because of circumstances beyond the student's

control the work is not completed." A student granted an incomplete will make an agreement specifying what material must be made up, and a date for its completion. The incomplete will be converted to a normal grade on the agreed upon completion date based upon whatever material is submitted by that time.

Important: Incompletes will *not* be given to students who have not fulfilled their classwork obligations, and who, at the end of the semester, are looking to avoid failing the course. This is asking for special treatment.

Responsible Use of Information Technology: Students are required to read the University at Albany Policy for the Responsible Use of Information Technology available at the ITS website: https://wiki.albany.edu/display/public/askit/Responsible+Use+of+Information+Technology+Policy

Weather: In general, the class will meet unless the University suspends classes. You should be signed up for alerts with the University. I will try and also send out a notification if there class is canceled. Having said that, if you feel that travel is unsafe even if class is in session, then don't risk it (and see the section on Excused Absences).

Academic Integrity

In this class, some course work and examinations are *individual* exercises. The individual work that you do must be *yours* – not that of other students, friends, tutors, *etc*. While it may seem like the easy way out of doing the assignments to copy them from others, this strategy will backfire on the tests, when you will not know the material you would have learned from doing the assignments. You may of course form study groups, discuss assignments and techniques in general terms, *etc*., but the assignments themselves *must* be your own work. In particular, two or more people may not create an individual assignment together and submit it for credit. *Please ask if you have any questions about academic integrity.*

I am also personally offended by cheating, in part because it hurts the honest students in the class. We will try our hardest to catch cheaters. If we catch a student cheating, we will not go easy on him or her. Given that, is it really worth it?

The Undergraduate Bulletin states the university's policies on academic integrity. You will be held to these policies. You are expected to be familiar with them.

A (non-exhaustive) list of unacceptable activities is:

- Allowing other students to see or copy your assignments.
- Examining or copying another student's assignments.
- Allowing other students to see or copy your work during an exam.
- Examining or copying another student's work during an exam.

- Getting answers or help from people, or other sources (*e.g.* research papers, web sites) without acknowledging them.
- Defacing or deleting class shared documents.
- Lying to the Professor about issues of academic integrity.

Any incident of academic dishonesty in this course, no matter how "minor" will result in

- No credit for the affected assignment.
- A written report will be sent to the appropriate University authorities.
- One of -
    - A final mark reduction by *at least* one-half letter grade (*e.g.* B → B-, C- → D+),
    - A Failing mark (E) in the course, and referral of the matter to the University Judicial System for disposition.

Policies from Undergraduate Bulletin: http://www.albany.edu/undergraduate_bulletin/regulations.html

Timeline

Week	Topic	Reading	Activity
1	Python Foundations	Text: *Development Tools*	iRAT, gRAT, Program
2		Materials: *Basics of Python 3*	Program
3			Program
4	Advanced Python	Materials: *Advanced Python Concepts* Materials: *Larger Scale Programming Projects*	iRAT, gRAT, Program
5	Advanced Python – Objected Oriented Programming	Text: *Development Paradigms*	Program
6	Advanced Python – APIs and Packages	Materials: *APIs and Packages*	Program
7	Software Project Management	Materials: *Design Thinking* Text: *Development Practices*	Team Project
8		Text: *Process Standards*	Team Project (Continued)
9		Text: *Setting Up Projects and Processes*	Team Project (Continued)
10	Database Integration	Text: *Thinking About Data Object Persistence*	iRAT, gRAT, Program, Team Project
11			Team Project (Continued)
12	Testing	Text: *Testing Business Objects*	iRAT, gRAT, Program, Team Term Project
13			Team Term Project (Continued)
14	Advanced Topics	Text: *Anatomy of A Service*	iRAT, gRAT, Program, Team Term Project (Continued)
15		Material: *Machine Learning and Data Science*	

Miscellaneous

Extra credit opportunities

During the semester the university and others hold events that may be of interest to students in this course. If you attend an event and write a summary and reflection piece on the event (specified in individual assignments) you may receive extra credit worth up to 1% of the course value. A maximum of 5% of extra credit can be accrued this way. There are no other extra credit mechanisms available in this course.

I INF428: Analysis, Visualization and Prediction in Analytics (3 credit hours)

Tuesday Thursday 4:15PM – 5:35 PM SL G12
Spring 2017

Instructor: Brian Northan

Office location (t.b.a.)
Office hours (t.b.a)
Contact information (bnorthan@albany.edu, bnorthan@gmail.com)

Course Information

Course description from *Undergraduate Bulletin*:
Principles of data analysis, emphasizing modern statistical and machine-learning based approaches. Also, the important role of simple analyses and visualization to gain an overall understanding of data sets, regardless of size. The role of analytics in creating predictive models of

phenomena. The importance of understanding the nature of the data and other methodological considerations.

Prerequisites

1. An introductory statistics course (such as INF 300, Probability and Statistics for Data Analytics) is recommended.
2. An introductory programming course is recommended. Students should be comfortable writing simple scripts in a language such as python, matlab or R.

Course Goals

By the end of the semester, you should be able to

- ➢ Understand and be able to demonstrate principles of data analysis.
- ➢ Be able to do simple data and visualization analyses to understand a new and complex data set.
- ➢ Demonstrate an understanding of and be able to use statistical and machine learning methods for data analysis.
- ➢ Demonstrate an understanding of and be able to use visualization analyses.
- ➢ Demonstrate an understanding of and be able to use predictive models.

Readings

Required readings
Python Data Analysis, Ivan Idris, 2014 Packt Publishig, $49.99, Available at usual University at Albany book sellers, as well as via online sellers. ISBN-13: 978- 0596802356.

KNIME Beginner's Luck
available on line
https://www.knime.org/knimepress/beginners-luck

Additional Materials

It is recommended that students have access to a laptop. (accommodations will be made for students who do not have lap tops)

Internet access is required

Course Policies

Attendance

Attendance is mandatory in every class and students are expected to arrive on time. Your in-class performance is key to your success in this course. Attendance, itself, is not graded. Instead, graded in-class activities and assignments constitute an important part of the course grade. It is not

possible to maintain a passing average without consistent attendance. Missing class means the student earns an automatic zero for the activities or assignments missed. Because of the nature of the assignments, no make-up opportunities will be available.

Tardiness
Missing an assignment or activity that happened before a student arrives or after a student leaves also earns a zero. No make-up opportunities will be available.

If you know that it will be difficult for you to consistently get to class on time and stay for the entire period, you should take this course at a time that better fits your schedule. Being late frequently will guarantee a low grade for the course.

Make-up Policy
There are generally no make-up opportunities for missed assignments except in extenuating circumstances. Instead of asking to make up missed work, please see the course 'safety valves' described below.

Since there will be occasions in your life when missing a class meeting is simply unavoidable, this course has a no-fault safety valve.

Safety valve 1
You may miss ONE/TWO/THREE class/es and it's associated in-class assignment grade(s). So, if you must miss class for any reason, it will be possible to drop the zero you would automatically receive for missing the assignment. Be careful not to waste your drop on frivolous things early in the semester, since you may need it if you catch a cold or need to leave town for a day later in the semester. If you do not use your safety valve for missed classes, you will be able to use your safety valve to improve your grade, by dropping your lowest score.

Plan carefully for classes that you know you will need to miss. Work, religious practice, sports team travel, military duty, club activities, fraternity/sorority obligations, family responsibilities, assignments for other courses, and even brief illnesses, etc—these are your responsibility to manage by using your safety valve. If you need to be out of class for any of these, make sure you have conserved your droppable grade to cover the class you need to miss.

Safety valve 2
If you become seriously ill during the semester, or become derailed by unforeseeable life problems, and have to miss so many assignments that it will ruin your grade, schedule a meeting with me in order to make arrangements for you to drop the course to save your grade point average. Don't wait until it's too late to see me when you get in trouble.

Late homework
Homework is due on the due date at the specified time, in class or submitted through Blackboard, depending on the assignment. Late assignments will be accepted, but at the cost of a full letter

grade for missing the first, in-class deadline, and an additional letter grade for each additional 24 hours late. In-class assignments may be done only on the days they are scheduled.

Extra Credit
There may be extra credit work. All students will be expected to complete, and be graded on, the same set of assignments. Details to follow. All extra-credit opportunities are capped at no more than 5 points on your overall grade.

Withdrawal from the course
The drop dates for the 2015 spring semester is February 3. That is the last date you can drop a course and receive a 'W'. It is your responsibility to take action by this date if you wish to drop the course. In particular, grades of "incomplete" will not be awarded to students because they missed the drop deadline.

Cell phones & laptops
Please make sure your electronic devices are turned off before entering the classroom unless we are doing a class exercise where they are helpful. Use of phones, tablets, computers, etc. for non-class purposes during class will count against you in your class participation grade. While you may be using computers in class, texting, using Facebook, etc., are not appropriate uses of class time and your instructor-evaluated grade will suffer for it.

Incompletes
As per the Undergraduate Bulletin, the grade of Incomplete (I) will be given "only when the student has nearly completed the course requirements but because of circumstances beyond the student's control the work is not completed." A student granted an incomplete will make an agreement specifying what material must be made up, and a date for its completion. The incomplete will be converted to a normal grade on the agreed upon completion date based upon whatever material is submitted by that time.
Important: Incompletes will not be given to students who have not fulfilled their classwork obligations, and who, at the end of the semester, are looking to avoid failing the course. This is asking for special treatment.

Academic Integrity
It is every student's responsibility to become familiar with the standards of academic integrity at the University. Claims of ignorance, of unintentional error, or of academic or personal pressures are not sufficient reasons for violations of academic integrity. See
http://www.albany.edu/undergraduate_bulletin/regulations.html

Course work and examinations are considered individual exercises. Copying the work of others is a violation of university rules on academic integrity. Individual course work is also key to your being prepared and performing well on tests and exams. Forming study groups and discussing assignments and techniques in general terms is encouraged, but the final work must be your own

work. For example, two or more people may not create an assignment together and submit it for credit. If you have specific questions about this or any other policy, please ask.

The following is a list of the types of behaviors that are defined as examples of academic dishonesty and are therefore unacceptable. Attempts to commit such acts also fall under the term academic dishonesty and are subject to penalty. No set of guidelines can, of course, define all possible types or degrees of academic dishonesty; thus, the following descriptions should be understood as examples of infractions rather than an exhaustive list.

- ➢ Plagiarism
- ➢ Allowing other students to see or copy your assignments or exams
- ➢ Examining or copying another student's assignments or exams
- ➢ Lying to the professor about issues of academic integrity
- ➢ Submitting the same work for multiple assignments/classes without prior consent from the instructor(s)
- ➢ Getting answers or help from people, or other sources (*e.g.* research papers, web sites) without acknowledging them.
- ➢ Forgery
- ➢ Sabotage
- ➢ Unauthorized Collaboration (just check first!)
- ➢ Falsification
- ➢ Bribery
- ➢ Theft, Damage, or Misuse of Library or Computer Resources

Any incident of academic dishonesty in this course, no matter how "minor" will result in

1. No credit for the affected assignment.
2. A written report will be sent to the appropriate University authorities (*e.g.* the Dean of Undergraduate Studies)
3. One of -
    - o A final mark reduction by *at least* one-half letter grade (*e.g.* B B-, C-D+),
    - o A Failing mark (E) in the course, and referral of the matter to the University Judicial System for disposition.

Policies from Undergraduate Bulletin:
http://www.albany.edu/undergraduate_bulletin/regulations.html

Responsible Use of Information Technology
Students are required to read the University at Albany Policy for the Responsible Use of Information Technology available at the ITS Web Site:
http://www.albany.edu/its/policies_responsible_use_of_IT.htm

Time Management
For every credit hour that a course meets, students should expect to work 3 additional hours outside of class every week (3 x 3= 9). For a three-credit course you should expect to work 9 hours

outside of class every week. Manage your time effectively to complete readings, assignments, and projects.

Available Support Services

Reasonable accommodation
Reasonable accommodation will be provided for students with documented physical, sensory, cognitive, learning and psychiatric disorders. If you believe you have a disability requiring accommodation in this class, please notify the Director of Disability Resource Center (Campus Center 137, 442-5490). That office will provide the course instructor with verification of your disability, and will recommend appropriate accommodations. In general, it is the student's responsibility to contact the instructor at least one week before the relevant assignment to make arrangements.

CCI Student Center
The College of Computing and Information Student Center (LI-84) offers tutoring, career development, social events and academic advising. Please stop by or email at ccistudentcenter@gmail.com. Visit the CCI Facebook page for more details and upcoming events: http://www.facebook.com/CollegeofComputingandInformation#

Course Outline and Schedule
The following schedule of lecture topics and reading assignments is preliminary and may be changed as the semester progresses. The final schedule and specific homework and lab

assignments and materials will be provided in Blackboard. Students are expected to have read the listed material before it is covered in class.

Topic	Topic	Readings	Notes
1	Introduction and Overview		
2	Intro/Review of Python and KNIME		
3	Intro/Review of Python and KNIME		
4	Python and KNIME Extensions		
5	Statistics and Linear Algebra Review		
6	Data Wrangling with Pandas and KNIME		
7	Introduction to Visualization		
8	Visualization with KNIME		
9	Visualization with Matplotlib		
10	Web Services (REST, JSON, RSS)		
11	Time Series Analysis		
12	Databases with KNIME and Python		
13	Machine Learning with Python and KNIME		
14	Textual Analysis		
15	Machine Learning		
16	Special topic and projects		

Assignments for undergraduates and graduate students . There will be 5-10 assignments for a total of 100 marks.

1. Introduction
2. Statistics.
3. Visualization
4. Databases and Text Processing
5. Machine learning

Undergraduates will receive a mark out of 100 which will be converted to a letter grade.

Assignments for graduate students

Graduate students are expected to complete a term long project that compliments their area of research. The project will be worth 50 points.

Graduate students will receive a mark out of 150 which will be converted to a letter grade.

Grading

A-E graded

Undergraduates: 11 assignments as described above. 1 assignment can be dropped. Undergraduates will receive a mark out of 100 which will be converted to a letter grade.

Graduates: 11 assignments as described above. 1 assignment can be dropped. In addition Graduates will be expected to complete a term long project that compliments their area of research. Graduates will receive a mark out of 150 which will be converted to a letter grade.

INF 463 Professional Inventions I (3 credits)

Day/time/Location: This class meets once per month
Fall 2020
Instructor: Jennifer Goodall
Office location: Draper 015
Office hours MW 4-6 pm
Contact information (email, IM, phone)

Course Information

Course description

Students from particular INF concentrations will represent their area of expertise on an individual or group project. The projects will either be real-life problems as presented by partnering external organizations or real-life problems as posed and solved by the group itself. A culminating paper, application, or presentation will be produced. The Instructor of INF 463 will act as a mentor to the student teams and help to guide them through their projects.

Prerequisites

Informatics seniors only.

Course Goals

By the end of the semester, individuals or teams of students will create a product for a real or proposed organization that solves an Informatics challenge for that organization. The key component of the capstone is that students will work on a team with students from other concentrations in the major, each bringing their own expertise to examine, research and solve a technology challenge.

Course Policies

Attendance

We will meet once/month during the semester. There is no formal attendance policy for this class, although the student must regularly communicate with the faculty member and present progress reports on a weekly basis. Meeting times and locations shall be determined as outlined in the grading section, below.

Withdrawal from the course

The drop date for the *XXXX* semester is *INSERT DATE* for undergraduate students. That is the last date you can drop a course and receive a 'W'. It is the student's responsibility to take action by this date if they wish to drop the course. In particular, grades of "incomplete" will not be awarded to students because they missed the drop deadline.

Incompletes

As per the Undergraduate Bulletin, the grade of Incomplete (I) will be given "only when the student has nearly completed the course requirements but because of circumstances

beyond the student's control the work is not completed." A student granted an incomplete will make an agreement specifying what material must be made up, and a date for its completion. The incomplete will be converted to a normal grade on the agreed upon completion date based upon whatever material is submitted by that time.
Important: Incompletes will not be given to students who have not fulfilled their course obligations, and who, at the end of the semester, which to avoid failing the course. This is asking for special treatment.

Academic Integrity

It is every student's responsibility to become familiar with the standards of academic integrity at the University. Claims of ignorance, of unintentional error, or of academic or personal pressures are not sufficient reasons for violations of academic integrity. See http://www.albany.edu/undergraduate_bulletin/regulations.html
The following is a list of the types of behaviors that are defined as examples of academic dishonesty and are therefore unacceptable. Attempts to commit such acts also fall under the term academic dishonesty and are subject to penalty. No set of guidelines can, of course, define all possible types or degrees of academic dishonesty; thus, the following descriptions should be understood as examples of infractions rather than an exhaustive list.

- Plagiarism
- Lying to the professor about issues of academic integrity
- Getting answers or help from people, or other sources (e.g. research papers, websites) without acknowledging them.
- Forgery
- Sabotage
- Unauthorized Collaboration (just check first!)
- Falsification
- Bribery
- Theft, Damage, or Misuse of Library or Computer Resources

Any incident of academic dishonesty in this course, no matter how "minor" will result in

1. No credit for the work performed.
2. A written report will be sent to the appropriate University authorities (e.g. the Dean of Undergraduate Studies)
3. A Failing mark (U) in the course, and referral of the matter to the University Judicial System for disposition.

Policies from Undergraduate Bulletin:

http://www.albany.edu/undergraduate_bulletin/regulations.html

Responsible Use of Information Technology

Students are required to read the University at Albany Policy for the Responsible Use of Information Technology available at the ITS Web Site:
http://www.albany.edu/its/policies_responsible_use_of_IT.htm

Time Management

For every credit hour that a course meets, students should expect to work 3 additional

hours outside of class every week (3 x 3= 9). For a three-credit course the student should expect to work a minimum of 9 hours every week on research and outlined activities for the course.

Available Support Services

Reasonable accommodation will be provided for students with documented physical, sensory, cognitive, learning and psychiatric disorders. If you believe you have a disability requiring accommodation in this class, please notify the Director of Disability Resource Center (Campus Center 137, 442-5490). That office will provide the course instructor with verification of your disability, and will recommend appropriate accommodations.

Course Outline and Schedule

This course will meet once per week for the first month and then on an irregular basis for regular check-ins. The students will meet regularly for client meetings and team meetings.

Grading

This course is letter graded, A-E.

Team Participation (15%)

Your team will submit peer evaluation grades at two points during the semester. This will contribute to your team participation grade.

Project Proposal (15%)

Your team will submit your project proposal after meetings with the client to determine their needs, research into the problem and a proposal for three possible solutions.

Team Presentation (15%)

Your team will present your final product on XXXX. This will include (1) process, (2) decision points, and (3) final product.

Site Supervisor (25%)

Your site supervisor will submit a grade based on the overall team product.

Individual Reflection (20%)

Each student will submit a 8-10 page paper reflecting on the process, how the team worked together, the challenge and the solution. Students should pay special attention to their contribution, representing their expertise, and how that complemented the overall team goals.

Blackboard may be used as a tool for communication and submittal of status reports and the final research document, as appropriate.

Course outline:

Please note that the professor reserves the right to alter this syllabus and preliminary outline with timely notice to students. Any changes to the class schedule or assignments will be announced in class and/or posted on Blackboard in sufficient time to avoid misunderstandings. In occasions where you have to miss class, make sure to consult the syllabus and to log on to Blackboard so that you are aware of what is going on in class. Also, make sure to consult your teammates, the peer educator and the professor in the case of any confusion.

Course Introduction + Orientation
Course Overview

Lab Orientation
Lab policy & procedure
Code of Conduct, Digital Citizenship, Responsible Use

Module #1: Identify Problem
Establish team
Meet with and interview client
Develop problem statement
Present multiple potential solutions

Module #2: Identify Solution
Identify one solution to pursue
Develop MVP
Work with client and team

Module #3: Scaling Projects
Application of technology
Behind the scenes of companies in the technology field
Site visits
Scaling labs

INF 471 Digital Game Design and Development II

Semester:

Face to Face

Meeting Information:

COURSE INSTRUCTOR	Michael C. Leczinsky, Professor of Practice
CONTACT INFO	**All course questions: Use "Ask a Question" in Blackboard.** Private communication with me regarding non-pubic / sensitive matters: mleczinsky@albany.edu
OFFICE HOURS	Face to Face: Online: Additional times by appointment. Office: Draper 340

INTRODUCTION

This lab-based course provides an introduction to game development. Students will examine games of various types and utilize industry standard software to develop several games and software projects. Students will work collaboratively in a team based studio environment. Students will utilize various emerging technologies and work primarily in 3D and Virtual Reality, Mixed Reality and Augmented Reality.

GENERAL EDUCATION

The following general characteristics apply to all General Education courses at UAlbany. Please briefly indicate how the course fulfills each of the following characteristics:

1. Offers explicit understandings of the procedures and practices of disciplines and interdisciplinary fields;
2. Provides multiple perspectives on the subject matter, reflecting the intellectual and cultural diversity within and beyond the university;
3. Emphasizes active learning in an engaged environment that enables students to be producers as well as consumers of knowledge;
4. Promotes critical inquiry about the assumptions, goals, and methods of various fields of academic study and the interpretive, analytic, and evaluative competencies central to intellectual development;

OBJECTIVES

After taking this course, students should be able to:

- Understand key terms and concepts within the eSports & gaming field.

- Develop a historical perspective of the eSports & gaming industries.
- Develop an understanding of current practices within eSports & gaming.
- Develop skills to make informed predictions about potential future progressions within the field.
- Apply information and knowledge in wide variety of situations.
- Summarize technical concepts in a plain and succinct manner.
- Evaluate the reputability of information gathered from a wide variety of sources.
- Apply information and knowledge gathered in executing open-ended creative projects.
- Interface, collaborate and engage with team members of various backgrounds and skill levels.
- Develop an understanding for various types of digital games.
- Demonstrate the ability to play various games.
- Create Internet broadcasts, video content, stream gameplay, and utilize basic graphic design skills.
- Teach others and play in co-operative environments.
- Troubleshoot hardware and software.
- Demonstrate best practices for digital citizenship and responsible use.
- Produce and host eSports events.

The instructor will help you meet these objectives through fostering an open, supportive environment, wherein you will develop:

- Verbal and written communication skills as you engage in class activities and work on assignments.
- Hands-on skills working with hardware, equipment and physical materials in the labs.
- Teamwork skills as you participate in team based learning (TBL).
- Critical reading skills as you progress through readings in multiple formats.
- Problem solving and troubleshooting skills.
- Project management skills as you execute projects of various scopes.
- Critical thinking skills.

Pre/Co-Requisites

INF 371

REQUIRED MATERIALS

For this course you will need the following materials:

1. Textbook: Level Up! The Guide to Great Video Game Design Paperback – Wiley; 2 edition (April 28, 2014). **ISBN-10:** 1118877160 - **ISBN-13:** 978-1118877166

2. Software:

Unity (Free): https://www.unity.com/
Construct 2/3 (Free): https://www.construct.net/

3. Approximately $100 budget for software. We will be utilizing various game development tools, add-ons, plugins and software throughout the semester. More information on selected software to be discussed in class.

You will be unable to complete your coursework without your own materials. Software piracy is not acceptable in any form.

Please do not order materials until they have been discussed in class.

CEHC Showcase / Events

The CEHC Showcase was designed as an opportunity for students to highlight and present interesting projects, research, and concepts they are learning within their courses. It also provides students with an opportunity to showcase their findings to others and develop highly desired presentation and people skills. All students in INF 196 are required to present at this event and should reserve that time in their schedule. Showcase is held at the end of the semester; the date and time will be shared in class.

Students in INF196 will also be presenting two eSports events during the semester. These are required, mandatory events open to the UAlbany campus community and will be held in the evening. All students must contribute and attend.

ASSIGNMENTS AND GRADING

Grade Breakdown:

Readiness Assurance Tests: 20%

Homework & Individual Assignments: 50%

Team Assignments: 15%

Peer Evaluation: 5%

Final Project (multiple stages): 10%

Most Blackboard assignments automatically post to the “Blackboard Course Calendar” - however not all of them do. Because of this, the “Blackboard Course Calendar” is supplemental to our "Module at a Glance" where every due date will appear. **It is your responsibility to check “Module at a Glance” for all due dates.**

I do not accept assignments via email. All assignments must be submitted on Blackboard.

Tests & Quizzes: 20%

Students are required to complete all readings before the first day of a module. The Reading Assessment Tests (RAT) will be based on these readings. All readings can be found on Blackboard.

Individual Assignments: 50%

Each student will have to complete a series Homework assignments. The HWs will consist of a couple types of assignments.

1. Discussion forum assignments & participation.

2. Journal assignments.

3. Hands-on project based work.

4. Additional assignments to be announced.

In Class Activities / Team Assignments: 15%

Each team will be required to complete a series of activities, as a team. Each team member will receive the same grade.

Peer Evaluation: 5%

Because so much of the work we will be doing depends on a constructive team environment you will have the opportunity to evaluate your teammates.

Final Project: 10%

Each student will complete a final project where they independently explore a topic related to course content. Milestones for the project will be spread throughout the semester. The final project should reflect a semester's worth of work.

The area of focus you pick is up to you, as long as it relates to the course content in some way. This is meant to challenge you but to also enable you to identify and explore an area that is interesting to **you**. If you need to change your topic, you need to complete the previously assigned milestones.

The final project has several major components, including:

1) **Research**
2) **Development**
3) **Documentation**
4) **A tangible final product**
5) **A presentation of work at CEHC Showcase**

Extra Credit (up to 5 points)

There may be bonus opportunities this semester. I encourage you to take advantage of as many as you are able. You can earn up to a total of 5 extra bonus points. Keep in mind that this is enough to raise your grade a half letter grade.

Attendance

Attendance is mandatory in every class and students are expected to arrive on time. Your in-class and online performance is key to your success in this course. You must log on to this course at multiple times throughout each week. Graded in-class activities and assignments constitute an important part of the course grade. It is not possible to maintain a passing average without consistent attendance. Missing class means the student earns an automatic

zero for the activities or assignments missed. Because of the nature of the assignments, no make-up opportunities will be available. It is the student's responsibility to find out about any future homework, readings or assignments assigned during classes they might have missed.

If you miss two classes, your final letter grade may be reduced by one full letter grade. Each subsequent absence will reduce your grade by a half letter grade.

Lab Attendance
Although the instructor does not schedule this, students will be required to work on their projects outside of class time in the lab. Lab hours will be posted. Please plan your schedule accordingly.

Tardiness
Missing an assignment or activity that happened before a student arrives or after a student leaves also earns a zero. No make-up opportunities will be available.

If you know that it will be difficult for you to consistently get to class on time and stay for the entire period, you should take this course at a time that better fits your schedule. Being late frequently will guarantee a low grade for the course.

If you are tardy three times, it counts as one absence.

If you are late to class, it is your responsibility to see me after class to register your attendance. I will not interrupt class to mark tardy students. If you are tardy and do not see me, you will not receive credit for attending class.

If you know that it will be difficult for you to consistently log on to Blackboard multiple times throughout each week, you should take this course at a time that better fits your schedule.

Grading Scale
Your final grade will be based on a scale of 100. The grading scale will be as follows:

A	A-	B+	B	B-	C+	C	C-	D+	D	D-	E
100-94	93-89	88-85	84-82	81-79	78-76	75-73	72-70	69-67	66-63	62-60	59-0

Course Policies

Make-Up Policy
Missed assignments receive no credit. As many of the assignments build on previous course work and require interaction with teammates, it is nearly impossible to schedule make-up opportunities. Since there will be occasions in your life when missing a class meeting or missing a deadline for an assignment is simply unavoidable (illness, personal crisis), this course has a few built-in safety valves. These are your tools to use in managing your life during the course of the semester. Please manage these carefully.

Safety Valve One: Your lowest weekly homework assignment will be dropped. Final project milestones assignments are not eligible to be dropped.

Safety Valve Two: Your lowest test / quiz score will be dropped.
Be careful not to waste your safety valves carelessly early in the semester, since you may need your droppable grades to offset any unforeseen low scores or difficulties later in the semester.

Safety Valve Three: If you become seriously ill during the semester, or become derailed by unforeseen life problems, and have to miss so many assignments that it will ruin your grade, you and the instructor are encouraged to meet to discuss withdrawal from the course with the proper documentation to save your GPA. Don't wait until too late to arrange a meeting if you see that you're getting into trouble.

Withdrawal: It is your responsibility to take action if you wish to drop the course. In particular, grades of "incomplete" will not be awarded to students because they missed the drop deadline. Details on withdrawal deadlines can be found at:
http://www.albany.edu/registrar/academic_calendar.php

Incompletes: As per the Undergraduate Bulletin, the grade of Incomplete (I) will be given "only when the student has nearly completed the course requirements but because of circumstances beyond the student's control the work is not completed." A student granted an incomplete will make an agreement specifying what material must be made up, and a date for its completion. The incomplete will be converted to a normal grade on the agreed upon completion date based upon whatever material is submitted by that time. ***Important: Incompletes will not be given to students who have not fulfilled their classwork obligations, and who, at the end of semester are asking for special treatment.***

Academic Integrity

It is every student's responsibility to become familiar with the standards of academic integrity at the University. Claims of ignorance, of unintentional error, or of academic or personal pressures are not sufficient reasons for violations of academic integrity. See
http://www.albany.edu/undergraduate_bulletin/regulations.html

Unless explicitly stated by the instructor, all course work is considered individual exercises. Copying the work of others is a violation of university rules on academic integrity. Individual course work is also key to your being prepared and performing well on assignments. Forming study groups and discussing assignments and techniques in general terms is encouraged, but the final work must be your own work. For example, two or more people may not create an assignment together and submit it for credit. If you have specific questions about this or any other policy, please ask.

The following is a list of the types of behaviors that are defined as examples of academic dishonesty and are therefore unacceptable. Attempts to commit such acts also fall under the term academic dishonesty and are subject to penalty. No set of guidelines can, of course, define all possible types or degrees of academic dishonesty; thus, the following descriptions should be understood as examples of infractions rather than an exhaustive list.

- Plagiarism
- Allowing other students to see or copy your assignments or exams

- Examining or copying another student's assignments or exams
- Lying to the professor about issues of academic integrity
- Submitting the same work for multiple assignments/classes without prior consent from the instructor(s)
- Each assignment must be unique and cannot contain copy / paste from previous assignments.
- Getting answers or help from people, or other sources (e.g. research papers, web sites) without acknowledging them.
- Forgery
- Sabotage
- Unauthorized Collaboration (just check first!)
- Falsification
- Bribery
- Theft, Damage, or Misuse of Library or Computer Resources

Any incident of academic dishonesty in this course, no matter how "minor" will result in:

1. No credit for the affected assignment.
2. A written report will be sent to the appropriate University authorities (e.g. the Dean of Undergraduate Studies)
3. One of -
   - A final mark reduction by at least one-half letter grade (e.g. B → B-, C- → D+),
   - A Failing mark (E) in the course, and referral of the matter to the University Judicial System for disposition.

Policies from Undergraduate Bulletin:
http://www.albany.edu/undergraduate_bulletin/regulations.html

All students are required to follow University Community Standards and Game Lab / Class Code of Conduct. https://www.albany.edu/communitystandards/

Students with game sanctions, bans, chat restrictions or other disciplinary actions will have difficulty completing this course. These elements will impact your course grade and prohibit you from taking part in class activities.

Inappropriate behavior or language of any type in class, on campus, off campus, in-game or in virtual spaces is not permitted and may result in immediate loss of privileges of hardware, software and labs.

Responsible Use of Information Technology

Students are required to read the University at Albany Policy for the Responsible Use of Information Technology available at the ITS Web Site:
http://www.albany.edu/its/policies_responsible_use_of_IT.htm

Students who misuse or damage equipment will be required to provide replacements.

Time Management: For every credit hour that a course meets, students should expect to work a minimum of 3 additional hours outside of class every week (3 x 3= 9). For a three-credit course you should expect to work 9 hours outside of class every week. Manage your time effectively to complete readings, assignments, and projects.

Reasonable accommodation

Reasonable accommodation will be provided for students with documented physical, sensory, cognitive, learning and psychiatric disorders. If you believe you have a disability requiring accommodation in this class, please notify the Director of Disability Resource Center (Campus Center 137, 442-5490). That office will provide the course instructor with verification of your disability, and will recommend appropriate accommodations. In general, it is the student's responsibility to contact the instructor at least one week before the relevant assignment to make arrangements.

Course Overview

Please note that the professor reserves the right to alter this syllabus and preliminary outline with timely notice to students. Any changes to the class schedule or assignments will be announced in class and/or posted on Blackboard in sufficient time to avoid misunderstandings. In occasions where you have to miss class, make sure to consult the syllabus and to log on to Blackboard so that you are aware of what is going on in class. Also, make sure to consult your teammates, the peer educator and the professor in the case of any confusion.

Course Introduction + Orientation
Course Overview
Code of Conduct, Digital Citizenship, Responsible Use

Lab Orientation
Lab policy & procedure

Overview of Digital Gaming, Training and Simulation

3D, AR/VR/ MR with Unity
Plugins, Add-ons, Extensions
Games
Training
Simulation
Industrial
Apps
Applications with Construct 2/3

3D, AR/VR/ MR Game Development
Development workflow
Art & Design
Audio
Storytelling
Writing for games
Level design

Animation
User Testing
Iteration
Software & Apps

Business of Games
Entrepreneurship
Intellectual Property
Branding
Project management
Collaboration
Logistics

Projects

INF 496: Intermediate Special Topics in Informatics / INF 596: Advanced Special Topics in Informatics (3 Credits)

Course Information

Topic: Geoinformatics
Semester: Fall 2019
Class number: 8397 (undergraduate) and 9724 (graduate)
Day/Time: Monday 4:15-7:05
Location: DR0014
Prerequisites: Permission of instructor, and junior or senior standing

Contact Information

Instructor: Norman Gervais, Ph.D.
Office Location: Draper Hall, 141A (Downtown Campus)
Email Address: ngervais@albany.edu
Office Hours: 1:30-2:45 Tuesday and Thursday, held in Humanities B16 (Uptown campus). Additional availability by appointment.

Course Description and Goals

Course Description from Undergraduate and Graduate Bulletin:

The contents of this course will vary from semester to semester. Each offering will cover an advanced topic in Informatics. May be repeated for credit when content varies.
(https://www.albany.edu/undergraduate_bulletin/87296.php and https://www.albany.edu/graduatebulletin/i_inf.htm)

A More Detailed Description

This course will provide the basic theory and skills needed to produce meaningful information from a variety of types of location-based (spatial) data. It will focus on the use of technology for obtaining, managing, and processing spatial data for practical applications. By the end of the semester, students will be able to analyze spatial data to answer important location based questions and effectively convey the answers both verbally and through creating thematic maps. The course will be split between lectures, discussions, presentations, and frequent hands on technical activities.

Prerequisite knowledge: It is encouraged that students have a prior math course, basic computer skills, and basic prior programming (for example CINF 108, CINF 201, or any other course). It is okay to be taking these prerequisites in the same semester as this class.

Course Goals

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

- Design aesthetically appealing and informative thematic maps
- Describe the differences between the types of geographic data
- Examine geospatial data to identify location based trends and changes
- Apply common computer languages (i.e. HTML/Python) to improve spatial data processing and visualization

Required Material

Readings

Readings will be given throughout the semester the week before they are due. The readings will be available on Blackboard. All students are expected to complete the assigned readings prior to tests, discussions and activities. The purchase of a text book is not required for this class.

Additional Materials

Students will require access to a PC computer on campus or a PC computer that they have permission to install software, a modern generation browser, and access to the Internet. You will also be required to have a USB drive of at least 32GB. It is highly recommended that the drive you use is USB 3.0 compatible. In addition, you will also need to utilize the following software:

- A SFTP client (i.e. WinSCP or FileZilla FTP Client)
- A text editor program (i.e. Notepad++, most computers already have one installed and if not many are free)
- ArcGIS
- Microsoft Excel

The Course Environment

Class Structure

The class structure is outlined in four phases below:

Phase 1 – Preparation: You will complete specified readings for each class topic by the start of each class. They will be available in Blackboard at least one week before the reading is due. You will also be required to obtain the necessary data before the start of class.

Phase 2 - Lectures and Discussions/Activities: We will discuss concepts from the readings and you will use the foundational knowledge from the readings to make decisions to complete activities and answer questions. Activities will take place both in class and outside of the classroom. In-class activities will be frequent and may not be announced prior to the start of class. There may be a presentation associated with the activities.

The activities will be technical in nature. Specific criteria and grade weights will be given in class. Although there will be occasions where you can start or even finish the activity in class, they will also occur outside of the classroom. All activities are **individual** unless otherwise explicitly stated. It is required that everyone retains an unaltered copy of the completed work for their records.

Graduate students: The activities you complete will be more in depth than the undergraduate activities. This may include but is not limited to additional questions and steps. There may also be additional activities and presentations required for graduate credit.

Phase 3 - Exams: There will be individual exams that focus on the concepts learned in the readings, discussed in class, and covered in the activities. Each exam will be 1.5 hours long. There will be no extra time allotted to complete the exams unless for a reasonable accommodation (see below). The specific weight of each exam will be specified one week prior to the exam.

Phase 4 – Individual Project: You will independently apply the foundational knowledge and skills acquired in the first three phases as an individual outside of class. The project must be unique to the class and will have a proposal and presentation associated with it. Details will be given in class a week before the proposal is due. There will be additional criteria for graduate level presentations.

You may present at the iCEHC Mini Showcase. This event was designed as an opportunity for students within the informatics field to highlight and present interesting projects, research, and concepts they are learning within their courses. It also provides students with an opportunity to showcase their findings to others and develop highly desired presentation and people skills. The Mini Showcase is December 4. All students will be presenting at this event and should reserve that time in their schedule. If your schedule does not permit you to attend, you will have an alternative in class presentation.

Instructor Availability

The instructor will be available for student consultation during office hours and by appointment. Students are expected to check email at least once every day Monday through Friday to see whether the instructor is trying to reach them. Students should not assume that instructor is online 24 hours a day, 7 days a week, to answer your questions immediately (even though the instructor will try to do so as much as possible).

Courtesy

In class (online) discussions the instructor and students are expected to demonstrate professional behavior. This means cooperating and interacting in a courteous, supportive, and tactful manner based on mutual respect for each other's ideas.

Students and professor should be professional at all time. Faculty should be addressed as Prof. (last name) or Dr. (last name). Emails and discussions in Blackboard to faculty, staff, peer educators, and other students should start with a greeting (i.e. Dear XYZ or Hello XYZ) and end with a “Thank you.”

Respect for Diversity

It is my intent that students from all diverse backgrounds and perspectives be well served by this course, that students’ learning needs be addressed both in and out of class, and that the diversity that students bring to this class be viewed as a resource, strength and benefit. It is my intent to present materials and activities that are respectful of diversity: gender, sexuality, disability, age, socioeconomic status, ethnicity, race, and culture. Your suggestions are encouraged and appreciated. Please let me know ways to improve the effectiveness of the course for you personally or for other students or student groups. In addition, if any of our class meetings conflict with your religious events, please let me know so that we can make arrangements for you (Respect for Diversity statement from https://www.brown.edu/sheridan/teaching-learning-resources/inclusive-teaching/statements).

Grading and Evaluation

Final Grades

Your final grade will be based on a scale of 100 points:

Category	Weight
Activities	50%
Final project proposal	5%
Final project presentation	5%
Final project	20%
Tests	20%
Total	100%

A-E graded (Undergraduate)

93 – 100% A 90 – 92% A-
87 – 89% B+ 83 – 86% B 80 – 82% B-
77 – 79% C+ 73 – 76% C 70 – 72% C-
67 – 69% D+ 63 – 66% D 60 – 62% D-
0 – 59% E

A-E graded (Graduate)

93 – 100% A 90 – 92% A-
87 – 89% B+ 83 – 86% B 80 – 82% B-
77 – 79% C+ 73 – 76% C 60-72% D
0-59% E

Extra Credit

There may be extra credit work that can be earned in a number of ways. All require consultation with the instructor before they are commenced. All students will be expected to complete, and be graded on, the same set of assignments. Details to follow. All extra-credit opportunities are capped at no more than 5% on your overall grade.

Course Policies

Make Up Policy

Completed activities, the project and its associated proposal and presentation, and exams are due on the due date at the specified time and must be submitted through Blackboard unless otherwise specified. Late individual activities will be accepted up to 24 hours late, but at the cost of a full letter grade (10%) for missing the deadline. In class activities, the project and its associated proposal and presentation, and exams will not be accepted late. It is expected that you will have a backup plan that would allow you to complete the required course work on time in the event that you are having technical difficulties on your end (i.e. computer virus, inconstant internet connection, etc.). If you know that it will be difficult for you to consistently turn in the required work on time, you should take this course at a time that better fits your schedule.

There are generally no make-up opportunities for missed activities, the project, the project proposal, the project presentation, or exams except in extenuating circumstances. Instead of asking to make up missed work, please see the course 'safety valves' described below and the Universities Medical Excuse Policy here http://www.albany.edu/health_center/medicalexcuse.shtml.

Safety valve 1

Your lowest activity grade will be dropped. So, if you must miss one of these for any reason, it will be possible to drop the zero you would automatically receive for missing it. Be careful not to waste your drop on frivolous things early in the semester, since you may need it for an unexpected reason later in the semester. If you do not use this safety valve, you will be able to use your safety valve to improve your grade, by dropping your lowest activity score.

Safety valve 2

If you become seriously ill during the semester, or become derailed by unforeseeable life problems, and have to miss so many assignments that it will ruin your grade, schedule a meeting with the instructor in order to make arrangements for you to drop the course to save your grade point average. Do not wait until it is too late to see the instructor when you get in trouble.

Absence Due to Religious Observance

New York State Education Law (Section 224-a) - Campuses are required to excuse, without penalty, individual students absent because of religious beliefs, and to provide equivalent opportunities for make-up examinations, study, or work requirements missed because of such absences. Faculty should work directly with students to accommodate religious observances. Students should notify the instructor of record in a timely manner.

Academic Integrity

It is every student's responsibility to become familiar with the standards of academic integrity at the University. Claims of ignorance, of unintentional error, or of academic or personal pressures are not sufficient reasons for violations of academic integrity. See
http://www.albany.edu/undergraduate_bulletin/regulations.html or
https://www.albany.edu/graduatebulletin/requirements_degree.htm#standards_integrity

Course work and examinations are considered individual exercises and must be completed individually unless otherwise explicitly specified. For example, two or more people may not create or work on an assignment together and submit it for credit. If you have specific questions about this or any other policy, please ask. Copying the work of others is a violation of university rules on academic integrity.

The following is a list of the types of behaviors that are defined as examples of academic dishonesty and are therefore unacceptable. Attempts to commit such acts also fall under the term academic dishonesty and are subject to penalty. No set of guidelines can, of course, define all possible types or degrees of academic dishonesty; thus, the following descriptions should be understood as examples of infractions rather than an exhaustive list.

- Plagiarism of code, images, designs, text, etc. from any source
- Allowing other students to see or copy your assignments or exams
- Examining or copying another student's assignments or exams
- Lying to the professor about issues of academic integrity
- Submitting the same work for multiple assignments/classes without prior consent from the instructor(s). This includes work developed previously in this class or any other class. You are allowed to apply code developed as a team to an individual website and/or apply code from an

individual assignment to the final project only with proper acknowledgement of the original submission, however, credit may not be given twice for the creation of the code.
- Getting answers or help from people, or other sources (e.g. research papers, web sites) without acknowledging them.
- Forgery
- Sabotage
- Unauthorized Collaboration (just check first!)
- Falsification
- Bribery
- Theft, Damage, or Misuse of Library or Computer Resources

Any incident of academic dishonesty in this course, no matter how "minor" will result in no credit for the affected submission as well as additional possible ramifications which can be found in the undergraduate bulletin (http://www.albany.edu/undergraduate_bulletin/regulations.html) or graduate bulletin (https://www.albany.edu/graduatebulletin/requirements_degree.htm).

Style Manuals and Guidelines

Students are required to cite sources, if any are used, in their written reports and code. Style manuals are available in the reference sections of many mainstream bookstores and reserve sections of University Libraries, including the Dewey Library.

Responsible Use of Information Technology

Students are required to read the University at Albany Policy for the Responsible Use of Information Technology available at the ITS Web Site:
https://wiki.albany.edu/display/public/askit/Responsible+Use+of+Information+Technology+Policy

Cell Phones & Laptops

Please make sure your electronic devices are turned off before entering the classroom unless we are doing a class exercise where they are helpful. If there is a special circumstance (i.e. family emergency) where you may need to take a phone call during class, please let the instructor know prior to the start of class.

Reasonable Accommodation

Reasonable accommodations will be provided for students with documented physical, sensory, systemic, medical, cognitive, learning and mental health (psychiatric) disabilities. If you believe you have a disability requiring accommodation in this class, please notify the Disability Resource Center (518- 442-5490; drc@albany.edu). Upon verification and after the registration process is complete, the DRC will provide you with a letter that informs the course instructor that you are a student with a disability registered with the DRC and list the recommended reasonable accommodations.

In general, it is the student's responsibility to contact the instructor at least one week before the relevant assignment to make arrangements.

Incompletes

No graduation credit. A temporary grade requested by the student and assigned by the instructor ONLY when the student has nearly completed the course requirements but because of circumstances beyond

the student's control, the work is not completed. The incomplete should only be assigned on the basis of an agreement between the instructor and the student specifying the work to be completed and establishing a general timeline in which the work will be completed. Incompletes may NOT be resolved by auditing or registering again for a subsequent offering of the course. The date for the completion of the work may not be longer than one month before the end of the semester following that in which the incomplete is received. Once the work is completed, the instructor assigns the appropriate academic grade.

The instructor may extend an incomplete for a maximum of one semester beyond the original deadline providing that the student has made contact with the instructor to request the extension. Additional extensions are NOT permitted.

Any grade of I existing after the stated deadline shall be automatically changed to E or U according to whether or not the student is enrolled for A–E or S/U grading. Except for extenuating circumstances approved by the Office of the Vice Provost for Undergraduate Education, these converted grades may not be later changed. (see https://www.albany.edu/undergraduateeducation/grading.php)

Important: Incompletes will not be given to students who have not fulfilled their classwork obligations, and who, at the end of the semester, are looking to avoid failing the course. This is asking for special treatment.

Withdrawal from the Course

The drop date for the Fall 2019 semester is November 4 for undergraduate students and October 21 for graduate students. That is the last date you can drop a course and receive a 'W'. It is your responsibility to take action by this date if you wish to drop the course. In particular, grades of "incomplete" will not be awarded to students because they missed the drop deadline.

Time Management

This course is set at a very fast pace that is not self-paced. You are expected to keep up with the readings and work, as it will be very difficult to catch up if you fall behind. For every credit hour that a course meets, students should expect to work 3 additional hours outside of class every week. This means that for a semester length three-credit course, you should expect to work 12 hours every week for that course. Manage your time effectively to complete readings, assignments, class work, and project components.

CEHC Community

CEHC sponsors several events throughout the semester. Opportunities offered by CEHC: https://docs.google.com/spreadsheets/d/1SrUvMlrvIJCW7U50NqQS7RIJO-kg2nrWsAMsjCHW2A8/edit?usp=sharing

My Expectations

I expect that if you are struggling with a concept and have already taken time to understand it on your own, that you will ask me for additional help. If you cannot make office hours you should email me to make an appointment to meet as soon as possible.

Course Schedule

COURSE CALENDAR AND ASSIGNMENT SCHEDULE

The following schedule is preliminary and may be changed as the semester progresses.

Topics/Activities	Class Date	Assignments Due
Course intro, Hello "Map" (Google Earth)	Aug 26	Activity: Exploring with GIS (Sept 6)
Classes suspended	Sept 2	None
Spreadsheet analysis of locations	Sept 9	Activity: Describing data (Sept 13)
Types of spatial data - GIS basics	Sept 16	Activity: Relational databases (Sept 20)
Thematic Maps	Sept 23	Activity: Thematic map (Sept 27)
Data collection and digitization	Sept 30	Activity: Data creation (Oct 4)
Zonal analysis	Oct 7	Activity: Zonal analysis (Oct 11)
Classes suspended	Oct 14	None
Advanced image analysis – Map algebra	Oct 21	Exam: Spatial data (In Class Oct 7) Activity: Raster Calculator (Oct 25)
Advanced image analysis – false color composites and indices	Oct 28	Activity: Image interpretation (Nov 1)
Advanced image analysis - classification	Nov 4	Activity: Machine learning (Nov 8)
Georeferencing and Drones	Nov 11	Activity: Image referencing (Nov 15)
Web mapping part I	Nov 18	Exam: Raster data (In class Nov 18) Activity: First web map (Nov 22) Proposal (Nov 22)
Web mapping part II	Nov 25	Activity: Advanced web map (Nov 26)
Exam, Final project work day	Dec 2	Exam: Web mapping (In class Dec 2)
Final project presentations	Dec 9	Final project (Dec 9) Presentation (In class Dec 9)

Updated Game Design and Development Proposal

Based upon the Senate Bill from February 2020

Other than the Justification, the text is unchanged.

A Proposal for Concentration in Game Design and Development in Informatics (INF)

Purpose of the Proposal: To establish a concentration within the B.S. in Informatics focused on Game Design and Development.

Justification: Starting with the CIP description of Informatics (11.0104), the Informatics BS degree provides students an opportunity to learn the principles and practices of information and data and the structure, behavior and interactions of information systems. This is increasingly important because of the relevance, applicability, and importance of Informatics knowledge and systems across the modern world. Towards that end, the degree allows students to choose a four-course concentration where they can study a specific area in greater depth. Currently, our degree program has concentrations in Data Analytics, Information Technology, Social Media, User Experience, Software Development, and Cybersecurity. These concentrations reflect important fields and areas of student interest and engagement within Informatics. To these, we propose to add a concentration in Game Design and Development (GDD). This four-course concentration builds upon the concepts and techniques of the Informatics degree and, as shown below, is a particularly exciting and relevant application of the core concepts and applied techniques of Informatics.

GDD is an important addition to our program. The core Informatics curriculum establishes the central core concepts, technologies, and societal relevance of the broader field. Building on these, GDD allows students to extend that base to learn about the concepts, technologies, design, human-computer interaction, communications structure, information architecture, and other aspects key to the design and implementation of digital games and simulations. With the increasing prevalence, power, and speed of computing and internet-based communications, we are seeing the explosion of digital games and simulations, and the incorporation of their elements into other systems. We anticipate a further expansion as machine learning and artificial intelligence techniques (covered in the Informatics curriculum as part of Data Analytics) become more prevalent in digital games and simulations, lending them even more realism and representational power.

If we focus on the most popular element in GDD – digital gaming – we get a sense of its scope and importance. In 2018, it was estimated to be a $138 billion industry and is projected to reach $180 billion by 2021[1]. Given how the COVID pandemic has moved society into substantial additional online activities, those numbers may well be significantly higher. In particular, eSports revenue was estimated to top $1.1 billion in 2019 alone[2], highlighting the potential economic opportunities for students in these industries. Additionally, in the Fall of 2019, the University at Albany launched a new initiative in eSports and support for integrating eSports and digital gaming into academic programs. In two weeks from the program's announcement, over 175 students completed the general interest form and the team fielded over 100 students on the co-ed roster. In the team's first season, students competed in over 300 officially sanctioned games with teams across the United States. Currently, UAlbany eSports is one of the largest programs in the 88 school Eastern College Athletic Conference and has won several regional and national championships, suggesting strong student interest in this area. Despite

[1] https://venturebeat.com/2018/04/30/newzoo-global-games-expected-to-hit-180-1-billion-in-revenues-2021/

[2] https://www.reuters.com/article/us-videogames-outlook/global-esports-revenues-to-top-1-billion-in-2019-report-idUSKCN1Q11XY

the Pandemic, these activities are still underway and going strong.

This proposal also lays the groundwork for learning beyond game design and development. The same Informatics-based techniques used for game design and development can also be used in simulations, and require similar attention to Informatics principles of design, user interface, *etc*. Simulations are used by governments, the military, industry, and others to model any number of different situations. These can be simulations of physical systems such as power plants, the interactions of multiple sources and uses of resources, such as transmission networks or patterns of consumer power use. They can show traffic and resource use patterns resulting from new roads, *etc*. Simulations can be used in process, device *etc*. training, such as aircraft, drone, or other vehicles. In addition to digital games, the underlying concepts and skills in GDD also provide the foundations for many intellectually rich and sustaining potential careers in simulations and related areas.

Description of the Proposed Concentration:

The Game Design and Development concentration in Informatics seeks to provide students with hands-on experience working with digital gaming & simulation technologies and tools. This concentration will prepare students to apply their skills in a variety of industries including game development, VR/AR/MR, training & simulation, eSports and software design.

The proposed concentration is interdisciplinary by design, reflecting the nature of both the home degreeprogram (Informatics) and the broader field. Students will need to develop and practice a wide variety of technical and non-technical skills including coding, art, design, UI/UX, audio, understanding hardware,software, networking and cybersecurity. Applied skills will be situated within broader discussions of the sociological, organizational, and normative frameworks surrounding the digital gaming ecosystem.

Moreover, opportunities exist within the available courses to collaborate with other programs oncampus including Journalism, Documentary Studies and Educational Theory and Practice.

Proposed Concentration Learning Objectives

Consistent with the broader learning objectives of the B.S. in Informatics, students in this concentration will be expected to meet all of the core learning objectives, as well as the following concentration-specific objectives:

- Understand key terms and concepts within the eSports & gaming field;
- Develop a historical perspective of the eSports & gaming industries;
- Develop an understanding of current professional practices within eSports & gaming;
- Develop an understanding of current design and development practices within eSports & gaming;
- Demonstrate the ability to achieve proficiency with various games across multiple platforms;
- Create internet broadcasts, video content, and stream gameplay to demonstrate promotional capabilities within the gaming ecosystem;
- Produce graphics and visualizations demonstrating basic graphic design skills;
- Teach others and play in co-operative environments; and
- Produce and host eSports events

Concentration Curriculum:

1. The INF concentration in Game Design and Development is a **12-credit** concentration, equivalent to other concentrations within the B.S. in Informatics degree.

2. The proposed concentration consists of four courses: an introduction to the digital gaming ecosystem (C INF 171), an overview of design principles and approaches within a digital context (C INF 363); an in-depth course on the application of design principles within 2-dimensional environments (C INF 371); and, an elective course that provides opportunities for additional development of game design principles (C INF 471; E TAP 534; E TAP 535), story development and production (A JRL 385/385Y; A JRL 390; AJRL 442), or other relevant topics (C INF 496).

Course Descriptions:

Required Courses

C INF 171 eSports & the Digital Gaming Ecosystem (3 credits) [NEW COURSE]

This course examines the eSports and digital gaming industries through a variety of perspectives including game development, competitive gaming, content creation, design, broadcasting, networking, digital citizenship and entrepreneurship. Students will participate in hands on activities within a laboratory environment, and participate in individual and team-based scholarship focused on the digital gaming and simulation. In addition, professionalism, ethical implications, and intersectional issues within the digital gaming ecosystem will also be discussed.

C INF 363 Digital Design (3 Credits)

Students apply design theory to the development and delivery of digital media with emphasis on digital imagery, video, and music. Topics may include consumption of digital

media on a variety of devices, creation, acquisition, editing and processing of digital content. Students will develop an appreciation for the role that each media element may contribute to the final user experience. Students will cultivate an understanding of how public policy issues apply to technology, in particular copyright, privacy and freedom of expression. Prerequisite(s): C INF 201.

C INF 371: Digital Game Design and Development 1 (3 Credits) [NEW COURSE]

This course introduces students to the world of design and development for software, apps, experiences, environments, simulations and games. Students will create story, art, music / audio, code, UI / UX, information and testing scenarios for a variety of hands-on projects primarily in 2D. Prerequisite/Co-Requisite: C INF 363.

Elective Courses (choose one):

A JRL 385/385Y Broadcast Journalism (3 Credits)

Students will report, write, produce, air, and record a variety of television and radio news stories with a degree of professionalism resembling what might be found in local newscasts, whether they be short reports or longer, feature-length stories. Working individually or in groups, students will use analog and digital video technologies and recording devices to produce their stories. Prerequisite(s): A JRL 200Z and either A JRL 201Z or A JRL 270X; or permission of instructor.

A JRL 390 Digital Media Workshop: Online Publishing (3 Credits)

This workshop course introduces students to the frontier of online journalism and audience building. Students develop proficiency with the range of online services and applications that journalists use today, including WordPress, Facebook, Twitter, Adobe Photoshop, and video-editing software. The field-based journalism projects include video and photography capture and editing. Students also learn search-engine optimization headline writing skills and online story editing. Prerequisite(s): A JRL 200Z, or permission of instructor.

A JRL 442 (= A DOC 442 & A WSS 442) Transmedia Storytelling (3 Credits)

Students in this workshop learn how to use a variety of new media tools, including—but not restricted to—digital videos, interactive web pages, and animation software, to create a set of linked stories about a singular historical or newsworthy event. Additionally, students learn to search for, collect, and analyze primary sources—e.g. news stories, first-person accounts, government records, cultural artifacts, ephemera, found footage, etc.—stored in archives, libraries, museums, and online databases. Through the processes of research and reflection, students learn to understand the intersections and consequences of class, gender, race, and nationality. The workshop format enables students to participate fully as active learners and peer teachers. Only one version of A DOC 442 may be taken for credit. Prerequisite(s): junior or senior standing or permission of instructor. May not be offered in 2018-2019.

C INF 471: Digital Game Design & Development 2 (3 Credits) [NEW COURSE]

This course extends design and development principles for software, apps, experiences, environments, simulations and games into 3D and mixed reality environments. Students will create story, art, music / audio, code, UI / UX, information and testing scenarios for a variety of hands-on projects primarily in 3D, Virtual Reality, Augmented Reality and Mixed reality. Prerequisite(s): C INF 371.

C INF 496 Intermediate Special Topics in Informatics (3 credits) – as appropriate

The contents of this course will vary from semester to semester. Each offering will cover an advanced topic in Informatics. May be repeated for credit when content varies. Prerequisite(s): permission of instructor, and junior or senior standing.

It is important to note that if students pick one of the following courses, they will only receive undergraduate credit for the course. They cannot double-count the course for undergraduate and graduate credit.

E TAP 534 Introduction to Games for Learning: Theory and Practice (3 Credits)

This course will introduce students to theory, research, and practice in the use of games for learning. Well-designed games can change the way learning occurs, making it both more engaging and effective. Not all games are well designed though and this course will review principles of good game design and good learning. With an emphasis on digital formats, we will also look at research supporting the utility of games as well as examples of how to design games for learning. Students will review, play, and perhaps even design their own games. Along the way the course will help students understand the very real potential of games, simulations, and immersive environments to transform education.

E TAP 535 Introduction to Game Design for Educators (3 Credits)

In Introduction to Game Design for Educators, students will utilize game programming software in order to create a unique educational game that can be used within the classroom. Students will learn about best practices for game design from renowned game designers. Students will also read educational research pertaining to benefits of using games in the classroom, computational thinking, and empowering students through game design.

E TAP 540 Learning and Teaching Computer Science Principles (3 Credits)

This course will help students develop updated understandings of computer science principles as well as effective strategies for teaching computer science principles in K-12 classrooms. The course is designed around the AP Computer Science Principles Curriculum Framework. This curriculum framework outlines seven central concepts of computer science (creativity, abstraction, data and information algorithms, programming, the Internet, global impact) and six computational thinking practices (connecting computing, creating computational artifacts, abstracting, analyzing problems and artifacts, communicating and collaborating). This course will organize these central topics around three big themes: data & information, programming and the Internet with a fourth module debriefing the pedagogy introduced throughout the course.

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When submitting a program proposal please submit this form to indicate the resource implications of the proposal.

Proposal Title: B.S. in Informatics with a concentration in Game Design and Development

College or School CEHC **Department**

Program Director or Sponsor Robert Griffin **Email** rpgriffin@albany.edu

Action Category
- ◪ Program Proposal
- ☐ Other (describe)

Does this proposal include any space resource implications? Approx. sq. ft. needed: _____
- ☐ Yes
- ☐ No

Action Type
- ◪ New
- ☐ Revision
- ☐ Deactivation
- ☐ Other (describe)

Does the Office of Finanical Aid identify this as a **Gainful Employment Program (GEP)**?
- ☐ Yes
- ◪ No

Brief Description of Proposal: *(attach additional pages if necessary)*

The proposed new concentration of Game Design and Development within the already approved B.S. in Informatics is designed to capture the growing interest in digital game design and development among UAlbany students. The proposed four-course concentration is designed to bring students through the entire game design and development process, with elective courses that weave in existing campus offerings in educational instruction, transmedia storytelling, and broadcast journalism. The proposed concentration draws on existing course offerings by full-time faculty within the College, and capitalizes on the growing participation of UAlbany students within the newly-formed eSports program. Leveraging existing resources, the proposed program can meet initial demand, and has a robust outlook for potential growth, given the over 300 students who have registered interest in our recently-formed eSports team within the College.

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Is there an impact on other service units? Please attach documentation that you have consulted with each unit listed below:

Yes	No	
☐	■	**ITS**
☐	■	**University Libraries**
☐	■	**Scientific Core Facilities**
☐	■	**Other services (**i.e., advisement, parking, facilities, security), please list:

Is there an impact on other academic programs? Please list all academic departments consulted regarding impact and attach documentation.

Yes, three different departments were consulted in the development of this concentration. We have attached documentation from Documentary Studies (A DOC) and Educational Theory and Practice (E TAP) units who are providing courses as options for the 1 elective within the concentration.

Faculty and Staff *(attach additional pages **if** necessary)*

(a) Describe new faculty hiring needed during the next 3 years

(b) Explain how program will be administered for the purposes of admissions, advising, course offerings, etc. Discuss the available support staff.

with one Professor of Practice (Lecturer) who can teach the entire course sequence (and is already teaching two of the required courses). Considering the potential growth of the concentration, we anticipate in Year 2 the hiring of a Tenure-Track line to support additional sections taught, and provide mentorship and research opportunities for students in the program.

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Program Expenses

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.

Program Expense Categories	Expenses (in dollars)					
	Prior to implementation	Academic Year 1:	Academic Year 2:	Academic Year 3:	Academic Year 4:	Academic Year 5:
(a) Personnel (including faculty and all others)	0	0	100,000	120,000	140,000	160,000
(b) Library	0	0	0	0	0	0
(c) Equipment	0	0	48,000	96,000	16,000	48,000
(d) Laboratories	0	0	0	0	0	0
(e) Supplies	0	0	8,640	12,960	14,400	14,440
(f) Capital Expenses	0	0	0	0	0	0
(g) Student stipends or scholarships	0	0	0	0	0	0
(h) Other (specify):	0	0	4,800	4,800	1,600	0
Sum of Rows Above	$ 0	$ 0	$ 161,440	$ 233,760	$ 172,000	$ 222,440

Explanatory Notes (add additional pages as needed):

Projected growth: Y1 - 30 students; Y2 - 60; Y3 - 90; Y4 - 120; Y5 - 150. We anticipate some transfer growth from other INF concentrations, but given broad campus interest in eSports, the majority of these projections assume new enrollment in the program.

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APPROVALS

Department Chair	n/a Department Chair	n/a Date
Dean	Robert Griffin Dean	2/7/2020 Date
UPPC Chair	 UPPC Chair	 Date

- It is the sponsoring department's responsibility to request and attach all required documentation and to obtain all required signatures (with the exception of the chair of UPPC's) **before** presenting the documentation.
- Completed forms should be sent to the **Office of Undergraduate Education**, the **Office of Graduate Education**, or **both** as appropriate.
- When the Chair of UPPC has received the proposal from the appropriate office(s), s/he will notify you that it has been placed on the UPPC agenda and invite you to attend the meeting.

Degree Requirements for the Major in Informatics
The B.S in Informatics is a unique opportunity for students to study the creation, presentation, and use of data and technology across disciplines. The degree is a combined major and minor, requiring a total of 54 credits. This includes 42 credits of required core courses that focus on the relationship between technology and society, the use of various technologies across platforms, and programming fundamentals. Emphasis is also placed on providing students with various opportunities to gain real-world experience. As part of the 54 credits, students are required to complete 12 credits in a concentration. Students electing the IT concentration or the IUE concentration can complete the entire degree online.

The concentrations are:

- Interactive User Experience (offered fully online)
- Cybersecurity
- Social Media
- Data Analytics
- Software Development
- Information Technology (offered fully online)
- Game Design and Development
- Self-Designed

Concentrations (at least 12 credits)
…

Game Design and Development
C INF 171 eSports & the Digital Gaming Ecosystem
C INF 363 Digital Design
C INF 371 Digital Game Design & Development 1

Select one course from:
A JRL 390 Digital Media Workshop: Online Publishing
A JRL 385/385Y Broadcast Journalism
A JRL 442 (= A DOC 442 & A WSS 442) Transmedia Storytelling
C INF 471 Digital Game Design & Development 2
C INF 496 Intermediate Special Topics in Informatics (as appropriate)
*E TAP 535 Introduction to Game Design for Educators
*E TAP 540 Learning and Teaching Computer Science Principles
*E TAP 534 Introduction to Games for Learning: Theory and Practice

**It is important to note that if students pick one of the E TAP courses, they will only receive undergraduate credit for the course. They cannot double-count the course for undergraduate and graduate credit.*

University at Albany – State University of New York

Course and Program Action Form

Proposal No. _____

Please check one: [ ] Course Proposal [X] Program Proposal

Please mark all that apply:

[ ]	New Course	Revision of:	[ ]	Number	[ ]	Description
[ ]	Cross-Listing		[ ]	Title	[ ]	Prerequisites
[ ]	Shared-Resources Course		[ ]	Credits		
[ ]	Deactivate/Activate Course (boldface & underline as appropriate)		[x]	Other (specify):	Game Design and Development Concentration	

Department: CEHC - Informatics

Effective Semester, Year: Fall 2020

Course Number Current: _____ New: _____ Credits: _____

Course Title: _____

Course/ Program Description to appear in Bulletin (please limit course descriptions to 50 words or less):

See Addendum

Prerequisites statement to be appended to description in Bulletin:

See Addendum

If S/U is to be designated as the only grading system in the course, check here: [ ]

This course is (will be) cross listed with: _____

This course is (will be) a shared-resources course with: _____

Explanation of proposal:

The growth of interest in electronic sports and digital gaming among college-aged populations, coupled with the increasing number of economic opportunities for this growing industry, creates demand for educational efforts to support these professions and industries. Alongside other emerging technologies like 3D printing and unmanned systems, game design and development represents an important focal area for new application development for both public and private sector entities. Leveraging relevant faculty expertise, and a recent investment in advanced computation capabilities to support digital game design and development, CEHC proposes a four-course concentration within its undergraduate Informatics program to teach basic and advanced digital design, simulation and game development. The proposed interdisciplinary effort will also leverage existing UAlbany courses from Journalism, Documentary Studies and Educational Theory and Practice.

Other departments or schools which offer similar or related courses and which have certified that this proposal does not overlap their offering:

No other departments offer a similar program as this; several departments are provided shared usage of their courses, and those agreements are attached.

Chair of Proposing Department	Date

Approved by Chair(s) of Departments having cross-listed course(s) **[Please attach copies of approval email or memo]**	Date	Dean of College	Date
		Robert Griffin	12/20/2019
Chair of Academic Programs Committee	Date	Dean of Undergraduate or Graduate Studies	Date
Brandon Behlendorf	12/20/2019		