Senate Bill 1314-02

UNIVERSITY SENATE

UNVERSITY AT ALBANY
STATE UNIVERSITY OF NEW YORK

Introduced by: UAC

Date: November 25, 2013

PROPOSAL
TO CREATE A BACHELOR OF SCIENCE DEGREE IN DIGITAL FORENSICS

IT IS HEREBY PROPOSED THAT:

1. The University Senate approve the following proposal to create a Bachelor of Science degree in Digital Forensics, as recommended by the Undergraduate Academic Council.
2. That these changes take effect beginning with the Fall 2014 semester.
3. This bill be forwarded to the President for approval.

A Proposal for Undergraduate Academic Programs Leading to the B.S. in Digital Forensics

Submitted to

The University at Albany University Senate

By

The School of Business
University at Albany, State University of New York

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I. INTRODUCTION

I.1. PREAMBLE

As discussed in the NY SUNY 2020 UAlbany Impact Proposal for New Faculty and in accordance with the School of Business (SOB) Faculty Charter and Bylaws, the School of Business Charter and Bylaws, the School of Business standing "Undergraduate Affairs Committee", the faculty formally approved the proposal on April 17, 2013 for undergraduate curriculum for a baccalaureate degree in Digital Forensics. The School of Business resolved to formally advance this curriculum for review and approval of the baccalaureate degree in Digital Forensics per the policies and guidelines of the School of Business, the University at Albany University Senate, the University at Albany, the State University of New York, and the New York State Education Department.

While information security education has grown significantly over the past 10 years, education in Digital Forensics has only recently emerged as critical specialty – distinct from information security. Digital Forensics is a branch of forensic science that involves investigation, recovery, an analysis of information from digital devices – typically related to computer crime. These devices can include computers, smartphones, mp3 players, digital cameras, etc. While information security deals with protection of computers and networks, Digital Forensics deals with post-mortem analysis of computer attacks and fraud; collection and presentation of criminal evidence; and determinations of responsibility and consequences. The Digital Forensics field is multidisciplinary. It involves application of information technologies and strategies within the public sector and private industry, international collaboration towards legislation development and law enforcement, as well as an understanding of human behavior. These activities have obvious benefits to the community-at-large by providing the capabilities and workforce to fill the demand for professionals to ensure the security and safety of citizens and the preservation of justice.

The National Academies of Science have warned that the people of the United States will face a lower standard of living if knowledge-intensive jobs further decline in the US.[1] American workers face increased job competition from lower-wage workers internationally, with leading-edge scientific and technology jobs being performed in many parts of the world. Consequently, large numbers of students are moving away from STEM fields including computing and engineering[2]. To increase enrollments in these fields, Denning and McGettrick[3] have suggested reengineering traditional computing education to focus on specialized fields. As enrollments drop in technology-based disciplines, new programs are emerging in specialized fields, such as Digital Forensics, to attract students disenfranchised by traditional computing**. In the past, demand for professionals in this field primarily came from law enforcement agencies[4]; today, the demand is largely coming from private-sector organizations and is being driven by business needs including: data recovery, electronic discovery, incident response, policy auditing and third-party forensic analysis services[5].** According to the Bureau of Labor Statistics, jobs in Digital Forensics

[1] National Academies of Science (NAS). Committee on Science, Engineering, and Public Policy. (2007). *Rising above the*

[2] Seymour, E. & Hewitt, N. M. (2000). *Talking about leaving: why undergraduates leave the sciences.* Boulder, CO, USA: Westview Press.

[3] Denning, P. J. & McGettrick, A. (2005, November). Recentering computer science. Communications of the ACM, 48(11), 15-19.

[4] Yasinsac, A., Erbacher, R. F., Marks, D. G., Pollitt, M. M., Sommer, P. M. (2003). Computer forensics education. IEEE *Security & Privacy, 2003*(1), 15–23.

[5] Kessler, G. C. & Haggerty, D. A. (2010). An online graduate program in digital investigation management: pedagogy and overview. *Journal of. Digital Forensic Practice 3*(1), 11-22.

are expected to grow over 13.3% by 2016[6]. Creating a Digital Forensics program is a natural next step that builds on our past successes in the area of information security and will place UAlbany at the forefront in this area.

The demand for Digital Forensics training is outpacing supply – leading to an acute shortage of training in Digital Forensics nationally and internationally. The need for Digital Forensics education is more recent and has grown as use of computers in crime and fraud has become a significant threat in the United States but around the world. According to Norton Cybercrime Report 2011[7], net cybercrime costs globally equal $388 billion across 24 countries – more than the black markets for marijuana, cocaine, and heroin combined ($288 billion) and close to the value of the total global drug trafficking market ($488 billion). Our program will also make use of online and blended learning especially in the third year of the program. Given the attractive option of partial online education, our program here at UAlbany will attract students not only from other states, but also from other countries. We are already building collaborations with international partners in offering our information security graduate certificate courses internationally (Russia, Armenia, Spain, Georgia). We will leverage these international connections to spread our Digital Forensics curriculum worldwide. The paucity of Digital Forensics programs provides us a captive audience of students who have few choices for advancing their skills and gives UAlbany an early mover advantage to build one of the leading programs in this field. **We will be the first SUNY and public state institution in New York that offers a bachelor's degree in Digital Forensics.**

This document outlines the curriculum proposed for a B.S. in Digital Forensics, which was unanimously approved by the faculty of the School of Business. The School of Business Undergraduate Affairs committee that reviews all curricular changes in the School of Business approved the program on February 5, 2013. The document containing the curriculum proposal is presented in what follows in a unified format to facilitate review and evaluation, is being submitted to the University at Albany University Senate for assessment and action.

I.2. EXECUTIVE SUMMARY

The School of Business (SOB) of the University at Albany, State University of New York (UAlbany) proposes academic curriculum leading towards the degree of Bachelor of Science in Digital Forensics. The curriculum proposed is intended to attract and retain at UAlbany a significant portion of the undergraduate student population that is presently inaccessible to SUNY and most of the private institutions of learning in New York State. This inaccessibility is driven by the lack of the four-year undergraduate digital forensics degree that is sought by this rapidly growing sector of the university clientele. Digital forensic analysts are in high demand in this technologically-driven world and with abundant opportunities in both public and private sectors, the job outlook is excellent.

The curriculum represents a 120-credit program designed for completion in eight academic semesters and is consistent with the SUNY General Education Program requirements, as implemented at UAlbany. The curriculum comprises a cutting-edge, inherently interdisciplinary, academic program centered on scholarly excellence, educational quality, and technical and pedagogical innovation. The outcome is a unique undergraduate experience that taps into the existing strength of the School of Business in the area of information security and digital forensics to attract and educate a diverse and talented pool of students at the baccalaureate level, and

[6] United States. Department of Labor. Bureau of Labor Statistics.(2009). *Occupational Outlook Handbook, 2008-09 Edition.*

[7] Symantec. (2011). Norton Cyber Crime Report 2011. Retrieved from: http://www.symantec.com/content/en/us/home_homeoffice/html/cybercrimereport/

position UAlbany to further cement its role as a competitive and valuable educational resource to the State University of New York and the State of New York.

Blueprint of the curriculum is comprised of four basic components: 1) a *"Foundational Principles"'* component, 2) a *"Core Competency"* component, 3) a *"Concentration"* component and, 4) a *"Capstone"* component. The first two components are designed to integrate the dissemination of fundamental principles with the cultivation of the critical skill set necessary for advanced undergraduate coursework and interdisciplinary research. The remaining two components expand on these foundational skills to develop the topical expertise, technical depth, and independent analytic abilities that are essential to a well-rounded undergraduate educational experience. The curriculum offers ability for students to take elective courses across campus to build more expertise in the areas of law enforcement, information security, or business. We plan on working with the College of Computing and Information Computer Science Department and the Rockefeller College Department of Political Science in the future to create elective courses geared towards this degree program.

The proposed undergraduate curricula will hold a scholarly profile and pedagogical impact that is singularly distinct from and highly complementary to current academic offerings at the remaining SUNY campuses and other New York State institutions of higher learning. The curricula will also serve as an effective tool in the attraction of the highest quality undergraduate students both from within the United States and from other countries to UAlbany further advancing its stature as a top-flight academic institution. In what follows, relevant admission criteria based on pertinent secondary education preparation are described, along with the underlying undergraduate advisement philosophy and resulting administrative and programmatic structures that ensure student success while maximizing academic options throughout the student's undergraduate career at the University at Albany.

II. PROGRAM SUMMARY

II.1. MISSION

The proposed undergraduate curriculum in digital forensics is designed to provide a high quality educational experience that will not only develop a foundation of fundamental knowledge of and basic proficiency with digital forensics, but also nurture the development of students who are able to think critically, perform high-level analysis, adapt to changing environments through innovation and exploration, and have a deep understanding of the technical, legal, financial, and socio-psychological influences that are related to the practice of digital forensics and investigation of cyber crime.

The proposed new undergraduate major in digital forensics coincides with many aspects of UAlbany's Strategic Plan and UAlbany Impact. This is a subject influenced by multiple disciplines and ties in several Units across the University: Information Technology Management, Criminal Justice, and Accounting & Law. This program will dramatically increase undergraduate enrollments through the creation of a new undergraduate major that does not compete with nor detract from enrollment in other majors. This program will serve as the first SUNY program and public state school offering a bachelor's degree in digital forensics – ensuring a captive market in undergraduate education. Digital forensics jobs often require four-year degrees and current availability of programs has made this profession prohibitive to certain students in the past. Our use of distance delivery and innovative pedagogical practices also make it more feasible for

students who come from lower socioeconomic or non-traditional backgrounds to more readily achieve success in their academic programs and future careers.

In addition to traditional UAlbany students from high schools, we plan to offer our program as part of executive education, internationally, and to community college students through articulation agreements with them. The Digital Forensics program will leverage internal resources at UAlbany and build collaborations with two-year community colleges in the surrounding area. This will create a pipeline of students from community colleges to our digital forensics program. By collaborating and developing strong partnerships with in-state community colleges as well as using innovative pedagogic methods, e.g. distance delivery, cloud-based labs, the program takes advantage of SUNY "systemness" to provide an opportunity for students who are limited by socioeconomic conditions to pursue a four-year degree in digital forensics. Our program is expected to contribute roughly 10% of the University's overall target for increasing undergraduate enrollment to 13,415 from the current enrollment of 12,834. In addition, through the pipeline created, we expect to also add to graduate enrollments and meet 7-12% of the target for 300 additional graduate enrollments. The proposal will strengthen existing ties between several units in the University, build critical mass in this area, and increase external funding potential – where we have had a history of success. With these new hires, we hope to be able to offer programs that will significantly improve student recruitment and success.

The digital forensics program is well aligned with the *Power of SUNY Strategic Plan* that defines the future mission of the SUNY system as a whole. It is specifically matched up with three important objectives:

1. SUNY and Seamless Education Pipeline: The program is designed to facilitate the transfer of students from community colleges in New York to the UAlbany in the junior year of the digital forensics program. Articulation agreements are already being developed with these community colleges.
2. SUNY Works: SUNY Works promotes experiential learning, which is built into the design of our program. We have started working with private firms to build relations for our students to get internships. We will be co-developing curriculum with some of these organizations to align the course work to industry demands and make the students attractive for internships. These internships are intended to be supplemental to the academic program.
3. SUNY and the Entrepreneurial Century: Digital Forensics is one of the four key areas of UAlbany 2020 plan and our goal is to create a talented workforce and attract entrepreneurs in digital forensics to the business incubator that is being developed on campus.

The proposed B.S. in Digital Forensics qualifies as fulfilling *"Strategic Initiative 2: Emerging Technologies: Improving Human Efficiency through Computational and Forensic Sciences"* listed in UAlbany Impact.

In addition, this program is aligned with multiple values and goals listed in the UAlbany Strategic Plan. The offering of this program is fully in line with the values of Excellence, Access, Collaboration, and Engagement. This proposed program also embodies the following goals:

> *"To enhance the quality of undergraduate education at UAlbany and attract and serve a highly qualified and diverse group of students"*

"To create an excellent student experience that integrates academic and co-curricular experiences, engages the surrounding community and the world, and fosters lifelong pride in the University"

"To increase UAlbany's visibility in, and resources for, advancing and disseminating knowledge, discovery, and scholarship"

The mission statements for the curriculum follow.

II.1.A Mission Statement for the Academic Program Leading to the B.S. in Digital Forensics

The curriculum is dedicated to providing quality undergraduate education in the interdisciplinary field of digital forensics. The program will provide students with foundational technology skills in the areas of communications and networking, computer hardware, software development and database design, information security, and law. It will build core competency on top of the foundational skills in the area of data preservation, examination, and discovery for multiple areas including information security, criminal investigations, accounting, and finance. The program culminates with capstone courses that consolidate the student learning in context of real problems. Overall, the program offers an academically rigorous preparation for students intending to pursue careers in digital forensics related fields as well as to pursue graduate education in the area of information security, digital forensics, data analytics, and law.

II.2 RATIONALE FOR THE PROPOSED PROGRAMS AND INSTITUTIONAL CONTEXT

While information security education has grown significantly over the past 10 years, education in Digital Forensics has only recently emerged as critical specialty – distinct from information security. Digital Forensics is a branch of forensic science that involves investigation, recovery, an analysis of information from digital devices – typically related to computer crime. These devices can include computers, smartphones, mp3 players, digital cameras, etc. While information security deals with protection of computers and networks, Digital forensics deals with post-mortem analysis of computer attacks and fraud; collection and presentation of criminal evidence; and determinations of responsibility and consequences. The digital forensics field is multidisciplinary. It involves application of information technologies and strategies within the public sector and private industry, international collaboration towards legislation development and law enforcement, as well as an understanding of human behavior. These activities have obvious benefits to the community-at-large by providing the capabilities and workforce to fill the demand for professionals to ensure the security and safety of citizens and the preservation of justice.

The National Academies of Science have warned that the people of the United States will face a lower standard of living if knowledge-intensive jobs further decline in the US.[8] American workers face increased job competition from lower-wage workers internationally, with leading-edge scientific and technology jobs being performed in many parts of the world. Consequently, large numbers of students are moving away from STEM fields including computing and engineering[9]. To

[8] National Academies of Science (NAS). Committee on Science, Engineering, and Public Policy. (2007). *Rising above the gathering storm: energizing and employing America for a brighter economic future*. Washington, DC, USA: The National Academies Press.

[9] Seymour, E. & Hewitt, N. M. (2000). *Talking about leaving: why undergraduates leave the sciences.* Boulder, CO, USA: Westview Press.

increase enrollments in these fields, Denning and McGettrick[10] have suggested reengineering traditional computing education to focus on specialized fields. As enrollments drop in technology-based disciplines, new programs are emerging in specialized fields, such as digital forensics, to attract students disenfranchised by traditional computing. In the past, demand for professionals in this field primarily came from law enforcement agencies[11]; today, the demand is largely coming from private-sector organizations and is being driven by business needs including: data recovery, electronic discovery, incident response, policy auditing and third-party forensic analysis services[12].

In 2009, the National Research Council (NRC) published a report outlining findings of the current state of forensic science laboratories. Critical findings included inadequate educational forensic programs, lack of forensic science research and training, as well as lack of strong ties to research universities and national science assets. The NRC report made several recommendations for the forensic science community to improve education, training, and personnel standards. According to the Bureau of Labor Statistics, jobs in digital forensics are expected to grow over 13.3% by 2016[13]. Creating a digital forensics program is a natural next step that builds on our past successes in the area of information security and will place UAlbany at the forefront in this area.

The demand for digital forensics training is outpacing supply – leading to an acute shortage of training in digital forensics nationally and internationally. The need for digital forensics education is more recent and has grown, as use of computers in crime and fraud has become a significant threat not only in the United States, but around the world. According to Norton Cybercrime Report 2011[14], net cybercrime costs globally equal $388 billion across 24 countries – more than the black markets for marijuana, cocaine, and heroin combined ($288 billion) and close to the value of the total global drug trafficking market ($488 billion).

There are currently three four-year institutions in New York that offer programs in Digital Forensics: 1) John Jay College of Criminal Justice (New York City, NY) offers a master's degree in Digital Forensics; 2) Medialle college (Buffalo, NY) offers a 16-credit certificate program designed for law enforcement personnel, financial business officers, private investigators, computer systems administrators, and criminal justice majors; and 3) Utica College offers a master's program in Digital Forensics. There is no program at the bachelor's level. Two colleges in Vermont have programs in Digital Forensics: 1) Norwich University (Northfield, VT), and 2) Champlain College (Burlington, VT). Norwich University offers a bachelor of science in computer security with concentrations in Cyber Forensics. Champlain College offers a bachelor's and master's degree in Digital Forensics. There is no undergraduate program Digital Forensics in any SUNY 4-year institution.

Given the attractive option of partial online education, the program here at UAlbany will attract students not only from other states, but also from other countries. School of Business is already building collaborations with international partners in offering our information security graduate certificate courses internationally (Russia, Armenia, Spain, Georgia). We will leverage these

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[10] Denning, P. J. & McGettrick, A. (2005, November). Recentering computer science. Communications of the ACM, 48(11), 15-19.

[11] Yasinsac, A., Erbacher, R. F., Marks, D. G., Pollitt, M. M., Sommer, P. M. (2003). Computer forensics education. IEEE *Security & Privacy, 2003*(1), 15–23.

[12] Kessler, G. C. & Haggerty, D. A. (2010). An online graduate program in digital investigation management: pedagogy and overview. *Journal of. Digital Forensic Practice 3*(1), 11-22.

[13] United States. Department of Labor. Bureau of Labor Statistics.(2009). *Occupational Outlook Handbook, 2008-09 Edition.*

[14] Symantec. (2011). Norton Cyber Crime Report 2011. Retrieved from: http://www.symantec.com/content/en/us/home_homeoffice/html/cybercrimereport/

international connections to spread our digital forensics curriculum worldwide. The scarcity of four-year digital forensics programs provides a captive audience of students who have few choices for advancing their skills and gives UAlbany an early-mover advantage in building one of the leading programs in this field. UAlbany will be the first SUNY and public New York State institution that offers a bachelor's degree in digital forensics.

II.3 Learning Outcomes and Assessment

UAlbany is committed to ensuring that baccalaurean graduates meet and exceed academic standards of scholarly excellence required to succeed as analysts and professionals who can successfully navigate careers in digital forensics, and in turn, deliver the technological and forensic innovations that are the future of academic institutions, the nation and global marketplace. This Digital Forensics program includes a comprehensive and integrated set of basic learning outcomes that must be met by students in order to qualify for graduation. Each learning outcome has been customized to reflect the specific mission, goals and objectives of the B.S. in Digital Forensics. This is complementary to current academic, corporate, and government performance metrics for the emerging digital forensics discipline.

Learning outcomes will be measured through performance evaluation and learning assessment methodology to track and measure student progress towards educational goals and degree requirements throughout the student's undergraduate career in digital forensics. This will include advisement intervention, course performance and individual student assessment. This assessment methodology is designed to begin with entering UAlbany direct-admit freshmen, qualified transfer students, and distance learners who are interested in the digital forensics field to analyze and measure their aptitude and ability to pursue the B.S. degrees in Digital Forensics; by doing this, we want to offer students accurate guidance and pertinent advice in terms of appropriateness of such a career path versus other opportunities for undergraduate study at UAlbany.

II.3.1 Learning Outcomes for B.S. Program in Digital Forensics

The learning outcomes are designed to ensure that the graduates of the program demonstrate the technical and professional proficiencies necessary to enable the forensic identification, investigation, collection and examination of digital and multimedia information or evidence; and, as a result, become highly successful analysts, educators, and leaders in global and technological "innovation" of the 21st century.

Digital Forensics Outcome 1

Digital Forensics graduates will be prepared to conduct cyber-crime investigations involving computers and the Internet, while utilizing investigative methodology, legal processes and forensic techniques that facilitate such investigations in public and private sectors.

Digital Forensics Outcome 2

Digital Forensics graduates will be knowledgeable in forensic concepts, binary and hexadecimal values, hardware and software essentials, as well as, forensic analysis techniques and methodology involving digital and multimedia data or evidence.

Digital Forensics Outcome 3

Digital Forensics graduates will have the ability to utilize proper techniques for collecting and preserving digital information and data found in the cloud, as well as, physical cyber-crime scenes. Graduates will be able to collect, preserve, and examine "live" networks and mobile devices, such as

smartphones, tablets, gaming consoles and other relevant "live" networked data that may be critical to an investigation.

Digital Forensics Outcome 4
Digital Forensics graduates will have the ability to conduct forensic analysis of binary data found in computers, removable media, and other electronic devices through hands-on experience with digital forensics utilities, tools and techniques to analyze digital data or evidence utilizing industry standards and best practices.

Digital Forensics Outcome 5
Digital Forensics graduates will have a foundation to manage basic corporate incident response challenges, as well as perform proper collection, archival and retrieval methodology for electronic data that may be subject to legal and regulatory requirements. Graduates will be knowledgeable in electronic discovery statutes, case law, and the management of corporate digital information.

Digital Forensics Outcome 6
Digital Forensics graduates will be prepared to compose and present oral and written reports, which outline digital forensic analysis findings. These reports are professionally and scientifically acceptable in corporate, administrative and legal proceedings.

Digital Forensics Outcome 7
Digital Forensics graduates will be knowledgeable in the development and implementation of corporate and government policies and procedures for computer forensic laboratory operations, quality control and training programs.

Digital Forensics Outcome 8
Digital Forensics graduates will be able to develop incident response, examination and analytical plans to guide the forensic investigation.

Digital Forensics Outcome 9
Digital Forensics graduates will be able to present digital forensics analysis findings, as well as provide expert witness testimony related to digital evidence (including how to deal with opposing counsel cross-examinations and how to effectively relay information to a judge and jury).

II.3.2 Assessment Practice and Methodology
A systematic, broad-based, and multi-pronged approach will be employed to assess student's progress towards and achievement of the learning outcomes outlined in Section II.3.1. This approach employs three primary metrics: course-embedded assessment; lab assessment; and capstone experience-driven assessment. These metrics are defined using the four pedagogical pillars and rubrics of each undergraduate degree, as described in Section II.6.1.

II.3.3.1 Course-embedded Assessment Metric
This metric employs the well-documented quantitative (grading) system typically applied in individual courses including quizzes, exams, and assignments. In addition to the conventional examinations and out-of-class assignments, this approach will also employ case analysis, discussions, presentations, and papers.

II.3.3.2 Laboratory Exercises Assessment Metric
Laboratory exercises will be a major part of the curriculum and would require students to satisfactorily perform the assigned tasks as a part of the evaluation. Students will receive

quantitative grades for their performance in the laboratories. These laboratory exercises will be incorporated in all of the BFOR courses to varying degrees to encourage hands-on learning and practical experience necessary in such a technical field.

II.3.3.3 CAPSTONE EXPERIENCE –MOOT COURTS

One of the key highlights of the program is a capstone course on presenting digital forensic testimony through moot courts built on previous digital forensic analysis. The assessment methodology for this capstone experience focuses on the direct evaluation of student performance by the faculty and/or and evaluation team regarding the student's ability to assimilate the learning into real-life scenarios, the student's oral and written communication skills and ability to work well within a team environment.

II.4 ADMISSION

The process for admission to the proposed undergraduate programs for both freshmen and transfer applicants will follow the standard UAlbany application procedures. Applicable admission requirements are outlined below for the three potential scenarios of applications, namely, 1) direct admits (freshmen), 2) advanced standing, and 3) transfer. It should be noted that only undergraduate students formally admitted to the Digital Forensics program are eligible to enroll in some of the Technical Concentration Courses or Capstone Courses in the School of Business (see Section II.6.2 Program Requirements). For direct admit students, UAlbany GPAs will be primarily used in determining admission and retention. Courses from other institutions may be used at the discretion of the program director.

II.4.1 DIRECT ADMISSION OF FRESHMEN

During the application period for traditional freshmen admission, an applicant interested in Digital Forensics and who meets the minimum established criteria would be offered an opportunity for direct freshman admission to the proposed digital forensics undergraduate major. The standard eligibility for consideration will be a minimum HSGPA of at least 89 and a minimum SAT of at least 1200 (1600 scale) and/or a minimum ACT of 25. Students selected for Direct Freshmen Admission in Digital Forensics will be required to document their intent to declare their major accordingly.

The overarching goal of direct admission to the digital forensics undergraduate program is the identification of outstanding and singularly prepared students who are poised for success in the field of digital forensics. It is expected that these students will rapidly excel and perform in accordance with the highest academic standards at UAlbany. There are several benefits to being a direct admit student in the Digital Forensics major. Based on experience with the direct admit program for SOB, direct admit students to the proposed Digital Forensics major would receive extra opportunities for career building and networking with alumni and recruiters. In addition, they receive extra guidance towards their academic and professional goals with supplementary advisement from SOB. In addition, being a direct admit is a positive addition to a resume for internship and job applications. The rationale for having additional requirements for continuation is based on student performance in the SOB direct admit program. 25-30% of direct admit students had below a 3.0 GPA with some GPAs like 1.5. Based on student feedback, this is seen as an unfair system, which allows admittance of students with inferior performance when better performers not in the direct admit program are not granted admission. It also impacts student satisfaction and performance

By requiring students to meet the academic criteria for continuance, we hope to motivate students to work hard during their first two semesters and ensure that they are able to capably manage the rigor of the program.

II.4.2 Retention and Movement to Upper Division

The following qualitative academic criteria will be used in determining movement to upper division status and enrollment in 300- and 400-level courses required in this major:

- At the end of four semesters, if a student is admitted as a Direct Admit, a student must have completed the following core courses with a minimum GPA of 3.0: RCRJ 281 or AMAT 108, ASOC 115, BACC 211, BFOR100, BFOR 201, BFOR 202, and BFOR 203.
- If not in the Direct Admit program, the student must have a cumulative overall GPA of 3.25 at the University at Albany and a cumulative GPA of 3.0 in designated courses (RCRJ 281 or AMAT 108, ASOC 115, BACC 211, BFOR 100, BFOR 201, BFOR 202, and BFOR 203).
- Completion of a minimum of 56-degree applicable credits.
- Students who do not fulfill the requirements above, but petition the director of the program and gain written approval, will gain either continued status or admission with advanced standing,

II.4.3 Admission with Advanced Standing Status

Undergraduate students at UAlbany, who are not formally enrolled in the digital forensics undergraduate program as direct admits, are offered an opportunity for admission to the program after completing the first four semesters of the program as outlined in the program sequence chart at UAlbany. The student must have completed the criteria listed above under II.4.2. The goal of Admission with Advanced Standing is the identification of outstanding students who have demonstrated the ability to excel at the university level and a scholarly aptitude for the field of digital forensics. Some students may be granted conditional status with admission to the program contingent upon satisfactory completion of a specific academic contract.

II.4.4. Admission of Transfers with Advanced Standing

This program is designed to facilitate the transfer from particular two-year schools within SUNY, directly into the junior year of the Digital Forensics Program. Articulation agreements will be designed and agreed to by all parties to facilitate the easy transition from a two-year program into the junior year of the Digital Forensics major. Students who are admitted "Transfer" students are offered the opportunity for admission to the digital forensics program, if they meet the following criteria:

I. Transfer students must complete the following courses with a cumulative GPA of 3.0: Statistics, Introduction to Sociology, and the equivalent of the University at Albany's Financial Accounting (BACC 211). Additionally, courses deemed equivalent to BFOR 100, 201, 202, and 203 must also be completed with a GPA of 3.0. Students must have an overall cumulative GPA of 3.25 at their respective community college or two-year institution.
II. Completion of a minimum of 56 degree-applicable credits.

Students from institutions without an articulation agreement in place who want to transfer to the digital forensics undergraduate program will be considered on a case-by-case basis at the discretion of the program director.

II.4.5 Rationale for Restricted Admission

The requirements for admission to the Digital Forensics major are a minimum 3.25 overall GPA and a minimum 3.0 in designated core courses (RCRJ 281 or AMAT 108, ASOC 115, BACC 211, BFOR 100, BFOR 201, BFOR 202, and BFOR 203)

University Senate Bill-1213-05, introduced April 19, 2013, specified allowable criteria for GPA restrictions on majors and minors. These included Program Quality ("quality threatened due to instructional resource limitations"), Prerequisites ("essential incoming competence or preparation"), and Quantitative Considerations ("inability of students to finish in four years" and "finite number of student spaces in the program").

SOB majors, and the upper level courses associated with SOB majors, presently have GPA restrictions justified under the criteria above; the program restrictions for the proposed Digital Forensics major are aligned with the other majors in SOB. These restrictions were imposed since the Digital Forensics program is selective with small class sizes necessitated by the lab-intensive nature of curriculum. The program size is based on the faculty resources allocated to the program. Increasing the size of the program will require additional sections, and in turn, additional faculty; new faculty lines cannot be guaranteed. A relaxation of the admissions criteria could substantially lower the necessary levels of academic achievement and preparation that is essential to ensure a high program quality that is a prerequisite for placement in the field.

II.5 Admissions and Academic Standing

The SOB maintains a formal Undergraduate Committee on Academic Affairs. In addition to the implementation of the admissions process as outlined in Section II.4, the committee is responsible for reviewing the following matters brought to its attention, and making a recommendation to the director of the program for disposition of those matters. The process and deliberations follow established University policies and protocol for due process. The Committee tasks include:

II.5.1 Appeals of Admission Decisions

The committee hears admissions appeals from those students who fail to meet the retention standards after the first two years. It will also entertain appeals from students seeking to transfer from a two-year institution whose academic record does not meet the minimum criteria stated in I. b. above.

I. The committee's decision is then presented to the Director of the program. An official letter will be sent by the program Director or his designee to the student indicating the decision of the committee regarding the student's appeal to admission to the upper division status.
II. The review of the appeal would include, but is not limited to, the student's written appeal and any documentation supporting the student's contentions.
III. The committee can make one of three decisions.
    a. Reinstate the student
    b. Do not reinstate the student
    c. Place the student on a one semester academic contract for the Fall of the third year, where the student will be asked to achieve a certain semester grade point average and a certain average from the 300 level BFOR (Digital Forensics) courses.

II.5.2 Grade Grievances

The committee will investigate and deliberate on cases brought by students who consider that they were aggrieved by the grading process. The committee will review the evidence and make a recommendation for disposition of the grievance to the Director. The Director will make the final decision, which will be communicated to the student via the Office of Student Services. The process and deliberations will follow established University policies and protocol for due process.

II.5.3 Reinstatement to the Major from a University Dismissal

In cases of students dismissed from the University, reinstatement of a student will be at the discretion of the director of the Digital Forensics program pursuant to the University guidelines for handling such cases.

II.5.4 Student Advisement and Mentoring

I. Direct Admits
   a. Students directly admitted to the Digital Forensics program will be advised in the first year by the Advisement Services Center. In their second year, the direct admit students will be advised by the Assistant Dean for Academic Programs and program faculty in the School of Business. At the conclusion of the second year, Digital Forensics students who move into upper division status will be advised by the well-established School of Business Office of Undergraduate Student Services, which has been functioning as the main advisement center for 40 years.
   b. All majors in this program will be encouraged to select a faculty mentor to discuss appropriate elective courses, as well as various career opportunities, and advance study in this field.

II. Transfer Students
   a. Students admitted to upper division status from collaborating community colleges will receive advisement from the School of Business Office of Undergraduate Student Services.
   b. All majors in this program will be encouraged to select a faculty mentor to discuss appropriate elective courses, as well as, various career opportunities and advance study in this field.

II.6 Curriculum Outline

II.6.1 Program Components and Rubrics

Building on the innovation and success School of Business's undergraduate and graduate programs, the proposed undergraduate academic program is comprised of four building blocks designed to preserve both the inherent flexibility required for an undergraduate degree with true interdisciplinary elements and the academic rigor and scholarly excellence demanded by the fields of digital forensics.

II.6.1.1 Foundational Principles For Digital Forensics

The foundational principles components of the Digital Forensics degree are designed to provide the background and intellectual "skill sets" required to ensure elementary understanding and basic knowledge of the digital forensics discipline, as well as, to ensure a broad background imparted through general education courses.

II.6.1.2 Core Competencies in Digital Forensics

The core competency courses are designed to provide the foundation in the forensics discipline on which advanced learning can be built. These courses introduce the students to functional areas, such as, criminal justice, accounting, and information security.

II.6.1.3 Concentration Courses in Digital Forensics

Concentration courses in digital forensics are comprised of specialized undergraduate coursework to develop deeper skills in the digital forensics discipline. Combined with upper-level elective courses, this component of the degree permits a high degree of interdisciplinary instructional customization.

II.6.1.4 Capstone Courses in Digital Forensics

This component includes an advanced coursework in digital forensics including analysis, reporting, and expert witness testimony through moot court experience.

Taken as a whole, the four components of the degree merge and integrate basic and advanced topics with hands-on laboratory work for customized skills training. This combination of pedagogical tools ensures a coherent undergraduate degree program and teaches the student how to learn new skills in a quickly evolving discipline. From an implementation perspective, it is recommended that the University establish a new course rubric BFOR to be associated with the Digital Forensics undergraduate academic offerings. These rubrics may or may not be expanded to include current or future graduate course offerings in information security.

II.6.2 Program Requirements

The digital forensics undergraduate program requires the completion of seventy (70) credits of major-specific coursework.

II.6.2.1 Requirements for the B.S. in Digital Forensics

The B.S. program in Digital Forensics requires the completion of the following courses clustered in four categories:

1. '*Foundational Principles'* Courses. Twenty-five (25) credits of APSY101, ASOC 115, BACC 211, BFOR 100, BITM 215, RCRJ 201, RCRJ 203, and RCRJ 281. RCRJ 281 may be replaced by AMAT 108.

2. '*Core Competencies*' Courses. Sixteen (16) credits of RCRJ 202, BFOR 203, BFOR 204, BFOR 300, and BACC 400.

3. '*Concentrations*' Courses. Twenty-one (21) credits of BFOR 201, BFOR 202, BFOR 301, BFOR 302, BFOR 303, BFOR 304, and BACC 401.

4. '*Capstone'* Courses. Eight (8) credits of BFOR 401W and BFOR 402.

II.6.3 General Education Requirements

The General Education Program at the University at Albany consists of a minimum of 30 credits of coursework that in intended to provide a foundation for coursework in student major and minor fields. The goal is to provide exposure to interdisciplinary fields, provide access to multiple different perspectives, emphasize active learning, and promote critical thinking. The General Education Program is summarized in Table I below.

The "Math and Statistics" General Education requirements are satisfied by the RCRJ 281 Introduction to Statistics in Criminal Justice or its substitute AMAT 108 Elementary Statistics courses. In addition, the "Social Sciences" requirement is fulfilled by APSY 101 Introduction to Psychology or ASOC 115 Introduction to Sociology – both are courses that are required by the major. In addition, the "Information Literacy" General Education requirement is met by BFOR 100 Introduction to Information Systems. As noted in the University at Albany Undergraduate Bulletin, students may not use the same course to fulfill both the Arts and the Humanities categories. Otherwise, if a course fulfills more than one category, students may use the course to fulfill all of those categories. Although such "double counting" may reduce the number of credits needed to fulfill General Education requirements to graduate from the University, each student must have

satisfactorily completed a minimum of thirty (30) graduation credits in courses designated as General Education requirements.

The Information Technology Management department and Accounting & Law department in the School of Business are working closely with the School of Criminal Justice in offering this program. All departments and colleges of which courses are included in the program have given permission for the participation of the students involved in this major. These letters of commitment are included in Appendix VI.4.

The rationale for including APSY 101 and ASOC 115 in our program is to due to the need for grounding in the social sciences for an interdisciplinary digital forensics major. Psychology is especially useful related to conferring expert witness testimony and interacting with legal personnel as well as juries. In addition, there is the field of psychological digital crime scene analysis and "cyber psychology" which is directly related to digital forensics. In a similar way, sociology is useful in analyzing criminal networks. We believe that knowledge of statistics is an important foundational element for our Digital Forensics students. They will need to understand the value of statistics for analysis of cyber crimes and determining probabilities of occurrence. Statistics can be used to determine the amount of random sampling that is sufficient for an investigation, where backlogs of caseload are common. It is also an essential basis for defining if there has been tampering of digital images (image forensics). We allow students to take either ACRJ 208 or AMAT 108 because we are partnered with the School of Criminal Justice in delivering this program and believe that students may benefit from a criminal justice framing of statistics.

There are four additional general education requirements that need to be fulfilled across the entire curriculum i.e. advanced writing, critical thinking, oral discourse, and information literacy. The following courses would fulfill each of these areas.

1. *Advanced Writing:* BFOR 303, BFOR 304, BACC 401, and BFOR 401W

2. *Critical Thinking*: BFOR 201, BFOR 202, BFOR303, BFOR 304, BACC 400, BFOR 401W, and BFOR 402

3. *Oral Discourse:* BFOR 303, BFOR 304, BACC 401, BFOR 402,

4. *Information Literacy:* BFOR 100, BFOR 204, BFOR 302

If a course fulfilling a General Education category also meets a major requirement, there is no prohibition against counting the course toward General Education and the major. SOB majors will be advised to make appropriate use of double-counting General Education courses for those categories not currently met through waiver by appropriate NYS Regents test scores (cf. U.S. history and foreign language), Advanced Placement credit (cf. statistics, psychology, foreign language, U.S. history, arts), or other college-level coursework earned in high school. SOB has prepared an advising chart to assist its students in appropriate General Education course selection to maximize their educational experience.

Table I. General Education Requirements for UAlbany Undergraduate Students

Requirements	Minimum Credits
Mathematics and Statistics	3
Writing and Critical Inquiry*	3
Arts**	3
Humanities**	3
Natural Sciences	3
Social Sciences	3
U.S. History	3
International Perspectives	3
Foreign Languages	3
Challenges for the 21st century	3
Information Literacy	3

*Writing and Critical Inquiry course must be completed with a grade of C or better.
** No single course can be used to satisfy BOTH the Humanities and the Arts requirement.

II.6.4 Digital Forensics Semester-by-Semester Major Academic Pathway (MAP) and Course Matrix

One section of each course at 100-level will be offered each year and will be delivered in a face-to-face session as stipulated in the pathway map in the table below. One section of each course at 200-level will be offered once each year in a face-to-face session as stipulated in the pathway map in the table below. In addition, we expect to offer online versions of BFOR 201, BFOR 202, and BFOR 204 as a part of our grant requirements from the National Science Foundation. Two sections of each course at the 300-level will be offered with one section online and the other face-to-face/blended learning. Two sections of each course will be offered at the 400-level that will be face-to-face/blended learning. Additional courses and sections may be offered online in the future based on increased international and internal demand, grant requirements, and availability of resources.

II.6.4.1 Table II. B.S. in Digital Forensics Semester-by-Semester Major Academic Pathway (MAP)

Year	Fall	Credits	Spring	Credits
1	**ASOC 115 Introduction to Sociology[2]	3	BITM 215 Information Technologies for Business	3
	**BFOR 100 Introduction to Information Systems	3	APSY 101 Introduction to Psychology[2]	3
	GE U.S. History	3	**BFOR 201 Introduction to Digital Forensics	3
	GE Foreign Language	3	**RCRJ 281 Intro to Statistics[1] or AMAT 108 Elementary Statistics[1]	3
	GE UUNI 100 Writing and Critical Inquiry	3	GE Natural Science	3
		15		**15**
2	RCRJ 201 Introduction to Criminal Justice	3	RCRJ 202 Introduction to Law and Criminal Justice w/ discussion	4
	**BFOR 202 Cyber Crime Investigations	3	RCRJ 203 Criminology w/ discussion	3
	**BFOR 203 Networking - Introduction to Communication w/ lab	3	BFOR 204 Fundamentals of Information and Cyber Security	3
	GE Humanities (suggested APHI 210 Introduction to Logic)	3	GE International Perspectives	3
	**BACC 211 Financial Accounting	3	GE Arts	3
		15		**16**
3	BFOR 300 Databases for Digital Forensics	3	BFOR 303 Computer Forensics II	3
	BFOR 301 Computer Forensics I	3	BFOR 304 Network and Mobile Forensics	3
	BFOR 302 eDiscovery Forensics	3	GE Challenges for 21st Century	3
	Elective	3	Elective	3
	Elective	3	Elective	3
		15		**15**
4	BFOR 401W* Advanced Digital Forensics	4	BFOR 402 Digital Forensics Moot Court	4
	BACC 400 Forensic Accounting and Fraud Detection	3	BACC 401 Forensic Accounting Investigative Techniques	3
	Elective	3	Elective	3
	Elective	3	Elective	3
	Elective	3		
		16		13

[1] Satisfies the GE Mathematics and Statistics requirement; [2] Satisfies the GE Social Sciences requirement; [3] Satisfies GE Information Literacy requirement.

II.6.4.2 PROPOSED DIGITAL FORENSICS COURSE MATRIX

Table III lists the proposed Digital Forensics courses by category. Full catalogue descriptions are given in Appendix VI.1

Table III. Digital Forensics Courses by Category (Course descriptions in Appendix VI.1.)

Foundational Principle Courses in Digital Forensics		Credits
APSY 101	Introduction to Psychology	3
ASOC 115	Introduction to Sociology	3
BACC 211	Financial Accounting	3
BFOR 100X	Introduction to Information Systems	4
BITM 215	Information Technologies for Business	3
RCRJ 201	Introduction to Criminal Justice	3
RCRJ 203	Criminology	3
RCRJ 281 OR AMAT 108	Introduction to Statistics / Elementary Statistics	3

Core Competency Courses in Digital Forensics		Credits
RCRJ 202	Introduction to Law and Criminal Justice	4
BFOR 203	Networking – Introduction to Communications	3
BFOR 204	Fundamentals of Information and Cyber Security	3
BFOR 300	Databases for Digital Forensics	3
BACC 400	Forensic Accounting and Fraud Detection	3

Concentration Courses in Digital Forensics		Credits
BFOR 201	Introduction to Digital Forensics	3
BFOR 202	Cyber Crime Investigations	3
BFOR 301	Computer Forensics I	3
BFOR 302	eDiscovery	3
BFOR 303	Computer Forensics II	3
BFOR 304	Network and Mobile Forensics	3
BACC 401	Forensic Accounting Investigative Techniques	3

Capstone Courses in Digital Forensics		Credits
BFOR 401W	Advanced Digital Forensics	4
BFOR 402	Digital Forensics Moot Court	4

II.6.5 STUDENT ADVISING AND CAREER DEVELOPMENT

A comprehensive and proactive advisement program, coupled to a flexible assessment system (see Section II.3. Learning Outcomes and Assessment), is essential to ensuring top academic quality and scholarly excellence of the Digital Forensics undergraduate program while best serving the educational and career interests of its student participants. All freshmen students will be advised in the UAlbany Advisement Services Center. After students have earned admission to the proposed Digital Forensics undergraduate program (juniors in the major and 2nd year direct admits), students will work with Assistant Dean for Academic Programs for consultation and scheduling of coursework. All administrative and programmatic actions with regards to student matters will be coordinated through the SOB Office of Student Services. Supplementary advisement by program faculty will be made available to all students intending to be in the major.

Periodic communication and evaluation of progress will be implemented for each student and will center on individual advisor/student interactions to ensure timely completion of the program of study. We expect students to meet with their academic advisors regularly to review progress, solicit guidance, and identify opportunities for advancement. Throughout the advisement process, the advisors will coordinate their actions with director of the Digital Forensics program to ensure the availability of the faculty resources and infrastructure assets necessary to support the student's academic path.

III. ENROLLMENT

SOB is committed to academically rigorous undergraduate programs serving a diverse student clientele from New York State and beyond. As such, the undergraduate digital forensics curricula proposed will be deployed in a manner that maintains the scholarly excellence, educational quality, and technical and pedagogical innovation necessary to attract and educate a talented pool of qualified students at the baccalaureate level. Accordingly, enrollments are planned to increase gradually in accordance with the plan laid out in the SUNY 2020 proposal as see in the table below.

Table VI. Targeted enrollments in the proposed Digital Forensics Baccalaureate program.*

	2014 - 2015		2015 – 2016**		2016 – 2017	
	Fall	Spring	Fall	Spring	Fall	Spring
Freshmen	23	22	25	24	30	28
Sophomores			20	20	22	22
Juniors	22	20	25	23	48	42
Seniors			18	16	21	20

* Student populations in the individual programs are not intended to represent a fixed ratio, and are expected to vary based on student interest and the yearly pool of potential applicants.

**Although full program implementation is tentatively planned for Fall 2015, partial instructional activities have been initiated in Fall 2013.

*** These enrollment numbers reflect fully admitted students for junior and seniors. Freshman and sophomore numbers will include direct admits as well as intended majors.

**** The chart indicates the number of intended or fully admitted students based on class year and academic semester and intends to capture natural attrition in the major. For example, in the 2014-2015 academic year, we expect 23 freshmen, and 22 transfers and then attribute a loss of 1 student from the freshmen class and 2 students from the junior class.

IV. Impact of Proposed Program on Other SUNY Institutions

The Digital Forensics undergraduate curricula is intended to attract and retain the large numbers of qualified undergraduate students who are presently inaccessible to SUNY and other private institutions of higher learning in New York State. This inaccessibility is driven by the lack of a four-year Digital Forensics baccalaureate degree, which is in great demand in both the public sector for law enforcement and the private sector for corporate investigative work.

In particular, a key component of the Digital Forensics undergraduate program is to address the severe shortage in the availability of qualified security and forensics specialists in New York and the U.S. **In this context, no similar educational program is currently being offered at any other institution of higher learning in New York, including the SUNY system**. Instead, a very small number of undergraduate courses dedicated to digital forensics are currently being offered at other SUNY campuses (See Appendix VI.3). Consequently, the potential negative impacts that might have otherwise resulted from duplication of programs offered at other SUNY colleges or universities are non-existent in this case. To the contrary, it is projected that the undergraduate degrees proposed will have significant positive direct consequences and beneficial ripple effects at a number of SUNY institutions, from two-year colleges to university centers.

From a strategic perspective, the establishment of world-class undergraduate programs in digital forensics will further advance the standing and reputation of SUNY as a top flight university system. Additionally, the programs will act as an effective pipeline for the graduation of exceptional students who could serve as highly qualified candidates for graduate programs such as Computer Science, Business, and Criminal Justice at other SUNY Schools. The proposed programs will provide an attractive and desirable platform for SUNY community college students who seek more advanced educational and training opportunities in the burgeoning field of digital forensics. From a programmatic perspective, the undergraduate curricula proposed do effectively complement the SUNY community colleges currently offering or contemplating the implementation of 2-year degree programs related to computer science, criminal justice, and information security. We are already working with several community colleges including Hudson Valley, Herkimer County, and Columbia-Green community colleges to build articulation agreements of transfer of their students into the junior year at the University at Albany digital forensics baccalaureate program.

V. FACULTY

The Digital Forensics program will feature participation of existing faculty from several schools and departments including the School of Business Information Technology Management and Accounting Departments, and the School of Criminal Justice. In addition, we have recently hired two faculty in the last semester and expect to hire two more in the upcoming academic year. In addition, we expect to hire an additional two faculty in the year after. These major-specific hires are being supported by the NY SUNY 2020 UAlbany Impact Proposal for New Faculty approved in 2012. The team of professors, educators, and academic advisement support staff below will serve as a resource for undergraduate course instruction, mentoring, academic advisement, and future program development.

A listing of current faculty, instructors, and academic advisement staff that will be participating in the undergraduate degree programs is presented below, along with their primary affiliation.

- **James R. Acker,** Distinguished Teaching Professor
  School of Criminal Justice
- **Fabio R. Auffant II,** Lecturer
  Information Technology Management, School of Business
- **Jason Cotungo,** Undergraduate Advisor
  Office of Student Services, School of Business
- **Jakov J. Crnkovic,** Service Associate Professor
  Information Technology Management, School of Business
- **Ingrid Fisher,** Chair and Associate Professor
  Accounting & Law, School of Business
- **Sanjay Goel,** Chair and Associate Professor
  Information Technology Management, School of Business
- **Yuan Hong,** Assistant Professor
  Information Technology Management, School of Business
- **Rey Koslowski,** Associate Professor
  Rockefeller College, Political Science
- **John Levato,** Assistant Dean for Academic Programs, Career Services and Alumni Relations
  School of Business
- **Siwei Lyu,** Assistant Professor
  College of Computing and Information, Computer Science
- **JoAnne M. Malatesta,** Assistant Dean
  School of Criminal Justice
- **Susan Maloney,** Director of Undergraduate Student Services
  School of Business
- **Michelle R. Moshier,** Lecturer
  Accounting & Law, School of Business
- **Cynthia Najdowski,** Assistant Professor
  School of Criminal Justice
- **Justin T. Pickett,** Assistant Professor
  School of Criminal Justice
- **Peter J. Ross,** Lecturer
  Information Technology Management, School of Business
- **Robert E. Worden,** Associate Professor
  School of Criminal Justice

APPENDIX VI.1 DIGITAL FORENSICS MAJOR COURSE CATALOGUE DESCRIPTIONS

APSY 101 Introduction to Psychology (3)
The basic methods and points of view in the scientific study of human behavior. Topics include biological bases of behavior, personality organization, intelligence, motivation, emotions, learning, and social relations. For psychology majors completing their major requirements as outlined in this bulletin or subsequent editions, APSY 101 is restricted to A-E grading after matriculation at Albany. Only one of APSY 101, 102, or TPSY 102 may be taken for credit.

ASOC 115/115Z Introduction to Sociology (3)
Nature of culture and of human society, personality development, groups and group structure, social institutions, the processes of social change. Only one version of ASOC 115 may be taken for credit.

BACC 211 Financial Accounting (3)
A thorough introduction to the basic financial statements including the balance sheet, income statement, and statement of cash flows, with a focus on accounting information that is available to individuals outside an organization. The course provides an introduction to the concepts, terminology and principles of financial accounting. Students learn about accounting as an information development and communication function that supports economic decision-making. The course enables students to analyze financial statements; derive information for personal and organizational decisions from financial statements; and better understand business entities. Not open to freshmen. Intended accounting and business majors should enroll in BACC 211 in the first semester of their sophomore year. Offered fall semester only.

BACC 400 Forensic Accounting and Fraud Detection
This course provides an overview of occupational fraud including misappropriation of assets, financial statement fraud and corruption as well as other forensic accounting engagements such as tax fraud and matrimonial disputes. The course will explore the characteristics of specific fraud schemes along with the characteristics of those who perpetrate them (according to the Annual Report to the Nations compiled by the Association of Certified Fraud Examiners). Students will acquire an understanding of the generally accepted accounting principles violated by the schemes. Students will become versed in the principles of internal control over the financial reporting system including how these principles work to deter financial fraud and ensure compliance with external requirements. Relevant guidance from the professional, regulatory and legal environment will be discussed. Prerequisite(s): BACC 211. Offered fall semester only.

BACC 401 Forensic Accounting Investigative Techniques
Students will learn the process and principal techniques for conducting fraud examinations and other forensic investigations as well as why careful attention to them is critical to a successful investigation. Students will learn the role of analytical review procedures in the investigation of financial fraud. Document analysis and the art of effective interviewing during investigations will be explored. Students will learn the proper procedures for evidence handling. Finally students will learn to write a report that succinctly and effectively communicates the completed investigation. Relevant guidance from the professional, regulatory and legal environment will be discussed. Prerequisite(s): BACC 400. Offered spring semester only.

BFOR 100 Introduction to Information Systems (4)
This course provides a foundation of information systems concepts that can be applied to future learning in advanced topics. The course will include background in the history and social

implications of computing including cyber ethics; emergent and contemporary information technology and its nomenclature; information and data abstraction, representation, manipulation and storage; operating systems; networking and the Internet, programming languages, logic, and algorithms; database systems; digital graphics and multimedia; and information security.

BFOR 201 Introduction to Digital Forensics (3)
In this course, students will learn the fundamental process of analyzing data collected from electronic devices (including computers, media, and other digital evidence). Students will become familiar with proper techniques and tools utilized for securing, handling and preserving digital and multimedia evidence at physical crime scenes. Students will utilize examination and chain of custody forms, as well as prepare crime scene & digital acquisition reports related to administrative, civil and criminal investigations.

BFOR 202 Cyber Crime Investigations (3)
This course will teach students forensic investigative techniques specifically for managing cyber crimes including collection and preservation of data from different sources, such as the Internet and "cloud" computing environments. Students will learn the legal processes available for collecting and preserving such evidence in conducting cyber investigations. Offered fall semester only.

BFOR 203 Networking - Introduction to Data Communication w/ lab (3)
The past couple of decades have witnessed the digital revolution profoundly altering our society. Most of the business affairs have been linked to communication and networking technologies. With tremendous advances in networking, it is now feasible to connect all the devices such as computers, tablets, smart phones, and mainframes together. However, the newly innovative communication and networking technologies pose additional challenges to business and IT management. Nowadays, IT professionals must have an elementary understanding of those technologies that facilitate them better impose management in the organization or perform advanced analysis such as for network forensics. Balanced technical and managerial contents are incorporated to enable students to learn from various perspectives. This course will introduce the student to the organization and design of data networks. Topics include networking media, Ethernet technology, the TCP/IP protocol suite, subnets, routers and routing protocols, Wide Area Networks (WANs), and fundamentals of network management. This course includes hands-on experience of networking techniques. Offered fall semester only.

BFOR 204 Fundamentals of Information and Cyber Security (3)
This course covers computer and network security. This course will examine general security concepts that include: communication security, infrastructure security, operation/organizational security, basic cryptography and steganography. Students will learn and apply de facto security best practices administering clients, servers and firewalls in a dedicated computer network laboratory. Students will have the opportunity to assess vulnerabilities and administrate information security. Offered spring semester only.

BFOR 300 Databases for Digital Forensics (3)
A large part of digital forensics deals with extraction and collection of data across electronic devices each of which has different architecture. In this class students learn the traditional relational database design and then understand the architecture of data storage in mobile electronic devices. The class also discusses in depth the storage of data on the cloud and the ramifications of that on digital forensics. Students also learn the basic techniques for analyzing data including use of Structured Query Language, data mining techniques and social network analysis. Students will also

use scripting languages to efficiently clean up data from text files and extract information from files. Prerequisite(s): BFOR 100 or permission of instructor. Offered fall semester only.

BFOR 301 Computer Forensics I (3)
This course prepares students to conduct digital forensic examination of computers, removable media and other electronic devices. Students will use digital forensics tools and techniques to analyze digital evidence pursuant to an investigation, while utilizing industry standards and best practices. This course will prepare student in the development and implementation of forensic incident response plans, policies and procedures. Students will engage in oral and written reporting outlining digital forensic analysis findings and conclusions, in a professionally acceptable manner, pursuant to administrative, civil and criminal legal proceedings.
Prerequisite(s): BFOR 201 or permission of instructor. Offered fall semester only.

BFOR 302 eDiscovery Forensics (3)
This course prepares student for the electronic collection, preservation and management of corporate information. It provides a foundation on basic corporate incident response challenges and proper collection methods for electronic data subject to legal and regulatory requirements. Student will utilize forensics tools for searching, culling and presenting corporate data, pursuant to administrative and civil eDiscovery cases. Offered fall semester only.

BFOR 303 Computer Forensics II (3)
This course prepares students to conduct a digital forensic examination and analysis involving complex cases, electronic devices and data, as well as other forensic processes utilized to ensure government and corporate continuity. This course will prepare student to develop and implement policies and procedures for computer forensic laboratories involving operations and quality control management. It prepares students to compose and present oral and written reports that include laboratory audits, forensic analysis findings and court presentation material.
Prerequisite(s): BFOR 301 or permission of instructor. Offered spring semester only.

BFOR 304 Network and Mobile Forensics (3)
This course exposes students to procedures for conducting live network forensics of computer system components and data. It prepares students to collect, preserve, and examines networks, computers, mobile devices and relevant data that may be critical to an investigation. Students will develop network incident response plans, policies and procedures relevant to corporate networks and data, as well as mobile corporate assets, such as mobile devices. It prepares students to compose and present oral and written reports that outline network and mobile device forensic analysis findings that are technically and legally acceptable in administrative hearings and court proceedings. Prerequisite(s): BFOR 203 & BFOR 301. Offered spring semester only.

BFOR 401W Advanced Digital Forensics (4)
Instructor will guide students through proficiency testing by utilizing digital forensic skills obtained in previous coursework to develop an incident response plan to guide a forensic investigation. Based on case-study scenario, student will also conduct forensic analysis of several items of digital evidence, preparing comprehensive written forensic laboratory reports and present findings to a panel of legal, forensics and management subject matter experts for constructive feedback. Students will also prepare exhibits and other materials for court presentation purposes based on the case-study scenario, forensic analysis findings and written laboratory reports. Instructor will conduct quality control assessments to ensure students are performing forensic analysis that is in compliance with industry standards guiding forensic and laboratory work environments Prerequisite(s): BFOR 302, BFOR 303, and BFOR 304. Offered fall semester only.

BFOR 402 Digital Forensics Moot Court (4)
This is a capstone course where students will learn how to provide expert testimony as a part of presenting their findings from completion of an advanced level digital forensic analysis. Students will learn how to prepare for and give expert witness testimony related to digital evidence, including how to deal with opposing counsel cross-examinations and how to effectively relay such information to a jury. Students will engage in a "mock" court grand jury, suppression hearing, and trial proceedings. Panel of subject matter experts from the legal, forensic and management fields will assist in the guidance and constructive feedback of students participating in "mock" court proceedings. Instructor will assess student's competence in providing a technical testimony to a group of non-technical listeners, such as judges, juries, as well as administrative and human resource officers. Prerequisite(s): BFOR 302, BFOR 303, BFOR 304 and BFOR 401W (BFOR 401W may be taken concurrently). Offered spring semester only.

BITM 215 Information Technologies for Business (3)
This course focuses on the role of information systems in solving business problems. The topics will include software applications, information security, e-commerce and cyber-ethics. Students will develop business-oriented applications using Microsoft Excel (comprehensive level) and Microsoft Access (introductory level). There will be two end-of-semester projects that involve developing a business application by interfacing Excel, Access and Word. Students may take both BITM 215 and ICSI 101 for credit. Not open to freshmen. Offered fall and spring semesters.

RCRJ 201 Introduction to the Criminal Justice Process (3)
Analysis of the decisions made in the process whereby citizens become suspects, suspects become defendants, some defendants are convicted and in turn become probationers, inmates and parolees. Analysis of operational practices at the major criminal justice decision stages. Analysis of innovative programs and the dilemmas of change in policing, diversion, court administration, sentencing, and community correctional programs.

TCRJ 201 Introduction to the Criminal Justice Process (3)
TCRJ 201 is the Honors College version of RCRJ 201; only one version may be taken for credit. Open to Honors College students only.

RCRJ 202 Introduction to Law and Criminal Justice (4)
Students will study judicial decisions involving constitutional and other legal issues relevant to criminal justice, including the government's power to define conduct as criminal, procedural rights, defenses, the rights of juveniles, and punishment. In addition to class meetings, students will enroll in a discussion section where they will engage in legal writing and moot court exercises.

RCRJ 203 (= ASOC 203) Criminology (3)
Introduction to the study of crime, including the development of criminal law, the relationship between crime and social structure, and the individual and social causes of crime. Only one of ASOC 203; ASOC 381; or RCRJ 203 can be taken for credit. Prerequisite(s): ASOC 115.

RCRJ 281 Introduction to Statistics in Criminal Justice (3)
Provides an introduction to statistical methods useful for analyzing the types of data most often encountered in criminal justice research, and it is intended primarily for criminal justice undergraduates. The course has a "practitioner" orientation, emphasizing how to understand and use statistics rather than how to create them. A variety of widely used statistical methods will be considered, including descriptive statistics, correlation and regression, hypothesis testing

(inferential statistics), and contingency tables. A working knowledge of high school algebra will be assumed. May not be taken for credit by students with credit for ASOC 221.

APPENDIX VI.2 UNDERGRADUATE "DIGITAL FORENSICS" AT OTHER INSTITUTIONS

Often times, digital forensics is combined in majors for computer security with an addition of one to two courses in B.S. degrees available in the United States; however, four-year undergraduate degrees specifically in computer or digital forensics with more than three courses in digital forensics are fairly rare, especially among public universities. These are:

Private Universities & Colleges

- The University of Advancing Technology, Arizona (B.S. Technology Forensics[15]),
- Westwood College, California/Virginia (B.A. Computer Forensics[16])
- American InterContinental University, Illinois (B.I.T. Specialization in Digital Forensics[17])
- International Academy of Design & Technology, Illinois (B.S. Computer Forensics[18])
- St. Ambrose University, Iowa (B.A. Computer Investigations and Criminal Justice[19])
- Defiance College, Ohio (B.S. Digital Forensic Science[20])
- Bloomsberg University of Pennsylvania, Pennsylvania (B.S. Digital Forensics[21])
- Robert Morris University, Pennsylvania (B.S. Cyber Forensics and Information Security[22])
- Champlain College, Vermont (B.S. Computer & Digital Forensics[23], B.S. Computer and Digital Investigations[24] (online))

Public Universities & Colleges

- University of Michigan - Dearborn, Michigan (B.S. Digital Forensics[25])
- Metropolitan State University, Minnesota (B.A.S. Computer Forensics[26])

While New York and SUNY universities and colleges do not offer a four-year digital forensics degree, we will list courses available in digital forensics in SUNY institutions of higher learning that offer four-year degrees.

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15 http://majors.uat.edu/Tech-Forensics/

16 http://www.westwood.edu/programs/school-of-technology/computer-forensics-degree

17 http://www.aiuniv.edu/Degree-Programs/Bachelor-of-Information-Technology-Specialization-in-Digital-Investigations

18 http://www.aiuniv.edu/Degree-Programs/Bachelor-of-Information-Technology-Specialization-in-Digital-Investigations

19 http://www.sau.edu/academic_programs/computer_and_information_sciences/degrees_and_programs/computer_investigations_and_criminal_justice.html

20 http://www.defiance.edu/pages/study_plans/cf_study_plans_even.pdf

21 http://www.bloomu.edu/catalog/current/cost/mat_forensics_bs.php

22 http://www.rmu.edu/OnTheMove/wpmajdegr.show_checksheet?icalledby=WPMAJDEGR&ipage=1195&it=&iattr=M&icksht=2012UFR

23 http://www.champlain.edu/computer-forensics/computer-and-digital-forensics-major/curriculum

24 http://www.champlain.edu/cyber-security/online-computer-forensics-digital-investigation-degree

25 http://www.engin.umd.umich.edu/CIS/data/programs/Curr%20DFOR%20Fall%202012.pdf

26 http://www.metrostate.edu/msweb/explore/cas/departments/csci/computer_forensics/index.html

VI.2.1. BINGHAMTON UNIVERSITY, SUNY

MIS 450 Security and Forensics (3)
The first part of the course covers description of different security technologies including firewalls, intrusion detection, and cryptography and identification of potential threats such as malicious software, social engineering, spoofing, and phishing. Students will also learn about managerial aspects including information security policies, security management models and practices, and risk management. The second part of the course covers technical and legal aspects of conducting computer forensic analysis and investigation. Topics include requirements of processing crime scenes, investigation of digital evidence (computers, laptops, etc.), network forensics, e-mail investigation, report writing, and expert testimony in high-tech investigations.

EECE 660 Seminar in Digital Forensics (3)
Topics include determining the origin of digital media, sensor device-metrics, forensic steganalysis, recovery of processing history of digital media. Format: lectures, self-study, class discussions, independent research work. Prerequisites: Probability and statistics, familiarity with either Matlab, C, or Java.

VI.2.2 UNIVERSITY AT BUFFALO, SUNY

MGS 410 Digital Forensics (3)
An introduction to digital forensics. Students will acquire, authenticate, and analyze digital evidence. We will explore technical and managerial topics, and provide students with both theoretical and practical hands-on experience using forensic equipment and software.

VI.2.3 EMPIRE STATE COLLEGE

SMT 273614 Cyber Crime and Computer Forensics (4)
Computer forensics is one of the fastest growing areas in computer security and law enforcement. Virtually every criminal investigation requires that any computer related to the investigation is seized and searched. Studies have shown that about 90 percent of human recording of words, images, sounds, etc. is in digital format, making computer storage a gold mine for investigators. The expertise for conducting investigations requires knowledge ranging from disk structure, file formats, commercial software to investigation techniques and expert testimony. This course will provide an introduction to the field. **Note:** Students must have the ability to work at the upper-level; students must have the ability to install software and a computer on which they can install required software. It is recommended, but not required, that students have familiarity with criminal investigations, trial procedure and the legal system, such as that gained in law enforcement or from a course such as Introduction to Law and the Legal System or Introduction to Criminal Justice.

V1.2.4 FARMINGDALE STATE COLLEGE

CRJ 115 Computer Forensics (3)
This course is an orientation to the study of computer forensic methods. The course will include an analysis of computer hardware that is utilized in forensic investigations such as motherboards, BIOS settings, hard and floppy disk drives and controllers, SCSI controllers and drives and implementations, RAID controllers, boot sequences and related components. Also, this course will introduce the student to methods used in analyzing data storage devices and will include an examination of the physical structures, surfaces and formats of hard disks and other media.

CRJ 217 Computer Forensics II (3)
Computer Forensics II is a continuation of CRJ 115. This course covers topics such as disk geometry and organization. Master boot sector record and volume record creation and organization, file signatures for data type identification, cyclic redundancy checksum for data integrity validation, and RSA's MD5 hash values for file authentication. Other subjects introduced include the UNIX "grep" search utility, search string techniques and file signature matching, and recovery of files that are intentionally deleted, hidden, or renamed. The course examines advanced computer-based evidentiary and "discovery" data methodologies, and includes a study of evidence identification, documentation, and chain of custody procedures.

CRJ 218 - Computer Forensics III (3)
This course examines federal, state, and local computer fraud statutes to provide the student with a legal foundation to approach computer investigations. The course includes lecture elements that provide the student with the skills necessary to conduct successful computer-related investigations, and includes an examination of the processes involved in preparing an affidavit for a search warrant.

VI.2.5 ALFRED STATE UNIVERSITY

CISY 7023 Computer Forensics and Legal Issues (3)
This course will provide a practical, hands-on approach to the process of scientifically retrieving, examining and analyzing data from computer storage media so that data can be used as evidence in court. The course assumes a prerequisite knowledge of network operating systems and security concepts. A final project will be required.

VI.2.6 SUNY INSTITUTE FOR TECHNOLOGY (SUNYIT)

NCS 435 Computer Forensics (4)
Introduction into the field of computer forensics in networked systems. The student will receive training in the methods, techniques and tools used by those practicing computer forensics in support of audit, security privacy and legal functions. Specific legal issues regarding seizure and chain of custody will be addressed. Students will have opportunity to learn computer forensics applications, methods and procedures through hands-on lab activities. Prerequisites: NCS 210, NCS 315, NCS 320.

APPENDIX VI.3 INCORPORATING ACADEMIC COMPETENCIES INTO MAJOR

- Competency: Advanced Writing in the Major
- Competency: Critical Thinking
- Competency: Oral Discourse
- Competency: Information Literacy

Department: Information Technology Management **Date Submitted: 9/9/13**

Major: Digital Forensics **Department Chair: Sanjay Goel**

Competency: Advanced Writing in the Major

Educational experiences that satisfy the Advanced Writing competency in the major will provide students with sustained practice in increasingly sophisticated writing, in a variety of formats appropriate to the discipline. Faculty will guide students toward writing effectively in the discipline by providing appropriate evaluation of written documents, including opportunities to incorporate feedback and progress as writers, either through revision or subsequent assignments. Students' coursework will also convey knowledge of and access to the necessary tools and resources for writing in the discipline.

Part 1: In the text box below, briefly describe (in about one paragraph), and in language suited to an audience composed of colleagues who are not specialists in your field, what it means to be competent in advanced writing at the undergraduate level in the discipline(s) appropriate to the major. **The text boxes in this form will expand as you type.*

Digital forensics specialists prepare written reports in the normal course of business encompassing several categories including forensic analysis findings, incident response plans, crime scene reports, examination plans, and investigation reports. Digital forensics specialists must be able to conduct technically proficient analysis of data and convey its results, opinions, and conclusions to readers who may not be technically proficient (e.g. clients, managers, attorneys, judges and jurors). Such reports are considered as permanent records of a forensic specialist actions and findings that subsequently may lead to oral testimony in legal court proceedings. These forensic reports must convey the professionalism and competence of the writer, while effectively communicating highly technical topics to non-technical decision makers and stakeholders. Students will communicate effectively through the composition of reports and forms utilized by public agencies and private sector corporations engaged in digital forensics. Writing competency at this level is established through the ability to substantiate claims through analysis and proper attribution of sources, to present information in a logical order and manner so that it is clearly understood, and critically evaluate writing for revision based on personal and external review.

Part 2: Please briefly describe how your major curriculum meets **each one** of the learning objectives for Advanced Writing. Please attach a description of major requirements, sample syllabi, and any other relevant materials as appendices to this document.

Students completing educational experiences that satisfy the Advanced Writing competency as part of the requirements for graduation in the major will:

1. *demonstrate increasingly sophisticated writing according to the conventions of their academic discipline;*

Students will be engaged in writing exercises throughout the program with increasing complexity. Students will begin their writing in BFOR 100 and get a foundation in source attribution and general academic writing. As students progress, all courses that include digital forensics analysis will involve report writing starting from BFOR 301 and culminating in BFOR 401W and BFOR 402 where students will develop reports based on analysis and references and present them in a simulated court environment. Students will be able to satisfactory complete standard forms and reports associated with digital forensics with increasing complexity and types of reports as students continue through the program.

2. *be able to communicate clearly in writing, employing fundamental rules of usage, style, and mechanics in the context of their discipline;*

Students will complete assorted types of reports utilized in digital forensics, each with specific rules of usage, style and mechanics. Students will clearly communicate written forensic findings, opinions, and conclusions associated with incident response plans, examination plans, investigation reports and crime scene reports and analysis reports.

3. *be able to evaluate critically a variety of appropriate written texts, including their own;*

Students will be guided throughout the program on the reporting standards and legal requirements involving digital forensics standards. Students' reports will be evaluated based on forensic reporting standards associated with the International Standards Organization, the American Society of Crime Laboratory Directors (LAB) and the Scientific Working Group on Digital Evidence. These reports will include references to external literature that students will have to evaluate and use to provide reference to any claims. In addition, reports will be reviewed for professionalism including style and mechanics. The importance of personal evaluation and introspection of writing prior to submission and peer review will be emphasized to the students in the program.

4. *demonstrate the ability to incorporate critical feedback on their writing, coming to understand that revision and rewriting are an integral part of the writing process.*

Students will receive both oral and written feedback during the evaluation and revision process of forensic reporting. Additionally, students will be exposed to quality control protocols associated with digital forensics reporting that includes self-assessment, peer review and forensic publication requirements. Students will receive feedback from subject matter experts that may include forensic practitioners, attorneys and laboratory managers.

Competency: Critical Thinking

Critical thinking is the systematic process of analyzing and evaluating data, hypotheses, arguments, or critiques. It is an essential component of any academic major. The research, scholarship, and creative activities of university faculty ensure that our academic disciplines are constantly evolving. The facts and theories in academic disciplines are essential knowledge our students must learn, but it is mastery of critical thinking that will allow for lifelong educational and occupational development, and facilitate students' functioning as engaged citizens. Students' coursework in the major will cultivate in them habits of critical thinking, as they learn to approach questions and problems in critical, logical, and reflective ways.

Part 1: In the text box below, briefly describe (in about one paragraph), and in language suited to an audience composed of colleagues who are not specialists in your field, what it means to be competent in critical thinking at the undergraduate level in the discipline(s) appropriate to the major. **The text boxes in this form will expand as you type.*

The field of digital forensics exemplifies critical thinking; it includes the identification, collection, preservation and examination of digital evidence, and its data. In addition, digital forensics specialists need to analyze and evaluate the data collected for the purpose of providing evidentiary support. It is essential that digital forensics specialists utilize a logical approach to data analysis that ensures completeness and relevance to the client's demands. Digital forensics specialists working in laboratory environments must continue to develop professionally through the use of reflective methodology commonly utilized in such work environments, such individual self-assessments, quality control participation, and forensic peer reviews of the work product. In all digital forensics analysis courses (e.g. BFOR 201, BFOR 202, BFOR 304), culminating in capstone courses BFOR 401W and BFOR 402, students will employ a critical thinking approach in all casework, since digital forensics specialists must remain unbiased and impartial, regardless of employer, client or attorney demands. Through the use of scenario-based case studies and control data, students will gather, evaluate and assess digital evidence (data), applying learned concepts, as well as critical and logical thinking in order to achieve solutions that meet established legal, forensic and professional standards.

Part 2: Please briefly describe how your major curriculum meets **each one** of the learning objectives for Critical Thinking. Please attach a description of major requirements, sample syllabi, and any other relevant materials as appendices to this document.

Students completing educational experiences that satisfy the Critical Thinking competency as part of the requirements for graduation in the major will:

1. *formulate complex questions, problems, and hypotheses clearly and precisely, and apply familiar and new concepts in developing solutions and conclusions;*

Students will be exposed to case-based scenarios developed to challenge the student in developing forensic hypotheses and apply learned concepts to develop solutions and conclusions. Students will utilize forensic tools and techniques to test hypothesis on control data to achieve acceptable conclusions to case-based problems.

2. gather and assess relevant information/data;

Students will gather relevant data (digital evidence) from computers, electronic devices and the Internet to perform analysis related to coursework, ultimately leading to forensic casework in a work environment. Students will utilize assorted hardware and software to forensically gather, assess, and analyze digital evidence (data).

3. test hypotheses against relevant criteria and standards, accounting for the facts;

Students will conduct data analysis of a limited scope derived from search parameters established by legal standards. Students will perform analysis based an overview of the facts of an incident or crime and test hypotheses of where evidence artifacts might be found, ultimately using forensic criteria and standards to either confirm the presence or absence of relevant data (evidence).

4. develop well-reasoned arguments and communicate them effectively to others;

Students will develop discussions and arguments regarding analysis opinions and engage in written and verbal communications with clients, corporate managers, attorneys, judges and jurors. Students will be engaged in individual presentations throughout the Digital Forensics program, ultimately leading to moot court testimony (BFOR 402).

5. demonstrate habits of reflection upon their own and others' thinking—identifying, analyzing, and evaluating their own and others' arguments; and challenging conclusions with alternative explanations or points of view.

Discussions and arguments will occur in formal presentations and informal discussions throughout the courses in the digital forensics program. The main course where reflection on their own and others' arguments is a large part of the curriculum is the BFOR 402 course; students will have to present evidence based on analysis results and observe how their own and their peers' testimony is received in terms of effectiveness and clarity. Students will observe how different arguments can be made for the same piece of evidence and the need for being able to determine what results and analysis are necessary and relevant to a case.

Competency: Oral Discourse

Oral discourse provides opportunities for students to develop the oral communication skills they need to participate more effectively in public and academic debates and discussions. Each academic major will offer opportunities for students to participate in a variety of communication contexts appropriate to the discipline, and to reflect on the principles and theories relevant to specific oral communication activities.

Part 1: In the text box below, briefly describe (in about one paragraph), and in language suited to an audience composed of colleagues who are not specialists in your field, what it means to be competent in oral discourse at the undergraduate level in the discipline(s) appropriate to the major. **The text boxes in this form will expand as you type.*

As subject matter experts, digital forensics specialists normally engage in public speaking forums, including presentations to clients, corporate managers, and community venues. Forensic specialists must be competent in verbally communicating highly technical information to groups of individuals that do not possess such technical knowledge. Specialists must also frequently engage in constructive debates or discussions when performing forensic peer reviews, as well as actively participate in providing direct court testimony and cross examination by opposing attorneys. It is essential that digital forensic specialists possess strong oral communication skills in order to provide effective court testimony under stressful situations. Students will learn to communicate effectively while engaged in problem solving and critical thinking exercises. Students will engage in individual and group discussions, oral presentations of forensic coursework (e.g. BFOR 304), and ultimately testify in a moot (mock) court environment (BFOR 402) to strengthen such oral communication skills.

Part 2: Please briefly describe how your major curriculum meets **each one** of the learning objectives for Oral Discourse. Please attach a description of major requirements, sample syllabi, and any other relevant materials as appendices to this document.

Students completing educational experiences that satisfy the Oral Discourse competency as part of the requirements for graduation in the major will:

1. *communicate ideas effectively appropriate to a specific context and according to a specific set of criteria;*

Students will provide presentations to fellow students regarding digital forensics topics based on criteria and assessment rubric established for specific courses in the program (e.g. BFOR 304). Students will become knowledgeable in effectively communicating technical information to a non-technical audience, such as community forums, legal proceedings and management meetings.

2. *establish and maintain an appropriate performer/audience relationship in a given oral exercise, and actively engage with listeners/audience;*

Oral presentations by students will include feedback from fellow classmates participating in the program, as well as from subject matter experts, such as forensic practitioners, attorneys, and lab managers. Oral communication coursework will ultimately lead to a major presentation during moot (mock) court testimony (BFOR 402).

3. *respond to, and where appropriate, incorporate listener's comments and questions;*

Anonymous feedback surveys will be utilized by the audience to provide constructive comments to assist the speaker improve their communication skills. Surveys will also be utilized by the instructors, in conjunction with presentation rubric, to better assess and guide the improvement of students' communication skills.

4. *evaluate, orally or in writing, an oral performance;*

All coursework documentation, such as feedback survey, rubric worksheet and assessment notes will be utilized to provide students guidance the continued development of verbal communication skills, as well as serve as a permanent record of such student assessment and evaluation.

5. *regularly practice communication skills through questions, discussions, debates and/or presentations (both formal and informal).*

Throughout program coursework, students will practice verbal communication skills in the form of individual and group presentations during instructed-guided exercises, constructive debates involving forensics, ethical and legal challenges. Additionally, students may make informal presentations to instructor during office hours, when requested by student or recommended by instructor, to provide guidance prior to public presentations by student.

Competency: Information Literacy

Information literate individuals are able to gather, evaluate, use, manage, synthesize, and create information and data in an ethical manner. They also understand the dynamic environment in which information and data are created, handled, and enhanced. Students demonstrate information literacy through finding information from appropriate sources; evaluating, using and managing information; and appreciating the role of information literacy in learning. Learning is understood here as the constant search for meaning by acquiring information, reflecting on and engaging with it, and actively applying it in multiple contexts. To this end, each academic major will offer increasingly sophisticated research assignments that rely upon diverse information sources. Students will find, process, evaluate, and cite information sources, creating and sharing information presented in multiple formats from multiple sources in a form appropriate to the discipline.

Part 1: In the text box below, briefly describe (in about one paragraph), and in language suited to an audience composed of colleagues who are not specialists in your field, what it means to be competent in information literacy at the undergraduate level in the discipline(s) appropriate to the major. **The text boxes in this form will expand as you type.*

Digital forensic specialists require continuous research regarding new and emerging technologies in order to develop analytical methodologies required to preserve and examine digital evidence (data). Specialist must constantly engage in knowledge sharing amongst other specialists across public and private sectors, through seminars, workshops, listserv, blogs and other electronic discussion forums. Students will be knowledgeable in the information resources available in the digital forensics field, including methodologies, tools and techniques for gathering, evaluating and managing information (e.g. BFOR 203). Students will demonstrate the ability to analyze digital content found in computers, electronic devices and the Internet, as well as utilizing available information resources to research computer file systems, locate data artifacts that may have evidentiary value, as well as prepare structured reports that outline forensic findings (e.g. BFOR 301, BFOR 303). In addition, students will gain an understanding of the changing technology landscape, in which digital forensics specialists must operate; they will also learn how to find, evaluate, and properly attribute sources (BFOR 100).

Part 2: Please briefly describe how your major curriculum meets **each one** of the learning objectives for Information Literacy. Please attach a description of major requirements, sample syllabi, and any other relevant materials as appendices to this document.

Students completing educational experiences that satisfy the Information Literacy competency as part of the requirements for graduation in the major will:

1. *understand the information environment and information needs in the discipline in today's society, including the organization of and access to information, and select the most appropriate strategies, search tools, and resources for each unique information need;*

Students will be exposed to the information environment found in corporate, private and public sectors involving the digital forensics discipline, such as available organizational resources for laboratory and forensic operations, as well as accreditation and standardization sources of information. Students will apply search strategies when conducting research of new technologies, as well as utilize search tools unique in the digital

forensics discipline (e.g. EnCase Forensic from Guidance Software and Forensic Tool Kit from Access Data) as well as traditional search tools for conducting research (e.g. library resources, online search engines, etc.)

2. *demonstrate the ability to evaluate content, including dynamic, online content if appropriate;*

Students will learn how to evaluate resources for validity including dynamic online content. In addition, more specific to the discipline, students will evaluate control data to determine relevancy to the case-based scenario or lab exercise and will be assessed on the searched and found content of the data (digital evidence). Students will also demonstrate ability to evaluate dynamic content, such as live memory, devices and networks, which its content is highly volatile and easily damaged or lost. Students will also evaluate digital evidence retrieved from computers and electronic devices with online information sources to determine authenticity and acceptance by the general forensic community.

3. *conduct ethical practices in the use of information, in ways that demonstrate awareness of issues of intellectual property and personal privacy in changing technology environments;*

Students will engage in exercises and assignments that demonstrate the ethical challenges associated with performing digital forensic examinations in an unbiased and scientific manner, as well as the specific topic of cyber ethics (BFOR 100). Additionally, students will become knowledgeable in Federal and State laws, as well as industry regulations, pertaining to personal privacy, intellectual property and homeland security.

4. *produce, share, and evaluate information in a variety of participatory environments;*

In all of our digital forensics analysis courses (e.g. BFOR 301, BFOR 303), students will participate in individual and group exercises that assist in the development of information (data) evaluation and analysis. Exercises include the production of corporate executive summaries, class presentation material, and moot court exhibit material relevant to digital forensics testimony.

5. *integrate learning and research strategies with lifelong learning processes and personal, academic, and professional goals.*

Students will be exposed to learning and research strategies by subject matter experts (e.g. forensic practitioners, lab managers, attorneys and corporate managers) as well as through their instructors and peers. Students will receive guidance in long term strategies for developing and continuing professional development in the digital forensics discipline, which may include participation in forensic forums, seminars and workshops to develop networking resources. Additionally, students will learn research techniques and processes that will be beneficial to personal, academic, or professional goals in academic, public and private work environments, such as tool testing and validation.

APPENDIX VI.4 LETTERS OF COMMITMENT

- Alan Lizotte, Dean, School of Criminal Justice
- Ingrid Fisher, Chair, Accounting & Law, School of Business
- Nancy A. Denton, Chair, Department of Sociology, College of Arts and Sciences
- Kehe Zhu, Chair, Department of Mathematics and Statistics, College of Arts and Sciences
- James H. Neely, Interim Chair, Department of Psychology, College of Arts and Sciences

UNIVERSITY AT ALBANY
State University of New York

School of Criminal Justice

August 28, 2013

Professor Sanjay Goel
Chair and Associate Professor, Information Technology Management
BB 311, School of Business
1400 Washington Ave. Albany, NY 12222

Dear Professor Goel:

The School of Criminal Justice has reviewed the proposal for the Digital Forensics undergraduate major curriculum and is happy to collaborate with the School of Business on this program.

We understand that students will be taking the following courses in the School of Criminal Justice (or transfer in an equivalent from an approved transfer institution) as part of the program:

- RCRJ 281 Introduction to Statistics (an option)
- RCRJ 201 Introduction to Criminal Justice
- RCRJ 202 Introduction to Law and Criminal Justice
- RCRJ 203 Criminology

We have determined that this request will not impose an undue burden on our offerings and will be able to accommodate anticipated students in the Digital Forensics major. We look forward to working with you on this program!

Sincerely,

Alan Lizotte
Dean and Professor, School of Criminal Justice
University at Albany, State University of New York

Draper Hall
135 Western Avenue
Albany, NY 12222
518-442-5210 Fax: 518-442-5212

Professor Sanjay Goel
Chair and Associate Professor, Information Technology Management
BB 311, School of Business
1400 Washington Ave. Albany, NY 12222

September 3, 2013

Dear Professor Goel:

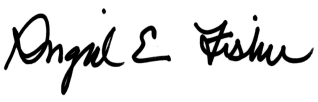
The Accounting & Law Department has reviewed the proposal for the Digital Forensics undergraduate major curriculum and is happy to collaborate with the Information Technology Management Department on this program.

We understand that students will be taking the following courses in the Accounting & Law Department as part of the program:

- BACC 211 Financial Accounting
- BACC 400 Forensic Accounting and Fraud Detection
- BACC 401 Forensic Accounting Investigative Techniques

We will work in every way possible to accommodate the anticipated students in the Digital Forensics major. We look forward to working with you on this exciting program!

Sincerely,



Ingrid Fisher
Chair, Accounting & Law
School of Business
University at Albany, State University of New York

RE: Letter of support

Zhu, Kehe
Sent: Wednesday, August 28, 2013 1:04 PM
To: Goel, Sanjay
Cc: Plotnick, Steven; Reinhold, Karin B

Dear Sanjay,

The Department of Mathematics and Statistics is supportive of your new Digital Forensics major and will be able to accommodate the enrollment of these students in our AMAT 108. Let me know if you need a more formal letter of support.

Best regards,
Kehe Zhu.
Professor and Chair/Mathematics and Statistics

From: Goel, Sanjay
Sent: Wednesday, August 28, 2013 10:46 AM
To: Zhu, Kehe
Cc: Plotnick, Steven; Reinhold, Karin B
Subject: Re: Letter of support

Dear Kehe:

We are working on proposing a new Digital Forensics undergraduate major. We have in our program an option for students to take the AMAT 108 course in their first year. We would like you to be able to accommodate our Digital Forensics students this course. Please find our formal request attached. I would be happy to give you a call to discuss this. Please let me know if you need any clarification or have any questions. If you are amenable, we can provide a template letter of support to help you with your response.

We hope to be able to work with you on this and other future ventures.

Best Regards,
Sanjay Goel

_____
Director of Research, NYS Center for Information Forensics and Assurance
Chair and Associate Professor, Information Technology Management, School of Business
University at Albany, State University of New York
NEW CONTACT INFORMATION AS OF 08/13/13
Business Building 311, 1400 Washington Ave. Albany, NY 12222
PH: (518) 956-8323 FX: (518) 442-2666
http://www.albany.edu/~goel

From: Karin Reinhold <reinhold@albany.edu>
Date: Monday, August 26, 2013 6:30 PM

UNIVERSITY AT ALBANY
State University of New York

Department of Sociology

Nancy A. Denton, Department Chair
ndenton@albany.edu

August 30, 2013

Professor Sanjay Goel
Chair and Associate Professor
Information Technology Management Department, School of Business
Director of Research, NYS Center for Information Forensics and Assurance

Dear Professor Goel:

I am writing to provide my strong support for your new undergraduate program in Digital Forensics. This is an extremely important area for undergraduates to learn about. We are pleased to support your effort by allowing you to require ASOC 115 as part of your program. As sociologists, we, of course, feel that knowledge of sociology is fundamental to everything, and we are very pleased when others recognize it as well.

Best wishes for the success of your program. And please, contact me if there is anything else we can do to assist you.

Sincerely,

Nancy A. Denton

Nancy A. Denton
Professor and Chair
Department of Sociology
University at Albany, SUNY

Arts and Sciences 351
1400 Washington Avenue
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College of Arts and Sciences

UNIVERSITY AT ALBANY
State University of New York

Social Science 399
Albany, New York 12222

(518) 442-4820
Fax: (518) 442-4867

September 3, 2013

Dr. Sanjay Goel
School of Business
Information Technology Management
BA 311

Dear Dr. Goel:

I am writing to inform you that the Department of Psychology has reviewed your request for creating a program in Digital Forensics. We understand that you are requesting approval to list Introduction to Psychology (APSY 101) as a program requirement for this new major.

We understand that this approval will require no more than 25 seats per year in APSY 101. Should you require more than 25 seats per year in the future, we will need to reevaluate our ability to accommodate additional seats at that time.

Based on your current request, we have determined that this will not impose an undue burden on our offerings. We can accommodate your students and see no problem with the proposal in this regard.

Sincerely,

James H. Neely
Professor and Interim Chair
Department of Psychology

APPENDIX VI.5 TRANSFER AGREEMENT OUTREACH ACTIVITIES

- Summary (prepared by Brian Gabriel, Assistant Dean for Undergraduate Education)
- Draft Transfer Equivalency Table Columbia-Greene Community College
- Draft Transfer Equivalency Table Herkimer County Community College
- Draft Transfer Equivalency Table Hudson Valley Community College

UNIVERSITY AT ALBANY
State University of New York

Office of the Vice Provost
for Undergraduate Education

To: Sanjay Goel, Associate Professor; School of Business

Date: September 5, 2013

From: Brian E. Gabriel, Assistant Dean for Undergraduate Education

Subject: Digital Forensics Transfer Agreement Outreach Activities Summary

The Transfer Agreement Coordinator in the Office for Undergraduate Education contacted eight of UAlbany's Community College partners - those with established computing, forensics, criminal justice and cyber-security degree programs - to explore the possibility of developing 2 + 2 transfer program agreements for UAlbany's proposed Digital Forensics degree program.

Six community colleges expressed a strong desire to immediately begin work on the development of 2 + 2 transfer program agreements -- Broome, Columbia-Greene, Fulton-Montgomery, Herkimer, Hudson Valley and Schenectady Community Colleges.

Transfer agreement work meetings over the past two months with Columbia-Greene, Herkimer and Hudson Valley Community Colleges have resulted in the development of draft 2 + 2 transfer course equivalency tables and draft program agreements. Draft 2 + 2 Digital Forensics program agreements and transfer equivalency tables for Columbia-Greene, Herkimer and Hudson Valley Community Colleges are attached for your review and feedback.

Work meetings to develop draft 2 + 2 Digital Forensics program agreements and transfer equivalency tables for Fulton-Montgomery and Schenectady Community Colleges are scheduled for the week of September 23-27, 2013. Initial contact and outreach with Monroe, Sullivan and Westchester Community Colleges will occur next week, September 9-13, 2013.

Additional outreach and transfer agreement development with community colleges and other two- and four-year institutions will continue. It seems very clear that there is a need and demand for transfer pathways that will allow students to enter the exciting field of Digital Forensics at UAlbany.

If you need any additional information, please let me know.

Lecture Center 30
1400 Washington Avenue, Albany, NY 12222
PH: 518-442-3950 FX: 518-442-4959
www.albany.edu

Columbia-Greene Community College

UAlbany's School of Business: Forensics Major - Course Requirements & Electives						Columbia-Greene Community College's Transfer Course Equivalencies					
Course #	Course Name	Credits	Required	Elective	Gen Ed	Course #	Course Name	Credits	Required	Elective	Gen Ed
APSY-101	Intro to Psychology	3	X		X	PY-101	Gen-Psychology (Social-Science Gen Ed)	3	X		X
ASOC-115	Intro to Sociology	3	X			SO-101	Introduction to Sociology	3	X		
BACC-211	Financial Accounting	3	X			AC-102	Managerial Accounting	3	X		
BACC-400	Accounting for Forensics	3	X								
BACC-401	Financial Forensics	3	X								
BFOR-100	Introduction to Computing	4	X			CS-134	Computer & Informatics I (Info-Lit Gen Ed)	3	X		X
BFOR-201	Intro to Digital Forensics	3	X			CS241	Computer Forensics	3			
BFOR-202	Cyber Crime Investigations	3	X			CJ-134	Cyber Crime Investigations	3	X		
BFOR-203	Networking I - Intro to Data Comm	3	X		X	CS-156/197	Introduction to Data Communications	3	X		X
BFOR-204	Computer & Information Security	3	X			CS-235	Network Security	3	X		
BITM-215	Info Technologies for Business	3	X								
BFOR-301	Computer Forensics I	3	X			CS-241	Computer Forensics	3	X		
BFOR-302	e-Discovery	3	X								
BFOR-303	Computer Forensics II	3	X								
BFOR-304	Network Forensics	3	X								
BFOR-331	Database Management	3	X								
BFOR-401W	Advanced Digital Forensics	4	X								
BFOR-402	Digital Forensics Moot Court	4	X								
RCRJ-201	Intro to Criminal Justice	3	X			CJ-102	Introduction to Criminal Justice	3	X		
RCRJ -202	Intro to Law & Criminal Justice	4	X			CJ-212	Procedural Criminal Law	3	X		
RCRJ-203	Criminology	3	X			SO-207	Criminology	3	X		
RCRJ-281	Statistics (or AMAT-108; Statistics)	3	X		X	MA 102	Statistics (Math Gen Ed)	3	X		X
	sub-total	**70**					**sub-total**	**39**			
Course #	**General Education Requirements**					Course #	Course Name				
AART-244	ART - Intro to Photography & Digital	3	X		X	AR-135	Digital Photography	3		X	X
AENG-100Z	HUMANITIES - English I	3	X		X	EN-101	English Composition I	3	X		X
ACHM-010	NATURAL SCIENCE - Forensic Science	4	X		X	SC-241	Forensic Science	4	X		X
AHIST-100/101	US HISTORY	3	X		X	HI-103/104	U.S. History 1492-1865 or 1865 - Present	3		X	X
AENG-121W	WRTING INTENSIVE & Critical Inquiry	3	X		X	EN-102	English Composition II & Literature	3	X		X
*	Challenges for the 21st Century	3				*	Students completing an A.A. or A.S.				
*	Foreign Language Course	3				*	Degree will have satisfied all of the				
*	International Perspectives	3				*	General Education Requirements				
Course #	**Additional Requirements or Electives**					Course #	Course Name				
BAAC-010	Financial Accounting	3		X		AC-101	Financial Accounting	3	X		
RCRJ-010	Criminal Invesitgations	3		X		CJ-204	Criminal Invesitgations	3		X	
MATH-100	Pre-calculus	3		X		MA-111	Pre-calculus	3	X		
ELECTIVE		3		X							
ELECTIVE		3		X							
ELECTIVE		3		X							
ELECTIVE		3									
ELECTIVE		3		X							
ELECTIVE		3		X							
	sub-total	**52**					**sub-total**	**25**			
Total Program Credits		**122**				**Total Program Credits**		**64**			

* A transfer student admitted to the University At Albany and has completed his/her A.A. or A.S. degree will be given full credit for meeting all of UAlbany and SUNY's General Education requirements (a minimum of 30 credits).

~ draft ~

UAlbany's Digital Forensics Program Transfer Equivalency Table
Herkimer County Community College

~ Sept-2013 ~

UAlbany's School of Business: Forensics Major - Course Requirements & Electives						Herkimer's Criminal Justice: Cybersecurity & Forensics - Transfer Equivalencies					
Course #	**Course Name**	**Credits**	**Required**	**Elective**	**Gen Ed**	**Course #**	**Course Name**	**Credits**	**Required**	**Elective**	**Gen Ed**
APSY-101	Intro to Psychology	3	X		X	SS-151	Psychology (Social-Science Gen Ed)	3	X		X
ASOC-115	Intro to Sociology	3	X			SS-161	Sociology	3		X	
BACC-211	Financial Accounting	3	X			BU-114/5	Accounting 1 & 2	6		X	
BACC-400	Accounting for Forensics	3	X								
BACC-401	Financial Forensics	3	X								
BFOR-100	Intro to Computing	4	X			IS-115	Computer Applications	3	X		
BFOR-201	Intro to Digital Forensics	3	X			CJ 262	Adv. Computer Forensics & Investigations	3	X		
BFOR-202	Cyber Crime Investigations	3	X			CJ 261	Computer Forensics & Investigations	3	X		
BFOR-203	Networking I - Intro to Data Comm	3	X			IS--140	Networking Essentials	3		X	
BFOR-204	Computer & Information Security	3	X			IS-260	Computer/Network Secuirty	3		X	
BFOR-301	Computer Forensics I	3	X								
BFOR-302	e-Discovery	3	X								
BFOR-303	Computer Forensics II	3	X								
BFOR-304	Network Forensics	3	X								
BFOR-331	Database Management	3	X								
BFOR-401W	Advanced Digital Forensics	4	X								
BFOR-402	Digital Forensics Moot Court	4	X								
BITM-215	Info Technologies for Business	3	X				Is there an Equivalent Course @ Herkimer				
RCRJ-201	Intro to Criminal Justice	3	X			CJ-120	Intro to Criminal Justice	3	X		
RCRJ -202	Intro to Law & Criminal Justice	4	X				Suggest taking UA's RCRJ-202 Online				
RCRJ-203	Criminology	3	X			SS-136	Criminology	3	X		
RCRJ 281	Statistics (May take AMAT-108)	3	X		X	MA-127	Statistics (Math Gen Ed)	3	X		X
	sub-total	**70**					**sub-total**	**36**			
Course #	**General Education Requirements**					**Course #**	**Course Name**				
AART-010	Arts	3	X		X	HU-242	Forensic Photography	3	X		X
AENG-010	Humanities - English I	3	X			EN-111	English I	3	X		
IINF-010	Info Literacy - Intro to Info-Assurance	3	X		X	CJ-230	Intro to Information Assurance	3	X		X
ACHM-120	Natural Science - Chemistry I & Lab I	4	X		X	SC-153	General Chemistry with Lab	4	X		X
AHIS-100Z	US History - American Pol & Soc History	3	X		X	SS-121	American History I	3	X		X
AENG-121W	Writing & Critical Inquiry	3	X		X	EN-112	English II - Wrtitng & Literature	3	X		X
*	Challenges for the 21st Century	3				*	Students completing an A.A. or A.S.				
*	Foreign Language Course	3				*	Degree will have satisfied all of the				
*	International Perspectives	3				*	General Education Requirements				
Course #	**Additional Requirements or Electives**					**Course #**	**Course Name**				
TBD	Fraud Examination	3		X		CJ-240	Fraud Examination	3	X		
TBD	Managing & Understanding Cybercrime	3		X		CJ-241	Managing & Understanding Cybercrime	3	X		
TBD	Network Defense & Countermeasures	3		X		CJ-273	Network Defense & Countermeasures	3	X		
TBD	Terrorism & Homeland Defense	3		X		SS-225	Terrorism & Homeland Defense	3	X		
TBD	ELECTIVE	3		X							
TBD	ELECTIVE	3									
TBD	ELECTIVE	3		X							
TBD	ELECTIVE	3		X							
	sub-total	**52**					**sub-total**	**31**			
	Total Program Credits	**122**					**Total Program Credits**	**67**			

* A transfer student admitted to the University At Albany and has completed his/her A.A. or A.S. degree will be given full credit for meeting all of UAlbany and SUNY's General Education requirements (a minimum of 30 credits).

Hudson Valley Community College

UAlbany's School of Business: Forensics Major - Course Requirements & Electives						Hudson Valley CC Criminal Justice: Cybersecurity & Forensics - Transfer Equivalencies					
Course #	**Course Name**	**Credits**	**Required**	**Elective**	**Gen Ed**	**Course #**	**Course Name**	**Credits**	**Required**	**Elective**	**Gen Ed**
APSY-101	Intro to Psychology	3	X		X	PSYC-100	Psychology (Social-Science Gen Ed)	3	X		X
ASOC-115	Intro to Sociology	3	X			SOCL-100	Sociology	3	X		
BACC-211	Financial Accounting	3	X			ACTG-110	Financial Accounting	3	X		
BACC-400	Accounting for Forensics	3	X								
BACC-401	Financial Forensics	3	X								
BFOR-100	Introduction to Computing	4	X			CISS-100	Introduction to Computing	3	X		
BFOR-201	Intro to Digital Forensics	3	X			CRJS-155	Concepts in Forensic Evidence	3	X		
BFOR-202	Cyber Crime Investigations	3	X				Develop a course for this requirement				
BFOR-203	Networking I - Intro to Data Comm	3	X			CISS 120	Networking I - Intro to Data Comm	3	X		
BFOR-204	Computer & Information Security	3	X			CISS-125	Computer & Information Security	3		X	
BFOR-301	Computer Forensics I	3	X								
BFOR-302	e-Discovery	3	X								
BFOR-303	Computer Forensics II	3	X								
BFOR-304	Network Forensics	3	X								
BFOR-331	Database Management	3	X			CISS-250	Database Management Systems	4	X		
BFOR-401W	Advanced Digital Forensics	4	X								
BFOR-402	Digital Forensics Moot Court	4	X								
BITM-215	Info Technologies for Business	3	X		X	CISS 101	Business Comp & Info Sci (Info-Lit Gen Ed)	3	X		X
RCRJ-201	Intro to Criminal Justice	3	X			CRJS-101	Intro to Criminal Justice	3	X		
RCRJ -202	Intro to Law & Criminal Justice	4	X				Suggest taking UA's RCRJ-202 Online				
RCRJ-203	Criminology	3	X			CRJS-250	Criminology	3	X		
RCRJ-281	Statistics (or AMAT-108; Statistics)	3	X		X	MATH-135	Statistics (Math Gen Ed)	3	X		X
	sub-total	**70**					**sub-total**	**37**			
Course #	**General Education Requirements**					**Course #**	**Course Name**				
AART-010	Arts	3	X		X	ARTS-100	Survey of Art History I	3		X	X
AENG-010	Humanities - English I	3	X		X	ENGL-101	English I - Composition	3	X		X
AHIS-100Z	US History - American Pol & Soc. History	3	X		X	POLS-105	American National Government	3	X		X
ACH-010	Natural Science - Forensic Science II	3	X		X	CRJS-246	Forensic Science II	3	X		X
AENG-121W	Writing & Critical Inquiry	3	X		X	ENG-101	English II - Writing & Inquiry	3	X		X
*	Challenges for the 21st Century	3				*	Students completing an A.A. or A.S.				
*	Foreign Language Course	3				*	Degree will have satisfied all of the				
*	International Perspectives	3				*	General Education Requirements				
Course #	**Additional Requirements or Electives**					**Course #**	**Course Name**				
ICSI-201	Computer Programming & Logic I	3		X		CISS-110	Programming & Logic I	3	X		
ICSI-010	Programming & Logic II - Data Structures	3		X		CISS-111	Programming & Logic II -Data Structures	3	X		
RCRJ-010	Introduction to Evidence Gathering	3		X		CRJS-190	Introduction to Evidence Gathering	3	X		
RCRJ-010	Forensic Science I (Evidence)	3		X		CRJS-245	Forensic Science I	3	X		
TBD	ELECTIVE	3		X							
TBD	ELECTIVE	3		X							
TBD	ELECTIVE	3		X							
TBD	ELECTIVE	3		X							
TBD	ELECTIVE	3		X							
	sub-total	**51**					**sub-total**	**27**			
Total Program Credits		**121**				**Total Program Credits**		**64**			

* A transfer student admitted to the University At Albany and has completed his/her A.A. or A.S. degree will be given full credit for meeting all of UAlbany and SUNY's General Education requirements (a minimum of 30 credits).

APPENDIX VI.6 SYLLABI FOR NEW BFOR AND BACC COURSES

- BACC 400
- BACC 401
- BFOR 100
- BFOR 201
- BFOR 202
- BFOR 203
- BFOR 204
- BFOR 300
- BFOR 301
- BFOR 302
- BFOR 303
- BFOR 304
- BFOR 401W
- BFOR 402

SCHOOL OF BUSINESS
UNIVERSITY AT ALBANY State University of New York

BACC 400
Forensic Accounting & Fraud Detection

#0000 – BACC 400 Forensic Accounting and Fraud Detection (3 credits)
Semester 0000 – Month 00, 0000 to Month 00, 0000
Course Prerequisite(s): BACC 211
Instructor(s):
Developer(s): Sanjay Goel

COURSE DESCRIPTION

This course provides an overview of occupational fraud including misappropriation of assets, financial statement fraud and corruption as well as other forensic accounting engagements such as tax fraud and matrimonial disputes. The course will explore the characteristics of specific fraud schemes along with the characteristics of those who perpetrate them (according to the Annual Report to the Nations compiled by the Association of Certified Fraud Examiners). Students will acquire an understanding of the generally accepted accounting principles violated by the schemes. Students will become versed in the principles of internal control over the financial reporting system including how these principles work to deter financial fraud and ensure compliance with external requirements. Relevant guidance from the professional, regulatory and legal environment will be discussed. Prerequisite(s): BACC 211. Offered fall semester only.

LEARNING OBJECTIVES

Overarching Goal: The course will teach students to detect and investigate accounting fraud

Sub-Objectives: Student will learn to

1. Analyze financial statements
2. Evaluate internal controls for accounting systems in an organization and identify gaps in controls
3. Detect accounting fraud and distinguish between different types of fraud
4. Investigate fraud cases to identify the perpetrators, evaluate the damage, and suggest controls to mitigate the risks of fraud
5. Analyze cases of fraud in organizations and write detailed reports backed by evidence

COURSE FORMAT: FACE-TO-FACE (F2F) ON-CAMPUS DELIVERY

The course will be offered in-class and include both lecture and hands-on laboratory components. In addition, learning will be supplemented with assigned readings or videos, discussions, and other assignments and exercises related to the course topics.

F2F Meeting Dates, Times, and Location: The class will be in a three hour session on campus with the location and time provided by the registrar for any specific semester.

INSTRUCTOR CONTACT

Type	Information	Availability
Email	goel@albany.edu	
Phone	**518 956 8323**	
In Person	BB 311	
Virtual		

BACC 400

Forensic Accounting & Fraud Detection

Chat		

COURSE RESOURCES

Type	Information
Course Website	TBD
Instructor Website	http://www.albany.edu/~goel
Textbook(s)	TBD
Reference Books(s)	TBD

TECHNICAL RESOURCES

If you experience technical problems that interrupt your ability to complete class work, it's important that you know where to seek help immediately. Here is a simple guide for where you should direct questions and calls for help.

Problems with…	You should contact…
Logging into your ISP (Internet Service Provider); connecting to websites; launching web browser (e.g. Internet Explorer, Firefox)	Your ISP. The following links are provided to a couple of local ISP providers contact pages. If yours is not on this list, look up your ISP in a search engine and find a "Contact Us" page: TimeWarner (Road Runner & Verizon (FIOS)
Connecting & logging into to the UAlbany Blackboard website; accessing your course(s); interacting or participating in course activities, submission of assignment or file attachments in course.	The ITS Help Desk by using the ITS Help Request Form (http://www.albany.edu/its/help) or call (518) 442-4000. Press "1" for students. Then, press "2" for help with Blackboard.
Forgotten PIN when trying to get forgotten password.	The ITS HelpDesk at (518) 442-3700 or go to Lecture Center (LC) 27 at the UAlbany main campus with your SUNYCard and another form of identification. Press "1" for assistance when calling.

Please note that your instructor is not on this list. If you send inquiries about these technical problems, you will be referred to the resources listed above.

COURSE ACTIVITIES

Lectures: Instructor-led lectures that may be supplemented with expert guest lectures on course-related topics will be offered in class. The lecture material should summarize and expand on the knowledge obtained from the assigned readings and assignments.

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Forensic Accounting & Fraud Detection

Video Clips: Video clips of lectures may be offered for portions of the class in case we use a flipped classroom approach for one or more lectures. This will feature PowerPoint content as well as the instructor video with subtitling and transcripts available. Purely audio versions of the content are also available for playing on personal media players, e.g. IPods. To play the video, you will need to download specific video player that will be provided to you.

Readings: Chapters, articles, or other readings assigned in the class are meant to supplement or reinforce the other course materials and will not generally have duplicate content.

Cases: Case studies using actual examples to provide real-world relevance to the topics in the class. The case(s) in this course will have several cases of accounting fraud such as at Citibank, WorldCom, etc.

Discussions: There will be a general discussion forum available for students to talk amongst themselves based on topics outside of class. Discussions topics will also be assigned and graded. The following criteria will be used for assessing discussions

Criteria	Outstanding 90-100	Proficient 80-89	Marginal 70-79	Unsatisfactory 0-69
Content Critical Thinking	Discussions/Comments/questions are thought provoking and display insight. They add to the depth of the discussion. Extensive use of resources to support comments or ideas.	Discussions/Comments/questions are appropriate/ relative and add to the discussion, but may not always display insight or provoke thought. Some use of resources to support comments or ideas.	Discussions/Comments/questions are relative but do not add to the discussion or may show lack of insight. Occasional use of resources to support comments or ideas.	Discussions/Comments/questions are not relative to the case and do not add to the discussion. No use of resources to support comments or ideas.

Assignments/Exercises: Students will receive several assignments during the course of the semester that will include homework, papers, and independent research

F2F Exams: These exams will be offered to assess individual content review and understanding. The content of these exams will be based on the lectures preceding the exam and will have multiple choice and essay questions. There will be 2 or 3 unit tests through the semester but final exam.

Project: An end-of-semester project will be assigned to groups of students the details of which will be provided during the class.

Hands-On Laboratories: Laboratory exercises will be offered where students get hands-on experience using tools and techniques in the field. Laboratory exercises take around 1 – 1 ½ hour to complete and will utilize classroom computer laboratories (in-class) or software available on the cloud that you can access with a personal computing device (online).

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Syllabus

Participation: Course attendance is important part of building long-lasting relationships and a learning community between your peers and your instructors. Not only does it allow you to share your opinions on course topics, but also you benefit from your classmates' and instructor perspectives. Participation in the course could be measured with attendance, and/or in-class assignments.

Presentation: You (or group) will be expected to make a 20-minute presentation to the class Each person present should ask questions during the presentation and respond to assertions from the speaker. The grading will be done for both presentations and questions asked. The grading rubric is as follows:

- Presentation (70%) - Content 50% / Clarity, Coherence & Organization 20%
- Q&A (30%) - Question Relevance 10% / Articulation of Question 5% / Response to Questions 15%

An outstanding presentation needs to be factually accurate and on-topic. The information should cover the topic selected and should consider the background of the audience. The presentation should have a clear beginning, middle, and end. Introduction should contain an articulate, compelling statement of the topic and inform the audience of the key ideas to be discussed. Any claims should be well-supported and the ending should be strong and conclusive. The grading for questions will be done across all presentations. Individual students from the same team will be graded separately.

GRADING AND ASSESSMENT

We try to grade assignments fairly and return them within a reasonable time period with relevant comments and to be available to discuss questions. Students are expected to set up an appointment to talk with the grader within a week of receiving a grade. Please let us know if there is a mistake in calculation – mistakes happen!

Late assignments, projects, or papers will receive 15% off per day late from the final possible grade for the exercise unless there is a legitimate excuse.

Students at UAlbany should contact the Disabled Student Services Center and the relevant professor at least a week before each F2F exam if requiring additional assistance. Missing any assessment without a verifiable legitimate excuse will result in a grade of zero. F2F Exams are expected to be closed-book unless otherwise specified and all personal electronic devices (laptops, cell phones, PDA's, etc.) should be put away.

ACTIVITY	PERCENTAGE OF GRADE
Participation	5%
Cases	15%
Assignments & Hands-On Laboratories	20%
Discussions	20%
Exam I	20%
Exam II	20%

Note: The instructor is expected to get approval of the entire class prior to making any changes regarding the grading rubric.

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BACC 400

Forensic Accounting & Fraud Detection

Syllabus

COURSE SCHEDULE	
Week	**Course Activities**
1	**Introduction to Forensic Investigative Techniques**
2	**Financial Statement Analysis**
3	**Internal Controls**
4	**Auditing**
5	**Forensic Accounting & Legislation**
6	**Exam I**
7	**Misappropriation of Assets (Including case)**
8	**Indirect methods of Restructuring Income: Money Laundering & Transnational Financial Flows (Including case)**
9	**Revenue Fraud (including case)**
10	**Inventory Fraud (including case)**
11	**Fraud on Reserves (including case)**
12	**Business Valuation and Damages (including case)**
13	**Exam II**
14	**Occupation/Employee Fraud (misreporting time/use of company resources etc.) Guest Lecture**
15	**TBD**

This schedule is subject to change and students are expected to be aware of any modifications to including, but not limited to: due dates, readings, exam dates, and project guidelines, announced via email, Blackboard announcements or during class hangouts.

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BACC 400

Forensic Accounting & Fraud Detection

Syllabus

ACADEMIC INTEGRITY & HONESTY

Students MUST comply with all University at Albany's standards of academic integrity. As stated on the undergraduate and graduate bulletin, **"Claims of ignorance, of unintentional error, or of academic or personal pressures are not sufficient reasons for violations of academic integrity."** Non-compliance with academic integrity standards, will result in the student being reported to the Office of Graduate Admissions or the Dean of Undergraduate Studies Office (whichever applies) AND receive a lowering of a paper or project grade of at least one full grade, receive a failing grade for a project containing plagiarized material or examination in which cheating occurred, receive a lowering of course grade by one full grade or more, a failing grade for the course, or any combination of these depending on the infraction.

Violations include: Giving or receiving unauthorized help on an examination; Collaborating on projects, papers, or other academic exercises which is regarded as inappropriate by the instructor(s), submitting substantial portions of the same work for credit more than once, without the prior explicit consent of the instructor(s) to whom the material is being submitted; misrepresenting material or fabricating information in an academic exercise or assignment; Destroying, damaging, or stealing of another's work or working materials; and presenting as one's own work, the work of another person (e.g., words, ideas, information, code, data, evidence, organizing principles, or presentation style of someone else). This includes paraphrasing or summarizing without acknowledgment, submission of another student's work as one's own, purchase of prepared research, papers or assignments, and the unacknowledged use of research sources gathered by someone else. Failure to indicate accurately the extent and precise nature of one's reliance on other sources is also a form of plagiarism. The student is responsible for understanding the legitimate use of sources, the appropriate ways of acknowledging academic, scholarly, or creative indebtedness, and the consequences for violating University regulations. **If you have questions about academic integrity - ASK!**

"GREAT" EXPECTATIONS

- Students can expect the instructor to be open to questions and concerns, but remain impartial and fair to all students.
- Students are expected to respectfully participate in the course and communicate with the instructor if there is confusion or lack of understanding of the material. In turn, the instructor will attempt to clarify any material.
- If the instructor is unable to attend class or office hours due to a personal emergency, students can expect for arrangements to be made for an alternate instructor or to be informed in as a timely a manner as possible.
- Students are expected to provide reliable contact information and inform the instructor of any updates.
- Students are expected to contact the instructor via email, phone, or in person for reliable response.
- Students are expected to complete all assignments and readings as well as set up meeting times with the instructor as necessary.
- It is important for students to inform the instructor if all available office hours interfere with other classes during the first week of the course.

SCHOOL OF BUSINESS
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Course ID: **BACC 401**
Course Name: **Forensic Accounting Investigative Techniques**
Credit Hours: **3**
Semester: **Spring 2014**
Course Prerequisite(s): **BACC 400**
Classroom: **TBA**
Time: **TBA**

INSTRUCTOR CONTACT INFORMATION

Instructor	Yuan Hong
Email	hong@albany.edu
Office Location	BB (New Business School)-316
Office Hours	Monday 3:00-5:00PM or by Appointment

COURSE DESCRIPTION

Students will learn the process and principal techniques for conducting fraud examinations and other forensic investigations as well as why careful attention to them is critical to a successful investigation. Students will learn the role of analytical review procedures in the investigation of financial fraud. Document analysis and the art of effective interviewing during investigations will be explored. Students will learn the proper procedures for evidence handling. Finally students will learn to write a report that succinctly and effectively communicates the completed investigation. Relevant guidance from the professional, regulatory and legal environment will be discussed. Prerequisite(s): BACC 400. Offered spring semester only.

LEARNING OBJECTIVES

After successfully completing this course, the student should be able to:

- Articulate the process of forensic investigation and fraud examination.
- Utilize effective analytical techniques conduct forensic investigation and fraud examination.
- Demonstrate effective interviewing techniques in a forensic investigation and fraud examination
- Prepare a written investigation report for a specific engagement.

COURSE STRUCTURE

This course is offered as a combination of lectures, case study, and hands-on experience of forensic accounting and audit tools/software. In some classes, case study and discussion are conducted by the instructor. Also, forensic and fraud examination tools/software are introduced after giving the lecture. The instructor will teach hands-on forensic and fraud

examination techniques and students are expected to finish the in-class exercises. Students should be interactively involved in the class activities.

COURSE RESOURCES

Course Website	Blackboard (https://blackboard.albany.edu/)
Textbooks	Not Required
Software	ACL, R, WEKA, SPLICE, Palantir
Reference Materials	To be posted on the Blackboard prior to each class

GRADING POLICY AND ASSESSMENT

Activity	Portion of Grade
Class Participation	15%
Assignments	25%
Group Project	20%
Exams	40%

Class Participation: The instructor expects students to actively participate in the class discussion. Critical thinking and learning to express opinions in a group setting is critical to everyone's success as a professional. Although this level of participation may initially be outside the students' comfort zone, remember that the instructor and students are on the same team in the learning process, and that they will be dealing with many issues that lack a right answer. Daily class activities provide important feedback to the instructor about how much students know about the subject matter and their levels of effort and preparation.

Case study is offered in some classes, which is essential for students to foster critical thinking and learn analytical skills in an interactive environment. Students are highly encouraged to deliver their ideas in case study.

Assignments: There will be several individual assignments throughout the semester. The assignments will require students to do some analytic tasks using the tools and methods covered in class, and/or complete the report of fraud examination. All homework assignments must be prepared using a word processor. They should be uploaded to Blackboard by the specific due date(s).

Group Project: A group project will be performed with delivery during the last few weeks of this course. The project is a comprehensive work that covers all the procedures of the fraud investigation and also fosters students' teamwork ability in practical fraud examination. The group can be gathered voluntarily and each group includes 3-5 students. The topic will be

assigned earlier. Each group should present their work and submits the summary (only one copy is required for each group) in the week before the finals week.

Exams: Students are required to take both Midterm and Final exams. The Midterm covers the contents of the first 6 classes and the final exam covers everything from Week 1-13. For exams, students will be responsible for the material covered in the lecture slides, projects and class discussions. In case you cannot attend the exam(s) on the scheduled date(s), a proof with appropriate excuse should be shown to the instructor. Otherwise, a make-up exam cannot be authorized.

Grading: The instructor will try to grade assignments, projects and exams fairly and return them within a reasonable time period with relevant comments and to be available to discuss questions. Students are encouraged to setup an appointment to talk with the grader within a week of receiving a grade.

Late Submission: Late assignments and project will receive 25% off per day late from the final possible grade for the exercise unless authorized by the instructor.

Disability Statement: Students at UAlbany should contact the Disabled Student Services Center and the relevant professor at least a week before each F2F exam if requiring additional assistance. Missing any assessment without a verifiable legitimate excuse will result in a grade of zero. F2F Exams are expected to be closed-book unless otherwise specified and all personal electronic devices (laptops, cell phones, PDA's, etc.) should be put away.

COURSE OUTLINE

Week	Topic	Comments
1	Introduction to Forensic Accounting and Fraud Examination	
2	Preliminary Data Analysis for Audit: Software/Tools, Descriptive Statistics, Data Visualization and Basic Analysis	R and ACL Assignment 1
3	Data Analytics Techniques I: Classification, Clustering	WEKA
4	Data Analytics Techniques II: Numeric Data Analysis, Text Mining	Text Mining Tool (SPLICE)
5	Fraud Examination Evidence I: Physical, Documentary and Observational Evidence	U.S. Food Service Case Study
6	Fraud Examination Evidence II: Interview and Interrogation Methods	Perplexed Payroll Clerk Case Study
7	**MIDTERM**	

8	Fraud Examination Evidence III: Forensic Science and Computer Forensics	Banking Industry Case Study
9	The Fraud Report, Litigation, and the Recovery Process	Assignment 2
10	Documenting and Presenting the Case	
11	Fraud Preventive Controls and Risk Management	
12	Predictive Audit I: Regression	R
13	Predictive Audit II: Expert System	Assignment 3
14	**FINAL EXAM**	

ACADEMIC INTEGRITY & HONESTY

Students MUST comply with all **University at Albany's standards of academic integrity**. As stated on the undergraduate and graduate bulletin, **"Claims of ignorance, of unintentional error, or of academic or personal pressures are not sufficient reasons for violations of academic integrity."** Non-compliance with academic integrity standards, will result in the student being reported to the Office of Graduate Admissions or the Dean of Undergraduate Studies Office (whichever applies) AND receive a lowering of a paper or project grade of at least one full grade, receive a failing grade for a project containing plagiarized material or examination in which cheating occurred, receive a lowering of course grade by one full grade or more, a failing grade for the course, or any combination of these depending on the infraction.

Violations include: Giving or receiving unauthorized help on an examination; Collaborating on projects, papers, or other academic exercises which is regarded as inappropriate by the instructor, submitting substantial portions of the same work for credit more than once, without the prior explicit consent of the instructor to whom the material is being submitted; misrepresenting material or fabricating information in an academic exercise or assignment; Destroying, damaging, or stealing of another's work or working materials; and presenting as one's own work, the work of another person (e.g., words, ideas, information, code, data, evidence, organizing principles, or presentation style of someone else). This includes paraphrasing or summarizing without acknowledgment, submission of another student's work as one's own, purchase of prepared research, papers or assignments, and the unacknowledged use of research sources gathered by someone else. Failure to indicate accurately the extent and precise nature of one's reliance on other sources is also a form of plagiarism. The student is responsible for understanding the legitimate use of sources, the appropriate ways of acknowledging academic, scholarly, or creative indebtedness, and the consequences for violating University regulations.

"GREAT" EXPECTATIONS

- Students can expect the instructor to be open to questions and concerns, but remain impartial and fair to all students.
- Students are expected to respectfully participate in the course and communicate with the instructor if there is confusion or lack of understanding of the material. In turn, the instructor will attempt to clarify any material.
- If the instructor is unable to attend class or office hours due to a personal emergency, students can expect for arrangements to be made for an alternate instructor or to be informed in as a timely a manner as possible.
- Students are expected to provide reliable contact information and inform the instructor of any updates.
- Students are expected to contact the instructor via email, phone, or in person for reliable response.
- Students are expected to complete all assignments and readings as well as set up meeting times with the instructor as necessary. It is important for students to inform the instructor if all available office hours interfere with other classes during the first week of the course.

SCHOOL OF BUSINESS
UNIVERSITY AT ALBANY State University of New York

BFOR 100
Introduction to Information Systems

#XXXX – BFOR 100 Introduction to Information Systems (3 credits)
Fall XXXX – Aug X – Dec X, 2014
Course Prerequisite(s): None
Instructor(s):
Developer(s):

Syllabus

COURSE DESCRIPTION

This course provides a foundation of information systems concepts that can be applied to future learning in advanced topics. The course will include background in the history and social implications of computing including cyber ethics; emergent and contemporary information technology and its nomenclature; information and data abstraction, representation, manipulation and storage; operating systems; networking and the Internet, programming languages, logic, and algorithms; database systems; digital graphics and multimedia; and information security.

LEARNING OBJECTIVES

Overarching Goal: Gain a foundation in information systems for future learning in advanced topics.

Sub-Objectives: Student will learn how to:

1. Critically discuss and evaluate ethical and legal issues and codes of practice related to the use of information systems
2. Recognize computer and network hardware and peripherals
3. Compare the advantages and disadvantages of different types of networks
4. Distinguish between different file and data structures and data types
5. Identify basic information security risks and engage in common secure practices
6. Use a database for data storage and retrieval
7. Apply programmatic logic for solving business problems
8. Evaluate and identify adequate information sources and how to properly attribute intellectual credit

COURSE FORMAT: F2F ON-CAMPUS DELIVERY

The course will be offered in-class and include both lecture and hands-on laboratory components. In addition, learning will be supplemented with assigned readings or videos, discussions, and other assignments and exercises related to the course topics.

F2F Meeting Dates, Times, and Location: In-class sessions will be held on DAYS between Month 00, 000 to Month 00, 0000 except for the following dates: Month 00, 0000, Month 00, 0000 & Month 00, 0000 that are school holidays. These sessions will be held at 00:00 EST in ROOM located at CAMPUS LOCATION. Please refer to the following link for directions: http://www.directions.com

INSTRUCTOR CONTACT

Type	Information	Availability
Email		
Phone		
In Person		

Virtual Chat		

COURSE RESOURCES

Type	Information
Course Website	https://blackboard.albany.edu
Instructor Website	http://www.instructorwebsite.edu
Textbook(s)	AuthLastName,FI. MI. (0000). *BookTitle, 0th ed.* City, STATE: Publisher. ISBN: 000-0-000-00000-0
Reference Books(s)	AuthLastName,FI. MI. (0000). *BookTitle, 0th ed.* City, STATE: Publisher. ISBN: 000-0-000-00000-0

TECHNICAL RESOURCES

If you experience technical problems that interrupt your ability to complete class work, it's important that you know where to seek help immediately. Here is a simple guide for where you should direct questions and calls for help.

Problems with…	You should contact…
Logging into your ISP (Internet Service Provider); connecting to websites; launching web browser (e.g. Internet Explorer, Firefox)	Your ISP. The following links are provided to a couple of local ISP providers contact pages. If yours is not on this list, look up your ISP in a search engine and find a "Contact Us" page: TimeWarner (Road Runner & Verizon (FIOS)
Connecting & logging into to the UAlbany Blackboard website; accessing your course(s); interacting or participating in course activities, submission of assignment or file attachments in course.	The ITS Help Desk by using the ITS Help Request Form (http://www.albany.edu/its/help) or call (518) 442-4000. Press "1" for students. Then, press "2" for help with Blackboard.
Forgotten PIN when trying to get forgotten password.	The ITS HelpDesk at (518) 442-3700 or go to Lecture Center (LC) 27 at the UAlbany main campus with your SUNYCard and another form of identification. Press "1" for assistance when calling.

Please note that your instructor is not on this list. If you send inquiries about these technical problems, you will be referred to the resources listed above.

COURSE ACTIVITIES

Lectures: Instructor-led lectures that may be supplemented with expert guest lectures on course-related topics will be offered in class. The lecture material should summarize and expand on the knowledge obtained from the assigned readings and assignments.

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BFOR 100

Introduction to Information Systems

Readings: Chapters, articles, or other readings assigned in the class are meant to supplement or reinforce the other course materials and will not generally have duplicate content.

Cases: Case studies using actual examples to provide real-world relevance to the topics in the class.

Discussions: There will be discussions in the class that may include debates about ethical and legal behavior or privacy and security concerns. The following rubric will be used for evaluation of these discussions.

Criteria	Outstanding 90-100	Proficient 80-89	Marginal 70-79	Unsatisfactory 0-69
Content Critical Thinking	Comments/questions are thought provoking and display insight. They add to the depth of the discussion. Resources/citations are used to support comments or ideas.	Comments/questions are appropriate/ relative and add to the discussion, but may not always display insight or provoke thought. Resources/citations may be used to support comments or ideas.	Comments/questions are relative but do not add to the discussion or may show lack of insight. Resources/citations may be used to support comments or ideas.	Comments/questions are not relative to the case and do not add to the discussion. No references or citations are used.

Assignments/Exercises: Assignments and exercises will be provided to evaluate understanding and for applying content learned in either lecture material or readings. There will be several assignments in the class in-class and assigned for homework. These include assignments leading up to the paper and annotated bibliography as well as technical assignments related to setting up information systems and programming.

F2F Exams: These exams will be offered to assess individual content review and understanding. Exam I will cover topics discussed in the first 6 weeks of the course. Exam II will cover topics covered after Exam I.

Hands-On Laboratories: Laboratory exercises will be offered where students get hands-on experience using tools and techniques in the field. These will include setting up an operating system as well as programming exercises among others.

Participation: Course attendance is important part of building long-lasting relationships and a learning community between your peers and your instructors. Not only does it allow you to share your opinions on course topics, but also you benefit from your classmates' and instructor perspectives. Participation in the course can be measured with attendance, and/or in-class assignments.

Paper and Annotated Bibliography: Students will spend the time of the class towards writing an academic paper on an emerging topic in computing and information technology. This will be structured in several assignments throughout the semester where students will define their topic; summarize and evaluate scholarly sources from both print and

online media; create an outline; and then write and submit a 6-page paper (double-spaced, in 12pt font, 1 in. margins) and annotated bibliography.

GRADING AND ASSESSMENT

We try to grade assignments fairly and return them within a reasonable time period with relevant comments and to be available to discuss questions. Students are expected to set up an appointment to talk with the grader within a week of receiving a grade. Please let us know if there is a mistake in calculation – mistakes happen!

Late assignments, projects, or papers will receive 15% off per day late from the final possible grade for the exercise unless there is a legitimate excuse.

Students at UAlbany should contact the Disabled Student Services Center and the relevant professor at least a week before each F2F exam if requiring additional assistance. Missing any assessment without a verifiable legitimate excuse will result in a grade of zero. F2F Exams are expected to be closed-book unless otherwise specified and all personal electronic devices (laptops, cell phones, PDA's, etc.) should be put away.

Activity	Portion of Grade
Participation	10%
Discussions	5%
Assignments & Hands-On Laboratories	40%
Exam I	15%
Exam II	15%
Paper and Annotated Bibliography	15%

The instructor is expected to get approval of the entire class prior to making any changes regarding the grading rubric.

Overall Accumulative Point Evaluation:

Point Range	Letter Grade
97-100	A
91-96	A-
86-90	B+
81-85	B
76-80	B-
71-75	C+
66-70	C
63-65	C-
60-62	D
Below 60	E

COURSE SCHEDULE

SCHOOL OF BUSINESS
UNIVERSITY AT ALBANY State University of New York

BFOR 100

Introduction to Information Systems

Week	Course Activities
1	**Introduction / Social and Business Implications of Computing**
2	**Cyber Ethics and Academic Integrity**
3	**Computer Architecture**
4	**Networks**
5	**The Internet and Digital Multimedia**
6	**Information Security Basics**
7	**Exam I**
8	**Operating Systems & Data Structures**
9	**Data Types and Database Applications**
10	**Data Representation, Number Systems & File Structures**
11	**Programming Logic & Problem-Solving**
12	**Applied Programming, Part 1**
13	**Applied Programming, Part 2**
14	**Exam II**

This schedule is subject to change and students are expected to be aware of any modifications to including, but not limited to: due dates, readings, exam dates, and project guidelines, announced via email, Blackboard announcements or during class hangouts.

ACADEMIC INTEGRITY & HONESTY

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Violations include: Giving or receiving unauthorized help on an examination; Collaborating on projects, papers, or other academic exercises which is regarded as inappropriate by the instructor(s), submitting substantial portions of the same work for credit more than once, without the prior explicit consent of the instructor(s) to whom the material is being submitted; misrepresenting material or fabricating information in an academic exercise or assignment; Destroying, damaging, or stealing of another's work or working materials; and presenting as one's own work, the work of another person (e.g., words, ideas, information, code, data, evidence, organizing principles, or presentation style of someone else). This includes paraphrasing or summarizing without acknowledgment, submission of another student's work as one's own, purchase of prepared research, papers or assignments, and the unacknowledged use of research sources gathered by someone else. Failure to indicate accurately the extent and precise nature of one's reliance on other sources is also a form of plagiarism. The student is responsible for understanding the legitimate use of sources, the appropriate ways of acknowledging academic, scholarly, or creative indebtedness, and the consequences for violating University regulations. **If you have questions about academic integrity - ASK!**

"GREAT" EXPECTATIONS

- Students can expect the instructor to be open to questions and concerns, but remain impartial and fair to all students.
- Students are expected to respectfully participate in the course and communicate with the instructor if there is confusion or lack of understanding of the material. In turn, the instructor will attempt to clarify any material.
- If the instructor is unable to attend class or office hours due to a personal emergency, students can expect for arrangements to be made for an alternate instructor or to be informed in as a timely a manner as possible.
- Students are expected to provide reliable contact information and inform the instructor of any updates.
- Students are expected to contact the instructor via email, phone, or in person for reliable response.
- Students are expected to complete all assignments and readings as well as set up meeting times with the instructor as necessary.
- It is important for students to inform the instructor if all available office hours interfere with other classes during the first week of the course.

SCHOOL OF BUSINESS
UNIVERSITY AT ALBANY State University of New York

BFOR 201

Introduction to Digital Forensics

Course ID: **BFOR 201 (**Formerly BITM 201)
Course Name: **Introduction to Digital Forensics**
Credit Hours: **3**
Semester: **Fall 2013**
Instructor: **Fabio R. Auffant II**
Course Prerequisites: **No**
Textbook: **No**

Syllabus

COURSE DESCRIPTION

In this course, students will learn the fundamental process of analyzing data collected from electronic devices (including computers, media, and other digital evidence). Students will become familiar with proper techniques and tools utilized for securing, handling and preserving digital and multimedia evidence at physical crime scenes. Students will utilize examination and chain of custody forms, as well as prepare crime scene & digital acquisition reports related to administrative, civil and criminal investigations.

LEARNING OBJECTIVES

After completing this class the student should be able to:

- Describe how to secure and process an incident or crime scene involving digital evidence.
- Define computer forensics analysis concepts, tools and techniques
- Identify hardware & software tools utilized during forensic examinations of digital evidence.
- Complete professional forms and reports associated with Digital Forensic investigations

COURSE FORMAT

Online or Classroom: The course may be offered online to offer a more flexible learning experience, through classroom delivery to ensure hands-on experience of forensic tools and techniques, or a combination of online and classroom environments. Students are provided with an interactive learning environment through instructor audio lesson plans, online discussion groups, and other learning assessments. Even though the course is spread over several weeks, it is important that students stay on schedule so that they can participate with other students in discussions. The class should require approximately 120 hours of work including instruction audio of lecture material, student assignments, quizzes, discussion postings, and the reading of the class textbook, as well as external publications.

BFOR 201

Introduction to Digital Forensics

INSTRUCTOR CONTACT

Type	Information	Availability
Email	fauffant@albany.edu	Dates and times TBA
Virtual Chat	Via Skype, TBA in class	Dates and times TBA

COURSE RESOURCES

Course Website	
Reference Material and External Readings	To be posted by instructor during course activities
Technical Support	

COURSE OUTLINE

Week	Topic	Activities
1	Computer (Digital) Forensics as a Profession	Class Discussion
2	Understanding Computer Investigations & Terminology	Assignment
3	Processing Crime/Incident Scenes & Reporting	Assignment
4	Computer Forensic Tools & Write-Blockers	Assignment
5	Forensic Acquisition Process	Assignment
6	Windows OS & Pre-Analysis Processing	Assignment
7	**MID-TERM EXAM**	
8	ProDiscover ® Acquisition & Pre-Analysis Processing	Lab Exercise
9	EnCase ® Acquisition & Pre-Analysis Processing	Lab Exercise
10	FTK ® Acquisition & Pre-Analysis Processing	Lab Exercise
11	Mobile Device Forensic Processing	Lab Exercise
12	Network & Virtual Machine Processing	Lab Exercise
13	**COURSE PROJECT**	Student Presentation
14	**FINAL EXAM**	

COURSE ACTIVITIES

Lab Exercises: Lab Exercises will also be assigned and graded by the instructor. Students will be required to complete Lab Exercises and submit to the instructor by specific date(s) and grading assessment will be based on the analysis of sample data and satisfactory completion of forensic reports.

Assignments: Assignments will be assigned and graded by the instructor and will be based on the weekly discussion topic(s). Students will be required to complete and submit to the instructor by specific date(s) and grading assessment will be based on acceptable grammar, terminology, formatting and substantive content.

Project: Course project will be assigned and graded by the instructor, based on individual and/or group assignments. Students will be required to complete and submit to the instructor by a specific date for grading and assessment.

GRADING AND ASSESSMENT

We try to grade assignments fairly and return them within a reasonable time period with relevant comments and to be available to discuss questions. Students are expected to set up an appointment to talk with the grader within a week of receiving a grade. Please let us know if there is a mistake in calculation – mistakes happen!
Late assignments, projects, or papers will receive 25% off per day late from the final possible grade for the exercise unless authorized by the instructor.

Students at UAlbany should contact the Disabled Student Services Center and the relevant professor at least a week before each F2F exam if requiring additional assistance. Missing any assessment without a verifiable legitimate excuse will result in a grade of zero. F2F Exams are expected to be closed-book unless otherwise specified and all personal electronic devices (laptops, cell phones, PDA's, etc.) should be put away.

Activity	Portion of Grade	Description
Assignments	25%	
Lab Exercises	25%	
Project	20%	
Exams	30%	

Overall Accumulative Point Evaluation:

Point Range	Letter Grade
97-100	**(A)**
91-96	**(A-)**
86-90	**(B+)**
81-85	**(B)**
76-80	**(B-)**
71-75	**(C+)**
66-70	**(C)**
63-65	**(C-)**
60-62	**(D)**
Below 60	**(E)**

ACADEMIC INTEGRITY & HONESTY

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Violations include: Giving or receiving unauthorized help on an examination; Collaborating on projects, papers, or other academic exercises which is regarded as inappropriate by the instructor(s), submitting substantial portions of the same work for credit more than once, without the prior explicit consent of the instructor(s) to whom the material is being submitted; misrepresenting material or fabricating information in an academic exercise or assignment; Destroying, damaging, or stealing of another's work or working materials; and presenting as one's own work, the work of another person (e.g., words, ideas, information, code, data, evidence, organizing principles, or presentation style of someone else). This includes paraphrasing or summarizing without acknowledgment, submission of another student's work as one's own, purchase of prepared research, papers or assignments, and the unacknowledged use of research sources gathered by someone else. Failure to indicate accurately the extent and precise nature of one's reliance on other sources is also a form of plagiarism. The student is responsible for understanding the legitimate use of sources, the appropriate ways of acknowledging academic, scholarly, or creative indebtedness, and the consequences for violating University regulations. **If you have questions about academic integrity - ASK!**

"GREAT" EXPECTATIONS

- Students can expect the instructor to be open to questions and concerns, but remain impartial and fair to all students.
- Students are expected to respectfully participate in the course and communicate with the instructor if there is confusion or lack of understanding of the material. In turn, the instructor will attempt to clarify any material.
- If the instructor is unable to attend class or office hours due to a personal emergency, students can expect for arrangements to be made for an alternate instructor or to be informed in as a timely a manner as possible.
- Students are expected to provide reliable contact information and inform the instructor of any updates.
- Students are expected to contact the instructor via email, phone, or in person for reliable response.
- Students are expected to complete all assignments and readings as well as set up meeting times with the instructor as necessary. It is important for students to inform the instructor if all available office hours interfere with other classes during the first week of the course.

SCHOOL OF BUSINESS
UNIVERSITY AT ALBANY State University of New York

BFOR 202
Cyber Crime Investigations

Course ID: **BFOR 202** (Formerly BITM 202)
Course Name: **Cyber Crime Investigations**
Credit Hours: **3**
Semester: **Fall 2013**
Instructor: **Y. Hong**
Course Prerequisites: **Yes**
Textbook: **No**

Syllabus

COURSE DESCRIPTION

This course will teach students forensic investigative techniques specifically for managing cyber crimes including collection and preservation of data from different sources, such as the Internet and "cloud" computing environments. Students will learn the legal processes available for collecting and preserving such evidence in conducting cyber investigations. Offered fall semester only.

LEARNING OBJECTIVES

After completing this class the student should be able to:

- Define Federal and State laws and legal processes relevant to cyber crime investigations.
- Describe how to investigate a crime or incident facilitated by technology or the Internet.
- Utilize proper methods for collecting and preserving potential evidence from the Internet.
- Utilize proper methods collecting and preserving digital evidence at physical cyber crime scenes.

COURSE FORMAT

Face-to-Face Classes & Online Activities: The course is offered as a combination of classroom delivery, hands-on experience of forensic tools and techniques, and online activities (i.e., discussion). Students are provided with an interactive learning environment through instructor audio lesson plans, online discussion groups (on the Blackboard), and other learning assessments. Even though the course is spread over several weeks, it is important that students stay on schedule so that they can participate with other students in discussions. The class should require approximately 120 hours of work including instruction audio of lecture material, student assignments, quizzes, discussion postings, and the reading of the posted materials.

SCHOOL OF BUSINESS
UNIVERSITY AT ALBANY State University of New York

BFOR 202
Cyber Crime Investigations

Syllabus

INSTRUCTOR CONTACT

Instructor	Yuan Hong
Email	hong@albany.edu
Office Location	BB 316 (New Business School)
Office Hours	Monday 3:00-5:00PM or by Appointment

COURSE RESOURCES

Course Website	Blackboard (or TBA)
Software	To be introduced in the Classes
Reference Material	To be posted on the Blackboard during Course Activities
External Readings	To be posted on the Blackboard

COURSE OUTLINE

Week	Topic	Activities
1	Introduction to Cyber Crime Investigations	Introduction & Discussion
2	Labor Day (Classes Suspended)	
3	Profiles, Motives and Philosophies of Cyber Crime Offenders	Discussion
4	Basic Techniques used by Offenders to Commit Cyber Crimes	Discussion
5	Responding to Cyber Incidents and Crimes	Discussion
6	Report Writing and Presentation of Cyber Crime Evidence	Assignment I (DUE TBA)
7	Interviews and Interrogations Related to Cyber Crimes	Discussion
8	**MID TERM EXAM (Monday, Oct. 14th, BA-222)**	
9	Collection & Preservation of Online Evidence	Assignment II (DUE TBA)
10	Collection and Preservation of Digital Evidence at Crime Scenes	Assignment III (DUE TBA) Project Issued
11	Evidence Collection at a Mock Incident or Crime Scene	Assignment IV (DUE TBA)
12	Role of CC investigation & Prevention in Business and Management Environments	Discussion
13	Role of CC investigation and prevention in the Criminal Justice System Environment	Discussion
14	**GROUP PROJECT (Monday, Nov. 25th, BA-222)**	Presentation (Report DUE TBA)
15	**FINAL EXAM (Time & Location TBA)**	

COURSE ACTIVITIES

Discussions: Discussions topics will also be assigned and graded by the instructor. Students will be required to post a discussion as well as at least two (2) responses each week. There will be a general discussion forum available for students (on the Blackboard) to talk amongst themselves based on topics outside of class that will not be graded.

Assignments: Assignments will be assigned and graded by the instructor and will be based on the weekly discussion topic(s). Students will be required to complete and submit to the instructor by specific date(s) and grading assessment will be based on acceptable grammar, terminology, formatting and substantive content.

Group Project: A group project will be performed with delivery during the last few weeks of this course. Details of this group project assignment will be available on blackboard later.

GRADING AND ASSESSMENT

Grading: The instructor will try to grade discussions, assignments, projects and exams fairly and return them within a reasonable time period with relevant comments and to be available to discuss questions. Students are encouraged to setup an appointment to talk with the grader within a week of receiving a grade.

Late Submission: Late assignments, projects, or papers will receive 25% off per day late from the final possible grade for the exercise unless authorized by the instructor.

Disability Statement: Students at UAlbany should contact the Disabled Student Services Center and the relevant professor at least a week before each F2F exam if requiring additional assistance. Missing any assessment without a verifiable legitimate excuse will result in a grade of zero. F2F Exams are expected to be closed-book unless otherwise specified and all personal electronic devices (laptops, cell phones, PDA's, etc.) should be put away.

Activity	Portion of Grade
Assignments	25%
Discussions	25%
Project	20%
Exams	30%

Criteria	Outstanding 90-100	Proficient 80-89	Marginal 65-79	Unsatisfactory Less than 65
Content Critical Thinking	Comments/questions are thought provoking and display insight. They add to the depth of the discussion. Resources/citations are used to support comments or ideas.	Comments/questions are appropriate/ relative and add to the discussion, but may not always display insight or provoke thought. Resources/citations may be used to support comments or ideas.	Comments/questions are relative but do not add to the discussion or may show lack of insight. Resources/citations may be used to support comments or ideas.	Comments/questions are not relative to the case and do not add to the discussion. No references or citations are used.
Quantity Frequency	Minimally 14 postings on 7 different days.	Minimally 10 postings on 5 different days.	Minimally 6 postings on 3 different days	Less than 6 postings of fewer than 3 days of entries.
Timeliness	Comments are always made in time for others to read and respond.	Comments are almost always made in time for others to read and respond.	Comments are frequently made late in the discussion thread and give little time to respond.	Comments are made late in the discussion thread and give no time to respond.
Professionalism Mechanics	Always responds in a professional demeanor, considers others opinions; addresses group members; no grammar/ spelling errors.	Professional; addresses group members; minor spelling/ grammar errors.	May not always be professional; does not address group members; comments & responses have frequent spelling / grammar issues.	Unprofessional comments; very frequent spelling errors, or inappropriate terminology used.
Evaluation	Evaluation form has both positive and constructive criticism which supports the grade submitted.	Evaluation form has both positive and constructive criticism but does not necessarily support the grade submitted.	Evaluation form has a grade but does not have positive or constructive criticism.	No evaluation form submitted.

Syllabus

ACADEMIC INTEGRITY & HONESTY

Students MUST comply with all University at Albany's standards of academic integrity. As stated on the undergraduate and graduate bulletin, **"Claims of ignorance, of unintentional error, or of academic or personal pressures are not sufficient reasons for violations of academic integrity."** Non-compliance with academic integrity standards, will result in the student being reported to the Office of Graduate Admissions or the Dean of Undergraduate Studies Office (whichever applies) AND receive a lowering of a paper or project grade of at least one full grade, receive a failing grade for a project containing plagiarized material or examination in which cheating occurred, receive a lowering of course grade by one full grade or more, a failing grade for the course, or any combination of these depending on the infraction.

Violations include: Giving or receiving unauthorized help on an examination; Collaborating on projects, papers, or other academic exercises which is regarded as inappropriate by the instructor(s), submitting substantial portions of the same work for credit more than once, without the prior explicit consent of the instructor(s) to whom the material is being submitted; misrepresenting material or fabricating information in an academic exercise or assignment; Destroying, damaging, or stealing of another's work or working materials; and presenting as one's own work, the work of another person (e.g., words, ideas, information, code, data, evidence, organizing principles, or presentation style of someone else). This includes paraphrasing or summarizing without acknowledgment, submission of another student's work as one's own, purchase of prepared research, papers or assignments, and the unacknowledged use of research sources gathered by someone else. Failure to indicate accurately the extent and precise nature of one's reliance on other sources is also a form of plagiarism. The student is responsible for understanding the legitimate use of sources, the appropriate ways of acknowledging academic, scholarly, or creative indebtedness, and the consequences for violating University regulations. **If you have questions about academic integrity - ASK!**

"GREAT" EXPECTATIONS

- Students can expect the instructor to be open to questions and concerns, but remain impartial and fair to all students.
- Students are expected to respectfully participate in the course and communicate with the instructor if there is confusion or lack of understanding of the material. In turn, the instructor will attempt to clarify any material.
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- Students are expected to provide reliable contact information and inform the instructor of any updates.
- Students are expected to contact the instructor via email, phone, or in person for reliable response.
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SCHOOL OF BUSINESS
UNIVERSITY AT ALBANY State University of New York

Course ID: **BFOR 203**
Course Name: **Networking – Introduction to Data Communication**
Credit Hours: **3**
Semester: **Fall 2013**
Course Prerequisites: **No**

INSTRUCTOR CONTACT INFORMATION

Instructor	Yuan Hong
Email	hong@albany.edu
Website	www.albany.edu/faculty/hong/
Office Location	BB (New Business School)-316
Office Hours	Monday 3:00-5:00PM or by Appointment

COURSE DESCRIPTION

The past couple of decades have witnessed the digital revolution profoundly altering our society. Most of the business affairs have been linked to communication and networking technologies. With tremendous advances in networking, it is now feasible to connect all the devices such as computers, tablets, smart phones, and mainframes together. However, the newly innovative communication and networking technologies pose additional challenges to business and IT management. Nowadays, IT professionals must have an elementary understanding of those technologies that facilitate them better impose management in the organization or perform advanced analysis such as for network forensics. Balanced technical and managerial contents are incorporated to enable students to learn from various perspectives. This course will introduce the student to the organization and design of data networks. Topics include networking media, Ethernet technology, the TCP/IP protocol suite, subnets, routers and routing protocols, Wide Area Networks (WANs), and fundamentals of network management. This course includes hands-on experience of networking techniques. Offered fall semester only.

LEARNING OBJECTIVES

After completing this class the student should be able to:

- Understand the fundamental concepts of communication and networking
- Understand the applications and protocols built in each layer of the network architecture
- Solve some practical networking problems encountered in business environment for IT professionals.
- Know the state-of-the-art architectures and/or mechanisms in communication and networking, e.g., cloud computing

TEXTBOOKS

Required Textbook: Business Data Communications and Networking, by Alan Dennis, Jerry Fitzgerald, and Alexandra Durcikova, Publisher: Wiley, 11 edition, ISBN-10: 111808683X

Supplementary Reading: Computer Networking: A Top-Down Approach Featuring the Internet by James F. Kurose and Keith W. Ross, Addison Wesley, 6th Edition, ISBN-10: 0132856204

COURSE ACTIVITIES

Attendance/Participation: Regular attendance is compulsory. You are not allowed to access Websites not related to the course or work on something beyond the scope of this course during the class time. The instructor expects students to actively participate in the class discussion.

Assignments & Hands-on Laboratories: Assignments will be assigned and graded by the instructor and will be based on the weekly discussion topic(s). Students will be required to complete and submit to the instructor by specific dates (generally one week later after the assigning it). Grading assessment will be based on acceptable grammar, terminology, formatting and substantive content. Moreover, laboratory exercise will be offered for students to learn hands-on experiences in networking management.

Group Project: A group project will be performed with delivery during the last few weeks of this course. The group can be gathered voluntarily and each group includes 3-5 students. The project includes literature survey/practice of new Internet technologies and their impact on business. Some ideas are (not limited to) web for business, social web, Wikipedia, web crawler, semantic web, new trends in search engines, web operating system, RFID business cases, mobile Internet, P2P applications, etc. Each group is expected to submit the survey and give a presentation in the week before final exam.

Exams: Students are required to take both Midterm and Final exams. The Midterm covers the contents of the first 6 classes and the final exam covers everything from Week 1-14. For exams, students will be responsible for the material covered in the lecture slides, projects and class discussions. In case you cannot attend the exam(s) on the scheduled date(s), a formal proof with appropriate excuse should be shown to the instructor. Otherwise, a make-up exam cannot be authorized.

COURSE OUTLINE

Week	Topic
1	Introduction and Fundamental Concepts
2	Network Models and Standards
3	Application Layer
4	Physical Layer
5	Data Link Layer
6	Network and Transport Layers
7	**MID TERM EXAM**
8	Wired Local Area Networks (LAN)
9	Wireless and Mobile Network
10	Internet
11	Network Management and Design
12	Network Security
13	Cloud Computing
14	Project Presentations
15	**FINAL EXAM**

GRADING POLICY AND ASSESSMENT

Activity	Portion of Grade
Participation	10%
Assignments/Lab Exercises	25%
Project	15%
Midterm	25%
Final Exam	25%

Grading: The instructor will try to grade assignments, project and exams fairly and return them within a reasonable time period with relevant comments and to be available to discuss questions. Students are encouraged to setup an appointment to talk with the grader within a week of receiving a grade.

Late Submission: Late submission of assignments or project will receive 25% off per day late from the final possible grade for the exercise unless authorized by the instructor.

Disability Statement: Students at UAlbany should contact the Disabled Student Services Center and the relevant professor at least a week before each F2F exam if requiring additional assistance. Missing any assessment without a verifiable legitimate excuse will result in a grade of zero. F2F Exams are expected to be closed-book unless otherwise specified and all personal electronic devices (laptops, cell phones, PDA's, etc.) should be put away.

Criteria	Outstanding 90-100	Proficient 80-89	Marginal 65-79	Unsatisfactory Less than 65
Content Critical Thinking	Comments/questions are thought provoking and display insight. They add to the depth of the discussion. Resources/citations are used to support comments or ideas.	Comments/questions are appropriate/ relative and add to the discussion, but may not always display insight or provoke thought. Resources/citations may be used to support comments or ideas.	Comments/questions are relative but do not add to the discussion or may show lack of insight. Resources/citations may be used to support comments or ideas.	Comments/questions are not relative to the case and do not add to the discussion. No references or citations are used.
Quantity Frequency	Minimally 14 postings on 7 different days.	Minimally 10 postings on 5 different days.	Minimally 6 postings on 3 different days	Less than 6 postings of fewer than 3 days of entries.

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ACADEMIC INTEGRITY & HONESTY

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Violations include: Giving or receiving unauthorized help on an examination; Collaborating on projects, papers, or other academic exercises which is regarded as inappropriate by the instructor, submitting substantial portions of the same work for credit more than once, without the prior explicit consent of the instructor to whom the material is being submitted; misrepresenting material or fabricating information in an academic exercise or assignment; Destroying, damaging, or stealing of another's work or working materials; and presenting as one's own work, the work of another person (e.g., words, ideas, information, code, data, evidence, organizing principles, or presentation style of someone else). This includes paraphrasing or summarizing without acknowledgment, submission of another student's work as one's own, purchase of prepared research, papers or assignments, and the unacknowledged use of research sources gathered by someone else. Failure to indicate accurately the extent and precise nature of one's reliance on other sources is also a form of plagiarism. The student is responsible for understanding the legitimate use of sources, the appropriate ways of acknowledging academic, scholarly, or creative indebtedness, and the consequences for violating University regulations.

"GREAT" EXPECTATIONS

- Students can expect the instructor to be open to questions and concerns, but remain impartial and fair to all students.
- Students are expected to respectfully participate in the course and communicate with the instructor if there is confusion or lack of understanding of the material. In turn, the instructor will attempt to clarify any material.
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- Students are expected to provide reliable contact information and inform the instructor of any updates.
- Students are expected to contact the instructor via email, phone, or in person for reliable response.
- Students are expected to complete all assignments and readings as well as set up meeting times with the instructor as necessary. It is important for students to inform the instructor if all available office hours interfere with other classes during the first week of the course.

SCHOOL OF BUSINESS
UNIVERSITY AT ALBANY State University of New York

BFOR 204

Fundamentals of Information and Cyber Security

BFOR 204 Fundamentals Information and Cyber Security
Course Prerequisite(s): BFOR 100 or Permission of the Instructor
Instructor(s): TBD
Developer(s): Sanjay Goel and Damira Pon

Syllabus

COURSE DESCRIPTION

This course covers computer and network security. This course will examine general security concepts that include: communication security, infrastructure security, operation/organizational security, basic cryptography and steganography. Students will learn and apply de facto security best practices administering clients, servers and firewalls in a dedicated computer network laboratory. Students will have the opportunity to assess vulnerabilities and administrate Information Security. Offered spring semester only.

LEARNING OBJECTIVES

Overarching Goal: Understand information security infrastructure and the security risks to an organization

Sub-Objectives: Student will learn to

- Deploy and configure tools for ensuring network and data security
- Identify the attacks and the possible mechanisms of launching them
- Relate network threats to vulnerabilities in the TCP/IP network stack
- Apply cryptographic concepts to security e.g. confidentiality, integrity, availability
- Understand psychological emotions exploited by hackers for social engineering attacks.
- Read and Interpret log files

COURSE FORMAT: FACE-TO-FACE (F2F) ON-CAMPUS DELIVERY

The course will be offered in-class and include both lecture and hands-on laboratory components. In addition, learning will be supplemented with assigned readings or videos, discussions, and other assignments and exercises related to the course topics.

F2F Meeting Dates, Times, and Location: The class will be in a three hour session on campus with the location and time provided by the registrar for any specific semester.

INSTRUCTOR CONTACT

Type	Information	Availability
Email	goel@albany.edu	
Phone	**518 956 8323**	
In Person	BB 311	
Virtual Chat		

SCHOOL OF BUSINESS
UNIVERSITY AT ALBANY State University of New York

BFOR 204

Fundamentals of Information and Cyber Security

Syllabus

COURSE RESOURCES

Type	Information
Course Website	TBD
Instructor Website	http://www.albany.edu/~goel
Textbook(s)	TBD
Reference Books(s)	TBD

TECHNICAL RESOURCES

If you experience technical problems that interrupt your ability to complete class work, it's important that you know where to seek help immediately. Here is a simple guide for where you should direct questions and calls for help.

Problems with…	You should contact…
Logging into your ISP (Internet Service Provider); connecting to websites; launching web browser (e.g. Internet Explorer, Firefox)	Your ISP. The following links are provided to a couple of local ISP providers contact pages. If yours is not on this list, look up your ISP in a search engine and find a "Contact Us" page: TimeWarner (Road Runner & Verizon (FIOS)
Connecting & logging into to the UAlbany Blackboard website; accessing your course(s); interacting or participating in course activities, submission of assignment or file attachments in course.	The ITS Help Desk by using the ITS Help Request Form (http://www.albany.edu/its/help) or call (518) 442-4000. Press "1" for students. Then, press "2" for help with Blackboard.
Forgotten PIN when trying to get forgotten password.	The ITS HelpDesk at (518) 442-3700 or go to Lecture Center (LC) 27 at the UAlbany main campus with your SUNYCard and another form of identification. Press "1" for assistance when calling.

Please note that your instructor is not on this list. If you send inquiries about these technical problems, you will be referred to the resources listed above.

COURSE ACTIVITIES

Lectures: Instructor-led lectures that may be supplemented with expert guest lectures on course-related topics will be offered in class. The lecture material should summarize and expand on the knowledge obtained from the assigned readings and assignments.

Video Clips: Video clips of lectures may be offered for portions of the class in case we use a flipped classroom approach for one or more lectures. This will feature PowerPoint content as well as the instructor video with subtitling and transcripts available. Purely audio versions of the content are also available for playing on personal media players, e.g. IPods. To play the video, you will need to download specific video player that will be provided to you.

SCHOOL OF BUSINESS
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BFOR 204

Fundamentals of Information and Cyber Security

Sample Syllabus

Readings: Chapters, articles, or other readings assigned in the class are meant to supplement or reinforce the other course materials and will not generally have duplicate content.

Cases: Case studies using actual examples to provide real-world relevance to the topics in the class. The case(s) in this course will have several cases of accounting fraud such as at Citibank, WorldCom, etc.

Discussions: There will be a general discussion forum available for students to talk amongst themselves based on topics outside of class. Discussions topics will also be assigned and graded. The following criteria will be used for assessing discussions

Criteria	Outstanding 90-100	Proficient 80-90	Marginal 70-80	Unsatisfactory 0
Content Critical Thinking	Discussions/Comments/questions are thought provoking and display insight. They add to the depth of the discussion. Extensive use of resources to support comments or ideas.	Discussions/Comments/questions are appropriate/ relative and add to the discussion, but may not always display insight or provoke thought. Some use of resources to support comments or ideas.	Discussions/Comments/questions are relative but do not add to the discussion or may show lack of insight. Occasional use of resources to support comments or ideas.	Discussions/Comments/questions are not relative to the case and do not add to the discussion. No use of resources to support comments or ideas.

Assignments/Exercises: Students will receive several assignments during the course of the semester that will include homework, papers, and independent research

F2F Exams: These exams will be offered to assess individual content review and understanding. The content of these exams will be based on the lectures preceding the exam and will have multiple choice and essay questions. There will be 2 or 3 unit tests through the semester but final exam.

Project: An end-of-semester project will be assigned to groups of students the details of which will be provided during the class.

Hands-On Laboratories: Laboratory exercises will be offered where students get hands-on experience using tools and techniques in the field. Laboratory exercises take around 1 – 1 ½ hour to complete and will utilize classroom computer laboratories (in-class) or software available on the cloud that you can access with a personal computing device (online).

Participation: Course attendance is important part of building long-lasting relationships and a learning community between your peers and your instructors. Not only does it allow you to share your opinions on course topics, but also you benefit from your classmates' and instructor perspectives. Participation in the course could be measured with attendance, and/or in-class assignments.

SCHOOL OF BUSINESS
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BFOR 204

Fundamentals of Information and Cyber Security

Syllabus

Presentation: You (or group) will be expected to make a 20-minute presentation to the class Each person present should ask questions during the presentation and respond to assertions from the speaker. The grading will be done for both presentations and questions asked. The grading rubric is as follows:

- Presentation (70%) - Content 50% / Clarity, Coherence & Organization 20%
- Q&A (30%) - Question Relevance 10% / Articulation of Question 5% / Response to Questions 15%

An outstanding presentation needs to be factually accurate and on-topic. The information should cover the topic selected and should consider the background of the audience. The presentation should have a clear beginning, middle, and end. Introduction should contain an articulate, compelling statement of the topic and inform the audience of the key ideas to be discussed. Any claims should be well-supported and the ending should be strong and conclusive. The grading for questions will be done across all presentations. Individual students from the same team will be graded separately.

GRADING AND ASSESSMENT

We try to grade assignments fairly and return them within a reasonable time period with relevant comments and to be available to discuss questions. Students are expected to set up an appointment to talk with the grader within a week of receiving a grade. Please let us know if there is a mistake in calculation – mistakes happen!

Late assignments, projects, or papers will receive 15% off per day late from the final possible grade for the exercise unless there is a legitimate excuse.

Students at UAlbany should contact the Disabled Student Services Center and the relevant professor at least a week before each F2F exam if requiring additional assistance. Missing any assessment without a verifiable legitimate excuse will result in a grade of zero. F2F Exams are expected to be closed-book unless otherwise specified and all personal electronic devices (laptops, cell phones, PDA's, etc.) should be put away.

ACTIVITY	PERCENTAGE OF GRADE
Participation	5%
Cases	15%
Assignments & Hands-On Laboratories	25%
Discussions	20%
Exam I	20%
Exam II	20%

Note: The instructor is expected to get approval of the entire class prior to making any changes regarding the grading rubric.

SCHOOL OF BUSINESS
UNIVERSITY AT ALBANY State University of New York

BFOR 204

Fundamentals of Information and Cyber Security

Syllabus

COURSE SCHEDULE	
Week	**Course Activities**
1	**Introduction & Networking Primer** Introduction to the Course Networking Fundamentals What is Information Security (CIA)? Why is Information Security Important? Adversaries: Motivations and Techniques
2	**Information Security Basics including Human Factors and Malware** What is Information Security (CIA)? Why is Information Security Important? Adversaries: Motivations and Techniques Social Engineering & Psychology Malware (Viruses, Worms, Spyware, Adware, Trojans) Email and Web Spoofing **Lab: Application Security Lab**
3	**Network Security Threats** IP Spoofing / Man-in-the-Middle Session Hijacking & Buffer Overflow Attacks Denial-Of-Service & Botnets ARP Cache / DNS Poisoning Wireless Security Protocols and Threats (MAC filtering) **Lab: Network Security Lab**
4	**Part A: Cryptography** Cryptography Basics Symmetric vs. Asymmetric Cryptographic Algorithms Symmetric Encryption Data Encryption Standard (DES), Triple DES, Advanced Encryption Standard Message Digests & Message Authentication Codes Public Key Infrastructure (PKI) Digital Signatures & Digital Certificates
5	**Web Application Security** N-tier Web Architecture Session Management & Web Authentication Threats, e.g. Code Injection, Cross-Site Scripting, etc. Buffer Overflow Attacks OWASP Testing & Review Procedures **Lab: SQL Injection Lab**
6	**Exam I**
7	**Authentication & Password Security** Password Storage & Authentication Password Security Threats & Controls Biometrics

	Lab: Password Cracking
8	**Authentication and Access Control** User Privileges / Access Classification Single Sign-On Security Models Role Based Access Control Remote Access (VPNs, etc.) **Case Analysis: TBD**
9	**Network Security Appliances & Assessment** Secure Network Design Firewalls and Intrusion Detection Systems (IDSs) Honeynets & Darknets Introduction to Network Log Analysis (SPLUNK) **Lab: Network Log Analysis**
10	-
11	**Security Standards & Legislation** - "Orange Book" - Russian State Technical Commission Guidance Documents - European General Provisions - USA Regulations (SOX, FERPA, FISMA, HIPAA, PCI) - ISO/IEC 17799:2005 - International Treaties **Case Analysis: Cyber Crime Treaty**
12	**Information Security Risk Analysis** - Basics of risk analysis - Risk Analysis methodology **Group Project: Risk Analysis of a Corporation**
13	**Exam II**
14	**Cyber Ethics**
15	**Group Presentations**

Analysis

This schedule is subject to change and students are expected to be aware of any modifications to including, but not limited to: due dates, readings, exam dates, and project guidelines, announced via email, Blackboard announcements or during class hangouts.

SCHOOL OF BUSINESS
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BFOR 204

Fundamentals of Information and Cyber Security

Syllabus

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- Students are expected to contact the instructor via email, phone, or in person for reliable response.
- Students are expected to complete all assignments and readings as well as set up meeting times with the instructor as necessary.
- It is important for students to inform the instructor if all available office hours interfere with other classes during the first week of the course.

SCHOOL OF BUSINESS
UNIVERSITY AT ALBANY State University of New York

BFOR 300

Databases for Digital Forensics

Title: Databases for Digital Forensics
Course Prerequisite(s): BFOR 100 or Permission of the Instructor
Instructor(s): TBD
Developer(s): Sanjay Goel

Syllabus

COURSE DESCRIPTION

A large part of digital forensics deals with extraction and collection of data across electronic devices each of which has different architecture. In this class students learn the traditional relational database design and then understand the architecture of data storage in mobile electronic devices. The class also discusses in depth the storage of data on the cloud and the ramifications of that on digital forensics. Students also learn the basic techniques for analyzing data including use of Structured Query Language, data mining techniques and social network analysis. Students will also use scripting languages to efficiently clean up data from text files and extract information from files. Prerequisite(s): BFOR 100 or permission of instructor. Offered fall semester only.

LEARNING OBJECTIVES

Overarching Goal: Understand data storage and extraction across multiple devices

Sub-Objectives: Student will learn to

- Create relational databases
- Query information from relational databases
- Apply clustering and classification techniques to data
- Use scripting language to clean up data in text files
- Differentiate between storage on different devices

COURSE FORMAT: FACE-TO-FACE (F2F) ON-CAMPUS DELIVERY

The course will be offered in-class and include both lecture and hands-on laboratory components. In addition, learning will be supplemented with assigned readings or videos, discussions, and other assignments and exercises related to the course topics.

F2F Meeting Dates, Times, and Location: The class will be in a three hour session on campus with the location and time provided by the registrar for any specific semester.

INSTRUCTOR CONTACT

Type	Information	Availability
Email	goel@albany.edu	
Phone	**518 956 8323**	
In Person	BB 311	
Virtual Chat		

COURSE RESOURCES

SCHOOL OF BUSINESS
UNIVERSITY AT ALBANY State University of New York

BFOR 300

Databases for Digital Forensics

Type	Information
Course Website	TBD
Instructor Website	http://www.albany.edu/~goel
Textbook(s)	TBD
Reference Books(s)	TBD

Syllabus

TECHNICAL RESOURCES

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Problems with…	You should contact…
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Connecting & logging into to the UAlbany Blackboard website; accessing your course(s); interacting or participating in course activities, submission of assignment or file attachments in course.	The ITS Help Desk by using the ITS Help Request Form (http://www.albany.edu/its/help) or call (518) 442-4000. Press "1" for students. Then, press "2" for help with Blackboard.
Forgotten PIN when trying to get forgotten password.	The ITS HelpDesk at (518) 442-3700 or go to Lecture Center (LC) 27 at the UAlbany main campus with your SUNYCard and another form of identification. Press "1" for assistance when calling.

Please note that your instructor is not on this list. If you send inquiries about these technical problems, you will be referred to the resources listed above.

COURSE ACTIVITIES

Lectures: Instructor-led lectures that may be supplemented with expert guest lectures on course-related topics will be offered in class. The lecture material should summarize and expand on the knowledge obtained from the assigned readings and assignments.

Video Clips: Video clips of lectures may be offered for portions of the class in case we use a flipped classroom approach for one or more lectures. This will feature PowerPoint content as well as the instructor video with subtitling and transcripts available. Purely audio versions of the content are also available for playing on personal media players, e.g. IPods. To play the video, you will need to download specific video player that will be provided to you.

Readings: Chapters, articles, or other readings assigned in the class are meant to supplement or reinforce the other course materials and will not generally have duplicate content.

SCHOOL OF BUSINESS
UNIVERSITY AT ALBANY State University of New York

BFOR 300

Databases for Digital Forensics

Cases: Case studies using actual examples to provide real-world relevance to the topics in the class. The case(s) in this course will have several cases of accounting fraud such as at Citibank, WorldCom, etc.

Discussions: There will be a general discussion forum available for students to talk amongst themselves based on topics outside of class. Discussions topics will also be assigned and graded. The following criteria will be used for assessing discussions

Criteria	Outstanding 90-100	Proficient 80-90	Marginal 70-80	Unsatisfactory 0
Content Critical Thinking	Discussions/Comments/questions are thought provoking and display insight. They add to the depth of the discussion. Extensive use of resources to support comments or ideas.	Discussions/Comments/questions are appropriate/ relative and add to the discussion, but may not always display insight or provoke thought. Some use of resources to support comments or ideas.	Discussions/Comments/questions are relative but do not add to the discussion or may show lack of insight. Occasional use of resources to support comments or ideas.	Discussions/Comments/questions are not relative to the case and do not add to the discussion. No use of resources to support comments or ideas.

Assignments/Exercises: Students will receive several assignments during the course of the semester that will include homework, papers, and independent research

F2F Exams: These exams will be offered to assess individual content review and understanding. The content of these exams will be based on the lectures preceding the exam and will have multiple choice and essay questions. There will be 2 or 3 unit tests through the semester but final exam.

Project: An end-of-semester project will be assigned to groups of students the details of which will be provided during the class.

Hands-On Laboratories: Laboratory exercises will be offered where students get hands-on experience using tools and techniques in the field. Laboratory exercises take around 1 – 1 ½ hour to complete and will utilize classroom computer laboratories (in-class) or software available on the cloud that you can access with a personal computing device (online).

Participation: Course attendance is important part of building long-lasting relationships and a learning community between your peers and your instructors. Not only does it allow you to share your opinions on course topics, but also you benefit from your classmates' and instructor perspectives. Participation in the course could be measured with attendance, and/or in-class assignments.

Presentation: You (or group) will be expected to make a 20-minute presentation to the class Each person present should ask questions during the presentation and respond to assertions from the speaker. The grading will be done for both presentations and questions asked. The grading rubric is as follows:

Syllabus

- Presentation (70%) - Content 50% / Clarity, Coherence & Organization 20%
- Q&A (30%) - Question Relevance 10% / Articulation of Question 5% / Response to Questions 15%

An outstanding presentation needs to be factually accurate and on-topic. The information should cover the topic selected and should consider the background of the audience. The presentation should have a clear beginning, middle, and end. Introduction should contain an articulate, compelling statement of the topic and inform the audience of the key ideas to be discussed. Any claims should be well-supported and the ending should be strong and conclusive. The grading for questions will be done across all presentations. Individual students from the same team will be graded separately.

GRADING AND ASSESSMENT

We try to grade assignments fairly and return them within a reasonable time period with relevant comments and to be available to discuss questions. Students are expected to set up an appointment to talk with the grader within a week of receiving a grade. Please let us know if there is a mistake in calculation – mistakes happen!

Late assignments, projects, or papers will receive 15% off per day late from the final possible grade for the exercise unless there is a legitimate excuse.

Students at UAlbany should contact the Disabled Student Services Center and the relevant professor at least a week before each F2F exam if requiring additional assistance. Missing any assessment without a verifiable legitimate excuse will result in a grade of zero. F2F Exams are expected to be closed-book unless otherwise specified and all personal electronic devices (laptops, cell phones, PDA's, etc.) should be put away.

ACTIVITY	PERCENTAGE OF GRADE
Projects	35%
Assignments	15%
Exam I	25%
Exam II	25%

Note: The instructor is expected to get approval of the entire class prior to making any changes regarding the grading rubric.

SCHOOL OF BUSINESS
UNIVERSITY AT ALBANY State University of New York

BFOR 300

Databases for Digital Forensics

COURSE SCHEDULE	
Week	**Course Activities**
1	**Introduction to the Course**
2	**Relational Database Design**
3	**SQL I**
4	**SQL 2**
5	**Advanced SQL**
6	**Exam I**
7	**Data sorting and searching using Unix Scripts**
8	**Clustering Techniques**
9	**Classification Techniques**
10	**Statistical Data Analysis**
11	**Social Network Analysis**
12	**Social Network Analysis**
13	**Exam II**
14	**Student Presentations/Projects**
15	**Student Presentations/Projects**

This schedule is subject to change and students are expected to be aware of any modifications to including, but not limited to: due dates, readings, exam dates, and project guidelines, announced via email, Blackboard announcements or during class hangouts.

Syllabus

SCHOOL OF BUSINESS
UNIVERSITY AT ALBANY State University of New York

BFOR 300

Databases for Digital Forensics

Syllabus

ACADEMIC INTEGRITY & HONESTY

Students MUST comply with all University at Albany's standards of academic integrity. As stated on the undergraduate and graduate bulletin, **"Claims of ignorance, of unintentional error, or of academic or personal pressures are not sufficient reasons for violations of academic integrity."** Non-compliance with academic integrity standards, will result in the student being reported to the Office of Graduate Admissions or the Dean of Undergraduate Studies Office (whichever applies) AND receive a lowering of a paper or project grade of at least one full grade, receive a failing grade for a project containing plagiarized material or examination in which cheating occurred, receive a lowering of course grade by one full grade or more, a failing grade for the course, or any combination of these depending on the infraction.

Violations include: Giving or receiving unauthorized help on an examination; Collaborating on projects, papers, or other academic exercises which is regarded as inappropriate by the instructor(s), submitting substantial portions of the same work for credit more than once, without the prior explicit consent of the instructor(s) to whom the material is being submitted; misrepresenting material or fabricating information in an academic exercise or assignment; Destroying, damaging, or stealing of another's work or working materials; and presenting as one's own work, the work of another person (e.g., words, ideas, information, code, data, evidence, organizing principles, or presentation style of someone else). This includes paraphrasing or summarizing without acknowledgment, submission of another student's work as one's own, purchase of prepared research, papers or assignments, and the unacknowledged use of research sources gathered by someone else. Failure to indicate accurately the extent and precise nature of one's reliance on other sources is also a form of plagiarism. The student is responsible for understanding the legitimate use of sources, the appropriate ways of acknowledging academic, scholarly, or creative indebtedness, and the consequences for violating University regulations. **If you have questions about academic integrity - ASK!**

"GREAT" EXPECTATIONS

- Students can expect the instructor to be open to questions and concerns, but remain impartial and fair to all students.
- Students are expected to respectfully participate in the course and communicate with the instructor if there is confusion or lack of understanding of the material. In turn, the instructor will attempt to clarify any material.
- If the instructor is unable to attend class or office hours due to a personal emergency, students can expect for arrangements to be made for an alternate instructor or to be informed in as a timely a manner as possible.
- Students are expected to provide reliable contact information and inform the instructor of any updates.
- Students are expected to contact the instructor via email, phone, or in person for reliable response.
- Students are expected to complete all assignments and readings as well as set up meeting times with the instructor as necessary.
- It is important for students to inform the instructor if all available office hours interfere with other classes during the first week of the course.

SCHOOL OF BUSINESS
UNIVERSITY AT ALBANY State University of New York

BFOR 301
Computer Forensics I

Course ID: **BFOR 301**
Course Name: **Computer Forensics I**
Credit Hours: **3**
Semester: **TBA**
Instructor: **Fabio R. Auffant II**
Course Prerequisite(s): **BFOR 201 or permission of instructor**
Textbook: **TBA**

Syllabus

COURSE DESCRIPTION

This course prepares students to conduct digital forensic examination of computers, removable media and other electronic devices. Students will use digital forensics tools and techniques to analyze digital evidence pursuant to an investigation, while utilizing industry standards and best practices. This course will prepare student in the development and implementation of forensic incident response plans, policies and procedures. Students will engage in oral and written reporting outlining digital forensic analysis findings and conclusions, in a professionally acceptable manner, pursuant to administrative, civil and criminal legal proceedings. Prerequisite(s): BFOR 201 or permission of instructor. Offered fall semester only.

LEARNING OBJECTIVES

After completing this class the student should be able to:

- Prepare digital forensics incident response plan, policies and procedures for businesses, government and independent practitioners, consistent with standards.
- Utilize computer forensic tools to analyze computer digital evidence.
- Perform forensic analysis of removable media digital evidence.
- Prepare written & oral presentations derived from computer forensic analysis.

COURSE FORMAT

Online or Classroom: The course may be offered online to offer a more flexible learning experience, through classroom delivery to ensure hands-on experience of forensic tools and techniques, or a combination of online and classroom environments. Students are provided with an interactive learning environment through instructor audio lesson plans, online discussion groups, and other learning assessments. Even though the course is spread over several weeks, it is important that students stay on schedule so that they can participate with other students in discussions. The class should require approximately 120 hours of work including instruction audio of lecture material, student assignments, quizzes, discussion postings, and the reading of the class textbook, as well as external publications.

SCHOOL OF BUSINESS
UNIVERSITY AT ALBANY State University of New York

BFOR 301
Computer Forensics I

INSTRUCTOR CONTACT

Type	Information	Availability
Email	fauffant@albany.edu	Dates and times TBA
Virtual	Via Skype, TBA in class	Dates and times TBA

COURSE RESOURCES

Course Website	
Reference Material and External Readings	To be posted by instructor during course activities
Technical Support	

COURSE OUTLINE

Week	Topic	Activities
1	Computer Basics for Digital Investigators	Class Discussion
2	Digital Forensics Best Practices, Standards & Reporting	Assignment
3	Incident Response & Forensic Hardware/Software Tools	Assignment
4	Forensic Analysis of Windows ® Systems	Assignment
5	Forensic Analysis of Other Operating Systems	Assignment
6	**MID-TERM EXAM**	
7	ProDiscover ® Forensic Case Analysis	Lab Exercise
8	EnCase ® Forensic Case Analysis	Lab Exercise
9	FTK ® Forensic Case Analysis – Password Recovery	Lab Exercise
10	FTK ® Forensic Case Analysis – Registry	Lab Exercise
11	FTK ® Forensic Case Analysis – Encryption	Lab Exercise
12	Forensic Mock Case Reporting	Assignment
13	**COURSE PROJECT**	Student Presentations
14	**FINAL EXAM**	

COURSE ACTIVITIES

Lab Exercises: Lab Exercises will also be assigned and graded by the instructor. Students will be required to complete Lab Exercises and submit to the instructor by specific date(s) and grading assessment will be based on the analysis of sample data and satisfactory completion of forensic reports.

Assignments: Assignments will be assigned and graded by the instructor and will be based on the weekly discussion topic(s). Students will be required to complete and submit to the instructor by specific date(s) and grading assessment will be based on acceptable grammar, terminology, formatting and substantive content.

Project: Course project will be assigned and graded by the instructor, based on individual and/or group assignments. Students will be required to complete and submit to the instructor by a specific date for grading and assessment.

GRADING AND ASSESSMENT

We try to grade assignments fairly and return them within a reasonable time period with relevant comments and to be available to discuss questions. Students are expected to set up an appointment to talk with the grader within a week of receiving a grade. Please let us know if there is a mistake in calculation – mistakes happen!

Late assignments, projects, or papers will receive 25% off per day late from the final possible grade for the exercise unless authorized by the instructor.

Students at UAlbany should contact the Disabled Student Services Center and the relevant professor at least a week before each F2F exam if requiring additional assistance. Missing any assessment without a verifiable legitimate excuse will result in a grade of zero. F2F Exams are expected to be closed-book unless otherwise specified and all personal electronic devices (laptops, cell phones, PDA's, etc.) should be put away.

Activity	Portion of Grade	Description
Assignments	25%	
Lab Exercises	25%	
Project	20%	
Exams	30%	

Overall Accumulative Point Evaluation:

Point Range	**Letter Grade**
97-100	**(A)**
91-96	**(A-)**
86-90	**(B+)**
81-85	**(B)**
76-80	**(B-)**
71-75	**(C+)**
66-70	**(C)**
63-65	**(C-)**
60-62	**(D)**
Below 60	**(E)**

ACADEMIC INTEGRITY & HONESTY

Students MUST comply with all University at Albany's standards of academic integrity. As stated on the undergraduate and graduate bulletin, **"Claims of ignorance, of unintentional error, or of academic or personal pressures are not sufficient reasons for violations of academic integrity."** Non-compliance with academic integrity standards, will result in the student being reported to the Office of Graduate Admissions or the Dean of Undergraduate Studies Office (whichever applies) AND receive a lowering of a paper or project grade of at least one full grade, receive a failing grade for a project containing plagiarized material or examination in which cheating occurred, receive a lowering of course grade by one full grade or more, a failing grade for the course, or any combination of these depending on the infraction.

Violations include: Giving or receiving unauthorized help on an examination; Collaborating on projects, papers, or other academic exercises which is regarded as inappropriate by the instructor(s), submitting substantial portions of the same work for credit more than once, without the prior explicit consent of the instructor(s) to whom the material is being submitted; misrepresenting material or fabricating information in an academic exercise or assignment; Destroying, damaging, or stealing of another's work or working materials; and presenting as one's own work, the work of another person (e.g., words, ideas, information, code, data, evidence, organizing principles, or presentation style of someone else). This includes paraphrasing or summarizing without acknowledgment, submission of another student's work as one's own, purchase of prepared research, papers or assignments, and the unacknowledged use of research sources gathered by someone else. Failure to indicate accurately the extent and precise nature of one's reliance on other sources is also a form of plagiarism. The student is responsible for understanding the legitimate use of sources, the appropriate ways of acknowledging academic, scholarly, or creative indebtedness, and the consequences for violating University regulations. **If you have questions about academic integrity - ASK!**

"GREAT" EXPECTATIONS

- Students can expect the instructor to be open to questions and concerns, but remain impartial and fair to all students.
- Students are expected to respectfully participate in the course and communicate with the instructor if there is confusion or lack of understanding of the material. In turn, the instructor will attempt to clarify any material.
- If the instructor is unable to attend class or office hours due to a personal emergency, students can expect for arrangements to be made for an alternate instructor or to be informed in as a timely a manner as possible.
- Students are expected to provide reliable contact information and inform the instructor of any updates.
- Students are expected to contact the instructor via email, phone, or in person for reliable response.
- Students are expected to complete all assignments and readings as well as set up meeting times with the instructor as necessary. It is important for students to inform the instructor if all available office hours interfere with other classes during the first week of the course.

SCHOOL OF BUSINESS
UNIVERSITY AT ALBANY State University of New York

BFOR 302
eDiscovery Forensics

Course ID: **BFOR 302**
Course Name: **eDiscovery Forensics**
Credit Hours: **3**
Semester: **TBA**
Instructor: **Fabio R. Auffant II**
Course Prerequisites: **No**
Textbook: **TBA**

Syllabus

COURSE DESCRIPTION

This course prepares student for the electronic collection, preservation and management of corporate information. It provides a foundation on basic corporate incident response challenges and proper collection methods for electronic data subject to legal and regulatory requirements. Student will utilize forensics tools for searching, culling and presenting corporate data, pursuant to administrative and civil eDiscovery cases. Offered fall semester only.

LEARNING OBJECTIVES

After completing this class the student should be able to:

- Identify federal and state eDiscovery statutes and case law.
- Define methodology for collecting, preserving and managing corporate electronic information that facilitates the eDiscovey process.
- Develop forensic policies and procedures for corporate managers and IT personnel.
- Utilize tools utilized to preserve and manage eDiscovery related data.
- Student will prepare comprehensive written report pursuant to electronic discovery investigation and court proceedings.

COURSE FORMAT

Online or Classroom: The course may be offered online to offer a more flexible learning experience, through classroom delivery to ensure hands-on experience of forensic tools and techniques, or a combination of online and classroom environments. Students are provided with an interactive learning environment through instructor audio lesson plans, online discussion groups, and other learning assessments. Even though the course is spread over several weeks, it is important that students stay on schedule so that they can participate with other students in discussions. The class should require approximately 120 hours of work including instruction audio of lecture material, student assignments, quizzes, discussion postings, and the reading of the class textbook, as well as external publications.

INSTRUCTOR CONTACT

Type	Information	Availability
Email		Dates and times TBA
Virtual		Dates and times TBA

COURSE RESOURCES

Course Website	
Reference Material and External Readings	To be posted by instructor during course activities
Technical Support	

COURSE OUTLINE

Week	Topic	Activities
1	Electronic Discovery Concepts & Terminology	Assignment
2	eDiscovery Forensic Concepts & Terminology	Assignment
3	Chain of Custody Documentation	Assignment
4	Federal Rules of Civil Procedure	Guest Lecturer/Class Discussion
5	Networking Storage & Management Essentials	Assignment
6	Mobile Device Storage & Management Essentials	Assignment
7	**MID-TERM EXAM**	
8	eDiscovery Review & Forensic Tools	Lab Exercise
9	Processing of electronically stored information	Lab Exercise
10	FTK Searching & Culling Methods	Lab Exercise
11	EnCase Searching & Culling Methods	Lab Exercise
12	Rational eDiscovery Searching & Culling Methods	Lab Exercise
13	**COURSE PROJECT**	Student Presentations
14	**FINAL EXAM**	

COURSE ACTIVITIES

Hands-On Labs: Lab Exercises will also be assigned and graded by the instructor. Students will be required to complete Lab Exercises and submit to the instructor by specific date(s) and grading assessment will be based on the analysis of sample data and satisfactory completion of forensic reports.

Assignments: Assignments will be assigned and graded by the instructor and will be based on the weekly discussion topic(s). Students will be required to complete and

submit to the instructor by specific date(s) and grading assessment will be based on acceptable grammar, terminology, formatting and substantive content.

Project: Course project will be assigned and graded by the instructor, based on individual and/or group assignments. Students will be required to complete and submit to the instructor by a specific date for grading and assessment.

GRADING AND ASSESSMENT

We try to grade assignments fairly and return them within a reasonable time period with relevant comments and to be available to discuss questions. Students are expected to set up an appointment to talk with the grader within a week of receiving a grade. Please let us know if there is a mistake in calculation – mistakes happen!
Late assignments, projects, or papers will receive 25% off per day late from the final possible grade for the exercise unless authorized by the instructor.

Students at UAlbany should contact the Disabled Student Services Center and the relevant professor at least a week before each F2F exam if requiring additional assistance. Missing any assessment without a verifiable legitimate excuse will result in a grade of zero. F2F Exams are expected to be closed-book unless otherwise specified and all personal electronic devices (laptops, cell phones, PDA's, etc.) should be put away.

Activity	Portion of Grade	Description
Assignments	25%	
Lab Exercises	25%	
Project	20%	
Exams	30%	

Overall Accumulative Point Evaluation:

Point Range	Letter Grade
96-100	**(A)**
90-95	**(A-)**
86-89	**(B+)**
81-85	**(B)**
76-80	**(B-)**
71-75	**(C+)**
66-70	**(C)**
63-65	**(C-)**
60-62	**(D)**
Below 60	**(E)**

ACADEMIC INTEGRITY & HONESTY

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Violations include: Giving or receiving unauthorized help on an examination; Collaborating on projects, papers, or other academic exercises which is regarded as inappropriate by the instructor(s), submitting substantial portions of the same work for credit more than once, without the prior explicit consent of the instructor(s) to whom the material is being submitted; misrepresenting material or fabricating information in an academic exercise or assignment; Destroying, damaging, or stealing of another's work or working materials; and presenting as one's own work, the work of another person (e.g., words, ideas, information, code, data, evidence, organizing principles, or presentation style of someone else). This includes paraphrasing or summarizing without acknowledgment, submission of another student's work as one's own, purchase of prepared research, papers or assignments, and the unacknowledged use of research sources gathered by someone else. Failure to indicate accurately the extent and precise nature of one's reliance on other sources is also a form of plagiarism. The student is responsible for understanding the legitimate use of sources, the appropriate ways of acknowledging academic, scholarly, or creative indebtedness, and the consequences for violating University regulations. **If you have questions about academic integrity - ASK!**

"GREAT" EXPECTATIONS

- Students can expect the instructor to be open to questions and concerns, but remain impartial and fair to all students.
- Students are expected to respectfully participate in the course and communicate with the instructor if there is confusion or lack of understanding of the material. In turn, the instructor will attempt to clarify any material.
- If the instructor is unable to attend class or office hours due to a personal emergency, students can expect for arrangements to be made for an alternate instructor or to be informed in as a timely a manner as possible.
- Students are expected to provide reliable contact information and inform the instructor of any updates.
- Students are expected to contact the instructor via email, phone, or in person for reliable response.
- Students are expected to complete all assignments and readings as well as set up meeting times with the instructor as necessary. It is important for students to inform the instructor if all available office hours interfere with other classes during the first week of the course.

SCHOOL OF BUSINESS
UNIVERSITY AT ALBANY State University of New York

BFOR 303
Computer Forensics II

Course ID: **BFOR 303**
Course Name: **Computer Forensics II**
Credit Hours: **3**
Semester: **TBA**
Instructor: **Fabio R. Auffant II**
Course Prerequisite(s): **BFOR 301 or permission of instructor**
Textbook: **TBA**

Syllabus

COURSE DESCRIPTION

This course prepares students to conduct a digital forensic examination and analysis involving complex cases, electronic devices and data, as well as other forensic processes utilized to ensure government and corporate continuity. This course will prepare student to develop and implement policies and procedures for computer forensic laboratories involving operations and quality control management. It prepares students to compose and present oral and written reports that include laboratory audits, forensic analysis findings and court presentation material.
Prerequisite(s): BFOR 301 or permission of instructor. Offered spring semester only.

LEARNING OBJECTIVES

After completing this class the student should be able to:

- Utilize forensic tools and techniques to examine and analyze complex computer evidence.
- Perform other forensic processes to properly cleanse, restore and archive digital evidence.
- Prepare policies and procedures for managing digital forensic laboratory operations.
- Prepare written & oral presentations derived from complex digital evidence forensic analysis and laboratory operations.

COURSE FORMAT

Online or Classroom: The course may be offered solely online to offer a more flexible learning experience or through classroom delivery to ensure hands-on experience of mobile device hardware. This may be your first experience with an online / Internet course and it is important to recognize the differences with a face-to-face classroom experience. Students are provided with an interactive learning environment through instructor audio lesson plans, online discussion groups, and other learning assessments. Even though the course is spread over several weeks, it is important that students stay on schedule so that they can participate with other students in discussions. The class should require approximately 120 hours of work including instruction audio of lecture material, student assignments, quizzes, discussion postings, and the reading of the class textbook, as well as external publications.

SCHOOL OF BUSINESS
UNIVERSITY AT ALBANY State University of New York

BFOR 303
Computer Forensics II

INSTRUCTOR CONTACT

Type	Information	Availability
Email		Dates and times TBA
Virtual		Dates and times TBA

COURSE RESOURCES

Course Website	
Reference Material and External Readings	To be posted by instructor during course activities
Technical Support	

COURSE OUTLINE

Week	Topic	Activities
1	Digital Forensics Laboratory Standards	Class Discussion
2	Development of Laboratory SOP's	Assignment
3	Quality Control & Assurance Forensic Standards	Assignment
4	Development of a Laboratory QC/QA Manual	Assignment
5	Laboratory Internal Training Standards	Assignment
6	Development of an Internal Training Program	Assignment
7	**MID TERM EXAM**	
8	Complex Device Analysis, Data Carving & GREP Expression Searching	Lab Exercise
9	Secure Cleansing & Forensic Restoration of Media	Lab Exercise
10	Logical Restoration and Archival of Digital Evidence	Lab Exercise
11	Forensic Analysis Reporting & Presentation	Lab Exercise
12	Preparation of Court Presentation Material	Lab Exercise
13	**COURSE PROJECT**	Student Presentations
14	**FINAL EXAM**	

COURSE ACTIVITIES

Lab Exercises: Lab Exercises will also be assigned and graded by the instructor. Students will be required to complete Lab Exercises and submit to the instructor by specific date(s) and grading assessment will be based on the analysis of sample data and satisfactory completion of forensic reports.

Assignments: Assignments will be assigned and graded by the instructor and will be based on the weekly discussion topic(s). Students will be required to complete and submit to the instructor by specific date(s) and grading assessment will be based on acceptable grammar, terminology, formatting and substantive content.

Project: Course project will be assigned and graded by the instructor, based on individual and/or group assignments. Students will be required to complete and submit to the instructor by a specific date for grading and assessment.

GRADING AND ASSESSMENT

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Activity	Portion of Grade	Description
Assignments	25%	
Lab Exercises	25%	
Project	20%	
Exams	30%	

Overall Accumulative Point Evaluation:

Point Range	**Letter Grade**
97-100	**(A)**
91-96	**(A-)**
86-90	**(B+)**
81-85	**(B)**
76-80	**(B-)**
71-75	**(C+)**
66-70	**(C)**
63-65	**(C-)**
60-62	**(D)**
Below 60	**(E)**

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Violations include: Giving or receiving unauthorized help on an examination; Collaborating on projects, papers, or other academic exercises which is regarded as inappropriate by the instructor(s), submitting substantial portions of the same work for credit more than once, without the prior explicit consent of the instructor(s) to whom the material is being submitted; misrepresenting material or fabricating information in an academic exercise or assignment; Destroying, damaging, or stealing of another's work or working materials; and presenting as one's own work, the work of another person (e.g., words, ideas, information, code, data, evidence, organizing principles, or presentation style of someone else). This includes paraphrasing or summarizing without acknowledgment, submission of another student's work as one's own, purchase of prepared research, papers or assignments, and the unacknowledged use of research sources gathered by someone else. Failure to indicate accurately the extent and precise nature of one's reliance on other sources is also a form of plagiarism. The student is responsible for understanding the legitimate use of sources, the appropriate ways of acknowledging academic, scholarly, or creative indebtedness, and the consequences for violating University regulations. **If you have questions about academic integrity - ASK!**

"GREAT" EXPECTATIONS

- Students can expect the instructor to be open to questions and concerns, but remain impartial and fair to all students.
- Students are expected to respectfully participate in the course and communicate with the instructor if there is confusion or lack of understanding of the material. In turn, the instructor will attempt to clarify any material.
- If the instructor is unable to attend class or office hours due to a personal emergency, students can expect for arrangements to be made for an alternate instructor or to be informed in as a timely a manner as possible.
- Students are expected to provide reliable contact information and inform the instructor of any updates.
- Students are expected to contact the instructor via email, phone, or in person for reliable response.
- Students are expected to complete all assignments and readings as well as set up meeting times with the instructor as necessary. It is important for students to inform the instructor if all available office hours interfere with other classes during the first week of the course.

SCHOOL OF BUSINESS
UNIVERSITY AT ALBANY State University of New York

BFOR 304

Network and Mobile Forensics

Course ID: **BFOR 304**
Course Name: **Network and Mobile Forensics**
Credit Hours: **3**
Semester: **TBA**
Instructor: **TBA**
Course Prerequisite(s): **BFOR 203 & BFOR 301**
Textbook: **TBA**

Syllabus

COURSE DESCRIPTION

This course exposes students to procedures for conducting live network forensics of computer system components and data. It prepares students to collect, preserve, and examines networks, computers, mobile devices and relevant data that may be critical to an investigation. Students will develop network incident response plans, policies and procedures relevant to corporate networks and data, as well as mobile corporate assets, such as mobile devices. It prepares students to compose and present oral and written reports that outline network and mobile device forensic analysis findings that are technically and legally acceptable in administrative hearings and court proceedings. Prerequisite(s): BFOR 203 & BFOR 301. Offered spring semester only.

LEARNING OBJECTIVES

After completing this class the student should be able to:

- Identify federal and state legal statutes, case law and government regulations relevant to network data preservation and incident forensic response.
- Utilize proper tools and methods for collecting & preserving network and mobile device hardware, and potential digital evidence.
- Prepare network cyber incident & forensics response plan, policy and procedures, consistent with industry standards.
- Prepare written & oral presentations derived from network and mobile device analysis.

COURSE FORMAT

Online or Classroom: The course may be offered solely online to offer a more flexible learning experience or through classroom delivery to ensure hands-on experience of mobile device hardware. This may be your first experience with an online / Internet course and it is important to recognize the differences with a face-to-face classroom experience. Students are provided with an interactive learning environment through instructor audio lesson plans, online discussion groups, and other learning assessments. Even though the course is spread over several weeks, it is important that students stay on schedule so that they can participate with other students in discussions. The class should require approximately 120 hours of work including instruction audio of lecture material, student assignments, quizzes, discussion postings, and the reading of the class textbook, as well as external publications.

SCHOOL OF BUSINESS
UNIVERSITY AT ALBANY State University of New York

BFOR 304

Network and Mobile Forensics

INSTRUCTOR CONTACT

Type	Information	Availability
Email		Dates and times TBA
Virtual		Dates and times TBA

COURSE RESOURCES

Course Website	
Reference Material and External Readings	To be posted by instructor during course activities
Technical Support	

COURSE OUTLINE

Week	Topic	Activities
1	Networking Storage & Management Essentials	Class Discussion
2	Network Forensics Guidelines & Standards	Assignment
3	Incident Response Planning & Standards	Assignment
4	Network Analysis Reporting	Assignment
5	Network Collection & Preservation Tools	Assignment
6	Collection & Preservation of Network Data	Lab Exercise
7	**MID-TERM EXAM**	
8	EnCase ® Network Forensic Analysis	Lab Exercise
9	FTK ® Network Forensic Analysis	Lab Exercise
10	Mobile Device Concepts & Terminology	Assignment
11	Mobile Device Forensics Hardware & Software	Lab Exercise
12	Mobile Device Forensic Analysis	Lab Exercise
13	**COURSE PROJECT**	
14	**FINAL EXAM**	

COURSE ACTIVITIES

Lab Exercises: Lab Exercises will also be assigned and graded by the instructor. Students will be required to complete Lab Exercises and submit to the instructor by specific date(s) and grading assessment will be based on the analysis of sample data and satisfactory completion of forensic reports.

Assignments: Assignments will be assigned and graded by the instructor and will be based on the weekly discussion topic(s). Students will be required to complete and submit to the instructor by specific date(s) and grading assessment will be based on acceptable grammar, terminology, formatting and substantive content.

Project: Course project will be assigned and graded by the instructor, based on individual and/or group assignments. Students will be required to complete and submit to the instructor by a specific date for grading and assessment.

GRADING AND ASSESSMENT

We try to grade assignments fairly and return them within a reasonable time period with relevant comments and to be available to discuss questions. Students are expected to set up an appointment to talk with the grader within a week of receiving a grade. Please let us know if there is a mistake in calculation – mistakes happen!

Late assignments, projects, or papers will receive 25% off per day late from the final possible grade for the exercise unless authorized by the instructor.

Students at UAlbany should contact the Disabled Student Services Center and the relevant professor at least a week before each F2F exam if requiring additional assistance. Missing any assessment without a verifiable legitimate excuse will result in a grade of zero. F2F Exams are expected to be closed-book unless otherwise specified and all personal electronic devices (laptops, cell phones, PDA's, etc.) should be put away.

Activity	Portion of Grade	Description
Assignments	25%	
Lab Exercises	25%	
Project	20%	
Exams	30%	

Overall Accumulative Point Evaluation:

Point Range	**Letter Grade**
97-100	**(A)**
91-96	**(A-)**
86-90	**(B+)**
81-85	**(B)**
76-80	**(B-)**
71-75	**(C+)**
66-70	**(C)**
63-65	**(C-)**
60-62	**(D)**
Below 60	**(E)**

ACADEMIC INTEGRITY & HONESTY

Students MUST comply with all University at Albany's standards of academic integrity. As stated on the undergraduate and graduate bulletin, **"Claims of ignorance, of unintentional error, or of academic or personal pressures are not sufficient reasons for violations of academic integrity."** Non-compliance with academic integrity standards, will result in the student being reported to the Office of Graduate Admissions or the Dean of Undergraduate Studies Office (whichever applies) AND receive a lowering of a paper or project grade of at least one full grade, receive a failing grade for a project containing plagiarized material or examination in which cheating occurred, receive a lowering of course grade by one full grade or more, a failing grade for the course, or any combination of these depending on the infraction.

Violations include: Giving or receiving unauthorized help on an examination; Collaborating on projects, papers, or other academic exercises which is regarded as inappropriate by the instructor(s), submitting substantial portions of the same work for credit more than once, without the prior explicit consent of the instructor(s) to whom the material is being submitted; misrepresenting material or fabricating information in an academic exercise or assignment; Destroying, damaging, or stealing of another's work or working materials; and presenting as one's own work, the work of another person (e.g., words, ideas, information, code, data, evidence, organizing principles, or presentation style of someone else). This includes paraphrasing or summarizing without acknowledgment, submission of another student's work as one's own, purchase of prepared research, papers or assignments, and the unacknowledged use of research sources gathered by someone else. Failure to indicate accurately the extent and precise nature of one's reliance on other sources is also a form of plagiarism. The student is responsible for understanding the legitimate use of sources, the appropriate ways of acknowledging academic, scholarly, or creative indebtedness, and the consequences for violating University regulations. **If you have questions about academic integrity - ASK!**

"GREAT" EXPECTATIONS

- Students can expect the instructor to be open to questions and concerns, but remain impartial and fair to all students.
- Students are expected to respectfully participate in the course and communicate with the instructor if there is confusion or lack of understanding of the material. In turn, the instructor will attempt to clarify any material.
- If the instructor is unable to attend class or office hours due to a personal emergency, students can expect for arrangements to be made for an alternate instructor or to be informed in as a timely a manner as possible.
- Students are expected to provide reliable contact information and inform the instructor of any updates.
- Students are expected to contact the instructor via email, phone, or in person for reliable response.
- Students are expected to complete all assignments and readings as well as set up meeting times with the instructor as necessary. It is important for students to inform the instructor if all available office hours interfere with other classes during the first week of the course.

SCHOOL OF BUSINESS
UNIVERSITY AT ALBANY State University of New York

BFOR 401W
Advanced Digital Forensics

Course ID: **BFOR 401W**
Course Name: **Advanced Digital Forensics**
Credit Hours: **4**
Semester: **TBA**
Instructor: **Fabio R. Auffant II**
Course Prerequisite(s): **BFOR 302, BFOR 303 & BFOR 304**
Textbook: **TBA**

COURSE DESCRIPTION

Instructor will guide students through proficiency testing by utilizing digital forensic skills obtained in previous coursework to develop an incident response plan to guide a forensic investigation. Based on case-study scenario, student will also conduct forensic analysis of several items of digital evidence, preparing comprehensive written forensic laboratory reports and present findings to a panel of legal, forensics and management subject matter experts for constructive feedback. Students will also prepare exhibits and other materials for court presentation purposes based on the case-study scenario, forensic analysis findings and written laboratory reports. Instructor will conduct quality control assessments to ensure students are performing forensic analysis that is in compliance with industry standards guiding forensic and laboratory work environments Prerequisite(s): BFOR 302, BFOR 303, and BFOR 304. Offered fall semester only.

LEARNING OBJECTIVES

After completing this class the student should be able to:

- Develop incident response and forensic examination plan in support of case-based scenario.
- Utilize the skills obtained in previous coursework to perform forensic analysis of multiple items of digital evidence in support of case-based scenario.
- Utilize the skills obtained in previous coursework to prepare a comprehensive written report and present forensic findings to a panel of subject matter experts.
- Understand quality control audits and assessments relevant to forensic and laboratory management.
- Based on the case scenario, prepare court-related presentation materials, documents and exhibits in support of case-bases scenario.

COURSE FORMAT

Classroom Only: The course will be offered solely in classroom environment to ensure academic integrity and provide guidance and support by course instructor. Even though the course is spread over several weeks, it is important that students stay on schedule so that they can participate with other students in discussions. Students would be evaluated on their ability to perform forensic analysis with minimal supervision and to ensure students arrive at forensically valid analysis conclusions. The class should require approximately 120 hours of work including instruction audio of lecture material, student assignments, discussion postings, and the reading of the class textbook, as well as external publications.

SCHOOL OF BUSINESS
UNIVERSITY AT ALBANY State University of New York

BFOR 401W
Advanced Digital Forensics

Syllabus

INSTRUCTOR CONTACT

Type	Information	Availability
Email		Dates and times TBA
Virtual		Dates and times TBA

COURSE RESOURCES

Course Website	
Reference Material and External Readings	To be posted by instructor during course activities
Technical Support	

COURSE OUTLINE

Week	Topic	Activities
1	Case-Based Scenario & Project Review	Class Discussion
2	Incident & forensic examination planning	Assignment
3	Federal Rules of Evidence	Lab Exercise
4	Federal Rules of Criminal Procedure	Assignment
5	Advanced Digital Forensics Techniques – Disks	Lab Exercise
6	Advanced Digital Forensics Techniques – Media	Assignment
7	**COURSE PROJECT PROGRESS REPORT**	Student Presentations
8	Quality Control ISO Auditing	Lab Exercise
9	Quality Control ASCLD/LAB Auditing	Assignment
10	Preparing a Forensics-Oriented Curriculum Vitae	Lab Exercise
11	Preparing Court Exhibits and Documents	Assignment
12	Presenting forensically accurate analysis findings	Lab Exercise
13	**COURSE PROJECT**	Student Presentations
14	**FINAL EXAM**	

COURSE ACTIVITIES

Lab Exercises: Lab Exercises will also be assigned and graded by the instructor. Students will be required to complete Lab Exercises and submit to the instructor by specific date(s) and grading assessment will be based on the analysis of sample data and satisfactory completion of forensic reports.

Assignments: Assignments will be assigned and graded by the instructor and will be based on the weekly discussion topic(s). Students will be required to complete and submit to the instructor by specific date(s) and grading assessment will be based on acceptable grammar, terminology, formatting and substantive content.

Project: Course project will be assigned and graded by the instructor, based on individual and/or group assignments. Students will be required to complete and submit to the instructor by a specific date for grading and assessment.

GRADING AND ASSESSMENT

We try to grade assignments fairly and return them within a reasonable time period with relevant comments and to be available to discuss questions. Students are expected to set up an appointment to talk with the grader within a week of receiving a grade. Please let us know if there is a mistake in calculation – mistakes happen!

Late assignments, projects, or papers will receive 25% off per day late from the final possible grade for the exercise unless there is a legitimate excuse.

Students at UAlbany should contact the Disabled Student Services Center and the relevant professor at least a week before each F2F exam if requiring additional assistance. Missing any assessment without a verifiable legitimate excuse will result in a grade of zero. F2F Exams are expected to be closed-book unless otherwise specified and all personal electronic devices (laptops, cell phones, PDA's, etc.) should be put away.

Activity	Portion of Grade	Description
Assignments	20%	
Lab Exercises	20%	
Project	40%	
Exam	20%	

Overall Accumulative Point Evaluation:

Point Range	**Letter Grade**
97-100	**(A)**
91-96	**(A-)**
86-90	**(B+)**
81-85	**(B)**
76-80	**(B-)**
71-75	**(C+)**
66-70	**(C)**
63-65	**(C-)**
60-62	**(D)**
Below 60	**(E)**

ACADEMIC INTEGRITY & HONESTY

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Violations include: Giving or receiving unauthorized help on an examination; Collaborating on projects, papers, or other academic exercises which is regarded as inappropriate by the instructor(s), submitting substantial portions of the same work for credit more than once, without the prior explicit consent of the instructor(s) to whom the material is being submitted; misrepresenting material or fabricating information in an academic exercise or assignment; Destroying, damaging, or stealing of another's work or working materials; and presenting as one's own work, the work of another person (e.g., words, ideas, information, code, data, evidence, organizing principles, or presentation style of someone else). This includes paraphrasing or summarizing without acknowledgment, submission of another student's work as one's own, purchase of prepared research, papers or assignments, and the unacknowledged use of research sources gathered by someone else. Failure to indicate accurately the extent and precise nature of one's reliance on other sources is also a form of plagiarism. The student is responsible for understanding the legitimate use of sources, the appropriate ways of acknowledging academic, scholarly, or creative indebtedness, and the consequences for violating University regulations. **If you have questions about academic integrity - ASK!**

"GREAT" EXPECTATIONS

- Students can expect the instructor to be open to questions and concerns, but remain impartial and fair to all students.
- Students are expected to respectfully participate in the course and communicate with the instructor if there is confusion or lack of understanding of the material. In turn, the instructor will attempt to clarify any material.
- If the instructor is unable to attend class or office hours due to a personal emergency, students can expect for arrangements to be made for an alternate instructor or to be informed in as a timely a manner as possible.
- Students are expected to provide reliable contact information and inform the instructor of any updates.
- Students are expected to contact the instructor via email, phone, or in person for reliable response.
- Students are expected to complete all assignments and readings as well as set up meeting times with the instructor as necessary. It is important for students to inform the instructor if all available office hours interfere with other classes during the first week of the course.

SCHOOL OF BUSINESS
UNIVERSITY AT ALBANY State University of New York

BFOR 402

Digital Forensics Moot Court

Course ID: **BFOR 402**
Course Name: **Digital Forensics Moot Court**
Credit Hours: **4**
Semester: **TBA**
Instructor: **TBA**
Course Prerequisite(s): **BFOR 302, BFOR 303, BFOR 304 & BFOR 401W**
(BFOR 401W may be taken concurrently**)**
Textbook: **TBA**

Syllabus

COURSE DESCRIPTION

This is a capstone course where students will learn how to provide expert testimony as a part of presenting their findings from completion of an advanced level digital forensic analysis. Students will learn how to prepare for and give expert witness testimony related to digital evidence, including how to deal with opposing counsel cross-examinations and how to effectively relay such information to a jury. Students will engage in a "mock" court grand jury, suppression hearing, and trial proceedings. Panel of subject matter experts from the legal, forensic and management fields will assist in the guidance and constructive feedback of students participating in "mock" court proceedings. Instructor will assess student's competence in providing a technical testimony to a group of non-technical listeners, such as judges, juries, as well as administrative and human resource officers. Prerequisite(s): BFOR 302, BFOR 303, BFOR 304 and BFOR 401W (BFOR 401W may be taken concurrently). Offered spring semester only.

LEARNING OBJECTIVES

After completing this class the student should be able to:

- Become familiar with civil and criminal legal proceedings and courtrooms.
- Prepare for legal proceedings and testimony associated with digital forensics.
- Effectively engage in pre-testimony proceedings with legal counsel.
- Effectively provide testimony during direct and cross examination.
- Prepare court exhibits derived from digital forensics analysis and lab reports.

COURSE FORMAT

Classroom Only: The course will be offered solely in classroom environment to ensure academic integrity and provide guidance and support by course instructor. Even though the course is spread over several weeks, it is important that students stay on schedule so that they can participate with other students in discussions. Students would be evaluated on their ability to perform forensic analysis with minimal supervision and to ensure students arrive at forensically valid analysis conclusions. The class should require approximately 120 hours of work including instruction audio of lecture material, student

assignments, discussion postings, and the reading of the class textbook, as well as external publications.

INSTRUCTOR CONTACT

Type	Information	Availability
Email		Dates and times TBA
Virtual		Dates and times TBA

COURSE RESOURCES

Course Website	
Reference Material and External Readings	To be posted by instructor during course activities
Technical Support	

COURSE OUTLINE

Week	Topic	Activities
1	Professional Ethics in Legal Proceedings	Class Discussion
2	Federal Rules of Civil Procedures	Assignment
3	Federal Rules of Criminal Procedures	Assignment
4	Establishing a Chain of Custody Foundation	Assignment
5	Establishing Expert Witness Credentials	Assignment
6	Establishing a Scientific and Forensic Foundation	Assignment
7	**MID TERM EXAM**	
8	Testifying in Grand Jury Proceedings	Lab Exercise
9	Testifying in Suppression Hearings	Lab Exercise
10	Testifying in Direct Examination	Lab Exercise
11	Testifying in Cross Examination	Lab Exercise
12	Preparing Digital Evidence Court Exhibits	Lab Exercise
13	MOOT COURT	Student Participation
14	MOOT COURT	Student Participation

COURSE ACTIVITIES

Lab Exercises: Lab Exercises will also be assigned and graded by the instructor. Students will be required to complete Lab Exercises and submit to the instructor by specific date(s) and grading assessment will be based on the analysis of sample data and satisfactory completion of forensic reports.

Assignments: Assignments will be assigned and graded by the instructor and will be based on the weekly discussion topic(s). Students will be required to complete and submit to the instructor by specific date(s) and grading assessment will be based on acceptable grammar, terminology, formatting and substantive content.
Project: Course project will be assigned and graded by the instructor, based on individual and/or group assignments. Students will be required to complete and submit to the instructor by a specific date for grading and assessment.

GRADING AND ASSESSMENT

We try to grade assignments fairly and return them within a reasonable time period with relevant comments and to be available to discuss questions. Students are expected to set up an appointment to talk with the grader within a week of receiving a grade. Please let us know if there is a mistake in calculation – mistakes happen!

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Students at UAlbany should contact the Disabled Student Services Center and the relevant professor at least a week before each F2F exam if requiring additional assistance. Missing any assessment without a verifiable legitimate excuse will result in a grade of zero. F2F Exams are expected to be closed-book unless otherwise specified and all personal electronic devices (laptops, cell phones, PDA's, etc.) should be put away.

Activity	Portion of Grade	Description
Assignments	20%	
Lab Exercises	20%	
Project – Moot Court	40%	
Exam	20%	

Overall Accumulative Point Evaluation:

Point Range	**Letter Grade**
97-100	**(A)**
91-96	**(A-)**
86-90	**(B+)**
81-85	**(B)**
76-80	**(B-)**
71-75	**(C+)**
66-70	**(C)**
63-65	**(C-)**
60-62	**(D)**
Below 60	**(E)**

ACADEMIC INTEGRITY & HONESTY

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Violations include: Giving or receiving unauthorized help on an examination; Collaborating on projects, papers, or other academic exercises which is regarded as inappropriate by the instructor(s), submitting substantial portions of the same work for credit more than once, without the prior explicit consent of the instructor(s) to whom the material is being submitted; misrepresenting material or fabricating information in an academic exercise or assignment; Destroying, damaging, or stealing of another's work or working materials; and presenting as one's own work, the work of another person (e.g., words, ideas, information, code, data, evidence, organizing principles, or presentation style of someone else). This includes paraphrasing or summarizing without acknowledgment, submission of another student's work as one's own, purchase of prepared research, papers or assignments, and the unacknowledged use of research sources gathered by someone else. Failure to indicate accurately the extent and precise nature of one's reliance on other sources is also a form of plagiarism. The student is responsible for understanding the legitimate use of sources, the appropriate ways of acknowledging academic, scholarly, or creative indebtedness, and the consequences for violating University regulations. **If you have questions about academic integrity - ASK!**

"GREAT" EXPECTATIONS

- Students can expect the instructor to be open to questions and concerns, but remain impartial and fair to all students.
- Students are expected to respectfully participate in the course and communicate with the instructor if there is confusion or lack of understanding of the material. In turn, the instructor will attempt to clarify any material.
- If the instructor is unable to attend class or office hours due to a personal emergency, students can expect for arrangements to be made for an alternate instructor or to be informed in as a timely a manner as possible.
- Students are expected to provide reliable contact information and inform the instructor of any updates.
- Students are expected to contact the instructor via email, phone, or in person for reliable response.

- Students are expected to complete all assignments and readings as well as set up meeting times with the instructor as necessary. It is important for students to inform the instructor if all available office hours interfere with other classes during the first week of the course.

Syllabus

Course Action Form

State University of New York at Albany
School of Business

Proposal No. _____

[x] New Course Revision of: [] Number [] Credits

[] Deletion of Courses [] Title [] Description

[] Cross-Listing [] Prerequisites [] Put in Suspension

GRADING >A - E

Effective Semester: Spring 2014

Faculty Area: Accounting

Course Number: New: BACC 400

Course Title: Forensic Accounting and Fraud Detection

Credits: 3

Prerequisites: BACC 211

Course description to appear in catalog:
This course provides an overview of occupational fraud including misappropriation of assets, financial statement fraud and corruption as well as other forensic accounting engagements such as tax fraud and matrimonial disputes. The course will explore the characteristics of specific fraud schemes along with the characteristics of those who perpetrate them (according to the Annual Report to the Nations compiled by the Association of Certified Fraud Examiners). Students will acquire an understanding of the generally accepted accounting principles violated by the schemes. Students will become versed in the principles of internal control over the financial reporting system including how these principles work to deter financial fraud and ensure compliance with external requirements. Relevant guidance from the professional, regulatory and legal environment will be discussed. Prerequisite(s): BACC 211. Offered fall semester only.

Justification of Proposal:

The department wants to offer this course as a core course for the School of Business Digital Forensics major and as an elective for School of Business students.

Course presented for S U grading: [] Yes [x] No

NONE

Not applicable

Cross-Listing Department: (If appropriate): NA Course No. _____

Other School or Department affected by change: NA

Action	Approved	Disapproved	Return to Reconsider	Signature	Date
Proposed to Curriculum Committee	X				
Curriculum Committee	X				
Faculty	X				
Dean	X				

Other Schools or Departments notified if affected:

Sent to Dean of Graduate Studies OR Designee, Jon Bartow, on: _____ by _____

Course Action Form

State University of New York at Albany
School of Business

Proposal No. _____

[x] New Course Revision of: [] Number [] Credits

[] Deletion of Courses [] Title [] Description

[] Cross-Listing [] Prerequisites [] Put in Suspension

GRADING >A - E

Effective Semester: Spring 2014

Faculty Area: Accounting

Course Number: New: BACC 401

Course Title: Forensic Accounting and Investigations II

Credits: 3

Prerequisites: BACC 400

Course description to appear in catalog:
Students will learn the process and principal techniques for conducting fraud examinations and other forensic investigations as well as why careful attention to them is critical to a successful investigation. Students will learn the role of analytical review procedures in the investigation of financial fraud. Document analysis and the art of effective interviewing during investigations will be explored. Students will learn the proper procedures for evidence handling. Finally students will learn to write a report that succinctly and effectively communicates the completed investigation. Relevant guidance from the professional, regulatory and legal environment will be discussed. Prerequisite(s): BACC 400. Offered spring semester only.

Justification of Proposal:

The department wants to offer this course as a core course for the School of Business Digital Forensics major and as an elective for School of Business students.

Course presented for S U grading: [] Yes [x] No

NONE

Not applicable

Cross-Listing Department: (If appropriate): NA Course No.

Other School or Department affected by change: NA

Action	Approved	Disapproved	Return to Reconsider	Signature	Date
Proposed to Curriculum Committee	X				
Curriculum Committee	X				
Faculty	X				
Dean	X				

Other Schools or Departments notified if affected:

Sent to Dean of Graduate Studies OR Designee, Jon Bartow, on: _____ by _____

Course Action Form

State University of New York at Albany
School of Business

Proposal No. _____

[X] New Course Revision of: [] Number [] Credits

[] Deletion of Courses [] Title [] Description

[] Cross-Listing [] Prerequisites [] Put in Suspension

GRADING >A - E

Effective Semester: Spring 2014

Faculty Area: Information Technology Management

Course Number: New: BFOR 100

Course Title: Introduction to Computing and Information Science

Credits: 3

Prerequisites: None

Course description to appear in catalog:
This course provides a foundation of information systems concepts that can be applied to future learning in advanced topics. The course will include background in the history and social implications of computing including cyber ethics; emergent and contemporary information technology and its nomenclature; information and data abstraction, representation, manipulation and storage; operating systems; networking and the Internet, programming languages, logic, and algorithms; database systems; digital graphics and multimedia; and information security.

Justification of Proposal:

The department wants to offer this course as a core course for the School of Business Digital Forensics major and as an elective for School of Business students.

Course presented for S U grading: [] Yes [x] No

NONE

Not applicable

Cross-Listing Department: (If appropriate): NA Course No. _____

Other School or Department affected by change: NA

Action	Approved	Disapproved	Return to Reconsider	Signature	Date
Proposed to Curriculum Committee	X				
Curriculum Committee	X				
Faculty	X				
Dean	X				

Other Schools or Departments notified if affected:

Sent to Dean of Graduate Studies OR Designee, Jon Bartow, on: _____ by _____

Course Action Form

State University of New York at Albany
School of Business

Proposal No. _____

[] New Course Revision of: [X] BITM 201 [X] 3 Credits

[] Deletion of Courses [X] Introduction to Digital Forensics [] Description

[] Cross-Listing [] Prerequisites [] Put in Suspension

GRADING >A - E

Effective Semester: Fall 2013

Faculty Area: Information Technology Management

Course Number: New: BFOR 201

Course Title: Introduction to Digital Forensics

Credits: 3

Prerequisites: N/A

Course description to appear in catalog:
In this course, students will learn the fundamental process of analyzing data collected from electronic devices (including computers, media, and other digital evidence). Students will become familiar with proper techniques and tools utilized for securing, handling and preserving digital and multimedia evidence at physical crime scenes. Students will utilize examination and chain of custody forms, as well as prepare crime scene & digital acquisition reports related to administrative, civil and criminal investigations.

Justification of Proposal:

The department wants to offer this course as a core course for the School of Business Digital Forensics major and as an elective for School of Business students. There has been a revision of the course number and description. The description has changed to clarify and distinguish the course content.

Course presented for S U grading: [] Yes [x] No

NONE

Not applicable

Cross-Listing Department: (If appropriate): NA Course No.

Other School or Department affected by change: NA

Action	Approved	Disapproved	Return to Reconsider	Signature	Date
Proposed to Curriculum Committee	X				
Curriculum Committee	X				
Faculty	X				
Dean	X				

Other Schools or Departments notified if affected:

Sent to Dean of Graduate Studies OR Designee, Jon Bartow, on: _____ by _____

Course Action Form

State University of New York at Albany
School of Business

Proposal No. _____

[] New Course Revision of: [X] BITM 202 [X] 3 Credits

[] Deletion of Courses [X] Cyber Crime Investigation [] Description

[] Cross-Listing [] Prerequisites [] Put in Suspension

GRADING >A - E

Effective Semester: Fall 2013

Faculty Area: Information Technology Management

Course Number: New: BFOR 202

Course Title: Cyber Crime Investigations

Credits: 3

Prerequisites: None

Course description to appear in catalog:
This course will teach students forensic investigative techniques specifically for managing cyber crimes including collection and preservation of data from different sources, such as the Internet and "cloud" computing environments. Students will learn the legal processes available for collecting and preserving such evidence in conducting cyber investigations. Offered fall semester only.

Justification of Proposal:

The department wants to offer this course as a core course for the School of Business Digital Forensics major and as an elective for School of Business students. There has been a revision of the course number, title, and description. The description has changed to clarify and distinguish the course content.

Course presented for S U grading: [] Yes [x] No

NONE

Not applicable

Cross-Listing Department: (If appropriate): NA Course No.

Other School or Department affected by change: NA

Action	Approved	Disapproved	Return to Reconsider	Signature	Date
Proposed to Curriculum Committee	X				
Curriculum Committee	X				
Faculty	X				
Dean	X				

Other Schools or Departments notified if affected:

Sent to Dean of Graduate Studies OR Designee, Jon Bartow, on: _____ by _____

Course Action Form

State University of New York at Albany
School of Business

Proposal No. _____

[X] New Course Revision of: [] Number [] Credits

[] Deletion of Courses [] Title [] Description

[] Cross-Listing [] Prerequisites [] Put in Suspension

GRADING >A - E

Effective Semester: Spring 2014

Faculty Area: Information Technology Management

Course Number: New: BFOR 203

Course Title: Networking – Introduction to Data Communication

Credits: 3

Prerequisites: None

Course description to appear in catalog:
The past couple of decades have witnessed the digital revolution profoundly altering our society. Most of the business affairs have been linked to communication and networking technologies. With tremendous advances in networking, it is now feasible to connect all the devices such as computers, tablets, smart phones, and mainframes together. However, the newly innovative communication and networking technologies pose additional challenges to business and IT management. Nowadays, IT professionals must have an elementary understanding of those technologies that facilitate them better impose management in the organization or perform advanced analysis such as for network forensics. Balanced technical and managerial contents are incorporated to enable students to learn from various perspectives. This course will introduce the student to the organization and design of data networks. Topics include networking media, Ethernet technology, the TCP/IP protocol suite, subnets, routers and routing protocols, Wide Area Networks (WANs), and fundamentals of network management. This course includes hands-on experience of networking techniques. Offered fall semester only.

Justification of Proposal:

The department wants to offer this course as a core course for the School of Business Digital Forensics major and as an elective for School of Business students.

Course presented for S U grading: [] Yes [x] No

NONE

Not applicable

Cross-Listing Department: (If appropriate): NA Course No. _____

Other School or Department affected by change: NA

Action	Approved	Disapproved	Return to Reconsider	Signature	Date
Proposed to Curriculum Committee	X				
Curriculum Committee	X				
Faculty	X				
Dean	X				

Other Schools or Departments notified if affected:

Sent to Dean of Graduate Studies OR Designee, Jon Bartow, on: _____ by _____

Course Action Form

State University of New York at Albany
School of Business

Proposal No. _____

[X] New Course Revision of: [] Number [] Credits

[] Deletion of Courses [] Title [] Description

[] Cross-Listing [] Prerequisites [] Put in Suspension

GRADING >A - E

Effective Semester: Spring 2014

Faculty Area: Information Technology Management

Course Number: New: BFOR 204

Course Title: Fundamentals Information and Cyber Security

Credits: 3

Prerequisites: None

Course description to appear in catalog:
This course covers computer and network security. This course will examine general security concepts that include: communication security, infrastructure security, operation/organizational security, basic cryptography and steganography. Students will learn and apply de facto security best practices administering clients, servers and firewalls in a dedicated computer network laboratory. Students will have the opportunity to assess vulnerabilities and administrate information security. Offered spring semester only.

Justification of Proposal:

The department wants to offer this course as a core course for the School of Business Digital Forensics major and as an elective for School of Business students.

Course presented for S U grading: [] Yes [x] No

NONE

Not applicable

Cross-Listing Department: (If appropriate): NA Course No.

Other School or Department affected by change: NA

Action	Approved	Disapproved	Return to Reconsider	Signature	Date
Proposed to Curriculum Committee	X				
Curriculum Committee	X				
Faculty	X				
Dean	X				

Other Schools or Departments notified if affected:

Sent to Dean of Graduate Studies OR Designee, Jon Bartow, on: _____ by _____

Course Action Form

State University of New York at Albany
School of Business

Proposal No. _____

[x] New Course Revision of: [] Number [] Credits

[] Deletion of Courses [] Title [] Description

[] Cross-Listing [] Prerequisites [] Put in Suspension

GRADING >A - E

Effective Semester: Spring 2014

Faculty Area: Information Technology Management

Course Number: New: BFOR 300

Course Title: Databases for Digital Forensics

Credits: 3

Prerequisites: BFOR 100 or permission of instructor.

Course description to appear in catalog:
A large part of digital forensics deals with extraction and collection of data across electronic devices each of which has different architecture. In this class students learn the traditional relational database design and then understand the architecture of data storage in mobile electronic devices. The class also discusses in depth the storage of data on the cloud and the ramifications of that on digital forensics. Students also learn the basic techniques for analyzing data including use of Structured Query Language, data mining techniques and social network analysis. Students will also use scripting languages to efficiently clean up data from text files and extract information from files. Prerequisite(s): BFOR 100 or permission of instructor. Offered fall semester only.

Justification of Proposal:

The department wants to offer this course as a core course for the School of Business Digital Forensics major and as an elective for School of Business students.

Course presented for S U grading: [] Yes [x] No

NONE

Not applicable

Cross-Listing Department: (If appropriate): NA Course No. _____

Other School or Department affected by change: NA

Action	Approved	Disapproved	Return to Reconsider	Signature	Date
Proposed to Curriculum Committee	X				
Curriculum Committee	X				
Faculty	X				
Dean	X				

Other Schools or Departments notified if affected:

Sent to Dean of Graduate Studies OR Designee, Jon Bartow, on: _____ by _____

Course Action Form

State University of New York at Albany
School of Business

Proposal No. _____

[] New Course Revision of: [X] BITM 301 [X] 3 Credits

[] Deletion of Courses [X] Computer Forensics I [] Description

[] Cross-Listing [X] BITM 201 [] Put in Suspension

GRADING >A - E

Effective Semester: Spring 2014

Faculty Area: Information Technology Management

Course Number: New: BFOR 301

Course Title: Computer Forensics I

Credits: 3

Prerequisites: BFOR 201 or permission of instructor

Course description to appear in catalog:
This course prepares students to conduct digital forensic examination of computers, removable media and other electronic devices. Students will use digital forensics tools and techniques to analyze digital evidence pursuant to an investigation, while utilizing industry standards and best practices. This course will prepare student in the development and implementation of forensic incident response plans, policies and procedures. Students will engage in oral and written reporting outlining digital forensic analysis findings and conclusions, in a professionally acceptable manner, pursuant to administrative, civil and criminal legal proceedings.
Prerequisite(s): BFOR 201 or permission of instructor. Offered fall semester only.

Justification of Proposal:
The department wants to offer this course as a core course for the School of Business Digital Forensics major and as an elective for School of Business students. There has been a revision of the course number and description. The description has changed to clarify and distinguish the course content.

Course presented for S U grading: [] Yes [x] No

NONE

Not applicable

Cross-Listing Department: (If appropriate): NA Course No.

Other School or Department affected by change: NA

Action	Approved	Disapproved	Return to Reconsider	Signature	Date
Proposed to Curriculum Committee	X				
Curriculum Committee	X				
Faculty	X				
Dean	X				

Other Schools or Departments notified if affected:

Sent to Dean of Graduate Studies OR Designee, Jon Bartow, on: _____ by _____

Course Action Form

State University of New York at Albany
School of Business

Proposal No. _____

[] New Course Revision of: [X] BITM 302 [X] 3 Credits

[] Deletion of Courses [X] eDiscovery [] Description

[] Cross-Listing [] Prerequisites [] Put in Suspension

GRADING >A - E

Effective Semester: Spring 2014

Faculty Area: Information Technology Management

Course Number: New: BFOR 302

Course Title: eDiscovery Forensics

Credits: 3

Prerequisites: None

Course description to appear in catalog:
This course prepares student for the electronic collection, preservation and management of corporate information. It provides a foundation on basic corporate incident response challenges and proper collection methods for electronic data subject to legal and regulatory requirements. Student will utilize forensics tools for searching, culling and presenting corporate data, pursuant to administrative and civil eDiscovery cases. Offered fall semester only.

Justification of Proposal:
The department wants to offer this course as a core course for the School of Business Digital Forensics major and as an elective for School of Business students. There has been a revision of the course number, title, and description. The description has changed to clarify and distinguish the course content.

Course presented for S U grading: [] Yes [x] No

NONE

Not applicable

Cross-Listing Department: (If appropriate): NA Course No. _____

Other School or Department affected by change: NA

Action	Approved	Disapproved	Return to Reconsider	Signature	Date
Proposed to Curriculum Committee	X				
Curriculum Committee	X				
Faculty	X				
Dean	X				

Other Schools or Departments notified if affected:

Sent to Dean of Graduate Studies OR Designee, Jon Bartow, on: _____ by _____

Course Action Form

State University of New York at Albany
School of Business

Proposal No. _____

[x] New Course Revision of: [] Number [] Credits

[] Deletion of Courses [] Title [] Description

[] Cross-Listing [] Prerequisites [] Put in Suspension

GRADING >A - E

Effective Semester: Spring 2014

Faculty Area: Information Technology Management

Course Number: New: BFOR 303

Course Title: Computer Forensics II

Credits: 3

Prerequisites: BFOR 301 or permission of instructor.

Course description to appear in catalog:
This course prepares students to conduct a digital forensic examination and analysis involving complex cases, electronic devices and data, as well as other forensic processes utilized to ensure government and corporate continuity. This course will prepare student to develop and implement policies and procedures for computer forensic laboratories involving operations and quality control management. It prepares students to compose and present oral and written reports that include laboratory audits, forensic analysis findings and court presentation material. Prerequisite(s): BFOR 301 or permission of instructor. Offered spring semester only.

Justification of Proposal:

The department wants to offer this course as a core course for the School of Business Digital Forensics major and as an elective for School of Business students.

Course presented for S U grading: [] Yes [x] No

NONE

Not applicable

Cross-Listing Department: (If appropriate): NA Course No.

Other School or Department affected by change: NA

Action	Approved	Disapproved	Return to Reconsider	Signature	Date
Proposed to Curriculum Committee	X				
Curriculum Committee	X				
Faculty	X				
Dean	X				

Other Schools or Departments notified if affected:

Sent to Dean of Graduate Studies OR Designee, Jon Bartow, on: _____ by _____

Course Action Form

State University of New York at Albany
School of Business

Proposal No. _____

[x] New Course Revision of: [] Number [] Credits

[] Deletion of Courses [] Title [] Description

[] Cross-Listing [] Prerequisites [] Put in Suspension

GRADING >A - E

Effective Semester: Spring 2014

Faculty Area: Information Technology Management

Course Number: New: BFOR 304

Course Title: Network and Mobile Forensics

Credits: 3

Prerequisites: BFOR 203 and BFOR 301

Course description to appear in catalog:
This course exposes students to procedures for conducting live network forensics of computer system components and data. It prepares students to collect, preserve, and examines networks, computers, mobile devices and relevant data that may be critical to an investigation. Students will develop network incident response plans, policies and procedures relevant to corporate networks and data, as well as mobile corporate assets, such as mobile devices. It prepares students to compose and present oral and written reports that outline network and mobile device forensic analysis findings that are technically and legally acceptable in administrative hearings and court proceedings. Prerequisite(s): BFOR 203 & BFOR 301. Offered spring semester only.

Justification of Proposal:

The department wants to offer this course as a core course for the School of Business Digital Forensics major and as an elective for School of Business students.

Course presented for S U grading: [] Yes [x] No

NONE

Not applicable

Cross-Listing Department: (If appropriate): NA Course No.

Other School or Department affected by change: NA

Action	Approved	Disapproved	Return to Reconsider	Signature	Date
Proposed to Curriculum Committee	X				
Curriculum Committee	X				
Faculty	X				
Dean	X				

Other Schools or Departments notified if affected:

Sent to Dean of Graduate Studies OR Designee, Jon Bartow, on: _____ by _____

Course Action Form

State University of New York at Albany
School of Business

Proposal No. _____

[x] New Course Revision of: [] Number [] Credits

[] Deletion of Courses [] Title [] Description

[] Cross-Listing [] Prerequisites [] Put in Suspension

GRADING >A - E

Effective Semester: Spring 2014

Faculty Area: Information Technology Management

Course Number: New: BFOR 401W

Course Title: Advanced Digital Forensics

Credits: 3

Prerequisites: BFOR 302, BFOR 303 & BFOR 304

Course description to appear in catalog:
Instructor will guide students through proficiency testing by utilizing digital forensic skills obtained in previous coursework to develop an incident response plan to guide a forensic investigation. Based on case-study scenario, student will also conduct forensic analysis of several items of digital evidence, preparing comprehensive written forensic laboratory reports and present findings to a panel of legal, forensics and management subject matter experts for constructive feedback. Students will also prepare exhibits and other materials for court presentation purposes based on the case-study scenario, forensic analysis findings and written laboratory reports. Instructor will conduct quality control assessments to ensure students are performing forensic analysis that is in compliance with industry standards guiding forensic and laboratory work environments Prerequisite(s): BFOR 302, BFOR 303, and BFOR 304. Offered fall semester only.

Justification of Proposal:

The department wants to offer this course as a core course for the School of Business Digital Forensics major and as an elective for School of Business students.

Course presented for S U grading: [] Yes [x] No

NONE

Not applicable

Cross-Listing Department: (If appropriate): NA Course No. _____

Other School or Department affected by change: NA

Action	Approved	Disapproved	Return to Reconsider	Signature	Date
Proposed to Curriculum Committee	X				
Curriculum Committee	X				
Faculty	X				
Dean	X				

Other Schools or Departments notified if affected:

Sent to Dean of Graduate Studies OR Designee, Jon Bartow, on: _____ by _____

Course Action Form

State University of New York at Albany
School of Business

Proposal No. _____

[x] New Course Revision of: [] Number [] Credits

[] Deletion of Courses [] Title [] Description

[] Cross-Listing [] Prerequisites [] Put in Suspension

GRADING >A - E

Effective Semester: Spring 2014

Faculty Area: Information Technology Management

Course Number: New: BFOR 402

Course Title: Digital Forensics Moot Court

Credits: 4

Prerequisites: BFOR 302, BFOR 303, BFOR 304 & BFOR 401W (BFOR 401W may be taken concurrently)

Course description to appear in catalog:
This is a capstone course where students will learn how to provide expert testimony as a part of presenting their findings from completion of an advanced level digital forensic analysis. Students will learn how to prepare for and give expert witness testimony related to digital evidence, including how to deal with opposing counsel cross-examinations and how to effectively relay such information to a jury. Students will engage in a "mock" court grand jury, suppression hearing, and trial proceedings. Panel of subject matter experts from the legal, forensic and management fields will assist in the guidance and constructive feedback of students participating in "mock" court proceedings. Instructor will assess student's competence in providing a technical testimony to a group of non-technical listeners, such as judges, juries, as well as administrative and human resource officers. Prerequisite(s): BFOR 302, BFOR 303, BFOR 304 and BFOR 401W (BFOR 401W may be taken concurrently). Offered spring semester only.

Justification of Proposal: The department wants to offer this course as a core course for the School of Business Digital Forensics major and as an elective for School of Business students.

Course presented for S U grading: [] Yes [x] No

NONE

Not applicable

Cross-Listing Department: (If appropriate): NA Course No. _____

Other School or Department affected by change: NA

Action	Approved	Disapproved	Return to Reconsider	Signature	Date
Proposed to Curriculum Committee	X				
Curriculum Committee	X				
Faculty	X				
Dean	X				

Other Schools or Departments notified if affected:

Sent to Dean of Graduate Studies OR Designee, Jon Bartow, on: _____ by _____

University at Albany – State University of New York

School of Business **Course and Program Action Form** **Proposal No.** _____

Please check one: [ ] Course Proposal [x] Program Proposal

Please mark all that apply:

[x]	New Course	Revision of: [ ]	Number	[ ]	Description
[ ]	Cross-Listing	[ ]	Title	[ ]	Prerequisites
[ ]	Shared-Resources Course	[ ]	Credits		
[ ]	Deactivate/Activate Course (boldface & underline as appropriate)	[ ]	Other (specify): _____		

Department: _____ Effective Semester, Year: Fall 2014

Course Number Current: _____ New: _____ Credits: _____

Program Title: Bachelors of Science in Digital Forensics

Program Description to appear in Bulletin:

See Attached

Prerequisites statement to be appended to description in Bulletin:

See attached

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 (i.e., CAS ###): _____

This course is (will be) a shared-resources course with (i.e., CAS ###): _____

Explanation of proposal:

The School of Business proposes to create a Bachelor of Science in Digital Forensics – a combined major/minor undergraduate program. This curriculum is designed to provide a foundation of fundamental knowledge of and basic proficiency with digital forensics, and nurture the development of students who are able to think critically, perform high-level analysis, adapt to changing environments through innovation and exploration, and have a deep understanding of the technical, legal, social, financial, political and psychological influences that are related to the practice of digital forensics and investigation of cyber crime.

Other departments or schools which offer similar or related courses and which have certified that this proposal does not overlap their offering:

College of Computing and Information

Chair of Proposing Department **(TYPE NAME)**	Assistant to Chair or Department Secretary **(TYPE NAME)** Date
Sanjay Goel	Lauri Mosall October 18, 2013
Approved by Chair(s) of Departments having cross-listed course(s) **[Copy of e-mail approval(s) on following page.]** Date	Dean of College Date
N/A	
Chair of Academic Programs Committee Date	Dean of Undergraduate or Graduate Studies Date

Requirements for the B.S. in Digital Forensics

The BS program in Digital Forensics combined major/minor requires the completion of the following 70 credits clustered in four categories:

1. Foundational Principles (25 credits): APSY 101, ASOC 115, BACC 211, BFOR 100, BITM 215, RCRJ 201, RCRJ 203, RCRJ 281 (or AMAT 108).

2. Core Competencies (16 credits): RCRJ 202, BFOR 203, BFOR 204, BFOR 300, BACC 400.

3. Concentration (21 credits): BFOR 201, BFOR 202, BFOR 301, BFOR 302, BFOR 303, BFOR 304, BACC 401.

4. Capstone (8 credits): BFOR 401W and BFOR 402

5. Course Descriptions

BACC 400 Forensic Accounting and Fraud Detection
This course provides an overview of occupational fraud including misappropriation of assets, financial statement fraud and corruption as well as other forensic accounting engagements such as tax fraud and matrimonial disputes. The course will explore the characteristics of specific fraud schemes along with the characteristics of those who perpetrate them (according to the Annual Report to the Nations compiled by the Association of Certified Fraud Examiners). Students will acquire an understanding of the generally accepted accounting principles violated by the schemes. Students will become versed in the principles of internal control over the financial reporting system including how these principles work to deter financial fraud and ensure compliance with external requirements. Relevant guidance from the professional, regulatory and legal environment will be discussed. Prerequisite(s): BACC 211. Offered fall semester only.

BACC 401 Forensic Accounting Investigative Techniques
Students will learn the process and principal techniques for conducting fraud examinations and other forensic investigations as well as why careful attention to them is critical to a successful investigation. Students will learn the role of analytical review procedures in the investigation of financial fraud. Document analysis and the art of effective interviewing during investigations will be explored. Students will learn the proper procedures for evidence handling. Finally students will learn to write a report that succinctly and effectively communicates the completed investigation. Relevant guidance from the professional, regulatory and legal environment will be discussed. Prerequisite(s): BACC 400. Offered spring semester only.

BFOR 100 Introduction to Information Systems (4)
This course provides a foundation of information systems concepts that can be applied to future learning in advanced topics. The course will include background in the history and social implications of computing including cyber ethics; emergent and contemporary information technology and its nomenclature; information and data abstraction, representation, manipulation and storage; operating systems; networking and the Internet, programming languages, logic, and algorithms; database systems; digital graphics and multimedia; and information security.

BFOR 201 Introduction to Digital Forensics (3)
In this course, students will learn the fundamental process of analyzing data collected from electronic devices (including computers, media, and other digital evidence).

Students will become familiar with proper techniques and tools utilized for securing, handling and preserving digital and multimedia evidence at physical crime scenes. Students will utilize examination and chain of custody forms, as well as prepare crime scene & digital acquisition reports related to administrative, civil and criminal investigations.

BFOR 202 Cyber Crime Investigations (3)
This course will teach students forensic investigative techniques specifically for managing cyber crimes including collection and preservation of data from different sources, such as the Internet and "cloud" computing environments. Students will learn the legal processes available for collecting and preserving such evidence in conducting cyber investigations. Offered fall semester only.

BFOR 203 Networking - Introduction to Data Communication w/ lab (3)
The past couple of decades have witnessed the digital revolution profoundly altering our society. Most of the business affairs have been linked to communication and networking technologies. With tremendous advances in networking, it is now feasible to connect all the devices such as computers, tablets, smart phones, and mainframes together. However, the newly innovative communication and networking technologies pose additional challenges to business and IT management. Nowadays, IT professionals must have an elementary understanding of those technologies that facilitate them better impose management in the organization or perform advanced analysis such as for network forensics. Balanced technical and managerial contents are incorporated to enable students to learn from various perspectives. This course will introduce the student to the organization and design of data networks. Topics include networking media, Ethernet technology, the TCP/IP protocol suite, subnets, routers and routing protocols, Wide Area Networks (WANs), and fundamentals of network management. This course includes hands-on experience of networking techniques. Offered fall semester only.

BFOR 204 Fundamentals of Information and Cyber Security (3)
This course covers computer and network security. This course will examine general security concepts that include: communication security, infrastructure security, operation/organizational security, basic cryptography and steganography. Students will learn and apply de facto security best practices administering clients, servers and firewalls in a dedicated computer network laboratory. Students will have the opportunity to assess vulnerabilities and administrate information security. Offered spring semester only.

BFOR 300 Databases for Digital Forensics (3)
A large part of digital forensics deals with extraction and collection of data across electronic devices each of which has different architecture. In this class students learn the traditional relational database design and then understand the architecture of data storage in mobile electronic devices. The class also discusses in depth the storage of data on the cloud and the ramifications of that on digital forensics. Students also learn the basic techniques for analyzing data including use of Structured Query Language, data mining techniques and social network analysis. Students will also use scripting languages to efficiently clean up data from text files and extract information from files. Prerequisite(s): BFOR 100 or permission of instructor. Offered fall semester only.

BFOR 301 Computer Forensics I (3)
This course prepares students to conduct digital forensic examination of computers, removable media and other electronic devices. Students will use digital forensics tools and techniques to analyze digital evidence pursuant to an investigation, while utilizing industry standards and best practices. This course will prepare student in the development and

implementation of forensic incident response plans, policies and procedures. Students will engage in oral and written reporting outlining digital forensic analysis findings and conclusions, in a professionally acceptable manner, pursuant to administrative, civil and criminal legal proceedings.
Prerequisite(s): BFOR 201 or permission of instructor. Offered fall semester only.

BFOR 302 eDiscovery Forensics (3)
This course prepares student for the electronic collection, preservation and management of corporate information. It provides a foundation on basic corporate incident response challenges and proper collection methods for electronic data subject to legal and regulatory requirements. Student will utilize forensics tools for searching, culling and presenting corporate data, pursuant to administrative and civil eDiscovery cases. Offered fall semester only.

BFOR 303 Computer Forensics II (3)
This course prepares students to conduct a digital forensic examination and analysis involving complex cases, electronic devices and data, as well as other forensic processes utilized to ensure government and corporate continuity. This course will prepare student to develop and implement policies and procedures for computer forensic laboratories involving operations and quality control management. It prepares students to compose and present oral and written reports that include laboratory audits, forensic analysis findings and court presentation material.
Prerequisite(s): BFOR 301 or permission of instructor. Offered spring semester only.

BFOR 304 Network and Mobile Forensics (3)
This course exposes students to procedures for conducting live network forensics of computer system components and data. It prepares students to collect, preserve, and examines networks, computers, mobile devices and relevant data that may be critical to an investigation. Students will develop network incident response plans, policies and procedures relevant to corporate networks and data, as well as mobile corporate assets, such as mobile devices. It prepares students to compose and present oral and written reports that outline network and mobile device forensic analysis findings that are technically and legally acceptable in administrative hearings and court proceedings.
Prerequisite(s): BFOR 203 & BFOR 301. Offered spring semester only.

BFOR 401W Advanced Digital Forensics (4)
Instructor will guide students through proficiency testing by utilizing digital forensic skills obtained in previous coursework to develop an incident response plan to guide a forensic investigation. Based on case-study scenario, student will also conduct forensic analysis of several items of digital evidence, preparing comprehensive written forensic laboratory reports and present findings to a panel of legal, forensics and management subject matter experts for constructive feedback. Students will also prepare exhibits and other materials for court presentation purposes based on the case-study scenario, forensic analysis findings and written laboratory reports. Instructor will conduct quality control assessments to ensure students are performing forensic analysis that is in compliance with industry standards guiding forensic and laboratory work environments
Prerequisite(s): BFOR 302, BFOR 303, and BFOR 304. Offered fall semester only.

BFOR 402 Digital Forensics Moot Court (4)
This is a capstone course where students will learn how to provide expert testimony as a part of presenting their findings from completion of an advanced level digital forensic analysis. Students will learn how to prepare for and give expert witness testimony related to digital evidence, including how to deal with opposing counsel cross-examinations and how to effectively relay such information to a jury. Students will engage in a “mock” court

grand jury, suppression hearing, and trial proceedings. Panel of subject matter experts from the legal, forensic and management fields will assist in the guidance and constructive feedback of students participating in “mock” court proceedings. Instructor will assess student’s competence in providing a technical testimony to a group of non-technical listeners, such as judges, juries, as well as administrative and human resource officers. Prerequisite(s): BFOR 302, BFOR 303, BFOR 304 and BFOR 401W (BFOR 401W may be taken concurrently). Offered spring semester only.

UNIVERSITY AT ALBANY
State University of New York

Major Academic Pathway (MAP)

Digital Forensics

Bachelor of Science combined major/minor

Fall Semester 1	Spring Semester 1	Summer 1
ASOC 115 **SS **BFOR 100 US Historical Perspectives Gen Ed **US** Foreign Language Gen Ed **FL** UUNI 110 **WCI**	BITM 215 APSY 101 ** BFOR 201 ** RCRJ 281/AMAT 108 **MS** Natural Science Gen Ed **NS**	Look for a summer job in the area of your studies Consider study abroad options
Fall Semester 2	**Spring Semester 2**	**Summer 2**
RCRJ 201 ** BACC 211 (fall only) ** BFOR 202 ** BFOR 203 Humanities Gen Ed **HU**	RCRJ 202 RCRJ 203 BFOR 204 International Perspectives Gen Ed **IP** Arts Gen Ed **AR**	Summer Internship
Fall Semester 3 *	**Spring Semester 3**	**Summer 3**
BFOR 300 BFOR 301 BFOR 302 Elective Elective	BFOR 303 BFOR 304 Challenges 21st Century Gen Ed **CH** Elective Elective	Summer internship
Fall Semester 4	**Spring Semester 4**	**Congratulations!**
BFOR 401W BACC 400 Elective Elective Elective	BFOR 402 BACC 401 Elective Elective	

** Admission requires 3.0 GPA in starred admission courses, plus 3.25 GPA overall

General Education Requirements, for students matriculating Fall 2014

MS Mathematics and Statistics
WCI Writing and Critical Inquiry
AR Arts
HU Humanities
NS Natural Sciences
SS Social Sciences

FL Foreign Language (one semester of collegiate study, or the equivalent, of a foreign language)
CH Challenges for the 21st Century

Community Engaged Coursework
Study Abroad
Tutoring opportunities

Credit bearing Professional Development Options:
RSSW 290, 291 and 390 – Community Service
Research within major
University Internship
Departmental Internship

US U.S. Historical Perspectives
IP International Perspectives

NOTE: This is a suggested course sequence.

Prepared by Advisement Services - 2014

UNIVERSITY AT ALBANY
State University of New York

UNIVERSITY POLICY AND PLANNING COUNCIL
CAMPUS IMPACT FORM

Proposal Title: Digital Forensics Undergraduate Major

College or School School of Business **Department** Information Technology Management

Program Director or Sponsor Sanjay Goel **e-mail** goel@albany.edu

Action Category
- [x] Program Proposal
- [ ] Other (describe)

Does this proposal include any space resource implications? ○ Yes ◉ No
Approximate sq. ft. needed:

Action Type
- [x] New
- [ ] Revision
- [ ] Deactivation
- [ ] Other (describe)

Program has been identified as a **Gainful Employment Program (GEP)** ○

Brief Description of Proposal:

This is a proposal to create a digital forensics major in the School of Business housed in the Information Technology Management Department. This is the only program of its kind in New York State and is a handful of programs throughout the country. Digital Forensics is in high demand both in the public sector (law enforcement, federal agencies) and private sector (banks, consulting firms, large corporations). The program is academically rigourous with significant hands-on component to be done in laboratories. The program will recruit students through direct admit, declaration of major at the end of junior year, or transfer through community colleges.

Impact on Other Programs:
The proposer had consulted the following service units:

- [x] ITS
- [x] the University Library
- [ ] Other

and it has been jointly determined that there will ○/won't ◉ be a fiscal impact of the proposed program on the service agency. Please attach letters of collaboration/support from impacted programs.

Faculty and Staff

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

Two faculty (lecturer and tenure-track assistant professor) have been hired as a part of the UA 2020 program, 2 faculty hires (tenure-track assistant professor) have been approved for the year 2013-2014, and 2 more faculty hires (tenure-track assistant professor) are expected in academic year 2014-2015.
The program will be administered by the program director and the admissions and advising will be managed by the existing advisement and admissions staff in the School of Business.

RESOURCE IMPLICATIONS				
	(1)	Year 1	Year 2	Year 3
Projected Expenditures (In home department and other affected units)				
Faculty (2)	From Existing Sources	185.000		
	From New Sources			
Administrative Staff (2)	From Existing Sources			
	From New Sources			
Clerical Staff (2)	From Existing Sources			
	From New Sources			
Equipment, Supplies, etc.(3)	From Existing Sources	25.000	25.000	25.000
	From New Sources			
Student Support	From Existing Sources			
	From New Sources			
Facilities	From Existing Sources			
	From New Sources			
Total Projected Expenditures		**$ 210.000**	**$ 25.000**	**$ 25.000**
Projected Capital Expenditures				
Capital Facilities	From Existing Sources			
	From New Sources			
Capital Equipment	From Existing Sources			
	From New Sources			
Total Projected Capital Expenditures		**$ 0**	**$ 0**	**$ 0**

APPROVALS

Department Chair — Sanjay Joel — Dept Chair — 11/14/2013 — Date

Dean — Donald Riegel — Dean — 11/16/2013 — Date

UPPC Chair — UPPC Chair — Date

UNIVERSITY AT ALBANY
State University of New York

College of Computing and Information
Informatics Department

October 1, 2013

Sanjay Goel,
Associate Professor and Chair,
Information Technology Management Department
School of Business
University at Albany

Dear Sanjay,

Writing as chair, please allow me to convey the enthusiasm of the Informatics Department for the proposal to create the new undergraduate major in Digital Forensics. As a long-time colleague of yours in this area and others during our years working together in the University's Center for Information Forensics and Assurance (CIFA), I feel that the Digital Forensics undergraduate degree is a fantastic next step in UAlbany's increasing educational and research excellence in areas of Information Assurance.

Specifically, the Informatics Department stipulates that the proposed Digital Forensics major does not constitute any kind of significant programmatic overlap with the Informatics Department's own proposed BS in Informatics. Rather, it nicely complements the ongoing efforts in in the Computer Science Department and your own Information Technology Management Department, and our own Cyber-security concentration in our Informatics BS proposal. Each of these programs has their own breadth, depth and emphasis; these allow students to choose targeted programs in areas of their interests, and together give UAlbany an impressive breadth across Information Assurance.

As part of our advisement process in CCI, as well in our early courses like CSI105, *Computing and Information*, we point out to students the various computing and information related options available at UAlbany (*e.g.* CS, INF, ITM, FMR). Once it is approved, we will be delighted to add the Digital Forensics program to the list. We hope that many students take advantage of this opportunity.

In addition, we will be delighted to make seats in our courses available to students in both the ITM and FOR programs if those programs' faculty feel that it will help promote their learning, either by explicit inclusion in degree requirements or DARS exceptions. We are also of course also open to

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course co-listing, and any other forms of educational and other resource sharing and collaboration between our departments and programs.

While the proposers of the FOR and INF programs agree that there is no significant programmatic overlap between our programs, at our recent meeting it was pointed out that several of the courses looked similar based upon the descriptions we have both made available. These courses include:

- FOR 100X and CSI105 (It's a CS course, but we use it in our curriculum, and I was a co-creator)
- FOR 203 and INF 203 (proposed; currently INF 423)
- FOR 204 and INF 306

Having worked with you in CIFA, and having had very a good working relationship with ITM over the years, especially when I was chair of the Computer Science Department, I fully realize the specific emphasis of ITM, and now FOR courses. Based upon that knowledge I stipulate that because of the School of Business perspective in general, and the unique character of Digital Forensics, that these courses, beyond a certain unavoidable core of technical material, do not duplicate the INF offerings.

Both personally and professionally I wish you the best of luck with this proposal and the creation of this exciting new program. If I or my department may be of any assistance, please let us know.

Sincerely,

George Berg

Associate Professor and Chair

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An Evaluation of the Resources of the University at Albany Libraries in Support of Digital Forensics -November 12, 2013

Introduction

The University Libraries collect, house, and provide access to all types of published materials in support of the research and teaching of the schools, colleges, and academic departments of the University. This evaluation considers those portions of the libraries' collections and services that support a program in Digital Forensics.

Library Collections

The University Libraries are among the top 115 research libraries in the country. The University Library, the Science Library, and the Dewey Graduate Library contain more than two million volumes and over 2.8 million microforms. The Libraries subscribe or provide access to over 75,000 serials. Many thousands more are made available via subscriptions to full-text databases. Whenever possible, current subscriptions are available electronically. Additionally, the Libraries serve as a selective depository for U.S. Government publications and house collections of software and media.

Books

Because of the cross discipline nature of Digital Forensics, it is difficult to provide a precise count of the books in the library collection that would support this program. We estimate there are well over 20,000 books in those portions of the Library of Congress (LC) classification scheme which relate to computer science; 2000 which relate to information technology management; the number related to the legal perspective may number less than 100.

Unlike other disciplines, we have been unable to locate an authoritative bibliography for digital forensics in the library science literature. However, using Computer Science as a proxy, the University Libraries book holdings were compared to the listing in the "Computing" chapter in *RCL: Resources for College Libraries* (volume 5: *Science and Technology*) on pages 335 to 349 (Chicago: American Library Association, 2007). This study showed that the University Libraries have 180 of 231 (77.9%) of the books listed, which indicates a strong collection for the technical perspective. We may need to acquire more titles with a legal or ITM perspective. This would require additional funding, or reduction in support of other areas.

Journals

To evaluate the strength of the journal holdings in digital forensics, we used computer science as a proxy. The University Libraries journal holdings were compared to the "Computer Science, Theory & Methods" listing on pages 97 to 98 in the 2007 *Journal Citation Reports (Science Edition).* The study found that the University Libraries owns or provides access to 48 of 79 (60.8%) of the journals listed. Despite the cancellation of several computer science journals during the last fifteen years, we conclude that the journal collection is reasonably strong.

Access provided through the library:

- Digital Investigation (Open Access from ScienceDirect)
- Forensic Science Communications (FBI)

- Forensic Science International
- IEEE Transactions on Information Forensics and Security
- International Journal of Cyber-Security and Digital Forensics (Open access)
- International Journal of Forensic Computer Science (Open access)
- International Journal of Legal Medicine
- Journal of Digital Forensics, Security and Law
- Journal of Forensic and Legal Medicine
- Journal of Forensic Sciences
- Open Forensic Science Journal
- Open Forensic Science Journal (Open access)
- Science and Justice
- Small Scale Digital Device Forensic Journal (Open Access)

Not subscribed (should be added if funding is available)

- International Journal of Digital Crime and Forensics - $625
- Journal of Digital Forensic Practice - $344

Databases & Digital Collections with Digital Forensics Content

- Academic Search Complete
- ACM Digital Library
- Business Source Complete
- Criminal Justice Abstracts[1]
- Criminal Justice Periodicals Index[1]
- Emerald 120.
- IEEE Computer Society Digital Library
- Inspec
- LexisNexis Academic
- PAIS Gallerywatch CRS[2]
- Proquest Congressional[2]
- Public Administration Abstracts[2]
- Safari Tech Books Online
- Scopus
- Springer Computer Science eBook Collection
- SpringerLink
- Westlaw Campus
- Wiley Online Library.
- Worldwide Political Science Abstracts[2]

[1] This database does not contain the full-text of the cited article, though it links to external sources when full-text is available. Articles not available online can be obtained, usually within only a few days, through interlibrary loan.
[2] For the public policy perspective.

Reference Collection

The reference section of the Science Library houses a collection of resources in support of the science and mathematics programs. Numerous reference books related to computer science are available; this includes titles such as:

- Collins Dictionary of Computing,
- Concise Encyclopedia of Computer Science,
- Dictionary of Multimedia and Internet Applications,
- Encyclopedia of Computer Science**,**
- Encyclopedia of Data Warehousing and Mining,
- Encyclopedia of Forensic Sciences
- Focal Dictionary of Communications
- Forensic Science Handbook
- Forensic Services Directory,
- Guide to Information Sources in the Forensic Sciences.
- International Biographical Dictionary of Computer Pioneers
- Oxford Dictionary of Computing.
- Webster's New World Computer Dictionary

We believe the following should be added to support the digital forensics program:

- Encyclopedia of Forensic Sciences (2nd edition, 2013) $2,887.50

Interlibrary Loan and Delivery Services

The University Libraries' Interlibrary Loan (ILL) Department borrows books and microforms, and obtains digital copies of journal articles and other materials not owned by the Libraries from sources locally, state-wide, nationally, and internationally. ILL services are available at no cost to the user for faculty, staff, and students currently enrolled at the University at Albany.

Access to Research Collections

Library memberships provide access to many other libraries in the Capital District region, in New York State, and throughout the United States and Canada. In the Capital District, the Capital District Library Council (CDLC) sponsors the Direct Access Program (DAP). Upon presentation of a CDLC DAP card, students and faculty may borrow from or use 47 academic, public, law, medical, and technical libraries, including the Rensselaer Polytechnic Institute Libraries. Students and faculty may also use the collections of the New York State Library. Statewide, students and faculty may use and borrow materials from most of the SUNY-affiliated institutions.

US Government Information

In addition to purchased information, the library is a natural portal to US Government information. Below is a list of resources the library could make available to students in this program:

- Handbook of Forensic Services - Published by the Federal Bureau of Investigation Laboratory Division

- Homeland Security Digital Library - From the Department of Homeland Security
- In the Spotlight: Forensic Science: Publications - From NCJRS, the National Criminal Justice Reference Service
- NCJRS Publications/Products - From the National Criminal Justice Reference Service
- NIJ Publication Collections - From the National Institute of Justice

Summary and Conclusions

The University Libraries are making a considerable financial commitment to build and maintain collections in support of the primary areas associated with digital forensics: computer science, criminal justice, and information technology management. The studies conducted for this report indicate strong and reasonably strong book and journal collections. Books and journal articles not owned by the University Libraries may be obtained through interlibrary loan.

Michael Knee
Bibliographer for Computer Science

Richard Irving
Bibliographer for Public Affairs

Christian Poehlmann
Bibliographer for Business & Economics

UNIVERSITY AT ALBANY
State University of New York

Office of the Chief Information Officer

November 25, 2013

Richard Fogarty
Undergraduate Affairs Council
University at Albany, State University of New York
LI 36, 1400 Washington Ave.
Albany, NY 12222

RE: UAC Approval

Dear Rick:

It gives us great pleasure in sending this letter in support of the Digital Forensics Major being planned in the School of Business. We have been working closely with Prof. Sanjay Goel and the School of Business Office of Computer Services (OCS) over the last several months in the planning and design of the laboratory to support digital forensics and cyber security laboratory activities.

Based on in-depth discussions, the laboratory will be operated by Prof. Goel and the OCS team. We do not anticipate the Digital Forensics major to require additional resource implications for Information Technology Services. Information Technology Services (ITS) currently delivers a number of highly relevant services that can be used by instructors and students in support of the major. With the several online courses, the Blackboard (v9.1) learning management system and the Virtual Information Commons (vIC), which enables access to specialized academic software from any location might be useful. We have worked together with Prof. Goel in the past in investigations to expand this service to provide functionality to support the needs associated with the laboratory exercises being offered for information security and digital forensics courses.

In addition, ITS staff have deep experience training and supporting faculty to develop fully-online courses, as well as blended courses. These services are standard at the University. In line with these activities, the ITS Faculty Technology Resources (FTR) group has partnered with the Institute for Teaching, Learning, and Academic Leadership (ITLAL) on campus to developed a flipped classroom project. Staff expertise in FTR will be available to consult with you as you move forward with implementing this type of classroom in your curriculum.

I personally have overseen the development and growth of the SUNY Learning Network, which won the 2001 Educause Award for Teaching and Learning. I am also on the faculty of the Educause Leadership Institute and I maintain ongoing relationships with CIOs across SUNY community colleges. I understand that this program will be able to be taken as a 2+2 program from local community colleges and would be able to provide support with coordination with other CIOs.

We are excited to see this new major being started at the University. Digital forensics is a growing and exciting field with a definite need in the information technology workplace. We wish Prof. Goel good luck in establishing the major and look forward to providing support towards its success.

Sincerely,

Christine E. Haile

Christine E. Haile

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