

**UNDERGRADUATE NEW PROGRAM
MAJOR OR MINOR OR CONCENTRATION
*Within an Existing Degree Program****

**For a new degree program or new CIP code designation, in addition to EPC program and course forms you must complete all procedures and forms found in the "SCHEV Guidelines."*

Proposal for a New Program

Department	ISYS, MANG, and MARK	Submission Date	September 16, 2013
Degree	Business	Program Name	Cyber Forensics and Security
Major <input type="checkbox"/>	Minor <input type="checkbox"/>	Concentration	<input checked="" type="checkbox"/>
Semester of Implementation	Fall 2014		

- I. Outline of the proposed major, minor or concentration including catalog copy. *Attach extra sheets.*

CYBER FORENSICS AND SECURITY/21 credits

ISYS 272 Introduction to Business Programming/3 credits
 ISYS 373 Database Management/3 credits
 ISYS 376 Cyber Security/3 credits
 ISYS 377 Cyber Forensics
 ISYS 473 Network Communications/3 credits
 ISYS 476 Advanced Topics in Cyber Security, Forensics, and Policy
 ISYS 477 Advanced Forensics (new course) **** SP and new course**

- II. New courses which will be proposed as part of this program. Be sure to submit a separate proposal for each course using the appropriate forms. *Attach extra sheets.*

ISYS 477 Advanced Forensics *SP (see attached)

- III. Rationale for the program:

Currently, there is an increasing demand for college graduates with cyber forensics and security skills. Our enrollment in the ISYS concentration jumped from 38 last year to 51 this year (an increase of 34%), and the enrollment in the Cyber Security, Forensics, and Policy minor increased from 2 last year to 16 this year. The Longwood Center for Cyber Security is one of a few institutions in the U.S. and currently is the only institution in Virginia to have earned the designation—a National Center for Digital Forensics Academic Excellence (CDFAE). Partnership with CDFAE will allow our students to obtain a Department of Defense-recognized skill set and awareness of current issues facing digital forensics investigators and examiners. Our courses have been approved by CDFAE at the 100- and 200-levels. With the

proposed Cyber Forensics and Security concentration, our courses will be approved by CDFAE at the 300- and 400-levels. The proposed concentration will help to train and meet the current demand for cyber forensics and cyber security experts.

See attached for proposed changes to Catalog.

IV. Resource Assessment

A. Estimate additional staff requirements for this program.

Only one additional course is needed for the proposed concentration. However, since we are anticipating an increase in the enrollment, there is a need for another ISYS faculty in the near future.

B. Estimate the amount and cost of equipment, library resources, computer hardware and software, and other resources that will be required to carry out this program.

None.

V. Anticipated enrollment in program after five (5) years.

We are anticipating that the proposed Cyber Forensics and Security concentration will have 100 students after 5 years.

VI. Affected Departments or Programs. If the proposed program could have an impact on other departments or programs, the appropriate affected chairs or program directors should be notified of the proposed changes. Where teaching licensure may be affected, the licensure officer should also be notified.

Licensure Officer _____ Date Notified_ _____

List other departments/programs that might be affected:

none.

Individuals contacted and date contacted:

VII. Library notification: The library liaison for the proposing department must be notified:

Liaison _____ Date notified _____

SIGNATURE PAGE
UNDERGRADUATE NEW PROGRAM
MAJOR OR MINOR OR CONCENTRATION

Department ISYS, MANG, and MARK Program Name Cyber Forensics and Security

VII. Approvals

	Date Received	Date Approved	Signature
1. Department Curriculum Committee Chair	<u>10/3/2013</u>	<u>10/3/2013</u>	<u>[Signature]</u>
2. Department Chair	<u>10/4/2013</u>	<u>10/4/2013</u>	<u>[Signature]</u>
3. College Dean	<u>10-4-13</u>	<u>10-4-13</u>	<u>[Signature]</u>
4. College Curriculum Committee	<u>10/3/2013</u>	<u>10/3/2013</u>	<u>[Signature]</u>
5. Educational Policy Committee	_____	_____	_____
6. Faculty Senate	_____	_____	_____
7. *VPAA	_____	_____	_____
8. OAIR notified	_____	_____	_____
9. *BOV/SCHEV - VPAA will submit materials for approval			
10. Date received by Registrar	_____		

*New degree programs, Spin-off or new CIP codes must be submitted to BOV & SCHEV)

All curriculum proposals/changes are processed in the date order received. In order to be included in the next academic year's catalog, all paperwork must be submitted no later than:

February 1st to the College Curriculum Committee
March 1st to the Educational Policy Committee (EPC)

Submission within the deadlines does not guarantee processing in time for the next academic year's catalog. For new degree programs that must go to SCHEV for approval, entry into the catalog may not occur for at least another year.

Proposed Catalog Changes (in bold)

BUSINESS ADMINISTRATION DEGREE PROGRAM

Students seeking a Bachelor of Science in Business Administration (BSBA) degree pursue a general course of business study that includes taking core courses in the functional areas of business. Students earning the BSBA degree must take a minimum of 50 percent of the total business hours at Longwood. For the purpose of assessing the quality of the program, graduating seniors will be tested on their general knowledge of business by taking the Major Field Test in Business.

Students also gain in-depth business knowledge by concentrating in one of **eight** areas of business. Students must declare a concentration prior to registering for the second semester of their junior year.

Concentration Areas

Students pursuing a Bachelor of Science in Business Administration degree (BSBA) must concentrate in one of the following **eight** areas:

Accounting: Students concentrating in accounting take courses that provide both technical instruction and a managerial perspective relevant to a career in accounting. The accounting concentration is designed to prepare students to be professional accountants in industry, government, or public practice. Students who complete the requirements for a concentration in accounting meet the specified content requirements to take the Virginia Certified Public Accountant examination. Students need a total of 150 credit hours to be certified in Virginia as a public accountant. A five-year BSBA and MBA program is available for students who want to graduate with 150 credit hours.

Cyber Forensics and Security: **Currently, there is an increasing demand for college graduates with cyber forensics and security skills. Therefore, the Cyber Forensics and Security concentration is designed to prepared students for a career in cyber forensics and cyber security. The Longwood Center for Cyber Security is one of a few institutions in the U.S. and currently is the only institution in Virginia to have earned the designation—a National Center for Digital Forensics Academic Excellence (CDFAE). Partnership with CDFAE will allow our students to obtain a Department of Defense-recognized skill set and awareness of current issues facing digital forensics investigators and examiners. Students will receive practical, hands-on experience through the Center's state-of-the-art lab, and learn from and conduct research with internationally known cyber forensics and cyber security experts.**

Economics: Economic logic underlies all business decisions and all government policies. A goal of the economics concentration is to teach students how to think critically about a situation and analyze its implications. Emphasis is placed on exposing students to important consumer, business, government and international situations. Graduates with a background in economics are hired by government and industry. In addition, a concentration in economics is a traditional education for students wishing to enter law school.

Finance: The finance concentration prepares students to make financial assessments and managerial decisions as well as plan and supervise financial activities for businesses and clients. Courses cover the theory and practice of managing financial aspects of businesses and organizations, including capital budgeting, investments, capital markets, financial institutions, and emerging financial instruments. With this background, students are prepared for lucrative careers such as financial managers, financial analysts, treasurers, controllers, credit managers, financial services representatives, stockbrokers, and more.

Information Systems and Security (ISYS): The ISYS concentration is designed to prepare students to plan, design, engineer, and implement secure networks and information systems in today's modern electronic, mobile, and global environment. Students learn how to manage information technologies and exploit their full potential while protecting the information assets and rights of individuals and organizations. The concentration prepares students for a career in a variety of organizations ranging from the end users and creators of information systems to the guardians of information assets and the organization's electronic infrastructure.

Management: The management concentration explores the relationship of behavioral and quantitative management techniques in the application of human resources, production processes, and organizational development. This curriculum provides students with skills in communication and critical thinking leading to management careers in any organization. In addition, the management skills of planning, directing, motivating, and controlling are essential for achieving organizational goals. The management concentration not only prepares students for professional careers with a wide range of management opportunities upon graduation, but it also provides a strong foundation for future graduate study in business.

Marketing: Careers in advertising, buying, selling, logistics, product management, international marketing, and marketing research are only a few of the fields available to students concentrating in marketing. This concentration is designed to prepare students for managerial positions in these fields. The curriculum includes not-for-profit, governmental, and international applications of marketing knowledge. Classroom knowledge, internship opportunities, and involvement of students in business organizations are integral components of the marketing concentration.

Real Estate: This concentration prepares students for a career as a professional in the real estate field. Students completing this concentration will be prepared to enter the areas of real estate investment, mortgage banking, property management, sales, appraisal, and development. The Principles of Real Estate (FINA 453) and Real Estate Appraisal (FINA 454) courses have been approved by the state of Virginia as preparation for the licensure exams.

BUSINESS ADMINISTRATION MAJOR, BSBA DEGREE

A. General Education Core Requirements/38 credits

Lower Level General Education/31 credits

Upper Level General Education/7 credits - Business students must take:

MATH 171 is recommended for General Education Goal 5 (required for admission to degree program)

MANG 474 is required for General Education Goal 12

Internship 492 in the area of concentration is required for General Education Goal 14

B. Additional Degree Requirements/7 credits Natural Science/4 credits

MATH 301 Applied Statistics/3 credits (MATH 171 prerequisite)

C. Major Requirements/41 credits (plus 4 credits listed from General Education: MANG 474/3 credits and Internship 492/1 credit)

A minimum of 50 percent of the total business hours must be taken at Longwood.

1. General Core 32 credits (plus 4 credits counted in upper-level General Education)

ACCT 240	Principles of Accounting I/3 credits
ACCT 242	Principles of Accounting II/3 credits
ACCT 296	Legal Environment/3 credits
ECON 217	Principles of Economics (Micro Emphasis)/3 credits
ECON 218	Principles of Economics (Macro Emphasis)/3 credits
FINA 350	Principles of Finance/3 credits
MANG 291	Business Communication/3 credits
MANG 360	Principles of Management/3 credits
MANG 391	Professional Skills Development/1 credit
MANG 474	Managing Business Ethics and Diversity/3 credits (Meets General Education Goal 12)
MANG 497	Business Strategy/3 credits
MARK 380	Principles of Marketing/3 credits
ACCT, ECON, FINA, MANG, ISYS or MARK 492	Internship/2 credits (1 credit of which meets General Education Goal 14)

2. Functional Competencies/9 credits

Concentrations require at least one course from each group as indicated:

International Issues:

ECON 319 International Economics/3 credits (All concentrations)

Information Systems:

ISYS 370 Principles of Management Information Systems/3 credits (All concentrations)

Quantitative Methods:

ECON 309 Managerial Economics/3 credits (Accounting, Economics, Finance, Real Estate)

MANG 363 Introduction to Management Science/3 credits (Management, Information Systems and Security, Marketing).

D. Business Concentration Requirements/15-30 credits

In addition to completing the major requirements, each candidate for the BSBA degree shall satisfy the additional specific requirements of one of the following concentrations. Students must declare a concentration prior to registering for the second semester of their junior year but are strongly encouraged to do so earlier.

Business Concentration Requirements - Accounting 30, **Cyber Forensics and Security 21**, Economics & Real Estate 21, Management 15, all others 18 credits.

ACCOUNTING/30 credits

ACCT 340 Intermediate Accounting I/3 credits
ACCT 341 Intermediate Accounting II/3 credits
ACCT 342 Cost Accounting/3 credits
ACCT 344 Tax Accounting I/3 credits
ACCT 346 Intermediate Accounting III/3 credits
ACCT 442 Auditing/3 credits

Select four of the following for a total of 12 credits:

ACCT 345 Tax Accounting II/3 credits
ACCT 350 Principles of Fraud Examinations/3 credits
ACCT 441 Accounting Theory/3 credits
ACCT 443 Governmental Not-For-Profit and Advanced Accounting/3 credits
ACCT 445 Law for Accountants/3 credits
ACCT 495 Special Topics in Accounting/1-3 credits

CYBER FORENSICS AND SECURITY/21 credits

ISYS 272 Introduction to Business Programming/3 credits
ISYS 373 Database Management/3 credits
ISYS 376 Cyber Security/3 credits
ISYS 377 Cyber Forensics/3 credits
ISYS 473 Network Communications/3 credits
ISYS 476 Advanced Topics in Cyber Security, Forensics, and Policy/3 credits
ISYS 477 Advanced Forensics/3 credits

ECONOMICS/21 credits

ECON 317 Intermediate Microeconomics/3 credits
ECON 318 Intermediate Macroeconomics/3 credits
ECON 414 Econometrics and Forecasting/3 credits

ECON 461 Senior Seminar/3 credits
ENGL 319 Technical Writing/3 credits
Economics electives/6 credits 300-400 level, ECON 492 cannot be used as economics elective

FINANCE/18 credits

FINA 353 Managerial Finance/3 credits
FINA 450 Financial Management/3 credits
FINA 451 Investment Analysis and Portfolio Management/3 credits
FINA 452 Financial Markets and Institutions/3 credits

Select two from the following for a total of 6 or more credits:

ACCT 340 Intermediate Accounting I/3 credits
ACCT 341 Intermediate Accounting II/3 credits
ACCT 342 Cost Accounting/3 credits
ACCT 344 Tax Accounting I/3 credits
ACCT 345 Tax Accounting II/3 credits
ECON 308 Money and Banking/3 credits
ECON 317 Intermediate Microeconomics/3 credits
ECON 318 Intermediate Macroeconomics/3 credits
ECON 414 Econometrics and Forecasting/3 credits
FINA 351 Risk Management/3 credits
FINA 354 Working Capital and Treasury Function/3 credits
FINA 413 International Financial Markets/3 credits
FINA 453 Principles of Real Estate/4 credits
FINA 454 Real Estate Appraisal/4 credits
FINA 455 Real Estate Finance and Investments/4 credits
FINA 495 Special Topics in Finance/1-3 credits
MATH 261 The Differential and Integral Calculus/4 credits
or MATH 262 The Differential and Integral Calculus/4 credits
MATH 267 Applications of Calculus/4 credits

INFORMATION SYSTEMS AND SECURITY/18 credits

ISYS 272 Introduction to Business Programming/3 credits
ISYS 373 Database Management/3 credits
ISYS 376 Cyber Security/3 credits
ISYS 471 Introduction to Systems Analysis and Design/3 credits
ISYS 473 Network Communications/3 credits

Select one from the following for a total of 3 or more credits:

CMSC 160 Introduction to Algorithmic Design I/4 credits
ISYS 372 COBOL Programming/3 credits
ISYS 375 Web Design and Development/3 credits
ISYS 475 Web Programming/3 credits
ISYS 495 Special Topics in Computer Information Systems and Security/1-3 credits

MANAGEMENT/15 credits

MANG 362 Organizational Behavior/3 credits
MANG 465 Human Resource Management/3 credits

Select three from the following (a minimum of two courses selected must have the MANG prefix) for a total of 9 credits:

MANG 364 Negotiation and Conflict Resolution/3 credits
MANG 460 Management Application and Skill Development/3 credits

MANG 462	Staffing Organizations/3 credits
MANG 463	Project Management/3 credits
MANG 464	Compensation and Benefits/3 credits
MANG 469	Entrepreneurship/3 credits
MANG 495	Special Topics in Management/1-3 credits
FINA 353	Managerial Finance/3 credits
FINA 450	Financial Management/3 credits
MARK 385	Marketing Channels Management/3 credits
MARK 481	International Business/3 credits
COMM 362	Organizational and Professional Communication/3 credits
POSC 394	Political Leadership/3 credits
SOCL 310	Complex Organizations/3 credits

MARKETING/18 credits

MARK 381	Marketing Research/3 credits
MARK 383	Consumer Behavior/3 credits
MARK 482	Marketing Strategy/3 credits

Select three from the following for a total of 9 credits:

MARK 382	Professional Selling and Sales Force Management/3 credits
MARK 385	Marketing Channels Management/3 credits
MARK 386	Direct Marketing/3 credits
MARK 387	Principles of Retailing/3 credits
MARK 388	Services Marketing/3 credits
MARK 480	Integrated Marketing Communications/3 credits
MARK 481	International Business/3 credits
MARK 484	New Product Marketing/3 credits
MARK 490	Independent Study/1-3 credits
MARK 495	Special Topics in Marketing/1-3 credits

REAL ESTATE/21 credits (must complete a Finance Internship in a real estate setting)

FINA 453	Principles of Real Estate/4 credits
FINA 454	Real Estate Appraisal/4 credits
FINA 455	Real Estate Finance and Investments/4 credits
FINA 456	Real Estate Law/3 credits

Select two from the following for a total of 6 credits:

ECON 308	Money and Banking/3 credits
FINA 353	Managerial Finance/3 credits
FINA 451	Investment Analysis and Portfolio Management/3 credits
FINA 452	Financial Markets and Institutions/3 credits
MANG 469	Entrepreneurship/3 credits
MARK 381	Marketing Research/3 credits
MARK 382	Professional Selling and Sales Force Management/3 credits
MARK 480	Integrated Marketing Communication/3 credits

E. General Electives: Accounting/4 credits; **Cyber Forensics and Security/13 credits**, Economics and Real Estate/13 credits; Finance, Information Systems and Security, Marketing/16 credits; Management/19 credits;

- F. Total Credits Required for Bachelor of Science in Business Administration with a concentration in Accounting, Cyber Forensics and Security, Economics, Finance, Information Systems and Security, Management, Marketing, Real Estate/120.**

ENDORSEMENT IN SUPPLY CHAIN MANAGEMENT

The Endorsement in Supply Chain Management provides an aspiring manager in logistics and supply chain management with a coherent body of knowledge relating to various aspects of these dynamic fields. Students will normally complete the prerequisites for the courses that qualify them for the endorsement as part of a Major or Minor in Business Administration. Students completing other majors may need to complete an additional 9 to 12 credits of prerequisites.

Students must complete the following requirements:

Certificate in Supply Chain Management/12 credits
MANG 363 Introduction to Management Science/3 credits MARK 385
Marketing Channels Management/ 3 credits

Select two from the following for a total of 6 credits:

FINA 351 Risk Management/ 3 credits
MANG 364 Negotiation and Conflict Resolution/3 credits
MANG 463 Project Management/ 3 credits
MANG 469 Entrepreneurship/ 3 credits

MINOR IN BUSINESS ADMINISTRATION

The College of Business and Economics offers a minor in Business Administration. To be admitted to the Business Administration minor and allowed to take upper-level business and economics courses, students must make a C- or better in ACCT 240 and ECON 217 and have at least a 2.33 cumulative GPA. Students should apply for admission to the Business Administration minor during the semester in which they will complete admission requirements (Oct. 1 for fall semester and March 1 for spring semester). *Students must complete the following requirements:*

Business Administration/18 credits
ACCT 240 Principles of Accounting I/3 credits
ECON 217 Principles of Economics (Micro Emphasis)/3 credits

Take 12 credits of business and economics courses; at least 9 credits must be 300 or 400 level courses and from at least two disciplines (for example, MANG and MARK). Internships, ECON 461 and MANG 497 may not be taken by non-business and non-economics majors.

MINOR IN CYBER SECURITY, FORENSICS, AND POLICY

Students may pursue a minor in Cyber Security, Forensics, and Policy. Students pursuing this interdisciplinary minor will take courses in Information Systems and Security, Computer Science, and Criminology and Criminal Justice.

Cyber Security, Forensics, and Policy/18 credits
ISYS 376 Cyber Security/3 credits
CMSC 355 Computer Security/3 credits
ISYS 377 Cyber Forensics/3 credits
CRIM 305 White Collar Crime/3 credits
ISYS 476 Advanced Topics in Cyber Security, Forensics, and Law /3 credits

Select one from the following for a total of 3 credits:

ACCT 350 Principles of Fraud Examinations/3 credits
CMSC 360 Computer Network Theory/3 credits
CMSC 455 Network Security and Cryptography/3 credits

ISYS 473
SOCL 305

Network Communications/3 credits
Society and Technology: Identity, Community, and Ethics/3 credits

INFORMATION SYSTEMS AND SECURITY COURSE DESCRIPTIONS (ISYS)

General Education Courses *
Writing Intensive Course WR
Speaking Intensive Course SP

ISYS 170. *Computer Applications.* The course utilizes several common business software applications to explore how these tools are used in typical business environments. The course enhances the students' knowledge of tools needed for upper-level courses in the College of Business and Economics, as well as their knowledge of computer concepts that are required in the business world. 3 credits.

ISYS 272. *Introduction to Business Programming.* The course emphasizes analysis of existing systems and designs of new systems using common structured and object-oriented modeling tools. It also includes the development of information systems from the analysis of present information flow, system specifications, and modeling. Offered fall semester only. 3 credits.

ISYS 275. *Web Design for Beginners.* An introduction to Web page design and development. Students will be introduced to HTML, Javascript and Vbscript. Students will create a Web site with features such as pictures, video, guestbook, marquees, forms, and other useful tools for Web site creation. In addition, OBNC connectivity, ASP and server/client relationships will be introduced for creating dynamic web pages and understanding Electronic commerce. 3 credits.

ISYS 295. *Special Topics.* Selected topics in Information Systems and Security. The topics may vary from semester to semester. May be repeated for credit when topics change. 1-3 credits.

ISYS 311, 312. *Studies Abroad.* Primarily intended for transfer of credit earned abroad in courses in Information Systems and Security. 1-18 credits.

ISYS 370. *Principles of Management Information Systems.* A general overview of information systems. Planning, designing and implementing information management systems. Emphasis is on application of the systems. 3 credits.

ISYS 372. *COBOL Programming.* An introduction to programming in a business oriented language (COBOL) with emphasis on commercial applications and elementary concepts of file processing. 3 credits. WR.

ISYS 373. *Database Management.* Introduction to theory of data structure, implementation of database models, and applications using a conventional database system. Offered fall semester only. Prerequisites: ISYS 370 or CMSC 362. 3 credits.

ISYS 375. *Web Design and Development.* This course teaches students how to use powerful, sophisticated, commercially available Web design tools to create interactive multimedia projects in an interdisciplinary team environment. Students build a personal Web site, an interactive portfolio site, and a site for a "real world" client. Other topics include introduction to ASP, CGI, Perl, VBScript, JavaScript, and Jscript. Prerequisites: ISYS 170 and 370, or permission of the instructor. 3 credits.

ISYS 376. *Cyber Security.* This class focuses on cyber security as well as corresponding cyber law, policy, and methods and tools for gaining forensic information from computer systems and networks. It includes case studies of cyber crimes as well as information on the capabilities and limitations of forensics techniques used in the analysis of cyber crime. Offered spring semester only. Prerequisite: take one of the following: ISYS 370, CMSC 121 or CMSC 160; or permission of the instructor. 3 credits.

ISYS 377. *Cyber Forensics.* This is a fundamental required course as part of an interdisciplinary curriculum that is very much in demand in today's society. This course covers cyber forensics as part of one of the three academic areas in the

interdisciplinary curriculum. The three areas covered are cyber security, cyber forensics, and cyber policy and law. It includes case studies of cyber-crimes as well as the application and management of cyber forensics. The course introduces students to forensics tools using hands-on experience and the Internet. Offered fall semester only. Prerequisite: ISYS 370 or CMSC 121 or permission of instructor. 3 credits.

ISYS 390. *Directed or Independent Study.* Must be approved by the head of the department. May be repeated as 391. 1-18 credits.

ISYS 471. *Introduction to Systems Analysis and Design.* Development of an information system from the analysis of present information flow, system specifications and equipment selection to implementation. Emphasis on analysis of existing systems and design of new systems. Offered spring semester only. Prerequisite: ISYS 373. 3 credits. SP.

ISYS 473. *Network Communications.* A study of voice and data communications concepts, including network components, strategies, topologies, planning and design issues, security considerations, evaluation/performance criteria, and management control requirements. Topics cover physical components as well as theoretical issues. Course includes in-class lectures as well as hands-on lab experiences with physical media, microcomputer connectors, and network operating systems. Offered spring semester only. Prerequisite: ISYS 370 or CMSC 121 or permission of instructor. 3 credits.

ISYS 475. *Web Programming.* An in-depth study of programming techniques used in Web page design. Topics can include HTML and derivative languages, server-side programming, client-side programming, Web server architecture, and Web security. Use of these programming techniques to create contemporary applications will be covered. These applications can include, but are not limited to, shopping carts, guest books, login validation, database access and manipulation, form processing, auctions, and chat rooms. Other applications and techniques may be covered that reflect current trends in Web design and use. Prerequisites: ISYS 272 or CMSC 160 and one of the following: ISYS 170, ISYS 370, or CMSC 362; or permission of instructor. 3 credits.

ISYS 476. *Advanced Topics in Cyber Security, Forensics, and Law.* This class covers cyber law and policy and its application to techniques for identifying and tracking cyber-attacks, as well as to methods and tools for gaining forensic information from computer systems. It includes case studies of cyber-crimes with a focus on the relationship between cyber forensics, cyber security and cyber law and policy today. The course will emphasize the application of law, ethics, conceptual models and hands-on experiences of using forensic tools with personal computers, servers, Internet activity and Web browser usage. Offered spring semester only. Prerequisites: ISYS 377 and ISYS 376 or CMSC 355; or permission of instructor. 3 credits.

ISYS 477. *Advanced Forensics.* This is an advanced required course as part of the Cyber Forensics and Security curriculum that is very much in demand in today's society. The eight domain areas covered in this course include legal and ethics; investigative process; storage media; mobile and embedded devices; network forensics; program and software forensics; QA-QC management; and lab and forensic operations. This class introduces advanced methods and computer tools to obtain and analyze forensic information from computer systems and networks. Students will learn using case studies of cybercrimes as well as the application and management of cyber forensics. The course also provides students with advanced skills and knowledge in cyber forensics analysis using hands-on experience and the Internet. Pre-requisite: ISYS 377. 3 credits. SP.

ISYS 492. *Internship: Information Systems and Security.* An on-the-job learning experience designed to give students an opportunity to apply their technical and professional skills and to observe organizations in action. Prerequisites: Cumulative and major GPA of 2.33 or greater, 60 credits, declared business or economics major, a declared concentration, ISYS 370, and permission of the internship director. 2-3 credits per internship placement; limited to a maximum of 6 credits. *Fulfills General Education Goal 14.

ISYS 495. *Special Topics.* Selected topics in Information Systems and Security. An individually designed course that allows the student to pursue advanced topics in specific management information systems areas. Topics may vary from semester to semester. May be repeated for credit when topics change. Prerequisite: Permission of the instructor. 1-3 credits.

ISYS 498. *Honors Research in Information Systems and Security.* Students conduct research in information systems and security under the direction of a faculty member and the Senior Honors Research Committee. May be repeated as 499. 3 credits.