# B.A. in Computer Science with Software Project Management

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
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</thead>
<tbody>
<tr>
<td>COS 100</td>
<td>Introduction to Programming</td>
<td>3</td>
</tr>
<tr>
<td>or COS 205</td>
<td>Scientific Computing</td>
<td></td>
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<tr>
<td>COS 105</td>
<td>Object-oriented Design and Programming</td>
<td>4</td>
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<tr>
<td>COS 212</td>
<td>Data Structures</td>
<td>4</td>
</tr>
<tr>
<td>COS 216</td>
<td>Algorithms and Advanced Data Structures</td>
<td>3</td>
</tr>
<tr>
<td>COS 420</td>
<td>Software Process</td>
<td>3</td>
</tr>
<tr>
<td>COS 450</td>
<td>Humans and Computers</td>
<td>3</td>
</tr>
<tr>
<td>MAT 123M</td>
<td>Precalculus</td>
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<tr>
<td>MAT 124M</td>
<td>Calculus 1</td>
<td>4</td>
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<tr>
<td>MAT 207M</td>
<td>Statistical Analysis</td>
<td>3</td>
</tr>
<tr>
<td>MAT 241</td>
<td>Discrete Mathematics</td>
<td>3</td>
</tr>
<tr>
<td>BUS 210</td>
<td>Financial Accounting</td>
<td>4</td>
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<tr>
<td>BUS 334</td>
<td>Principles of Project Management</td>
<td>3</td>
</tr>
<tr>
<td>BUS 344</td>
<td>Managerial Finance</td>
<td>4</td>
</tr>
<tr>
<td>COM 220</td>
<td>Group Communication</td>
<td>4</td>
</tr>
<tr>
<td>BUS 230</td>
<td>Principles of Management</td>
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<tr>
<td>or COM 248</td>
<td>Organizational Communication</td>
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</tr>
<tr>
<td>COM 322</td>
<td>Advanced Group Communication</td>
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<tr>
<td>or COM 370</td>
<td>Interpersonal Communication</td>
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<tr>
<td>COS 313</td>
<td>Database Systems</td>
<td>3</td>
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<tr>
<td>or COS 318</td>
<td>Web Programming</td>
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<tbody>
<tr>
<td>Major</td>
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<tr>
<td>General Education</td>
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<tr>
<td>Electives</td>
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<td>Total Credits</td>
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<td>122</td>
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</table>

1 Students may test out of this course based on their performance on the Math and Computer Science department placement exam.

Students may not declare a B.A. in Computer Science with Software Project Management and a Minor in Computer Science.

Students may not declare a B.A. in Computer Science with Software Project Management and a B.A. in Computer Science.

Students may not declare a B.A. in Computer Science with Software Project Management and a B.S. in Computer Science.

Courses whose number is followed by a letter fulfill a General Education requirement.
BUS 100M • Business Calculus 3 Credits
A non-trigonometric-based introduction to the concepts of the derivative and the integral with a focus on applications in business and economics.
Prerequisites: At least two years of high school algebra. Offered: Fall, Interim.

BUS 106 • Introduction to Business Applications 1 Credit
A basic understanding of business applications software. Students gain a working knowledge of word processing, presentation software, spreadsheets, desktop publishing, and Internet Research.
Offered: Fall, Interim, Spring.

BUS 130 • Business Problem Solving 3 Credits
A foundation for understanding and solving business and economic problems. Introduction to business and economic concepts, terminology, and problems along with the mathematical skills needed to solve problems. Emphasis on understanding problems, solutions, and decision making, as well as developing critical-thinking skills needed for success in business and economics.
Offered: Fall, Spring.

BUS 200 • Individual Tax Preparation 3 Credits
A practical study of taxation through the eyes of the poor, elderly, and recent immigrants. Students gain an understanding of an urban community and barriers that keep residents from filing tax returns. Tax return preparation for the poor, elderly, and recent immigrants is studied.
Prerequisites: BUS 210. Offered: Interim.

BUS 202Z • Introduction to International Business 3 Credits
An introduction to international business involving off-campus study to expose students to critical concepts and the day-to-day practice of global business. Students interact with a culture through a series of activities. The countries under study vary from year to year.
Offered: Interim.

BUS 210 • Financial Accounting 4 Credits
Basic financial accounting concepts and their application to the recording and reporting of business events.
Prerequisites: BUS 100M, BUS 130, or MAT 124M. Offered: Fall, Spring.

BUS 212 • Personal Finance 3 Credits
Management and planning of personal and family finances. Emphasis given to budgeting, investments, individual income tax, and insurance.
Offered: Interim.

BUS 220 • Principles of Marketing 4 Credits
Role of marketing in society and the economy. The business firm as a marketing system. Management of the firm’s marketing effort.
Prerequisites: Sophomore standing or prior approval of course instructor Offered: Fall, Spring.

BUS 230 • Principles of Management 4 Credits
Fundamentals of managerial activities: planning, organizing, leading, and controlling organizational activity.
Offered: Fall, Spring.

BUS 231 • Human Resource Management 3 Credits
Role of human resource management within organizations. Overview of human resource planning, job analysis, staffing and selection, training, development, compensation and benefits, and employee relations. Understanding how employment and discrimination law affects the workplace.
Prerequisites: BUS 230 or (COM 248 If a non-Business department student). Offered: Fall, Spring.

BUS 232 • Innovation and Entrepreneurship 3 Credits
Practical problems associated with starting and operating a small business, including feasibility analysis, innovation, entrepreneurship, legal and financial aspects, accounting, marketing, and personnel management.
Prerequisites: BUS 220 and BUS 230. Offered: Spring.
BUS 300 • Topics in Business and Administration 3 Credits
Special topics in business, particularly as they relate to current issues and contemporary developments. Specific topics and prerequisites announced in advance of registration.
Prerequisites: Related courses as specified. Offered: Occasionally.

BUS 306 • Public Administration 3 Credits
How public policy is put into effect through the administrative agencies of government, the management problems of such agencies, and their relations with the public.
Prerequisites: POS 100 recommended. Offered: Spring. Special Notes: Carries cross-credit in political science.

BUS 309 • Brand Management 3 Credits
Theoretical and practical knowledge necessary for successful management of brands and the creation of strategies that build and preserve brand equity. Introduces qualitative and quantitative methods of evaluating brand equity, brand strategy at different stages of the product life cycle, developing brand positioning, managing total brand experience and brand relevancy.
Prerequisites: BUS 220. Offered: Fall, Spring.

BUS 310 • Intermediate Accounting I 4 Credits
Theories of accounting, accounting practice related to current asset measurement, and reporting. Analysis and evaluation of the measurement and reporting on noncurrent assets and current liabilities.
Prerequisites: BUS 210. Offered: Fall.

BUS 311 • Intermediate Accounting II 4 Credits
Current and alternative accounting theories relating to long-term liabilities, stockholders’ equity, special income determination problems, and other accounting topics of current interest.
Prerequisites: BUS 310. Offered: Spring.

BUS 312Z • Federal Income Taxes 3 Credits
Current federal income tax law as it pertains to individuals, corporations, and partnerships. Includes the concept of taxable income and covers tax planning and tax determination within the provisions of the law.
Prerequisites: BUS 200. Offered: Spring.

BUS 313 • Strategic Managerial Accounting 3 Credits
Compilation and utilization of internal accounting information for managerial decision making.
Prerequisites: BUS 210. Offered: Fall, Spring.

BUS 315 • Sales and Sales Management 3 Credits
Emphasizes the concepts and practices of selling and sales management. Provides a guide for preparing sales presentations, one-on-one selling techniques, persuasive communication, oral and verbal presentation skills useful for one-to-one presentations, and the unique concepts of managing a sales team.
Prerequisites: BUS 220. Offered: Fall.

BUS 317 • Business Analytics 4 Credits
Applies descriptive and predictive analytics of data and facts to decision-making in business. Covers techniques of advanced data visualization, use of excel in analytics, hypothesis testing, and machine learning methods like multiple regression analysis, classification methods and cluster analysis. Uses a variety of business analytics software.
Prerequisites: Junior standing; MAT 207M or MAT 330. Offered: Fall, Spring.

BUS 318G • Global Marketing 3 Credits
Study of marketing concepts and decision-making processes relative to individuals and firms engaged in the global marketplace. An examination of key strategies of global marketing and mission-critical variables including cultural distinctive, role of language and values, politics and laws, pricing norms, product values, and promotional environment.
Prerequisites: [GES 130; GES 160; Contemporary Western Life and Thought (L) course; World Cultures (U) course] or [GES 244; World Cultures (U) course] and BUS 220. One business course recommended. Offered: Fall, Interim, Spring.
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BUS 319 • Advertising and Promotion 3 Credits
Principles and techniques of advertising, sales promotion, and public relations. Considers customer motivation, ad copy, physical layout of ads and promotional pieces, media selection, advertising budgets, and coordination of advertising and sales promotion campaigns.
Prerequisites: BUS 220. Offered: Fall, Interim.

BUS 321 • Marketing Research 3 Credits
Marketing research methods, including design, sampling, data collection, and report writing. A research design project is an integral part of the course.
Prerequisites: BUS 220 and MAT 207M. Offered: Fall, Spring.

BUS 324 • Consumer Behavior 3 Credits
A systematic examination of the behavioral, economic, cultural, and systemic factors that influence the behavior of the consumer. Students read relevant research in consumer behavior and design and complete a series of projects exploring the major course topics.
Prerequisites: BUS 220. Offered: Fall, Spring.

BUS 325 • Business Analysis 3 Credits
An understanding of business analysis principles, practices, tools, and techniques. Real-world applications involving the use of Enterprise Business Applications and an Agile project management approach.
Prerequisites: BUS 106 or successful completion of the Business Application Competency Assessment; BUS 230. Offered: Fall.

BUS 326 • Business Information Systems 3 Credits
Business information systems and their role in today's organizations. Explores computing hardware, security, networking, databases, enterprise application software, business analysis, project management, and other technology necessary for effective organizations. Strengthens proficiency in business applications.
Prerequisites: BUS 106 or successful completion of the Business Application Competency Assessment. Offered: Fall.

BUS 327 • Marketing and Management in Spain 3 Credits
Theoretical and practical concepts of marketing and management in the semi-globalized world. Understand the significant challenges globalization presents to management and marketing, specifically in the context of Spain. Business terminology and reality in a Spanish business environment.
Prerequisites: SPA 202UZ. Offered: Spain Term, Fall. Special Notes: Carries cross listing in languages and cultures. This class is taught and assignments are completed in Spanish.

BUS 329 • Student Managed Investment Fund 1 Credit
Students develop investment-related skills, including but not limited to wealth management, relationship management, marketing, operations, performance reporting, quantitative analysis, and economic analysis. These skills are applied as part of the student-managed investment fund, the Royals Investment Fund, LLC (the Fund).
Prerequisites: BUS 210; BUS 344 (May be taken concurrently), and selection by the faculty advisor through an application and interview process; Additional prerequisite for Chief Investment Officer and Fund Managers: BUS 390. Offered: Fall, Spring.

BUS 330 • Compensation Theory and Practice 3 Credits
Compensation and reward practices in organizations' wage and salary administration. Theories of design and implementation of pay programs using job evaluation, salary surveys, job and skill-based pay, incentive pay, and other compensation systems.
Prerequisites: BUS 231; BUS 344 (may be taken concurrently). Offered: Fall.
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BUS 331 • Staffing, Training and Development 3 Credits
Theories and strategies for maximizing the potential of an organization’s workforce. Explores methods for recruiting and selecting employees, orienting them to an organization, using training to properly equip them for their positions, and facilitating career development. Hands-on approach to designing and analyzing surveys, selection tests, and needs assessments.
Prerequisites: BUS 231. Offered: Spring.

BUS 333 • Entrepreneurship Strategies and Tools 3 Credits
Strategic and tactical tools associated with starting and operating a small or entrepreneurial business. Students develop an understanding of how to move from the development of a business plan to actually financing and running a small business.
Prerequisites: BUS 210; BUS 232; ECO 201. Offered: Fall.

BUS 334 • Principles of Project Management 3 Credits
Theory and practice of effective project management, including project planning, risk analysis, execution/implementation, and control. Explores project management styles, critical success factors, organizational support systems, project authority and politics, and ethics in project execution. Uses project management software to develop and track project plans for case studies and project simulations.
Prerequisites: BUS 230, COM 248, or COS 216. Offered: Spring.

BUS 335 • Organization Development 3 Credits
Factors that influence the effectiveness of organizations. Explores methods for diagnosing organizational health and designing interventions for the individual (motivation; diversity, equity and inclusion; work-related attitudes), group (teamwork, conflict, cooperation, collaboration), and organizational (culture, change, leadership) levels in order to implement planned organizational change.
Prerequisites: BUS 230. Offered: Spring.

BUS 342GZ • International Market Issues 3 Credits
Intensive study of economics and marketing in an international context. Students study the dynamics of the economy and markets through site visits, thereby developing cross-cultural competencies for the global marketplace.
Prerequisites: [GES 130; Contemporary Western Life and Thought (L) course; World Cultures (U) course] or [GES 246; World Cultures (U) course]; Consent of instructor. Offered: Occasionally interim.

BUS 344 • Managerial Finance 4 Credits
Principles of financial management, including financial analysis, capital structures, working capital management, and investment decisions.
Prerequisites: BUS 210. Offered: Fall, Spring.

BUS 352 • Financial Modeling & Valuation 3 Credits
Builds on principles of finance through the use of case studies and Excel modeling to identify, quantify, and manage business risks. Includes developing and utilizing intermediate-level financial analysis skills, critical-thinking objectives, and demonstration of an ability to synthesize material into a defined model of financial valuation.
Prerequisites: BUS 344. Offered: Fall, Spring.

BUS 357 • Principles of Digital Marketing 3 Credits
Study of digital marketing strategy, content development, and media channels to help students leverage digital techniques and understand how they integrate with the marketing plan as a whole. Students will design and analyze digital campaigns within a team environment. Best practices are leveraged as the digital marketplace evolves. Hands on work emphasized.
Prerequisites: BUS 220. Offered: Interim. Special Notes: This course carries cross credit in communication studies.
BUS 361 • Business Law 3 Credits
An introduction to the legal aspects and general structure of business dealings. Topics include an overview of the American legal system, general contract law, pertinent parts of the Uniform Commercial Code, and various forms of business organizations. Some aspects of employment and real estate law are also covered.
Prerequisites: BUS 230 and one other 200-level business course. Offered: Fall, Spring.

BUS 371G • International Business 4 Credits
International business as a bridge between diverse social systems. A panorama of the most important activities in international business and a framework for thinking about them from the perspective of the company manager.
Prerequisites: [GES 130; GES 160; Contemporary Western Life and Thought (L) course; World Cultures (U) course] or [GES 244; World Cultures (U) course]; enrollment in the Europe Term. One business course recommended. Offered: Occasionally.

BUS 390 • Investments 4 Credits
Characteristics and interrelationships of investments, the operation and regulation of the markets, analysis of risk and return, valuation of speculative assets, portfolio planning, and timing and trading strategies.
Prerequisites: BUS 344. Offered: Fall, Spring.

BUS 410 • Advanced Accounting 3 Credits
Principles and problems relating to partnerships, international accounting, consolidated financial statements, corporate mergers, and governmental accounting.
Prerequisites: BUS 311 and all business core courses except BUS 481. Offered: Fall.

BUS 414 • Auditing Principles and Procedures 4 Credits
Auditing objectives, standards, and procedures employed in the examination of business enterprises and verification of their financial statements. Includes an evaluation of internal control, preparation of work papers, report writing, professional ethics, and current trends.
Prerequisites: BUS 311 and All business core courses except BUS 481 and Senior standing. Offered: Spring.

BUS 416 • Business Forecasting and Data Mining 3 Credits
Teach students business time-series forecasting, database management and querying, and some tools for data mining in business analytics. Specific application will include forecasting sales and revenue, economic trends, clustering data and classifying outcomes. Case studies, real world data, and relevant software will be used.
Prerequisites: BUS 317 and Major in business with an emphasis in business analysis and analytics and Senior standing. Offered: Spring.

BUS 417 • Business Analysis and Analytics Seminar 3 Credits
Capstone course in Business Analysis and Analytics emphasis. Integration of theories and practices learned in other courses through casework and practical exercises focused on equipping students to enter the business analysis, business analytics and business consulting market. Examines ethical questions that influence decision making.
Prerequisites: BUS 317; BUS 334; all business core courses except BUS 481. Offered: Spring.

BUS 420 • Marketing Seminar 3 Credits
Capstone course in the marketing emphasis. Main course elements include case study analysis where students integrate prior course knowledge with relevant brand examples. Students utilize critical and ethical analysis of marketing practices and develop marketing strategies and plans with a real client.
Prerequisites: Three of the following: BUS 315, BUS 318G, BUS 319, BUS 321, or BUS 324; all business core courses except BUS 481; Senior standing. Offered: Fall, Spring.

BUS 430 • Strategic Management 3 Credits
Strategy and policy formulation and implementation from the general manager's perspective. Includes written and oral analyses of comprehensive cases involving multifunctional applications.
Prerequisites: All business core courses except BUS 481. Offered: Fall.
BUS 440 • Capital Markets 3 Credits
Comprehensive overview of the capital markets with an emphasis on major financial institutions and international financial centers. Evaluation of managing risk within the context of the capital markets in both a domestic and a global economy.
Prerequisites: All business core courses except BUS 481; BUS 390 or Consent of instructor. Offered: Fall, Spring.

BUS 470 • Finance Seminar 3 Credits
Capstone course in the Finance emphasis. Systematic examination of financial, economic, cultural, ethical, and systemic factors that influence financial decision making. Through a case study approach, students integrate the theories and practices learned in other finance courses. Use of Excel to complete detailed analysis.
Prerequisites: All business core courses (except BUS 481) and BUS 390 (may be taken concurrently). Offered: Fall, Spring.

BUS 475 • Innovation and Entrepreneurship Seminar 3 Credits
Development of an individualized and intensive personal business plan as major course project. Plan is submitted to a panel of entrepreneurs to evaluate as part of a competition. Seniors are evaluated on their written plan, their presentation, and the overall viability of the proposed new venture. Includes ethical discussions, entrepreneurial guest speakers, and case analyses of entrepreneurial ventures.
Prerequisites: All business core courses (except BUS 481) and BUS 333. Offered: Spring.

BUS 481 • Internship in Business 3-4 Credits
A learning/practicing experience to apply understanding and skills in an off-campus professional setting. Includes participation in an online course with weekly assignments.
Prerequisites: Major or minor within the Business department; Completion of 20 credits of BUS/ECO courses; Consent of department. Grade exceptions: Graded on an S/U basis. Offered: Fall, Spring, Summer.

BUS 493 • Seminar - Human Resource Management 3 Credits
Capstone course in the Human Resource Management emphasis. Integration of theories and practices learned in other courses through casework and practical exercises focused on equipping students to enter the HR labor market. Examines ethical questions that influence HR decision making.
Prerequisites: All business core courses (except BUS 481) and Senior standing in the HR emphasis. Offered: Spring.

COS 100 • Introduction to Programming 3 Credits
An introduction to programming using a current procedural (imperative) programming language. Standard data types and control structures are introduced.
Offered: Fall, Interim.

COS 105 • Object-oriented Design and Programming 4 Credits
Introduction to object-oriented design methodologies and programming, fundamental search and sort algorithms, and recursion. Strong emphasis on theory. Extensive programming assignments in a current object-oriented computer language.
Prerequisites: COS 100, COS 205, or equivalent proficiency; MAT 123M, MAT 124M, MAT 125, or equivalent proficiency. Offered: Spring. Special Notes: Not designed as a computer literacy course. Includes 6 lab hours.

COS 205 • Scientific Computing 3 Credits
An introduction to programming using both a procedural (C language) and object-oriented (C++) programming language. Basic data types and control structures are introduced and the fundamentals of OOP (encapsulation, inheritance, and polymorphism) are covered. Issues relevant to scientific computing are considered including performance, numerical representation, and machine error.
Prerequisites: MAT 124M with C- or higher (can be taken concurrently). Offered: Fall, Spring.

COS 212 • Data Structures 4 Credits
Elementary data structures such as arrays, linked lists, stacks, queues, heaps, hashtables, and trees. Extensive programming assignments in a current computer language.
Prerequisites: COS 105 with C- or higher or COS 205 with C- or higher with consent of instructor. Special Notes: Includes 6 lab hours. Offered: Fall, Spring.
COS 216 • Algorithms and Advanced Data Structures 3 Credits
Fundamental algorithms, algorithm analysis, and advanced data structures.
Prerequisites: COS 212 with C- or higher and MAT 241 with C- or higher. Offered: Fall, Spring.

COS 235 • Computer Systems 4 Credits
Assembly and machine language to study computer organization and structure, including addressing techniques, digital logic and representation of numbers and arithmetic, structure of operating systems, memory management, process management, resource allocation, and operating system monitors. Also includes an introduction to C.
Prerequisites: COS 212 with C- or higher. Offered: Spring.

COS 313 • Database Systems 3 Credits
Relational and object-oriented databases, schemas, and normalization. Database management systems, SQL, concurrent transactions, logging/disaster recovery, and query optimization. Application program interaction with database management systems.
Prerequisites: COS 216 with C- or higher. Offered: Fall, even # years.

COS 318 • Web Programming 3 Credits
An examination of the foundational technologies used for creating web applications. Includes client and server programming, as well as fundamentals of cloud services, including security, storage, and reliability.
Prerequisites: COS 216 with C- or higher. Special Notes: Some knowledge of HTML and the basics of JavaScript are expected. Offered: Fall.

COS 320 • Computer Graphics Programming 3 Credits
Introduces the drawing methods, geometrical transforms, and illumination models that are fundamental to computer graphics programming. Modeling of 2D and 3D objects, local and global illumination simulation, shading, color models, procedural modeling, and discrete (fragment) techniques, including texture mapping. A current graphics API is used, including custom shaders.
Prerequisites: COS 216 with C- or higher. Offered: Fall, odd # years.

COS 334 • Data Mining and Machine Learning 3 Credits
An introduction to widely-used techniques for extracting information from large data sets such as medical databases, credit reports, weather history, and the stock market. Includes algorithms for nominal and ordinal data and metrics to measure their performance. Students will implement common algorithms with real data and choose appropriate algorithms for different applications.
Prerequisites: COS 216 with C- or higher. Offered: Spring, even # years.

COS 335 • Computer Security 3 Credits
An introduction to the concepts of security as applied to areas such as programming, databases, networks, systems, and applications. General concepts and specific instances of security-related threats are presented. Security risks are discussed in the context of several computer operating system and architecture components.
Prerequisites: COS 235 with C- or higher (COS 386 is a recommended prerequisite). Offered: Spring, odd # years.

COS 351 • High-Performance Computing 3 Credits
Fundamental concepts and techniques for parallel computation in C/C++ (load balancing, communication, synchronization, serial program decomposition) using an industry-standard parallel computing library.
Prerequisites: COS 205 with C- or higher or COS 235 with C- or higher. Offered: Fall, odd # years, Interim, odd # years.

COS 371 • Organization of Programming Languages 3 Credits
Formal programming language specification using various grammars and the Backus-Naur Form. Data types and structures, control structures, and data flow of several programming languages, including interpreters and compilers. Introduction to parsing and lexical analysis.
Prerequisites: COS 216 with C- or higher. Offered: Spring, even # years.
COS 386 • Data Communications and Computer Networks 3 Credits
Data communications including interprocess communication, computer networking, and associated software protocols. Topics include network topologies, point-to-point network protocols, local area networks, and interconnection of networks.
Prerequisites: COS 235 with C- or higher. Offered: Fall, even # years.

COS 389 • Artificial Intelligence 3 Credits
Basic concepts and techniques of artificial intelligence, including representation, notational structures, searches, control structures, and logic programming languages. Samples of current work in several application areas including natural language systems, expert systems, and neural networks.
Prerequisites: COS 216 with C- or higher. Offered: Spring, odd # years.

COS 420 • Software Process 3 Credits
Balancing the various real-world challenges that a software engineer encounters, including ambiguity, conflicting requirements, task-time estimation, team dynamics, requests from customers, product managers or architects. A team-based software project on a modern computer science topic will be developed during the semester.
Prerequisites: COS 216 with C- or higher. Special Notes: Carries cross credit in engineering. COS 477 is a recommended prerequisite. Offered: Spring, odd # years.

COS 450 • Humans and Computers 3 Credits
Examines the ways that humans and computers interact. Issues in user experience and human-machine interaction are explored. Christian and professional ethics in the development and application of computing technology are extensively examined.
Prerequisites: COS 216 with C- or higher. Offered: Interim, even # years. Special Notes: Students may not receive credit for both COS 450 and GES334K.

COS 477 • Software Engineering 3 Credits
Formal approach to the design and development of software. Multiple process models discussed and compared. Other topics include design patterns, project management and estimation, team management, formal methods, documentation, system and data description, verification and validation, and process improvement.
Prerequisites: COS 216 with C- or higher. Special Notes: Carries cross credit in engineering. Offered: Spring, even # years.

COS 490 • Topics in Computer Science 3 Credits
A seminar to provide an in-depth survey of a recent trend or field in the rapidly changing discipline of computer science. Students work on a significant project and explore the future implications of the current topic.
Prerequisites: COS 216 with C- or higher. Offered: Occasionally.