

ACCOUNTING AND INFORMATION SYSTEMS

Our Website (<http://www.acis.pamplin.vt.edu>)

Our Mission

The Department of Accounting and Information Systems in the Pamplin College of Business strives for excellence in fulfilling the three missions of a comprehensive land grant university by:

- Improving the accounting and information systems professions by conducting quality research and disseminating the results;
- Providing a world class accounting and information systems education to our students; and
- Delivering outreach services to accounting and information systems professionals and educators.

The department seeks to fulfill the teaching mission through programs which include:

Undergraduate Programs, where we seek to

- *Prepare students to enter the accounting and information systems professions with the skills and knowledge of business, information systems, and accounting concepts and practices.*

Masters of Accounting and Information Systems, where we seek to

- *Prepare students for professional careers with specializations in accounting analytics, audit, financial services, information systems, and taxation.*

Ph.D. Program in Business with a major in Accounting and Information Systems, where we seek to

- *Prepare students for academic careers in research and teaching.*

The Department of Accounting and Information Systems prepares students to become professionals in their chosen area of accounting and information systems. Faculty members in the department have chosen to specialize in selected areas of accounting or information systems and they teach and conduct research in these areas. All tenure track faculty members at the professorial ranks have Ph.D.s in accounting or information systems appropriate to the courses they teach, and many have professional certification in their areas of specialization. The faculty is committed to the education of accounting and information systems professionals who will be active participants in the information age, with increasing demand for data analytics skills.

The department's undergraduate program offers two options: Accounting (ACCT) and Information Systems Audit (ISA). These options are designed to allow students to specialize in their area of interest. Completion of the selected option prepares the student for entry level positions as professional accountants or information systems professionals who work in professional service firms, industrial companies, governmental entities, or to continue their education in graduate school. The job titles vary greatly and include auditor, information systems auditor, management accountant, tax professional, systems consultant, controller, financial data analytics specialist, and cost analyst. The demand for our graduates has been very strong throughout the department's history, and this strong demand continues.

Many graduates of our department desire to gain licensure and/or certification in their selected area of specialization. The Certified Public Accountant (CPA) license is highly respected and sought after in addition to being globally recognized. Students planning to take the CPA exam in Virginia are required to have a bachelor's degree from one or more accredited institutions with an accounting concentration or equivalent (as defined by the Virginia Board of Accountancy) and at least 120 semester credit hours (SCH). 150 SCH are ultimately required for CPA licensure. The best preparation is to earn a Master's degree in Accounting and Information Systems; however, Virginia Tech offers other options for meeting these requirements. If interested, students should discuss with their advisor and/or department's faculty. Students should be aware that education requirements vary by state (consult the state board of accountancy of interest). In addition to the CPA license, graduates of our programs sit for the Certificate in Management Accounting (CMA) exam, the Certified Internal Auditor (CIA) exam, the Certified Information Systems Auditor (CISA) exam, and others. Students planning to take one or more of these exams are advised to talk to the department's faculty during their junior year so that they may select the electives appropriate for the respective certification(s).

The department encourages its students to gain "real world" **experience** prior to graduation through an internship or by participating in the Cooperative Education Program. More information about these programs is available either from the department's faculty or Career Services.

The department also encourages **interaction with accounting and information systems professionals** by sponsoring three student organizations: Accounting Society; National Association of Black Accountants; and Beta Alpha Psi, the national honorary and professional society dedicated to the advancement of the accounting profession. These organizations and other campus groups provide multiple opportunities for developing leadership skills and interacting with accounting and information systems professionals.

The department encourages students to gain a **global perspective** of business through modules on international issues in our courses, by participation in the college's International Business Minor and/or by participating in one or more of the college's study abroad programs. Our goal is to encourage our students to become well-rounded professionals who will become leaders in their chosen careers.

Lastly, many of the department's 7,000 plus alumni have generously contributed to a variety of scholarships for accounting and information systems majors. Each year the department awards over \$375,000 in scholarships to our students.

Course Requirements

Students graduating from the Department of Accounting and Information Systems must have a minimum quality credit average (GPA) of 2.00 in upper-division (3000 and 4000 level) accounting and information systems courses (the in-major GPA) as well as an overall GPA of 2.00 for all courses taken at Virginia Tech.

During their sophomore year, students must select one of the two options in the department: Accounting (ACCT) and Information Systems Audit (ISA). These options are more fully described below.

Degree Requirements

The graduation requirements in effect during the academic year of admission to Virginia Tech apply. Requirements for graduation are listed on checksheets. Students must satisfactorily complete all requirements

and university obligations for degree completion. The university reserves the right to modify requirements in a degree program.

Please visit the University Registrar's website at <https://www.registrar.vt.edu/graduation-multi-brief/checksheets.html> for degree requirements.

Accounting Option (ACCT)

The Accounting option provides basic education for careers in public accounting, internal auditing, large and small corporations (controller's staff), governments (federal, state, and local) and their agencies, and nonprofit organizations. Graduates from this option are prepared to become CPAs, CMAs, CIAs, and all of the other common professional accounting designations. Many of the students who select this option will continue into the Master of Accounting and Information Systems program.

Information Systems Audit Option (ISA)

The IS Audit option is designed to prepare students for careers as information systems auditors and information systems professionals in the areas of enterprise risk assurance services, computer risk management services, and other systems assurance services. These positions are available in organizations from all sectors of business: industry, professional service firms, consulting firms, government, and nonprofit organizations. This track prepares graduates to sit for the CPA, CISA, CIA, or other professional designations.

- Accounting & Information Systems Major with Accounting Information Systems Audit Option (<https://catalog.vt.edu/undergraduate/pamplin-college-business/accounting-information-systems/accounting-information-systems-bs-accounting-information-systems-audit/>)
- Accounting & Information Systems Major with Accounting Option (<https://catalog.vt.edu/undergraduate/pamplin-college-business/accounting-information-systems/accounting-information-systems-bs-accounting/>)

Head: Robert H. Davidson

Curling Visiting Professor: J.A. Pittman

John E. Peterson Professor: J.R. Joe

KPMG Professor: R. Barkhi

R. B. Pamplin Professor of Accounting and Information Systems: F. Belanger

Thomas M. Wells and Kathy Dargo Professors: S. Bhattacharjee and J. J. Maher

University Distinguished Professor: F. Belanger

Wayne E. Leininger Professor: L.L. Lisic

Professors: R.H. Davidson, S.D. Sheetz, and L.G. Wallace

Associate Professors: A.A. Acito, J. Huang, S.E. Stein, L. Tan, D.P. Tegarden, and M.D. Vance

Assistant Professors: M.A. Cobabe, M.J. Erickson, M.K. Harding, S.M. Hillison, M.R. Lowry, and K. Walker

Collegiate Assistant Professors: C.M. Easterwood and D.P. Garner

Professors of Practice: D.R. Compton, C.M. Green, and N.A. Rogers

Associate Professors of Practice: L.A. Almond and J.M. Lacoste

Assistant Professors of Practice: G.J. Kogan, E.A. Martin, J.P. Sharp, and J.L. Shortt

Career Advisor: R. H. Davidson (231-6591)

Undergraduate Course Descriptions (ACIS)

ACIS 1004 - Accounting Foundations (3 credits)

Fundamentals of accounting, the language of business, including what accounting information is, how it is developed, how it is used and what it means. Financial Accounting including the application of accounting principles for real world, complex business transactions to classify these transactions, reflect their economic value, produce basic financial statements, evaluate financial position and make fundamental interpretations. Managerial Accounting including cost behaviors, budgeting and other management reporting to assist in internal decision making and performance analysis. Attention to accountants codes of ethics applied throughout. Emphasis placed on non-Business majors becoming informed users of accounting information. No credit will be given for ACIS 1004 if taken with or after ACIS 2115 or ACIS 2116.

Pathway Concept Area(s): 5F Quant & Comp Thnk Found., 10 Ethical Reasoning

Instructional Contact Hours: (3 Lec, 3 Crd)

ACIS 1104 - Careers in Accounting and Information Systems (1 credit)

Overview of career options in the accounting field. Real life perspective from industry expert guest speakers. Career skills and training requirements. Job search strategies. Job market analysis. Effective professional materials creation. Pass/Fail only.

Instructional Contact Hours: (1 Lec, 1 Crd)

ACIS 1504 - Introduction to Business Analytics and Business Intelligence (3 credits)

Foundational data analytics using Microsoft Excel. Utilizes the data analytics framework and many Excel functions to address various business problems. Introduction to big datasets, how to navigate them, and the many complexities of using them, including relevant ethical issues. Identification and construction of various data visualizations and charts to be used in presentations.

Pathway Concept Area(s): 5F Quant & Comp Thnk Found., 10 Ethical Reasoning

Instructional Contact Hours: (3 Lec, 3 Crd)

ACIS 1984 - Special Study (1-19 credits)

Instructional Contact Hours: Variable credit course

ACIS 2024 - Small Business Accounting (3 credits)

Accounting to support starting and operating a small business. Includes setting up accounting records, creating budgets, pricing products and services, tracking revenues and expenses, planning for taxes, and accounting for borrowing, inventory, payroll, and long-term assets. Emphasis on performance evaluation using mathematical models including financial statements, budget variance models, and financial ratios. Accounting presented in compliance with Generally Accepted Accounting Principles (GAAP) and accountant's codes of ethics to support the prevention and detection of fraud.

Pathway Concept Area(s): 5A Quant & Comp Thnk Adv., 10 Ethical Reasoning

Instructional Contact Hours: (3 Lec, 3 Crd)

ACIS 2115 - Principles of Accounting (3 credits)

Introduction to financial and managerial accounting. 2115: Emphasis on the financial accounting cycle. Discusses accounting information uses, fraud, and internal controls. Analysis of financial statement elements: assets, liabilities, stockholders' equity, revenues, and expenses. 2116: Emphasis on budgeting and accounting information decision-making. Discusses management accounting and cost concepts. Use of job order costing and cost value profit relationships. Use of variable costing and segment reporting. Create external financial reporting documents.

Corequisite(s): ACIS 1504

Instructional Contact Hours: (3 Lec, 3 Crd)

ACIS 2116 - Principles of Accounting (3 credits)

Introduction to financial and managerial accounting. 2115: Emphasis on the financial accounting cycle. Discusses accounting information uses, fraud, and internal controls. Analysis of financial statement elements: assets, liabilities, stockholders' equity, revenues, and expenses. 2116: Emphasis on budgeting and accounting information decision-making. Discusses management accounting and cost concepts. Use of job order costing and cost value profit relationships. Use of variable costing and segment reporting. Create external financial reporting documents.

Prerequisite(s): ACIS 2115

Instructional Contact Hours: (3 Lec, 3 Crd)

ACIS 2504 - Introduction to Accounting Analytics (3 credits)

Design and creation of models used to perform accounting analytics. Cleansing, transformation, organization, analysis, and reporting of accounting data using analytics tools such as spreadsheets, programming, and accounting software applications. Display of accounting data using visualization techniques.

Prerequisite(s): ACIS 1504

Instructional Contact Hours: (3 Lec, 3 Crd)

ACIS 2954 - Business Study Abroad (1-19 credits)

This course provides students with an international business experience. The course examines the accounting and information systems issues that impact the multinational business. It is only offered as part of a program outside of the United States. Students will learn from the structured educational experience developed by the faculty leader. Content will vary between semesters. Pre: Instructors consent and the completion of 24 semester hours with a minimum GPA of 3.0 or departmental consent. May be repeated for a maximum of 9 credit hours.

Instructional Contact Hours: Variable credit course

Repeatability: up to 9 credit hours

ACIS 3115 - Intermediate Financial Accounting (3 credits)

Intermediate financial accounting. 3115: In-depth analysis of basic concepts of external financial reporting. Includes asset and related transaction analysis and preparation of financial statements in accordance with generally accepted accounting principles. Discusses the historical development accounting theory and practice as well as discussion and exploration of international accounting standards and ongoing and potential developments in accounting practice. 3116: In-depth analysis of liability, equity, and tax related transactions and their subsequent impacts on financial reporting. Interpret financial accounting standards including requirements to adjust financial statements due to errors and corrections. Prepare the statement of cash flows in accordance with generally accepted accounting principles. Course credit will not be awarded for both ACIS 3115 and ACIS 4194.

Prerequisite(s): ACIS 2115 and ACIS 2504

Instructional Contact Hours: (3 Lec, 3 Crd)

ACIS 3116 - Intermediate Financial Accounting (3 credits)

Intermediate financial accounting. 3115: In-depth analysis of basic concepts of external financial reporting. Includes asset and related transaction analysis and preparation of financial statements in accordance with generally accepted accounting principles. Discusses the historical development accounting theory and practice as well as discussion and exploration of international accounting standards and ongoing and potential developments in accounting practice. 3116: In-depth analysis of liability, equity, and tax related transactions and their subsequent impacts on financial reporting. Interpret financial accounting standards including requirements to adjust financial statements due to errors and corrections. Prepare the statement of cash flows in accordance with generally accepted accounting principles. Course credit will not be awarded for both ACIS 3115 and ACIS 4194.

Prerequisite(s): ACIS 3115

Instructional Contact Hours: (3 Lec, 3 Crd)

ACIS 3314 - Tax Impact on Decisions (3 credits)

Introduction to federal taxation for individuals and business entities with an emphasis on effective tax planning strategies. IRS tax compliance and discussion of other tax authorities. Individual tax overview includes filing status, gross income, exclusions, and deductions. Business tax overview includes business entity types, filing requirements, business income, deductions, accounting methods, property acquisitions, cost recovery, and property dispositions. Properly classify corporate operations to compute corporate taxable income.

Prerequisite(s): ACIS 3115

Instructional Contact Hours: (3 Lec, 3 Crd)

ACIS 3504 - Accounting Systems and Controls (3 credits)

Examines system design concepts and methods including an understanding of basic control structures. Covers specific accounting cycles and computerized transaction processing systems. Analyzes controls for manual and computerized systems including database systems.

Prerequisite(s): ACIS 2115

Instructional Contact Hours: (3 Lec, 3 Crd)

ACIS 3554 - Networks, Telecommunications and Security (3 credits)

Provides an introduction to computer networks and data communications in business. Topics include mechanisms for reliable data transfer, network topologies and technologies, and a comprehensive treatment of inter-networking. Additional topics include packet switching, and cloud, edge, and advanced networking. Security issues related to using computer networks are discussed, along with network design issues, and methodologies for network applications. Duplicates BIT 4554.

Prerequisite(s): BIT 2406 or ACIS 3504 or BIT 2164 or CS 2164 or PSCI 2164

Instructional Contact Hours: (3 Lec, 3 Crd)

Course Crosslist: BIT 3554

ACIS 3564 - Management Information Systems (3 credits)

An overview of management information systems. Topics include the organizational foundations of information systems; the technical foundations of information systems; the approaches to building information systems; and the management of contemporary information systems.

Prerequisite(s): ACIS 1504 and ACIS 2116

Instructional Contact Hours: (3 Lec, 3 Crd)

ACIS 3954 - Study Abroad (1-19 credits)

Instructional Contact Hours: Variable credit course

ACIS 4024 - Information Systems Audit and Control (3 credits)

An introduction to the fundamentals of information systems auditing and controls. Emphasis on information systems controls and general application controls. Employment of computer assisted audit tools, techniques, and reporting languages. Implementation of different types of audit approaches including on line and continuous auditing as well as fraud and forensic auditing. Exposure to risk assessment, system-based guidelines, and professional standards in the field of information systems auditing. Examination of the implementation and deployment of information systems.

Prerequisite(s): ACIS 3504 and ACIS 4414

Instructional Contact Hours: (3 Lec, 3 Crd)

ACIS 4114 - Advanced Financial Accounting (3 credits)

Detailed analysis of external financial reporting. Study of debt and equity investments, derivatives, and foreign currency. Proper application of Securities and Exchange Commission reporting regulations.

Prerequisite(s): ACIS 3116

Instructional Contact Hours: (3 Lec, 3 Crd)

ACIS 4124 - Governmental and Nonprofit Accounting (3 credits)

Detailed analysis of U.S. state and local governmental, nonprofit, and federal accounting. Focus on entity characteristics, regulatory environment, fund accounting, financial transactions, and financial statements.

Prerequisite(s): ACIS 3115

Instructional Contact Hours: (3 Lec, 3 Crd)

ACIS 4194 - Analysis of Financial Statements (3 credits)

Analysis of financial statements including how to interpret and assess a company's results of operations, financial condition, and cash flows. Construction and use of financial ratios for use in various contexts. Development of reports comparing financial performance across companies and over time to aid in evaluating investments in companies' debt or equity. Course credit will not be awarded for both ACIS 3115 and ACIS 4194.

Prerequisite(s): FIN 3134

Instructional Contact Hours: (3 Lec, 3 Crd)

ACIS 4214 - Cost Planning and Control (3 credits)

The purpose of this course is to help the student develop an understanding of the role of accounting in the management process, an understanding of cost accounting systems, an understanding of cost behavior, an understanding of alternative accounting systems, and the usefulness of costs involved in non-routine decision-making.

Prerequisite(s): ACIS 2116 and ACIS 2504 and BIT 2406

Instructional Contact Hours: (3 Lec, 3 Crd)

ACIS 4344 - Tax for Financial Planners (3 credits)

Overviews income tax concepts relevant to financial planning for individuals who are investors, employees, and business owners. Topics include income tax fundamentals for individuals, taxation of the sale of property, taxation of business entities, taxation of trusts, and overview of the federal transfer tax on estates and gifts. Duplicates some material in ACIS 4314. Course credit will not be awarded for both ACIS 4314 and ACIS 4344.

Prerequisite(s): FIN 3104

Instructional Contact Hours: (3 Lec, 3 Crd)

ACIS 4364 - Taxation of Business Operations (3 credits)

Introduction to the tax issues for various operating models. Analysis from a tax perspective of formation, operation, distribution of earnings, business unit acquisitions and divestitures, and liquidation. Entity types discussed include partnerships, S Corporations, regular (C) Corporations and not for profit entities. Emphasis on how to report tax results to the applicable government(s) as well as the GAAP accounting of the tax results. Initial exposure to multistate taxation, the U.S. taxation of non-US activities, and estate and gift taxation.

Prerequisite(s): ACIS 3314

Instructional Contact Hours: (3 Lec, 3 Crd)

ACIS 4414 - Financial Statement Auditing (3 credits)

Study of external financial statement auditing, professional code of conduct, audit evidence considerations, internal control, fraud, and transaction cycles, and audit reporting.

Prerequisite(s): ACIS 3115 and ACIS 3504

Instructional Contact Hours: (3 Lec, 3 Crd)

ACIS 4444 - Forensic Accounting (3 credits)

This course provides students experience in forensic accounting, commonly used computer forensic software, forensic techniques, litigation support, fraud risk management, fraud investigation, and the related audit tools.

Prerequisite(s): ACIS 3115

Instructional Contact Hours: (3 Lec, 3 Crd)

ACIS 4514 - Database Management Systems (3 credits)

Introduction to database management systems and their use in business. Topics covered include data modeling, normalization, SQL, transaction management and concurrency control, security issues, physical data organization, query optimization, hierarchical queries, distributed database management systems, object-oriented databases, client/server databases, multidimensional databases, data mining, data warehousing, and database administration.

Instructional Contact Hours: (3 Lec, 3 Crd)

ACIS 4544 - Applied Accounting Analytics (3 credits)

Application of analytics software and methodologies to address real-world based accounting activities. Examination of accounting scenarios to determine an appropriate analytic approach. Emphasis on commonly used accounting analytics software to apply the extract, transform, and load process on data. Implementation of analytics software to analyze accounting data, and evaluation and communication of the results through data visualizations.

Prerequisite(s): ACIS 2504 and ACIS 3115

Pathway Concept Area(s): 6D Critique & Prac in Design, 10 Ethical Reasoning

Instructional Contact Hours: (3 Lec, 3 Crd)

ACIS 4654 - Accounting Analytics (3 credits)

Design and development of accounting systems using relational database management tools. Extraction and analysis of accounting data using queries, analytics, and visualization techniques. Application of accounting data analytics concepts using commercially available tools such as audit management software and current visualization tools. Proper preparation of data and use of analytics algorithms and visualization techniques to inform decision making.

Prerequisite(s): ACIS 2504 and ACIS 3504 and ACIS 3115

Instructional Contact Hours: (3 Lec, 3 Crd)

ACIS 4664 - Environmental, Social, and Governance Accounting (3 credits)

Introduction to procedures for extracting and quantifying quality of corporate Environmental, Social, and Governance (ESG) information and assessment of compliance with current accounting standards. Analysis of corporate ESG data and impact on Financial Statements for corporate environmental and social justice decision-making. Introduction and differentiation of U.S. and international regulatory bodies promulgating ESG standards. Discussion of disclosure components, frameworks, and standards concerning accounting and business-related ESG information. Exploration of incremental decision usefulness of ESG information for various stakeholders beyond traditional accounting financial statements. Presentation of attestation and assurance methodologies related to disclosed corporate ESG accounting information.

Prerequisite(s): ACIS 3115 and ACIS 3504

Instructional Contact Hours: (3 Lec, 3 Crd)

ACIS 4684 - Information Systems Security and Assurance (3 credits)

An examination of the concepts, technologies, and applications of security and assurance in information systems. Topics include the security threats against information systems; tools used by intruders; computing platforms and security; encryption; securing the transaction and the server; audit tools to detect intrusions; responses to attacks; legal, ethical and international issues; and the future of information systems security and assurance.

Instructional Contact Hours: (3 Lec, 3 Crd)

ACIS 4954 - Study Abroad (1-19 credits)

Instructional Contact Hours: Variable credit course

ACIS 4974 - Independent Study (1-19 credits)

Instructional Contact Hours: Variable credit course

ACIS 4984 - Special Study (1-19 credits)

Instructional Contact Hours: Variable credit course

ACIS 4994 - Undergraduate Research (1-19 credits)

Instructional Contact Hours: Variable credit course