ACCOUNTING, BACHELOR OF SCIENCE (B.S.) WITH A CONCENTRATION IN DATA ANALYTICS

The major in accounting with a concentration in data analytics is designed to prepare students for positions in accounting by providing tools to meet the growing need for data analytics modeling and analysis in accounting.

This program will qualify graduates to sit for the Uniform Certified Public Accountant Examination in Virginia. However, certification requires 150 hours of college credits. Most public accounting firms give hiring preference to applicants who have completed the full 150 hours prior to starting work.

Learning outcomes

Upon completing this program:

• Graduates will demonstrate a broad base of knowledge across accounting topics and apply that knowledge in a variety of contexts.

• Graduates will demonstrate an understanding of the core business and strategic concepts involved in accounting.

• Graduates will demonstrate the ability to identify and communicate accounting ethical issues; evaluate information in a manner free of distortion, personal bias or conflicts of interest; recognize situations where professional ethical standards apply; respect confidentiality.

• Graduates will demonstrate the ability to effectively communicate ideas and analysis of accounting problems. Graduates can demonstrate this ability either in writing or in oral presentations (e.g., writing memos, thought papers or other types of business correspondence; presenting case analyses; etc.).

Special requirements

The foundation program specifies course work required during the freshman and sophomore years. Students are eligible for admission into the advanced business program with a major in the School of Business upon meeting the minimum cumulative GPA requirement and successful completion of:

<table>
<thead>
<tr>
<th>Course</th>
<th>Title</th>
<th>Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>A minimum of 54 credits in the foundation program</td>
<td></td>
<td>54</td>
</tr>
<tr>
<td>ACCT 203 &amp; ACCT 204</td>
<td>Introduction to Accounting I and Introduction to Accounting II</td>
<td>6</td>
</tr>
<tr>
<td>BUSN 201</td>
<td>Foundations of Business</td>
<td>3</td>
</tr>
<tr>
<td>BUSN 212 or MATH 200</td>
<td>Differential Calculus and Optimization for Business or Calculus with Analytic Geometry I</td>
<td>3-4</td>
</tr>
<tr>
<td>BUSN 225</td>
<td>Winning Presentations</td>
<td>3</td>
</tr>
<tr>
<td>ECON 210</td>
<td>Principles of Microeconomics</td>
<td>3</td>
</tr>
<tr>
<td>ECON 211</td>
<td>Principles of Macroeconomics</td>
<td>3</td>
</tr>
<tr>
<td>INFO 160</td>
<td>Digital Literacy: Computer Concepts, Internet, Digital Devices</td>
<td>1</td>
</tr>
<tr>
<td>INFO 161</td>
<td>Digital Literacy: Word Processing Skills</td>
<td>1</td>
</tr>
<tr>
<td>INFO 162</td>
<td>Digital Literacy: Spreadsheets Skills I</td>
<td>1</td>
</tr>
<tr>
<td>INFO 165</td>
<td>Digital Literacy: Spreadsheet Skills II</td>
<td>1</td>
</tr>
<tr>
<td>UNIV 111 Play course video for Focused Inquiry I</td>
<td>Focused Inquiry I</td>
<td>3</td>
</tr>
<tr>
<td>UNIV 112 Play course video for Focused Inquiry II</td>
<td>Focused Inquiry II (with a minimum grade of C)</td>
<td>3</td>
</tr>
<tr>
<td>UNIV 200</td>
<td>Inquiry and the Craft of Argument (with a minimum grade of C)</td>
<td>3</td>
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</tbody>
</table>

The admission requirements for the School of Business (http://bulletin.vcu.edu/undergraduate/business/undergraduate-information/academic-policies/) detail the deadlines for students to be admitted to the advanced business program with a major in the school. At least 30 hours of the required business courses for the Bachelor of Science must be taken at VCU.

All baccalaureate degree programs in the School of Business require successful completion of the business knowledge exam as administered in BUSN 499.

Students may need to take additional mathematics courses as prerequisites to BUSN 212 or MATH 200. These credits will count as electives in the foundation program. The sample curriculum outline provides an example in which BUSN 171 is used as a prerequisite for BUSN 212.

The INFO 160, INFO 161, INFO 162 and INFO 165 requirements may be waived upon successful completion of a Knowledge Equivalency Test administered by the Office of Undergraduate Studies. No more than two additional credits may be applied to the degree from the INFO 16x series.

No more than four credits in physical education courses may be applied to the degree.

INTL 493 may not be counted toward a business degree.

Credit for SPECH 121 or SPECH 321 will substitute for BUSN 225, and no more than three credits of these courses may be applied toward a business degree. Credit for STAT 210 or STAT 212 will substitute for SCMA 301. Students who earned a minimum grade of B in ECON 203 at VCU may substitute that credit for ECON 210.

All upper-level accounting courses with a prerequisite course require a minimum grade of C in the prerequisite course and the following must be fulfilled:

• Students must have received a minimum grade of C in all required accounting courses.

• Required accounting courses in which students earn a grade of D or F must be repeated.

• Students must achieve a 2.5 GPA in upper-level ACCT courses to graduate.
Degree requirements for Accounting, Bachelor of Science (B.S.) with a concentration in data analytics

Business foundation (60 credits minimum) ¹

<table>
<thead>
<tr>
<th>Course</th>
<th>Title</th>
<th>Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>UNIV 111 Play course video for Focused Inquiry I</td>
<td>Focused Inquiry I</td>
<td>3</td>
</tr>
<tr>
<td>UNIV 112 Play course video for Focused Inquiry II</td>
<td>Focused Inquiry II</td>
<td>3</td>
</tr>
</tbody>
</table>

General education requirements (34 credits minimum) ²

<table>
<thead>
<tr>
<th>Course</th>
<th>Title</th>
<th>Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>UNIV 200 Inquiry and the Craft of Argument</td>
<td>3</td>
<td></td>
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<tr>
<td>Approved humanities/fine arts</td>
<td>3</td>
<td></td>
</tr>
<tr>
<td>Approved natural/physical sciences</td>
<td>3-4</td>
<td></td>
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<tr>
<td>Approved quantitative literacy:</td>
<td>3-4</td>
<td></td>
</tr>
<tr>
<td>BUSN 212 Differential Calculus and Optimization for Business</td>
<td>3</td>
<td></td>
</tr>
<tr>
<td>or MATH 200 Calculus with Analytic Geometry I</td>
<td>3</td>
<td></td>
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<tr>
<td>Approved social/behavioral sciences</td>
<td>3-4</td>
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</tbody>
</table>

Total Hours 21-24

Course | Title | Hours |
<table>
<thead>
<tr>
<th></th>
<th></th>
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</thead>
<tbody>
<tr>
<td>ECON 210 Principles of Microeconomics</td>
<td>3</td>
<td></td>
</tr>
<tr>
<td>ECON 211 Principles of Macroeconomics</td>
<td>3</td>
<td></td>
</tr>
<tr>
<td>INFO 160 Digital Literacy: Computer Concepts, Internet, Digital Devices</td>
<td>1</td>
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<tr>
<td>INFO 161 Digital Literacy: Word Processing Skills</td>
<td>1</td>
<td></td>
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<tr>
<td>INFO 162 Digital Literacy: Spreadsheets Skills I</td>
<td>1</td>
<td></td>
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<tr>
<td>INFO 165 Digital Literacy: Spreadsheets Skills II</td>
<td>1</td>
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</tbody>
</table>

Business general education electives (Select credits from the approved list.) 3

Total Hours 13

Advanced business core

<table>
<thead>
<tr>
<th>Course</th>
<th>Title</th>
<th>Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>BUSN 325 Organizational Communication</td>
<td>3</td>
<td></td>
</tr>
<tr>
<td>BUSN 499 Business Knowledge Exam</td>
<td>0</td>
<td></td>
</tr>
<tr>
<td>FIRE 311 Financial Management</td>
<td>3</td>
<td></td>
</tr>
<tr>
<td>MGMT 303 Creativity and Ideation</td>
<td>3</td>
<td></td>
</tr>
<tr>
<td>MGMT 310 Managing People in Organizations</td>
<td>3</td>
<td></td>
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<tr>
<td>MGMT 434 Strategic Management (capstone)</td>
<td>3</td>
<td></td>
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<tr>
<td>MKTG 301 Marketing Principles</td>
<td>3</td>
<td></td>
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<tr>
<td>SCMA 301 Business Statistics I</td>
<td>3</td>
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</tr>
</tbody>
</table>

Major requirements

Advanced business core (flexible by major)

<table>
<thead>
<tr>
<th>Course</th>
<th>Title</th>
<th>Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>ACCT 307 Accounting Systems</td>
<td>3</td>
<td></td>
</tr>
<tr>
<td>BUSN 323 Legal Environment of Business</td>
<td>3</td>
<td></td>
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<tr>
<td>BUSN 400 Principles of Consulting</td>
<td>3</td>
<td></td>
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</tbody>
</table>

Approved data analytics elective (Select from list below.) 3

Total Hours 60

The minimum total of credit hours required for this degree is 120.

Advanced business program (60 credits minimum)

<table>
<thead>
<tr>
<th>Course</th>
<th>Title</th>
<th>Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>BUSN 301 Federal Income Taxation for Individuals</td>
<td>3</td>
<td></td>
</tr>
<tr>
<td>ACCT 303 Intermediate Accounting I</td>
<td>3</td>
<td></td>
</tr>
<tr>
<td>ACCT 304 Intermediate Accounting II</td>
<td>3</td>
<td></td>
</tr>
<tr>
<td>ACCT 305 Intermediate Accounting III</td>
<td>3</td>
<td></td>
</tr>
<tr>
<td>ACCT 306 Cost Accounting</td>
<td>3</td>
<td></td>
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<tr>
<td>ACCT 406 Auditing</td>
<td>3</td>
<td></td>
</tr>
<tr>
<td>ACCT 408 Data Analytics for Accountants</td>
<td>3</td>
<td></td>
</tr>
</tbody>
</table>

Total Hours 60

Additional University Core Education Curriculum approved courses

- Any AFAM, ANTH, ANTZ, ARTH, BIOL, BIOZ, CHEM, CHEZ, CRJS, DANC, ENGL, ENVIS, FRSC, FRSZ, HIST, INNO, INSC, INTL (except INTL 493), MASC, MATH, PHIL, PHYS, PHYZ, POLI, PSYC (except PSYC 214), RELS, SOCS, SOCY, USRP or WRLD course
- Any foreign language course
- Any honors-designated course taught outside of the School of Business
- Any of the following UNIV courses:
  - UNIV 211 Food for Thought
  - UNIV 213 Play course video for The Truth About Lying
  - UNIV 217 Finding Your Voice in Contemporary Society

¹ Students may complete additional course work (if needed) in electives to total 60 credit hours in business foundation.

² Students who receive waivers to these required courses must complete additional business general education electives to reach the 34-credit minimum.
### Approved data analytics electives

<table>
<thead>
<tr>
<th>Course</th>
<th>Title</th>
<th>Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>INFO 320</td>
<td>Business Intelligence and Data Mining</td>
<td></td>
</tr>
<tr>
<td>SCMA 339</td>
<td>Quantitative Solutions for Supply Chain Management</td>
<td></td>
</tr>
<tr>
<td>SCMA 430</td>
<td>Data Management and Visualization</td>
<td></td>
</tr>
<tr>
<td>SCMA 440</td>
<td>Data Mining and Forecasting</td>
<td></td>
</tr>
</tbody>
</table>

What follows is a sample plan that meets the prescribed requirements within a four-year course of study at VCU. Please contact your adviser before beginning course work toward a degree.

#### Freshman year

##### Fall semester

- **BUSN 171**: Mathematical Applications for Business 3 Hours
- **INFO 160**: Digital Literacy: Computer Concepts, Internet, Digital Devices 1 Hour
- **INFO 162**: Digital Literacy: Spreadsheets Skills I 1 Hour
- **UNIV 101**: Introduction to the University ((Satisfies open elective)) 1 Hour
- **UNIV 111**: Play course video for Focused Inquiry I 3 Hours

##### Approved University Core Education Curriculum courses 6 Hours

**Term Hours:** 15

##### Spring semester

- **BUSN 212**: Differential Calculus and Optimization for Business 3 Hours
- **BUSN 225**: Winning Presentations 3 Hours
- **INFO 161**: Digital Literacy: Word Processing Skills 1 Hour
- **INFO 165**: Digital Literacy: Spreadsheets Skills II 1 Hour
- **UNIV 112**: Play course video for Focused Inquiry II 3 Hours

##### Approved University Core Education Curriculum course 3 Hours

**Term Hours:** 15

#### Sophomore year

##### Fall semester

- **ACCT 203**: Introduction to Accounting I 3 Hours
- **BUSN 201**: Foundations of Business 3 Hours
- **ECON 210**: Principles of Microeconomics 3 Hours
- **UNIV 200**: Inquiry and the Craft of Argument 3 Hours
- **Business general education elective** 3 Hours

**Term Hours:** 15

##### Spring semester

- **ACCT 204**: Introduction to Accounting II 3 Hours
- **BUSN 325**: Organizational Communication 3 Hours
- **ECON 211**: Principles of Macroeconomics 3 Hours

#### Junior year

##### Fall semester

- **ACCT 301**: Federal Income Taxation for Individuals 3 Hours
- **ACCT 303**: Intermediate Accounting I 3 Hours
- **BUSN 325**: Organizational Communication 3 Hours
- **MGMT 303**: Creativity and Ideation 3 Hours
- **SCMA 302**: Business Statistics II 3 Hours

**Term Hours:** 15

##### Spring semester

- **ACCT 304**: Intermediate Accounting II 3 Hours
- **ACCT 306**: Cost Accounting 3 Hours
- **ACCT 307**: Accounting Systems 3 Hours
- **MGMT 310**: Managing People in Organizations 3 Hours
- **SCMA 303**: Business Analytics 3 Hours

**Term Hours:** 15

#### Senior year

##### Fall semester

- **ACCT 305**: Intermediate Accounting III 3 Hours
- **ACCT 408**: Data Analytics for Accountants 3 Hours
- **BUSN 499**: Business Knowledge Exam 0 Hours
- **FIRE 311**: Financial Management 3 Hours
- **MGMT 319**: Leadership **or Principles of Consulting** or **International Consulting Practicum** 3 Hours
- **Open elective** 3 Hours

**Term Hours:** 15

##### Spring semester

- **ACCT 406**: Auditing 3 Hours
- **MGMT 434**: Strategic Management 3 Hours
- **Approved data analytics elective** 3 Hours
- **Open elective** 6 Hours

**Term Hours:** 15

**Total Hours:** 120

The minimum total of credit hours required for this degree is 120.

**ACCT 202. Accounting for Non-business Majors. 3 Hours.**

Semester course; 3 lecture hours. 3 credits. The course is open only to non-business students. A nontechnical introduction to the principles of financial and managerial accounting with emphasis on the use and interpretation of financial reports, managerial planning and control. The course is for the individual who seeks a basic knowledge of accounting and its uses. It is designed for the user of accounting information rather than the preparer. This course cannot be substituted for ACCT 203, 204 or 205. Students graduating with a major in the School of Business cannot receive credit for this course.
ACCT 203. Introduction to Accounting I. 3 Hours.
Semester course; 3 lecture hours. 3 credits. Theoretical and technical facets of financial and managerial accounting for business. Accumulation, analysis, interpretation and uses of accounting information. Course will focus on financial accounting.

ACCT 204. Introduction to Accounting II. 3 Hours.
Semester course; 3 lecture hours. 3 credits. Prerequisite: ACCT 203 with a minimum grade of C. Theoretical and technical facets of financial and managerial accounting for business. Accumulation, analysis, interpretation and uses of accounting information. Course will focus on managerial accounting.

ACCT 205. Introductory Accounting Survey. 3 Hours.
Semester course; 3 lecture hours. 3 credits. Enrollment is restricted to students in the post-baccalaureate undergraduate certificate programs in accounting and information systems, students seeking a B.S. in Financial Technology, students enrolled in the College of Engineering, or by permission of instructor. An accelerated course covering theoretical and technical facets of financial and managerial accounting for business. Accumulation, analysis, interpretation and uses of accounting information. May not be counted toward any of the B.S. programs offered by the School of Business other than the B.S. in Financial Technology.

ACCT 291. Topics in Accounting. 1-3 Hours.
Semester course. 1-3 credits. Prerequisite: permission of instructor. An in-depth study of selected accounting topics. Graded as pass/fail.

ACCT 301. Federal Income Taxation for Individuals. 3 Hours.
Semester course; 3 lecture hours. 3 credits. Prerequisite: ACCT 204 or ACCT 205 with a minimum grade of C. Enrollment is restricted to accounting majors who have completed at least 54 credit hours (junior standing). Income tax legislation and the concept of taxable income; federal income tax law applicable to individuals.

ACCT 303. Intermediate Accounting I. 3 Hours.
Semester course; 3 lecture hours. 3 credits. Prerequisite: ACCT 203 or ACCT 205 with a minimum grade of C. Restricted to students who have completed at least 54 credit hours (junior standing). Continues the study of financial accounting, covering accounting for acquisition and disposition of property, plant and equipment, intangible assets, contingencies, long-term liabilities, stockholders’ equity, earnings-per-share, and investments.

ACCT 304. Intermediate Accounting II. 3 Hours.
Semester course; 3 lecture hours. 3 credits. Prerequisite: ACCT 303 with a minimum grade of C. Restricted to students who have completed at least 54 credit hours (junior standing). Continues the study of financial accounting, covering accounting for acquisition and disposition of property, plant and equipment, intangible assets, contingencies, long-term liabilities, stockholders’ equity, earnings-per-share, and investments.

ACCT 305. Intermediate Accounting III. 3 Hours.
Semester course; 3 lecture hours. 3 credits. Prerequisite: ACCT 304 with a minimum grade of C. Enrollment is restricted to students who have completed at least 54 credit hours (junior standing). Continues the study of financial accounting, covering accounting for income taxes, accounting for pensions and postretirement benefits, accounting for leases, accounting changes, error analysis, statement of cash flows, full disclosure in financial reporting and accounting for state and local governments and not-for-profit organizations.

ACCT 306. Cost Accounting. 3 Hours.
Semester course; 3 lecture hours. 3 credits. Prerequisite: ACCT 303 with a minimum grade of C. Enrollment is restricted to students who have completed at least 54 credit hours (junior standing) or those in the post-baccalaureate certificate program. Cost accumulation for inventory pricing and income determination. Cost behavior concepts for planning and control. Job order and process cost systems, standard costs, budgets and special topics in relevant costs for managerial decisions.

ACCT 307. Accounting Systems. 3 Hours.
Semester course; 3 lecture hours. 3 credits. Prerequisite: ACCT 303 with a minimum grade of C. This course is restricted to students who have completed at least 54 credit hours (junior standing). Examines design and evaluation of manual and computerized accounting information systems. Emphasis on the system of internal controls and the impact of computers on those controls.

ACCT 401. Governmental and Not-for-profit Accounting. 3 Hours.
Semester course; 3 lecture hours. 3 credits. Prerequisites: ACCT 304 with a minimum grade of C. This course is restricted to students who have completed at least 54 credit hours (junior standing). The role of accounting in the management of resources entrusted to government and nonprofit entities, including accounting and reporting standards. Accounting in municipalities and nonprofit entities such as hospitals, charitable and health organizations, and colleges and universities.

ACCT 402. Advanced Cost Accounting. 3 Hours.
Semester course; 3 lecture hours. 3 credits. Prerequisites: ACCT 303 and ACCT 306, each with a minimum grade of C. This course is restricted to students who have completed at least 54 credit hours (junior standing). An advanced conceptual cost managerial course designed to familiarize students with the more complex aspects of cost/managerial accounting concepts including process costing, standard costing, activity-based costing, Just-in-Time inventory systems, enterprise resource planning and issues relating to the relative strengths and limitations of managerial accounting.

ACCT 403. Management Control Systems. 3 Hours.
Semester course; 3 lecture hours. 3 credits. Prerequisites: ACCT 303 and ACCT 306, each with a minimum grade of C. This course is restricted to students who have completed at least 54 credit hours (junior standing). An advanced conceptual management control systems course designed to expose students to the theoretical and conceptual foundations of management control systems and to integrate accounting into the managerial decision/control process. Uses a predominantly case-oriented approach. While primary emphasis will be on integrating accounting into the management control process, significant attention also will be devoted to the behavioral issues involved in management control system design and implementation. Students also will receive hands-on experience in structuring and formulating control systems in an Enterprise Resource Planning system environment.

ACCT 404. Introduction to Forensic Accounting and Fraud Examination. 3 Hours.
Semester course; 3 lecture hours. 3 credits. Prerequisite: ACCT 304 with a minimum grade of C. Introduction to the area of forensic accounting. Topics include the detection of fraudulent financial reporting, employee fraud, money laundering, digital forensic analysis and electronic evidence, evidence management, computer forensics, and an introduction to business valuation.
ACCT 406. Auditing. 3 Hours.
Semester course; 3 lecture hours. 3 credits. Prerequisites: ACCT 304 and 307 with a minimum grade of C. This course is restricted to students who have completed at least 54 credit hours (junior standing). A study of the conceptual, theoretical and practical procedures applicable to auditing — both external and internal. Primary emphasis is placed upon the theory of audit evidence; the objectives, techniques and procedures for financial and operational audit reports.

ACCT 408. Data Analytics for Accountants. 3 Hours.
Semester course; 3 lecture hours. 3 credits. Prerequisites: ACCT 307 with a minimum grade of C; and MGMT 301, SCMA 301, STAT 210 or STAT 212. Enrollment is restricted to students who have completed at least 54 credit hours (junior standing). The spreadsheet analysis and written communication of data relating to accounting-focused business problems.

ACCT 409. Research and Communication for Accountants. 3 Hours.
Semester course; 3 lecture hours. 3 credits. Prerequisite: ACCT 304 with a minimum grade of C. Restricted to students who have completed at least 54 credit hours (junior standing). Focuses on the research of accounting issues and preparation of technical reports relating to that research. Leadership and team dynamics are explored using group projects.

ACCT 410. Advanced Tax Accounting. 3 Hours.
Semester course; 3 lecture hours. 3 credits. Prerequisites: ACCT 301, ACCT 303 and ACCT 408, each with a minimum grade of C. Enrollment is restricted to students who have completed a minimum of 54 credit hours (junior standing). Complex tax problems of the trust, partnership and corporation. Particular emphasis is given to tax planning.

ACCT 491. Topics in Accounting. 1-3 Hours.
Semester course; 1-3 lecture hours. 1-3 credits. Prerequisites vary by topic. Study of current topics. Topics may vary by semester. See the Schedule of Classes for specific topics to be offered.

ACCT 492. Independent Study. 1 Hour.
Semester course; 1 lecture hour. 1 credit. Restricted to accounting majors who have completed at least 54 credit hours (junior standing). The purpose of this course is to allow international students to take advantage of an internship work experience. Graded as pass/fail.

ACCT 493. Internship in Accounting. 3 Hours.
Semester course; 3 credits. Prerequisites: ACCT 304 with a minimum grade of B; senior standing in accounting and permission of the department chair. Intention to enroll must be indicated to the instructor prior to or during advance registration for semester of credit. Involves students in a meaningful experience in a setting appropriate to the major. A structured course in which the first three weeks are spent in the classroom, followed by 11 weeks at a workplace. The last week of the semester students return to the classroom for discussion and reflection on the work experience. An internship portfolio is required at the end of the course. Graded as pass/fail.

ACCT 497. Guided Study in Accounting. 1-3 Hours.
Semester course; variable hours. 1-3 credits. Maximum total of three credits. Prerequisites: junior standing in accounting and approval of adviser and department chair prior to course registration. Intensive study under supervision of a faculty member in an area not covered in-depth or contained in the regular curriculum.