The College of Business Administration was originally the School of Commerce, dating back to 1919. Commerce was changed to Business in 1937 and gained college status in 1947. The college-wide MBA program was approved in 1966 and the doctoral program in 1971.

Graduate programs of the College of Business Administration are designed to prepare men and women to assume positions in the increasingly complex world of business and industry, teaching and research, and government.

Viewing the business firm as operating in dynamic social, political, and economic environments that demand leaders capable of dealing with innovation and rapid change, the college places central importance on development of students’ thought processes and leadership potential. Emphasis is focused on flexibility of mind, receptivity to new ideas, and capacity to adapt one’s reasoning powers. Our objective is to encourage the student to develop the ability to reason analytically and logically, and to develop a commensurate plan of action. Above all else, we strive to instill the irrepressible desire to continue to learn and grow in knowledge throughout the student’s life.

The College of Business Administration has made a commitment to total quality management by integrating the principles of productivity through quality and statistical process control throughout the graduate curriculum. Interdisciplinary partnerships are encouraged among academic units in the college, with other university academic units and with the private sector, enhancing the process of inquiry and critical thinking which is crucial to total quality management.

The College of Business Administration is fully accredited by the American Assembly of Collegiate Schools of Business and is associated with other leading graduate schools of business as a member of the Graduate Management Admission Council.

The College of Business Administration offers programs leading to five advanced degrees: the Doctor of Philosophy with majors in business administration, economics, industrial and organization psychology, and management science; the Master of Arts with a major in economics; the Master of Science with majors in human resource development, management science, and statistics; the Master of Accountancy; and the Master of Business Administration.

A limited number of teaching and other assistantships that require from 10 to 20 hours of service per week are available through the departments of the college. Remuneration includes remission of fees and tuition as well as a monthly stipend. Awards are generally made on the basis of scholarship and performance on the appropriate (GMAT or GRE) admission test. Application forms may be obtained in any of the departments. Information
on college-administered fellowships is available from the appropriate department or office.

Applications must be received by March 1 for consideration of assistantships and fellowships to be awarded for the following fall term.

**Academic Standards**

A graduate student in the College of Business Administration whose grade point average falls below 3.0 will be placed on probation. A student on probation will be dropped from the program unless his/her cumulative grade point average is 3.0 or higher at the end of the probationary period. The probationary period is defined as the next semester’s coursework as established by the degree program.

**MASTER OF BUSINESS ADMINISTRATION**

**Business Administration Major**

Two tracks are available for the MBA: the regular, full-time program and the executive program.

The full-time MBA is for students seeking a full-time, weekday program that follows the traditional academic format. The nature of this program precludes students from simultaneously working full-time outside of school. In addition to the regular full-time program, there are two full-time dual-degree programs: the JD-MBA with the College of Law and the MS-MBA with the College of Engineering. Descriptions of these dual-degree programs follow the description of the executive tracks of the MBA.

For students who wish to continue working full-time while they earn their MBA degree, there are three programs within the executive track of the MBA. In these programs, students carry a full academic course load in addition to their full-time jobs. Each of these programs is designed to serve a different group of students. Descriptions of the MBA programs in the executive track follow the description of the regular, full-time program.

To obtain an MBA application, contact the MBA Program Office, 527 Stokely Management Center, College of Business Administration, the University of Tennessee, Knoxville, Tennessee 37996-0552, Phone (865) 974-5033, Email: mba@utk.edu. The application may also be downloaded from the Web site at http://mba.bus.utk.edu. For the executive programs, contact the Center for Executive Education, 708 Stokely Management Center, College of Business Administration, the University of Tennessee, Knoxville, Tennessee 37996-0575, Phone (865) 974-5001.

**Full-Time MBA**

The full-time MBA program is designed for students with undergraduate degrees in a wide variety of fields, including the social and natural sciences, the humanities, and professional fields such as engineering, business, agriculture, and architecture. In addition, most students in this program should have two or more years of work experience beyond their undergraduate degree(s). The MBA program is a 17-month program with students beginning in late July of each year and graduating in December of the following year. During the summer between the second and third semesters, students must complete an internship with a company using those skills acquired during the first year of the MBA program.

The MBA program consists of a common core (29 hours) and a selection of concentration and elective courses (15 hours). The first-year core develops a general management foundation upon which specialization is developed in the concentration area.

The objective of the 17-month program is to develop leaders able to enhance the success of their organizations. Specific emphasis is placed upon competency in the area of integrated value chain management. This managerial perspective acknowledges that an organization’s success is strongly related to its ability to function effectively and efficiently within a larger network of allied businesses. Managers must understand how to integrate business functions within their organizations, as well as across the other organizations within their value chain. Integrated value chain management rests upon a foundation including: supply chain management, information management, resource management, and customer relationship management. In addition, students will pursue concentrations and careers in a variety of areas, including finance, logistics, marketing, and operations management.

**ADMISSION**

Applications are accepted for fall semester only. The application deadline for fall semester is March 1. Applications by U.S. citizens and permanent residents received after March 1 will be considered as space allows.

To be considered for admission, the applicant’s file must be complete. A completed file includes the Application for Graduate Admission, transcripts of prior college work, the MBA program application, two completed applicant recommendation forms, and the Graduate Management Admission Test (GMAT) score report. The first items should reach the Office of Graduate Admissions one month before the MBA application deadline to allow for processing. Additional information is required by Graduate Admissions for international students.

For admission to the MBA program, consideration is given to (1) applicant’s academic record with particular attention to the last two years of undergraduate work and previous graduate studies, (2) scores on the GMAT and the Test of English as a Foreign Language (TOEFL) for those whose native language is not English, (3) work experience and other activities that demonstrate potential for leadership, and (4) recommendations from professors and work supervisors. The admission decision is based on all factors that make up the total application; therefore, there is no automatic cut-off for either grade point averages or GMAT scores. However, admission preference will be given to applicants with full-time work experience after obtaining the undergraduate degree.

**Prerequisites**

There are no specific course prerequisites for admission. However, undergraduate courses and work experience should demonstrate ability with both qualitative and quantitative work.

**REQUIREMENTS**

**MBA Core**

The MBA core (29 hours total) consists of: a 3-hour foundations course taken during the three weeks prior to the beginning of fall semester, a 15-hour core course and a 1-hour career development course taken in the first semester (fall 1), a 9-hour core course taken in the second semester (spring 1),
and a 1-hour capstone in the third semester (fall 2). The topics introduced within these courses follow three major themes. The first theme covers “what every manager needs to know,” and includes such functional topics as finance, strategy, decision tools, environmental analysis, and leadership skills development. The second theme focuses on functions involved in the flows of product, information, and finances within an integrated value chain, to include, but not limited to, operations management, logistics management, demand management, customer relationship management, supplier management, and resource management. The third theme involves integrating the content of the other two themes using information technology. Throughout all three themes, significant emphasis is placed on learning the topics in an integrated fashion. Students will understand how various business functions are integrated within an organization, as well as how integration should occur across organizations within the context of a value chain.

Students in the first-year core undertake active learning within a team-based environment. Many core requirements are experiential exercises in which self-discovery within a team setting is an important element of the learning process. Individualized support is provided for developing both written and oral communication skills.

Concentration and Electives

A concentration area may be indicated on the MBA Program Application or this declaration may be deferred until after matriculation. In any event, selection should be made after the first semester and must be made after completion of the first year. Requests for changes in concentration area must be submitted for approval to the MBA Program Office.

Among the 15 credit hours in the concentration/electives block, 9 credit hours must be taken in one of the following concentration areas. For specific courses required in concentration areas, see the appropriate department.

- Finance
- Logistics
- Marketing
- Operations Management

The first course in each concentration is designed to provide a foundation upon which the concentration can be built. These courses will be delivered in the latter part of the spring semester of the first year, after the spring core course has been completed. They are intended to prepare students for their summer internships. However, these courses should not be thought of as simply the first three hours in a nine-hour elective. Rather, these courses are self contained, intensive introductions to a specialty area of business. Students will choose two of these courses in the spring semester, which will permit them flexibility for choosing concentrations in the second year of the program. Two additional courses in the concentration area will be taken in the second fall semester to meet the 9-hour requirement for a concentration.

Elective courses may be chosen from any 500-level courses in the College of Business Administration. Courses outside the college as well as courses listed in the Graduate Catalog numbered below 500 may be included as an elective only with written prior permission via formal petition to the MBA Program Office.

Transfer Credits

Graduate-level courses taken at other institutions accredited by the American Assembly of Collegiate Schools of Business that otherwise conform to university policy may be credited toward MBA degree requirements within the following limits:

- Concentration Area: 3 hours (provided at least 6 hours of work at this institution are included in the concentration area).
- Elective Area: 3 hours.

Because of the fully integrated nature of the first-year curriculum, no credit hours are transferred into this core curriculum. The maximum number of hours that may be transferred to elective and concentration areas is 6 semester hours. Transfer credit will be considered upon formal petition to the Dean of the MBA Program and must meet all requirements of the Graduate Council.

Other Requirements

The Application for Admission to Candidacy must be approved by three faculty members in the student’s area of concentration and the Assistant Dean of the MBA Program. It should be submitted to the Office of the University Registrar at least one full semester prior to the date the degree is conferred. (Admission to candidacy for the MBA degree must be submitted in the spring semester for graduation in the following fall semester.)

To qualify for the degree, the student must achieve a B average (3.0) or above in MBA core courses required in his/her program, a B average or higher in courses comprising the concentration area, and a B average or higher in the overall program.

Executive MBA Programs

Each of the four programs of the executive track is designed to serve the needs of a different student group. Each of the four programs of the executive track is designed to serve the needs of a different student group.

The programs share a common course structure of 36 credit hours of classroom learning (Business Administration 551, 552, 553) and 9 credit hours of projects applied within the student’s business organization (Business Administration 561, 562 and 563). Students carry a full, 15 credit-hour load each semester. In each program, all participants begin and complete the program together.

The courses are functionally integrated, and the broad curriculum objectives are similar in each of the executive track programs. All are oriented toward applied learning and are highly interactive, making extensive use of experiential learning techniques. Emphasis and depth of subject material within the curriculum varies somewhat from program to program depending on the intended student group. All programs result in the same Master of Business Administration degree as the full-time MBA.

ADMISSION

Primary consideration is given to the applicant’s professional achievements and recommendations from the applicant’s organization. Applicants must meet the minimum requirements of the Graduate Council and submit transcripts of all undergraduate and graduate work. Applicants may need to take the Graduate Management Admission Test (GMAT) (see specific program descriptions). No specific cut-off score exists for either grade point averages or GMAT scores; however, admission is
competitive, and applicants will be evaluated on their ability to operate on a par with other high achieving participants. Students whose native language is not English must take the Test of English as a Foreign Language (TOEFL) unless they are U.S. citizens or have earned a degree from an accredited U.S. college or university within the past two years. A minimum TOEFL score of 213 on the computer-based test is required for admission to graduate study.

**Prerequisites**

Although there are no specific course prerequisites for admission, undergraduate studies and professional experience should demonstrate ability with both qualitative and quantitative work.

**Transfer Credit**

Because of the integrated nature of the executive track curricula, no credit hours may be transferred as substitutes for program curriculum.

**Other Requirements**

Other requirements are the same as those for the full-time MBA program.

**Aerospace Executive MBA Program**

The aerospace executive MBA is provided for a national audience of managers from defense and commercial aerospace organizations. The students for whom this program is designed have five to ten years of work experience and are currently employed in the aerospace sector. The emphasis in this program is providing a solid grounding in the broad range of business functions comprising virtually all MBA programs. However, much of this coverage will be delivered within the context of the aerospace industry. Beyond a basic grounding in business fundamentals, this program will offer advanced concepts especially relevant to managing the complex value streams that produce today’s most advanced aircraft. Advanced coverage and emphasis will be given to value stream integration, lean manufacturing, and industrial statistics in particular. This mix of topical coverage is ideal for engineers and others with technical backgrounds who are transitioning into program management where business and leadership skills are critical.

The program starts each fall semester and is completed in three consecutive semesters spread over twelve months. Classes are held during six residency periods, lasting from eight to eleven days each, some of which may be hosted on-site at the facilities of organizations participating in the program to facilitate hands-on learning. Between residency periods, formal coursework continues with bi-weekly distance learning through live, Internet cyber classes. Additional graded work includes a number of large-scale projects completed under faculty supervision, resulting in significant written reports and oral presentations.

Applications to this program are accepted for a fall entry only. The early application deadline is May 1, and the final application deadline is August 1, each year. Scores from either the Graduate Management Admission Test (GMAT) or the Graduate Record Examination (GRE) are required as part of a complete application.

The program will not be offered in those years in which the enrollment is not sufficient.

**Physician Executive MBA Program**

The physician executive MBA is provided for a national audience of physicians. The students for whom this program is designed have an MD or DO degree with five or more years of work experience. The curriculum objectives are the same as those for the executive MBA, but in the physician executive MBA, many of the functional skills are taught in the context of the health care industry with specialized content related to the health care environment. The physician executive MBA is the right choice for physicians who want to have a voice in the health care industry, in their own careers, and are seeking a program that allows them to continue their practice while earning their MBA degree.

The physician executive MBA is three consecutive semesters completed in 12 months. The class meets in Knoxville for 8-day residence periods in January, April, August and December. Between residence periods, live distance learning classes are held each Saturday morning, and there are asynchronous internet learning sessions each week.

Applications are accepted for January entry only. Applications are accepted throughout the year. The final application deadline is November 1. Applicants to the physician executive MBA are not required to take the GMAT test.

Additional information on the physician executive MBA can be found at www.pemba.utk.edu.

**Professional MBA Program**

The weekend professional MBA is provided for fully-employed managers within commuting distance of the University of Tennessee, Knoxville. The group of students for whom this program is designed has approximately five years of work experience. The emphasis in this program is to provide a good grounding in the quantitative and qualitative tools of various business functions and a good basis in strategic thinking. Learning is expanded through applying these tools within the student’s own organization through a structured project each semester. The professional MBA is the right choice for individuals who wish to enhance their position within their organization by broadening their business knowledge beyond the functional area in which they are currently employed.

The professional program is three consecutive semesters completed in 16 months. Classes meet all day on Saturdays and via live, distance learning classes on Tuesday evenings. The program begins in August with an intensive week of classes, then continues with weekend classes. The final fall semester also includes an intensive week of courses in addition to weekend classes. Graduation is in December.

Applications are accepted for fall semester only. The application priority deadline is April 10.

Additional information on the professional MBA can be found at www.promba.utk.edu.

**Senior Executive MBA Program**

The senior executive MBA is provided for a national audience of managers holding middle and upper level positions in organizations that support the attainment of an MBA degree. The students for whom this program is designed have at least 10 years of work experience and are currently in management positions. Typical students bring a greater knowledge of business fundamentals than is true of other MBA programs. The senior executive MBA places considerable emphasis on global busi-
ness and on individual skills of leadership. The program also has a heavy emphasis on strategic thinking and leading-edge management concepts. The senior executive MBA is the right choice for individuals who are in positions of broad responsibility or who have been designated to fulfill such roles within their organizations in the future.

The senior executive MBA is three consecutive semesters completed in 12 months. The class meets in Knoxville for 11–day residence periods in alternate months starting in January and ending in December. The May residence period is a global business seminar of two weeks and is held in South America, Asia or Europe. Off-campus work includes distance learning classes and requires substantial and regular contact with faculty and other participants. The project work in the senior executive MBA is a large-scale management project running throughout the year. Students work with managers in their own organizations to choose a project of significant scale and scope. Each project has a faculty advisor.

Applications are accepted for January entry only. The early application deadline is June 1, and the final application deadline is September 15. The GMAT may be waived depending on work experience. Students will receive materials for study in mid-November preceding the January start date.

Additional information on the executive MBA can be found at www.emba.utk.edu.

**Dual JD-MBA Program**

The College of Business Administration and the College of Law offer a coordinated dual program leading to the concurrent conferral of both the Doctor of Jurisprudence and the Master of Business Administration. The dual program saves the student approximately 15 hours (one semester) over the time that would be required to earn both degrees independently.

The establishment of the dual program recognizes the increasingly complex body of knowledge necessary to the creative conduct of business and business-related law practice, the complementary nature of many aspects of the graduate programs of the College of Law and the College of Business Administration, and the intellectual benefits inherent in the concurrent study of both business and business-related law. The program is designed to accommodate the interests of students who (a) contemplate a career in public service and want to acquire the skills and perspective of the lawyer and the business-oriented manager, (b) contemplate a career in business management and want to acquire the skills and perspective of a lawyer, or (c) contemplate a career as a lawyer specializing in business-related law and want to acquire the skills and perspective of the business-oriented manager.

**ADMISSION**

Applicants for the JD-MBA program must make separate application to, and be competitively and independently accepted by, the College of Law for the JD, Graduate Admissions and College of Business Administration for the MBA degree, and by the Dual Program Committee.

Students who have been accepted by both colleges may apply for approval to pursue the dual program anytime prior to, or after, matriculation in either or both colleges. Such approval will be granted, provided that dual program studies are started prior to entry into the last 28 semester hours of JD coursework and prior to the third semester of the MBA program. Students interested in entering the dual degree program should submit a letter of application to the Dual Program Committee. Upon receipt of the application, the Dual Program Committee will determine eligibility and assign students to advisors who will be responsible for course approval and supervision of the student’s progress through the dual program.

**REQUIREMENTS**

A dual program candidate must satisfy the graduation requirements of each college. Students withdrawing from the dual program before completion of both degrees will not receive credit toward graduation from either college for courses in the other college, except as such courses qualify for credit without regard to the dual program.

The College of Law will award up to nine semester hours of credit toward the JD for acceptable performance in approved graduate-level courses offered by the College of Business Administration. The College of Business Administration will award up to six semester hours of credit toward the MBA for acceptable performance in approved courses offered in the College of Law. The approval of courses is the responsibility of the Dual Program Committee and the student’s assigned advisor.

Students may begin their studies in either the JD or the MBA program, but may not enroll in MBA coursework while completing the first year of the law curriculum and may not enroll in JD coursework while completing the first year of the business curriculum. During the first year in the JD program, students register through the College of Law. During the first year in the MBA program, students register as graduate students. After the first two years, any term in which students take law courses or a mixture of law and graduate courses, they are classified and registered as law students. If taking only graduate courses, they are classified and registered as graduate students.

**Approved Dual Credit**

MBA courses in which the student has earned a B grade or higher and are to be counted toward the JD program must include nine semester hours approved by the College of Law. The six hours of law courses in which the student has earned a 2.3 or C+ grade or higher and are to be counted toward the MBA must be selected from those approved by the Assistant Dean of the MBA Program.

**Dual MS–MBA Program**

The College of Business Administration and the College of Engineering offer an integrated program leading to the concurrent conferral of the Master of Business Administration degree with a major in business administration (concentration in operations management) and the Master of Science degree with a major in engineering science (concentration in product development and manufacturing), industrial engineering (concentration in manufacturing systems engineering or product development and manufacturing), mechanical engineering (concentration in product development and manufacturing), or nuclear engineering.

The engineering science program is intended to provide other engineering majors an opportunity to participate in this program with a flexible coursework plan based on their undergraduate degree.

The industrial engineering program is also open to students with undergraduate engineering majors other than industrial engineering.
The establishment of the dual program addresses the critical need for personnel trained in both engineering and management who can integrate an increasingly complex body of knowledge for rapid introduction of new products to the marketplace. The objective of the dual degree program is to prepare graduates to take a leading management role in companies that must react quickly to a dynamic market where forces of competition require rapid changes in design and manufacturing and a short product development cycle.

ADMISSION

Applications are accepted for fall semester only. Applicants for the MS-MBA program must make separate application to, and be competitively and independently accepted by, Graduate Admissions for the Master of Business Administration degree program and the Master of Science degree program with a major in engineering science, industrial engineering, mechanical engineering, or nuclear engineering, and by the Dual Program Committee.

Students will initially apply for the MBA program, indicating on their application the intent to pursue the dual MS-MBA program and the appropriate engineering major (refer to the MBA program for separate instructions). Students accepted for both the MBA and one of the engineering degree programs will be assigned to Dual Program Committee advisors, who will be responsible for course approval and supervision of the students’ progress through the dual program.

Applications by U.S. citizens and permanent residents received after the MBA application deadline (March 1) will be considered as space allows. Additional information is required and different application dates are established by Graduate Admissions for international students.

REQUIREMENTS

All engineering students enrolled in the dual program must complete common coursework designed to provide them with an integrated, multidisciplinary teamwork experience. The MBA curriculum consists of 31 hours of common coursework in the College of Business Administration and 15 hours of common coursework in the College of Engineering. Engineering common coursework includes a 3-hour integrated project course requiring a comprehensive report, and a final examination as required by the Dual Program Committee, to be taken during the first session of summer following the second year.

During the second year dual degree candidates will take courses in their engineering major. The coursework for each option is designed to provide students with a concentration in their major and advanced skills to accomplish their teamwork assignments.

Dual degree candidates enrolled in engineering science option are required to take 18 hours of graduate level engineering courses during the second year of the program. This option requires a coursework plan, approved by the Dual Program Committee, including a concentration such that the student can accomplish his/her teamwork assignments.

Curriculum for Dual MS-MBA Degree
August—First Year
<table>
<thead>
<tr>
<th>Course</th>
<th>Title</th>
<th>Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>BA 511</td>
<td>MBA Core I</td>
<td>3</td>
</tr>
</tbody>
</table>
| Fall—First Year
| BA 512        | MBA Core II                  | 15    |
| IE/ME 504     | Product Development Process  | 1     |
| Spring
| BA 513        | MBA Core III                 | 9     |
| IE/ME 506     | Product Selection and Evaluation | 2 |
| IE/ME 508     | Integrated Product, Process, and Manufacturing System Design | 3 |
| Summer
| —             | Internship                   | —     |
| —             | Multidisciplinary Project    | 1     |
| Fall—Second Year
| BA 514        | Integrated Business Simulation | 1 |
| IE 511*       | Business Planning and Commercialization | 3 |
| IE/ME 509     | Multidisciplinary Project    | 1     |
| —             | Engineering major            | 9-12  |
| Spring
| —             | MBA hub course elective      | 3     |
| IE/ME 509     | Multidisciplinary Project    | 1     |
| —             | Engineering major            | 6-9   |
| Summer (first session)
| IE/ME 594     | Culminating Integrated Project Report | 3 |

Total 61-67

*Students in manufacturing systems engineering concentration may substitute other selected Industrial Engineering courses for these courses.

For additional requirements for Master of Science degree with majors in engineering science, industrial engineering, mechanical engineering, or nuclear engineering, refer to program descriptions for those majors.

The dual degree candidate must satisfy the curriculum and graduation requirements of the engineering major being pursued and the College of Business Administration.

Students withdrawing from the dual degree program before completing both degrees will not receive credit toward graduation in either degree program for courses taken in the other degree program, except as such courses qualify for credit without regard to the dual degree program. The MS and the MBA degrees will be awarded upon successful completion of the requirements of the dual program.

Approval Dual Credit

A maximum of 15 hours of the common program courses completed in the College of Engineering may be counted toward the MBA degree program.

DOCTOR OF PHILOSOPHY
Business Administration Major

The primary objective of the PhD with a major in business administration is to prepare a select number of qualified students for careers in university-level teaching and research and for responsible positions in business and government.
ADMISSION

Students seeking a PhD must be recommended for acceptance by the College of Business Administration to the Office of Graduate Admissions. Actual admission is based on the applicant’s overall standing compared with other applicants and with the number of vacancies in each department. The Graduate Council requires the Graduate Admissions Application, transcripts from all previous college work, and additional information from international students. The college requires the PhD application, scores from the GMAT, and four written recommendations. All materials should be received by the College of Business Administration not later than March 1. Late applications are considered only if space is available.

Under exceptional circumstances, a student may be considered for acceptance into the PhD program without having a master’s degree. An applicant in this situation should have an outstanding undergraduate background and should represent a deep and sincere commitment to the pursuit of a career in research and instruction.

OVERVIEW

The PhD normally requires four years of intensive study and research beyond the master’s degree. Typically, the first two years of a student’s program consist of coursework, writing, and research. The third and fourth years require completion of courses, the comprehensive exam, and completion of the dissertation. It is emphasized that the PhD program of study is structured for full-time students only. Upon acceptance of a student by a particular departmental faculty, the student is expected to remain in residence until the dissertation has been completed and all requirements are met for completion of the PhD.

Since the program focuses on the development of competent scholars, heavy emphasis is placed on both teaching and research skills. As part of the doctoral program, each student is required to serve as a teaching assistant to an undergraduate business class or as a research assistant to a senior faculty member. Students with strong teaching skills may be assigned their own classes. Typically, the College of Business Administration offers financial support for doctoral students during their tenure in the program.

The PhD program is highly flexible, offering a wide array of concentrations and cognates. Moreover, heavy emphasis is placed on individualized instruction and close student-faculty interaction. Instruction takes the form of regular classes, doctoral seminars, and independent study and research. Students are also encouraged to attend lectures and discussions by visiting scholars throughout the year.

There are seven concentrations offered in the PhD program:

- Accounting
- Finance
- Human Resource Development
- Logistics
- Management (Operations Management and Strategic Management)
- Marketing
- Statistics

More detailed information concerning these specific areas is available by writing directly to each department or by accessing the College of Business Administration Web page.

REQUIREMENTS

Doctoral students must file a program of study that has been approved by their doctoral committee within one year of completing their first year of doctoral studies. This committee is nominated by the department chairperson in a student’s intended area of concentration, subject to the Graduate Council’s policies and procedures. Following are specific degree requirements:

- Students must complete at least three years of full-time coursework beyond the baccalaureate degree, with two years of residence on the Knoxville campus.
- Students are required to have a sound and broad base on which to build their PhD coursework. The departmental doctoral advisor will work with the student to determine what, if any, courses need to be completed. All such work is subject to approval by the temporary doctoral advisory committee and the Dean of the MBA Program. Specific concentrations may have prerequisites.
- Research Tools: A minimum of nine semester hours of graduate research methods must be completed. At least 6 semester hours in statistics courses beyond Statistics 531 are required. The remaining three semester hours may be completed in additional statistics courses (not to include Statistics 531) or in other areas such as research methodology, management science, computer science, econometrics, and psychometrics.
- Concentrations: The concentration is the focal point of the PhD program. Students are expected to master the literature and research techniques in the concentration area and to do quality research as evidenced by the preparation of an acceptable dissertation. A minimum of 12 semester hours of coursework is required, including at least 9 hours of doctoral seminars. Graduate work taken in the concentration at other institutions is considered by the temporary doctoral advisory committee in approving the specific coursework required. Available concentrations are: accounting, finance, human resource development, logistics, management (operations management and strategic management), marketing, and statistics. See the appropriate departments for specific course requirements.
- A minimum of nine semester hours of graduate coursework is required in an area outside, but complementary to, the concentration. The student may choose the cognate from one of the following: one of the seven concentration business areas listed above, economics, or a related area in another school or college of the university. Hybrid cognates combining courses from multiple disciplines are permitted with the approval of the doctoral advisor and the temporary doctoral advisory committee.

Comprehensive Examinations

Comprehensive written examinations over the concentration area are required of each person seeking candidacy for the PhD. This examination is administered in two sessions of approximately four hours each. Students qualify in the cognate area by completing a one-session, four-hour examination or an equivalent jointly approved by the student’s major professor and the student’s advisor in the cognate area. Comprehensive examinations are generally offered during the fall and spring terms. Comprehensive examinations must be taken within five years of matriculation.
When either the concentration or cognate area examination is passed, the remaining examination must be passed within the next 13 months.

**Doctoral Committee**

A doctoral student is advised to give serious attention early in the program to the composition of his/her doctoral committee. In accordance with Graduate Council policy, the student and the major professor identify a doctoral committee composed of at least four faculty members, three of whom, including the chair, must be approved by the Graduate Council to direct doctoral research. When the doctoral committee has been formed, the temporary doctoral advisory committee ceases to exist.

**Admission to Candidacy**

Students may apply for admission to candidacy for the PhD after maintaining at least a B average in coursework, successful completion of comprehensive examinations, and acceptance of a research proposal for the dissertation by the student’s doctoral committee.

Admission to candidacy must be approved at least one full semester prior to the date the degree is conferred. (Admission in the fall permits graduation in the following spring semester.)

Application for admission to candidacy must include a listing of all courses taken in each of the fields required for the degree (business functional areas, basic disciplines, concentration and cognate area). Graduate courses accepted from other institutions must be included. Under “Other Requirements,” the date of acceptance of the research proposal by the doctoral committee should be indicated. The application must be approved by the student’s doctoral committee and the Associate Dean before submission to the Office of the University Registrar.

**Dissertation**

Minimum of 24 semester hours: The student must complete a dissertation embodying the results of original research demonstrating the ability to do scholarly writing. The dissertation is supervised by the candidate’s doctoral committee, which must certify its completion and acceptability after oral defense of the candidate’s research effort.

The dissertation normally must be completed within three years of the student’s advancement to candidacy.

**GRADUATE COURSES**

**Business Administration (205)**

501 MBA Career Development (1) Career opportunities available in each concentration. Prereq: Admission to MBA program or consent of Assistant Dean of MBA Program. Satisfactory/No Credit grading only.


510 Customer Responsive Management (3) Management methods that provide flexibility required to respond to diverse customer needs and to adapt to competitive, technological, and operational change. Mass customization, interactive marketing, capacity management economics, and relationship management for industries: health care, consulting, temporary services, professional services, repair services, truck load transportation, emergency response organizations, customer service centers and other responsive organizations.

511 MBA Core I (3) Essential skills of manager: basic information technology skills, teambuilding, and written and oral communication skills. Finance and accounting fundamentals. Introduction to integrated value chain. Prereq: Admission to MBA program or consent of Assistant Dean of MBA Program. Satisfactory/No Credit grading only.

512 MBA Core II (15) Development of roles and responsibilities of business managers. Functional fundamentals: marketing, operations, human resource management. Continuous systems improvement and delivery of customer value. Role of firm in society: stakeholder value, economics, and ethical and legal environment of firm. Personal leadership skills, and assessment of students’ leadership abilities. Integration of value chain: demand management, operations management, process design and management, and logistics management. Prereq: 511 or consent of Assistant Dean of MBA Program.

513 MBA Core III (9) Continuation of the functional fundamentals from 512. Integration of value chain: supply management and resource management. Case studies in integrated management systems for large organizations. Prereq: 512 or consent of Assistant Dean of MBA Program.


561 Management Project I (3) Company project. Preliminary investigation of significant strategic issue (new initiative, program or significant organizational change to enhance organizational effectiveness) in sponsoring organization. Work within firm under guidance of faculty to develop proposal which defines issue and scope of project. Proposal to be approved by company and faculty. Prereq: Admission to executive program of MBA and cooperation of sponsoring organization. Coreq: 551.


581 International Travel (4) This one-hour course provides one-hour credit enrollment for purposes of international travel and cultural exchange programs that are sponsored by the MBA program. Prereq: Admission to MBA program or consent of Assistant Dean of the MBA Program.

593 Directed Independent Study (3) Cross-disciplinary topic of mutual interest to student and faculty. Available only by prearrangement with supervising faculty member. May require approval of Dean of the MBA Program. May be repeated. Maximum 6 hours. Satisfactory/No Credit or letter grade.

599 Executive-In-Residence (3) Interaction with corporate executives from wide spectrum of business disciplines and discussion of domestic and international strategic planning as applied in major corporations. Prereq: MBA core and consent of instructor.
Theoretical foundations and frameworks common to business research. Historical and philosophical science perspectives.

Research processes: philosophical foundations, problem formulation, grounded theory, qualitative methods and analysis, measurement, sources of error, experimental design and analysis, survey design and analysis.

Prereq: Consent of Instructor. May be repeated. Maximum 6 hours.

Seminars that integrate content from various business functions: international business, management information systems.

Department of ACCOUNTING AND INFORMATION MANAGEMENT

http://bus.utk.edu/acct

Daniel P. Murphy, Head
Kenneth E. Anderson, Graduate Liaison

Professors

Anderson, K.E. (Pugh and Company) ......................................................... Indiana
Fisher, B.D., LLM ................................................................. George Washington
Kiger, J.E. (Warren L. Slagle Professor), PhD, CPA ............................... Missouri
Murphy, D.P. (Deloitte & Touche Professor), PhD, CPA ........................ North Carolina
Reeve, J.M. (Sara Clark Professor of Accounting and Business), PhD, CPA ......................................................... Oklahoma State
Roth, H.P., PhD, CPA, CMA ................................................................. Virginia Tech
Stanga, K.G. (Andersen Professor), PhD, CPA ................................. Louisiana State
Williams, J.R. (Ernst & Young Professor), PhD, CPA ........................... Arkansas

Associate Professors

Behn, B.K. (William B. Stokely Distinguished Scholar), PhD, CPA ..................................................... Arizona State
Carcillo, J.V. (William B. Stokely Distinguished Scholar), PhD, CPA, CIA ............................................. Georgia State
Townsend, R.L. (Accounting Excellence Teaching Scholar), PhD, CPA .............................................. Texas Tech
Woodroof, J.B., PhD, CPA ................................................................. Texas Tech

Assistant Professors

DeVries, D.D., PhD, CPA, CISA ......................................................... Arizona State
Pennington, R.R., PhD, CPA ................................................ South Carolina

Lecturers

Anderson, E.B., MAcc, CPA ......................................................... Tennessee
Gilbert, P.S., MS ................................................................. Tennessee
Hendrick, L.W., MBA, CPA, JD ...................................................... Houston
Hollander, A.S., PhD ................................................................. Tennessee
Hughes, H.N., BS ................................................................. Tennessee
Reeves, L.M., MAcc, CPA ................................................ Tennessee
Valades, K.L., MAcc ................................................................. Tennessee

MAJORS

Accounting ................................................................. MAcc
Business Administration .................................................. PhD

MASTER OF ACCOUNTANCY

Accounting Major

The objective of the Master of Accountancy program is to prepare individuals who have a high level of ability and motivation for successful careers in professional accounting and industry. This nationally recognized program uses active learning methods to engage students in global business planning, practices, and strategies. The program offers students the breadth of a broad business perspective and exposure to cutting-edge management issues. It also provides students with the technical depth required for a career in assurance services, information management, or taxation. Coursework includes a particular focus on the development of analytical skills, communication skills (both oral and written), and research skills.

The Master of Accountancy program is a full-time, weekday program. The nature of the program precludes students from simultaneously working full-time outside of classes. UT’s accounting undergraduate and graduate programs are accredited by AACSB International and are among the first programs in the nation to receive this accreditation.

ADMISSION

Students may begin graduate coursework for the MAcc degree only in fall semester. The application deadline is March 1 and applications received after that date will be considered as space allows.

The program is designed both for students who have completed an accredited baccalaureate degree program with a major in accounting and others. Students with an accounting degree from an accredited baccalaureate degree program normally meet all prerequisites for the program. Students with outstanding undergraduate records in areas other than accounting may enter the MAcc program (which starts in the fall semester) by completing coursework in introductory accounting and economics, and the following prerequisite undergraduate courses: Accounting 311, 321, 411, 414, and 431, Information Management 341, and Finance 301 or their equivalents as approved by the Director of the MAcc program. In addition, students choosing the information management concentration must have completed Information Management 351 or an equivalent course in object-oriented programming. All prerequisites must be completed prior to the start of graduate coursework in fall semester.

In addition to the general admission requirements, MAcc applicants are required to take the Graduate Management Admission Test (GMAT) and submit information on forms provided by the Department of Accounting and Information Management. Applicants whose native language is not English must submit results of the Test of English as a Foreign Language (TOEFL).

For admission to the MAcc program, consideration is given to:

• applicant’s academic records with particular attention to the last two years of undergraduate work;
• scores on the GMAT, and TOEFL for those whose native language is not English;
• internships and/or work experience and other activities that demonstrate potential for leadership; and
• recommendations from professors and/or work supervisors.

The admission decision is based on all factors that make up the total application; therefore there is no automatic cut-off for either grade point averages or GMAT scores.

Students will be expected to have a laptop computer for use in the classroom and for assignments. Additional details concerning the hardware and software configurations required are posted on the departmental Web site.
REQUIREMENTS

A student’s program encompasses a minimum of 30 semester hours of graduate coursework. Specifically, the student must complete courses in accounting and other areas as indicated below. Each course is 3 semester hours of graduate credit.

Students take 12 hours each semester and 6 hours in the first summer session.

Program requirements are:

- Business Core (12 hours) Business Administration 521, 522, 523, 524
- Accounting Concentration (18 hours)

Three concentrations are available:

- Assurance Services: Accounting 507, Accounting 518, Accounting 519, Accounting 531; Information Management 541 and 543.
- Information Management: Information Management 541, 542, 543, 549; Accounting 507, and 518.
- Taxation: Accounting 531, 532, 533, 534, 539, and an additional course.

Students may further modify their programs with approval of the Director of the MAcc program.

Transfer Credits

A maximum of six semester hours taken at other AACSB accredited institutions that otherwise conform to the transfer policy of the Graduate Council may be credited toward MAcc degree requirements.

Other Requirements

To qualify for the degree, a student must maintain a B average (3.0) or above in the program. The student must satisfactorily demonstrate his/her ability to recognize, analyze, and solve accounting policy problems and integrate concepts from the various areas of accounting by passing a comprehensive written examination. This examination is included in the capstone courses in each concentration as follows: Accounting 519, 539, and Information Management 549.

DOCTOR OF PHILOSOPHY

Business Administration Major · Accounting Concentration

This degree provides a research-oriented terminal qualification for those seeking entry-level faculty positions in accounting. Students take approximately three years of coursework beyond the bachelor’s degree, including a doctoral sequence designed to expose students to various areas of accounting research. Courses in accounting and other areas are selected to supplement the student’s individual background and to prepare the student in an area of accounting specialization (financial, managerial, auditing, tax or systems). The final year is normally spent completing the doctoral dissertation. Minimum course requirements are 12 hours including 611, 612, 619, and one other accounting course to be approved by PhD accounting program advisor.

GRADUATE COURSES

Accounting (009)

415 Governmental and Nonprofit Accounting (3) Advanced study of governmental and nonprofit entities. Governmental accounting principles, revenues and expenditures, budgeting, and financial reporting. Accounting principles and reporting models of nonprofit organizations. Integration of economic and social issues with reporting standards for governmental and non-business organizations. Prereq: 414 or permission of instructor.

451 Operational Auditing and Consulting (3) Approaches to evaluate an entity’s efficiency and effectiveness in variety of settings and techniques used in consulting to provide entity competitive advantage.

502 Registration for Use of Facilities (1-15) Required for the student not otherwise registered during any semester when student uses university facilities and/or faculty time before degree is completed. May not be used toward degree requirements. May be repeated. Satisfactory/No Credit grading only.

507 Financial Reporting Research and Contemporary Issues (3) Theory and practice of contemporary financial reporting issues are covered with an emphasis on researching the authoritative accounting literature. Specific contemporary issues covered vary each semester. Prereq: Admission to MAcc program or consent of instructor.

518 Professional Standards (3) Basic standards and contemporary issues relevant to assurance providers. Actual practice cases are used to illustrate application. Prereq: Admission to MAcc program or consent of instructor.

519 Seminar in Business Risk and Assurance Methodology (3) Business risk and emerging methodology used by assurance providers. Prereq: Admission to graduate programs or consent of instructor.

521 Advanced Management Accounting (3) Analysis of management accounting and cost management practices and models. Topics include cost behavior, strategies and models for decision making, and performance measurement issues. Prereq: Management Accounting, and either admission to a graduate business program or consent of instructor.

531 Tax Strategy, Tax Research, and Entity Taxation (3) Current issues in tax strategy including investment models, implicit taxes, tax arbitrage, organizational form, and other selected topics. Methods of researching tax issues within the U.S. federal tax system with emphasis on Web-based research tools. Income taxation of business entity operations. Prereq: Admission to MAcc program or consent of instructor.

532 Corporate Taxation and Reorganizations (3) Current issues in corporate taxation including organization and capital structure, distributions, liquidations, acquisitions, and reorganizations. Course emphasizes group projects and presentations. Web-based research tools used extensively. Prereq: Admission to MAcc program or consent of instructor. Prereq/Coreq: 531.

533 Taxation of Partnerships and S Corporations (3) Current issues in partnership and S corporation taxation including partnership formation, operations, allocations, and distributions; LLCs; S corporation election and operations; and comparisons of different flow-through entities. Course emphasizes group projects and presentations. Web-based research tools used extensively. Prereq: Admission to MAcc program or consent of instructor. Prereq/Coreq: 531.

534 Family Tax Planning (3) Methods used to value closely-held businesses, the law and planning strategies related to inter vivos and post-mortem property transfers and the taxation of estates, and financial planning techniques used to meet family tax planning objectives. Prereq: Admission to MAcc program or consent of instructor. Prereq/Coreq: 531.

539 Multi-Jurisdictional Tax Planning and Policy (3) International and state tax law as it pertains to business transactions. Particular emphasis is placed on identifying tax planning opportunities and designing tax strategies to meet planning objectives. Prereq: 531 and either admission to MAcc program or consent of instructor.

592 Graduate Internship in Accounting (3) Full-time resident professional employment for one academic semester involving qualified job experience, written report of responsibilities, and evaluation of student performance. Prereq: Admission to MAcc program or consent of MAcc advisor.

593 Individual Research in Accounting (3) Directed research in topic of mutual interest. Prereq: Admission to MAcc program or consent of MAcc advisor. May be repeated. Maximum 6 hours.

600 Doctoral Research and Dissertation (3-15) P/NP only.

611-612 Doctoral Seminar in Accounting (3,3) Analysis of issues reflected in accounting literature. Prereq: Consent of PhD program advisor.

619 Doctoral Research in Accounting (3) Study of research methodology and application of various research methods in accounting literature. Prereq: Consent of PhD program advisor.
Business Law (216)

511 Business Law and Professional Responsibility (3) Legal framework and ethical implications of business transactions. Principles and practices in law of contracts, commercial transactions, real property, trusts, estates and professional responsibility. Prereq: 301 and admission to MAcc program or consent of instructor. Not available for students with credit for 401.

Information Management (558)

541 Advanced Database Systems (3) Illustrates and applies advanced database techniques including data modeling, database design, SQL, stored procedures, multi-user databases and web databases. Also covered are data security and control issues related to multi-user databases. In addition to MS Access, this course makes use of the Oracle database to introduce concepts and implement assignments. A database project is a major component of this course. Prereq: 341 or consent of the instructor.

542 Application Security and Controls (3) Introduces students to data security, systems controls, and privacy issues regarding Internet applications. Prereq: 541 or consent of instructor.

543 Systems Audit Security and Controls (3) Discusses information systems security, auditing/assurance, planning, and control issues. The course examines security and control issues primarily at the operating system level. Prereq: 541 or consent of instructor.

549 Enterprise Planning, Security and Controls (3) Examines the use of enterprise information systems to achieve strategic and operational advantage, to support managerial decision-making, and to achieve operational control. Prereq: 541 or consent of instructor.

Adjunct Faculty

Bjornstad, David, PhD .........................................................Syracuse
Curlee, T.R., PhD ...............................................................Purdue
D’Urso, V.T., PhD .............................................................Massachusetts Institute of Technology
Schriver, W.R., PhD ..........................................................Tennessee
Shelton, R.B., PhD .........................................................Southern Illinois
Vogt, D.P., PhD .................................................................Syracuse

MAJORS

DEGREES

Economics ........................................................................ MA, PhD

The Department of Economics offers graduate programs leading to the MA and PhD. The MA may be completed by either a thesis or non-thesis option, while the PhD requires successful completion of a dissertation. Applicants to these programs should contact the Director of Graduate Studies, Department of Economics, for further information.

ACADEMIC STANDARDS

A graduate student whose grade point average falls below 3.0 will be placed on probation. A student on probation will be dropped from the program unless his/her cumulative graduate grade point average is 3.0 or higher at the end of the probationary period. The probationary period is defined as the next semester’s coursework established by the degree program for full-time students and the next two semesters’ coursework as established by the degree program for part-time students.

STUDENT’S RIGHT TO PETITION

Graduate students in good academic standing have the right to petition the department for modification of departmental degree requirements and redress of grievances. Petitions must be in writing and addressed to the Director of Graduate Studies.

MASTER OF ARTS

Economics Major

Admission to the MA program is based on undergraduate academic performance and on scores from the general portion of the GRE. The student may choose either the thesis or non-thesis option.

REQUIREMENTS

Non-Thesis Option

Thirty hours of coursework at the 400 level or above. Of these, at least 24 hours (at least 18 hours of which are in economics) must be at the 500 level or above. Of the minimum of 18 hours in economics at the 500 level or above, 12 hours must consist of 511, 512 and 513, 514, and the remaining six hours must be in one field of economics. Of the 30 hours, a maximum of nine hours in courses approved by the department may be taken in fields other than economics. Students electing the non-thesis option are required to pass a final comprehensive examination.

Thesis Option

Thirty hours of coursework at the 400 level or above, including at least 24 hours at the 500 level or above, six hours of which may be thesis hours. Of the remaining 18 hours at the 500 level or above, at least 15 hours must be in economics and must include 511, 512, 513, and 514. A maximum of six hours may be in an area other than economics.
DOCTOR OF PHILOSOPHY
Economics Major

Admission to the PhD program is based on promise of outstanding scholarship as demonstrated by previous academic performance, by scores achieved on the general portion of the GRE, and by recommendations.

REQUIREMENTS
The program requires a minimum of 48 hours of coursework beyond the bachelor’s degree or 24 hours beyond the master’s degree, at least 24 hours of 600 Doctoral Research and Dissertation, and successful completion of the following:

Students are required to complete the following core requirements:

- Economic Theory: Microeconomic theory and macroeconomic theory by a qualifying exam taken not later than the beginning of the fourth semester of study.
- History of Economics: Completion of 515 with a grade of B or better, or by qualifying examination.
- Quantitative Methods: Completion of 581, 582 and 583 with grades of B or better, or by qualifying examination.
- Students failing a qualifying examination must retake the examination the next time offered. A qualifying examination may be taken a third time only with approval of the department. Failing a qualifying examination for a third time will result in dismissal from the doctoral program.
- Students are required to demonstrate competence by comprehensive examination in at least two fields of specialization in economics. Students failing a comprehensive examination must retake the examination the next time offered. A comprehensive examination in a specific field may be taken a third time only with approval of the department.
- Students are required to complete with a grade of B or better two elective courses in economics at the 500 level or above, outside the core subject areas and outside the fields of specialization.
- Students are required to complete a doctoral dissertation and to defend it successfully before the faculty.

Environmental Policy Minor
The program is designed to give master’s and doctoral level graduate students an opportunity to develop an interdisciplinary specialization in environmental policy. While administered through the Political Science Department, the program is coordinated by a committee of representatives from the following participating departments and programs: Agricultural Economics; Botany; Civil and Environmental Engineering; Ecology and Evolutionary Biology; Economics; Forestry, Wildlife and Fisheries; Geography; Management; Planning; Political Science; and Sociology.

Students may request admission to the minor following admission to a graduate program in one of the participating departments. Students in good standing in one of these programs may apply for admission to the minor in environmental policy. The coordinating committee will consider the admission of interested students. Applicants should have a background in both natural and social sciences evidenced by prior coursework or experience.

REQUIREMENTS
One course in environmental studies from the student’s major discipline and one course in quantitative methods are required. These requirements may be fulfilled before or after admission to the minor. All students admitted to the minor will be required to register for at least three hours of Economics 579, Environmental Policy Research Workshop, and to complete successfully the following:

- Ecology and Evolutionary Biology 520 or Plant Sciences 414 or Geography 433 or an equivalent course approved by the coordinating committee.
- Six hours of coursework outside the major discipline approved by the coordinating committee.

Doctoral students seeking a minor in environmental policy must also complete, in addition to above, a policy-relevant dissertation approved by the coordinating committee.

GRADUATE COURSES
Economics (283)

400 Special Topics (3) Topics vary. Prereq: Determined by department. May be repeated.
413 Macroeconomic Fluctuations (3) Analysis of historical data, methods of analyzing macro-economic fluctuations, theoretical explanations of cycles, and role of monetary and fiscal policies in aggregate economy. Major writing requirement. Prereq: Intermediate Macroeconomics or consent of instructor.
462 Economics of Resources and Environmental Policy (3) Economic analysis of environmental policy and allocation of resources. Benefits and costs of development of natural resources and impacts of growth on environment. Major writing requirement. Prereq: 201.
471 Public Finance: Optimal Government Functions and Expenditure Analysis (3) Problems of collective consumption, external effects, public investment, social decision making. Major writing requirement. Prereq: 201.
472 Public Finance: Taxation and Intergovernmental Relations (3) Analysis of individual taxes and of tax systems, non-tax sources of revenue, fiscal federalism. Major writing requirement. Prereq: 201.
482 Introduction to Mathematical Economics (3) Application of basic mathematical tools: calculus, matrix algebra, etc. to major topics of economic theory. Prereq: Intermediate Microeconomics with B or better and Calculus.
500 Thesis (1-15)  P/NP only.
502 Registration for Use of Facilities (1-15) Required for the student not otherwise registered during any semester when student uses university facilities and/or faculty time before degree is completed. May not be used toward degree requirements. May be repeated. Satisfactory/No Credit grading only.
511-512 Microeconomic Theory (3,3) Theory of consumer choice and demand, theory of revealed preference, attributes of goods and implicit prices, market demand, labor supply, individual behavior under uncertainty, theory of firm, theory of production and cost, market structures, derived demand and factor pricing, introduction to welfare economics, market failure and theory of second best, pure exchange.
513-514 Macroeconomic Theory (3,3) Dynamic general equilibrium models, endogenous growth theory, credibility of monetary policy, budget deficits and fiscal policy, consumption, investment, asset pricing, overlapping generations models, real business cycle, search theory, and open-economy macro models.
577 Environmental Economics and Policy Management (3) Interdisciplinary perspective on goals of sustainable economic development and environmental quality. Development of decision-making tools and conflict resolution.


600 Doctoral Research and Dissertation (3-15) P/NP only.


622 International Finance (3) Analysis of macroeconomic adjustment in open economy, international policy coordination, integration of world capital markets, liberalization of non-market economies and the international monetary system. Prereq: 512 and 514.

623 Economic Development: Theories and Policies (3) Principal theories explaining economic behavior in developing countries and policies and strategies used to promote development. Prereq: Undergraduate degree in economics or consent of instructor.

631 Industrial Organization I (3) Standard models of imperfect competition, oligopoly, and asymmetric information. Topics include pricing with market power and strategic decision making. Prereq: Consent of instructor.

632 Industrial Organization II (3) Economics of regulation and antitrust. Topics include public utility regulation, consumer product regulation, occupational safety regulation, environmental regulation and antitrust legislation. Prereq: Consent of instructor.

651 Monetary Theory (3) Study of money, credit, and liquidity as related to real output determination, interest rates, employment, and prices. Prereq: 513.

652 Topics in Monetary Theory (3) Advanced monetary models, issues in monetary policy, open economy monetary theory and policy. Student participation. Prereq: 651.

661 Regional and Urban Location and Development Theory (3) Theory of industrial and agricultural location and human migration. Economic basis for land-use patterns, central places, and urban form. Spatial inequalities and urban problems. National policies for regional and urban assistance.

662 Methods of Regional and Urban Analysis (3) Theory of regional/urban economic structure and growth. Regional income and product accounts, shift and share analysis, economic base studies, and regional/urban input-output models. Theory and problem solution.


672 Public Finance: Taxation and Intergovernmental Relations (3) Theory of taxation; tax incidence and tax efficiency; policy analysis of U.S. tax structure at federal, state, and local levels. Theory of fiscal federalism and intergovernmental relations.

677 Environmental and Natural Resource Economics (3) Alternative paradigms for allocating and valuing environmental, balance of payments, pollution, market failure and development. Student participation. Prereq: 671.

678 Economics of Environmental Policy (3) Topics in environmental policy analysis. Consideration of alternative policy instruments, defining policy objectives and role of risk in decision-making process.

682 Advanced Topics in Cross-Section Econometrics (3) Models with limited dependent variables, panel data analysis, nonparametric estimation, selection models and duration models. Prereq: 582-583 or equivalent.

683 Time Series Econometrics (3) Univariate and multivariate time series modeling of economic data-AR, MA, ARMA, VAR; models of non-stationary time-series unit roots, cointegration and error correction models; time series models of heteroskedasticity-ARCH, ARCH-M, GARCH; exogeneity and causality. Prereq: 582-583 or equivalent.

690 Workshop (3) Advanced topics in economics. Student participation. Prereq: Consent of instructor. May be repeated. Maximum 9 hours.

693 Independent Study (1-3) Directed research on topic of mutual interest to faculty and student. Variable title for transcript purposes. Prereq: Consent of instructor. May be repeated. Maximum 6 hours.

Department of FINANCE

http://bus.utk.edu/finance

James W. Wansley, Head
Phillip R. Daves, Doctoral Program Advisor

Professors

Black, H.A. (James F. Smith Professor), PhD ......................... Ohio State
Boehm, T.P. (AmSouth Scholar), PhD .......................... Washington University (St. Louis)
DeGennaro, R.P. (SunTrust Professor), PhD ........................ Ohio State
Elthardt, M.C. (Castagna Professor), PhD .......................... Georgia Tech
Philippatous, G.C. (Distinguished Chaired Professor of Banking .......................... New York
Shries, E. (Voigt Professor), PhD .................................................. UCLA
Wachowicz, Jr. J.M. (AmSouth Scholar), PhD .......................... Illinois
Wansley, J.W. (Clayton Homes Chair of Excellence), PhD ........ South Carolina

Associate Professors

Auxier, A.L. (Flaskerud Investments Teaching Scholar), PhD ....... Iowa
Collins, M.C. (Home Federal Faculty Fellow), PhD .................. Georgia
Daves, P.R., PhD .......................................................... North Carolina
Murphy, D.L., PhD .................................................. Florida

Assistant Professor

Woidtke, T., PhD .......................................................... Tulane

Instructors

Murphy, S.P., MBA .......................................................... Loyola University
Sexton, L.S., MBA .......................................................... Tennessee

MAJOR DEGREES

Business Administration .......................................................... MBA, PhD

MASTER OF BUSINESS ADMINISTRATION

Business Administration Major · Finance Concentration

The curriculum offers courses for those interested in careers in corporate financial management, security analysis and investments, banking and financial institutions, and real estate. Minimum course requirements are three courses: 511 plus two from the following: 512, 525, 532, 581, and 599 (Torch Fund only).

DOCTOR OF PHILOSOPHY

Business Administration Major · Finance Concentration

Minimum course requirements for the concentration: Finance 641, 651, 652, 653, and 654.

GRADUATE COURSES

Finance (349)

502 Registration for Use of Facilities (1-15) Required for the student not otherwise registered during any semester when student uses university facilities and/or faculty time before degree is completed. May not be used toward degree requirements. May be repeated. Satisfactory/No Credit grading only.

511 Strategic Management for Creation of Financial Value (3) Strategic issues in corporate finance, investments, and capital markets: how firms can employ strategic financial tools to create value. Use of derivatives, risk management, real options, fixed income securities, venture capital, initial public offerings and financial restructuring. Prereq: Business Administration 511, 512, and 513, or consent of instructor.

512 Problems in Financial Management (3) Readings and cases that apply finance theory to real-world investment, financing, and asset management problems. Prereq: 511 and Business Administration 511, 512, 513, and 514, or consent of instructor.
525 Investment Analysis and Portfolio Management (3) Investment process, portfolio applications. Asset allocation decision in global setting; organization and functioning of financial markets; equity and bond valuation; asset valuation models; equity and bond portfolio management; options, forwards and futures contracts; evaluation of portfolio performance; and review of alternative economies and emerging markets. Prereqs: 511 and Business Administration 511, 512, 513, and 514, or consent of instructor.


551 Financial Management of a New Enterprise (3) Financial issues associated with formation, control, and long-term planning of new enterprise. Acquisition of venture capital. Prereq: 511 and Business Administration 511, 512, 513, and 514, or consent of instructor.

581 Real Estate Investment and Finance (3) Financial and market analysis used to make real estate investment decisions. Effects of variety of financing options on rate of return on income-producing properties. Effect of various financing options on consumer’s decisions to purchase. Relationship between primary and secondary mortgage markets and impact of those markets on cost and availability of funds for real estate lending. Effects of government intervention (taxation, subsidization, and regulation) in both real estate and mortgage markets. Prereqs: 511 and Business Administration 511, 512, 513, and 514, or consent of instructor.

599 Special Topics in Finance (1-3) Topics vary. Prereq: Consent of instructor. May be repeated. Maximum 6 hours. Satisfactory/No Credit or letter grade.

600 Doctoral Research and Dissertation (3-15) P/NP only.

641 Seminar in Finance (1-3) Capital markets, utility theory, asset pricing, theory of the firm, capital structure, dividend policy. Prereq: Consent of instructor. Satisfactory/No Credit or letter grade.

651 Seminar in Corporate Finance (1-3) Recent theoretical and empirical developments in micro-finance literature. Topics vary. Prereq: 641 and consent of instructor. May be repeated. Maximum 6 hours. Satisfactory/No Credit or letter grade.

652 Seminar in Asset Pricing and Markets (1-3) Recent theoretical and empirical developments in finance. Topics vary. Prereq: 641 and consent of instructor. May be repeated. Maximum 6 hours. Satisfactory/No Credit or letter grade.

53 Seminar in Financial Institutions (1-3) Theoretical and empirical studies of financial institutions. Topics: modeling banking firm, efficiencies in banking, bank lending arrangements and asymmetric information, international competitiveness, and deposit insurance. Prereq: 641 and consent of instructor. May be repeated. Maximum 6 hours. Satisfactory/No Credit or letter grade.

654 Special Topics (1-3) Recent developments in finance. Topics vary. Prereq: 641 and consent of instructor. May be repeated. Maximum 6 hours. Satisfactory/No Credit or letter grade.

**HUMAN RESOURCE DEVELOPMENT PROGRAM**

http://bus.utk.edu/hrd

Michael L. Morris, Program Liaison

**Associate Professors**

Kupritz, V., PhD ................................................................. Virginia Tech
Morris, M.L., PhD, CFLE .................................................... Tennessee
Stout, V.J., EdD ................................................................. Tennessee

**Assistant Professors**

Bartley, S.J., PhD .............................................................. Tennessee
Lim, D.H., PhD ................................................................. Illinois
Pierce, R.H., PhD ............................................................. Ohio State

**Lecturer**

Mackey, D.L., PhD ............................................................ Tennessee

**MAJORS**

Human Resource Development .................................................. MS
Business Administration ......................................................... PhD

The human resource development program integrates occupational education, training, career development, and organizational development. The curriculum goal of the program centers around producing organizational effectiveness through a guiding framework that focuses on developing human resource skills and understanding of organizational culture, systems and structures, and decision-making; individual, group, organizational learning; high performance teaming; organizational change, communication processes; and analysis, action, measurement of economic outcomes. human resource development required (core) courses and human resource electives are offered in diverse formats enabling working professionals to obtain the master’s or doctoral degree.

**MAJOR OF SCIENCE**

Human Resource Development Major

The Master of Science degree with a major in human resource development provides a flexible graduate program for professionals wishing to pursue in-depth study within and across subject areas of human resources.

**ADMISSION**

Applicants for admission should request information and application forms from both the Office of Graduate Admissions (218 Student Services Building) and the Human Resource Development Program (408 Stokely Management Center, The University of Tennessee, Knoxville, Tennessee 37996).

Applicants are to submit an application for admission to Graduate Admissions. Additionally, applicants are to submit an application, three letters of reference from individuals familiar with their potential for success in academic work, and a statement describing personal career objectives directly to the Human Resource Development Program. Applicants must hold a bachelor’s degree from an accredited institution and present evidence of ability to do graduate work, including a GPA of 3.0 on a 4.0 scale for the last two years of undergraduate work. Any student below this level of academic quality must justify admission via other exceptional credentials. If the applicant has prior work experience in human resource development, a reference letter should also be provided by the work supervisor. Applicants without an undergraduate degree in an area related to human resource development, previous HR employment experience, or a statistical background may be required to complete additional course work as part of their program. Recent Graduate Record Examination (GRE) or Graduate Management Admission Test (GMAT) scores are required of all applicants. Deadline: New students are admitted in fall semester only. Applications must be received by March 1.

**REQUIREMENTS**

The human resource development master’s degree program is a 39 hour non-thesis program. All students must take the program core of 18 hours consisting of Human Resource Development 510, 556, 557, 559, 561, and 563. In addition to the program core, all students must complete Management 521 and six hours of 400 and/or 500 level courses in human resource management. For the remaining 12 hours, students will select four out of the following courses: Human Resource Development 511, 517, 518, 519, or 520.
DOCTOR OF PHILOSOPHY
Business Administration Major · Human Resource Development Concentration

ADMISSION
Applicants for admission should request information and application forms from both the Office of Graduate Admissions, 218 Student Services Building, and the Human Resource Development Program, 408 Stokely Management Center, The University of Tennessee, Knoxville, Tennessee, 37996.

Applicants are to submit an application for admission to Graduate Admissions. Additionally, applicants are to submit an application, three letters of reference from persons familiar with their potential for success in doctoral work, a statement describing personal career objectives, and a sample of written work directly to the Human Resource Development Program. Deadline: New students are admitted in fall semester only. Applications must be received by the Graduate Admissions Office and Human Resource Development Program by March 1.

Applicants must hold a master’s degree from an accredited institution and present evidence of ability to do PhD work, including having maintained a graduate GPA of 3.3 on a 4.0 scale or better. Applicants without a graduate degree in an area related to human resource development may be required to complete additional course work as part of their program. If the applicant has prior work experience in human resource development, human resource management, or a related occupational area, a reference letter should be provided by the work supervisor. Recent Graduate Record Examination (GRE) or Graduate Management Admission Test (GMAT) scores are required of all applicants. Any person whose native language is not English must submit results of the Test of English as a Foreign Language (TOEFL).

REQUIREMENTS
The Doctor of Philosophy degree with a major in business administration and a concentration in human resource development is for graduate students who seek careers in higher education or as managers/administrators of human resources. The curriculum (60 hours) is designed to enable students to achieve professional objectives, develop needed competencies, and gain desirable experiences and understanding of human resources. Students not possessing a master's degree before acceptance to the program maybe required to complete additional course work before enrolling into any courses associated with the doctoral program. Students must be in residence full time for one year; must maintain an overall 3.0 grade point average with no more than one grade below B in the Human Resource Development courses, research core, and business core; students who did not complete a thesis in their master’s program must complete a predoctoral research project prior to beginning dissertation work; and must pass a comprehensive examination and must pass a final oral examination on their dissertation research. Detailed information regarding the PhD concentration program of study may be obtained from the program liaison. Course equivalents and substitutions must be approved by the student’s doctoral committee.

Note: For latest update, check the homepage of the Human Resource Development Program through the College of Business Administration’s Web site.

Course Requirements

<table>
<thead>
<tr>
<th>Course Requirements</th>
<th>Hours Credit</th>
</tr>
</thead>
<tbody>
<tr>
<td>1 Human Resource Development Core</td>
<td>6</td>
</tr>
<tr>
<td>2 Human Resource Development Seminars</td>
<td>9</td>
</tr>
<tr>
<td>3 Research Core</td>
<td>12</td>
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<tr>
<td>4 Business Core</td>
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<td>Dissertation</td>
<td>24</td>
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<td>Total</td>
<td>60</td>
</tr>
</tbody>
</table>

1 Human Resource Development 602 (fall 1st Year), 603 (spring 1st Year).
2 Students consult with doctoral advisor and committee to select 3 courses from: Human Resource Development 605, 606, 607, 608, 609, 613.
3 Statistics 531-532 or 537-538 or equivalent; Statistics 579 or Industrial/Organizational Psychology 627 or equivalent; Marketing 612.
4 Marketing 611; Management 571; Industrial/Organizational Psychology 586.

GRADUATE COURSES

Human Resource Development (529)

500 Thesis (1-15) P/NP only.

502 Registration for Use of Facilities (1-15) Required for the student not otherwise registered during any semester when student uses university facilities and/or faculty time before degree is completed. May not be used toward degree requirements. May be repeated. Satisfactory/No Credit grading only.

503 Problems in Lieu of Thesis (3) May be repeated. Maximum 6 hours. Satisfactory/No Credit grading only.

509 Implementation of Human Resource Development Systems (3) The internship provides experiential learning for students who come to human resource development without practical real world experience. The internship is an opportunity to apply classroom knowledge, obtain additional human resource experience, and reflect on the knowledge and experience. The corporate experience provides additional human resource knowledge and assists the student in research and career advancement. Prereq: 510.

510 Foundations of Human Resources (3) Students develop a working definition and understanding of the foundations that grid the academic discipline and profession of Human Resources. Students develop knowledge of the historical, theoretical, and philosophical foundations as well as the core models of learning, performance, change and management that promote best practices in the field. Students are introduced to the disciplines of training and development, human expertise, organizational development, and management including human resource management goals and activities.


513 Special Topics in Human Resource Development (1-3) Topics vary in research, theory and current issues in Human Resources. Prereq: Consent of instructor. May be repeated. Maximum 9 hours.

514 Individual Study in Human Resource Development (3) Prerequisite: Consent of supervising instructor. Approval form must be filed in office of the Program Liaison. May be repeated. Maximum 6 hours.

517 Career Development (3) Examination of processes and practices that facilitate the individual’s leadership development, performance improvement and career goals in relation to the organization’s present and future human resource needs, including identification of personal responsibilities and organizational opportunities through successful career development systems.

518 Performance Improvement Systems and Technologies (3) Provides studies of concepts, strategies, tools, and trends of performance improvement technologies. Major emphasis will be on the planning, facilitating, and implementation of performance technologies that support human resource functions and facilitate their value to organizations. Prereq: 510.

519 Human Resource Problems (3) Accommodates experiential learning for students who have a background in human resource development. In an employment context, students identify, analyze design, develop, implement, and evaluate a practical human resource development intervention. Prereq: 510 and 511.
520 Collaborative Strategies in Human Resource Development (3) Examines the strategies for collaboration and teambuilding within organizational systems. The course assists human resource professionals understand the processes associated with teambuilding including defining types of teams, rewarding and evaluating team performance, operating principles and communication within teams. The primary focus of this course will be creating the high performance team. Prereq: 563.

556 Organizational Development Strategies (3) Overview of the roles, strategies, and challenges of organizational development with a focus on the dynamics of organizational change and the internal integration of organizational culture in a global context. Coreq: 510.

557 Design Strategies (3) Design methodology for business and industry interventions; development of instructor-based, technology-based, and self-directed training for training and development and consulting. Coreq: 510.

559 Evaluation Strategies (3) Evaluation strategies for professional settings. This course examines the importance of evaluation, how to conduct appropriate evaluations, instrumentation and analysis strategies, how to assess the return-on-investment, and guidelines for creating an evaluation report. Prereq: 557.


563 Organizational Communication Strategies (3) Students investigate organizational communication theory, purposes, channels, practices, styles, approaches, skills, and tools. Process improvement strategies span internal, and external communication and target oral, written, and nonverbal communications that occur in face-to-face, technology-mediated, and blended organizational communication contexts.

600 Doctoral Research and Dissertation (3-15) P/NP only

602 Proseminar I in Human Resource Development (3) Basic thought, concepts, and issues required for advanced graduate study in human resource development. Must be taken during first year of study in program. Consent of instructor for non-HRD students.

603 Proseminar II in Human Resource Development (3) Basic thought, concepts, and issues required for advanced graduate study in human resource development. Must be taken during first year of study in program. Consent of instructor for non-HRD students.

605 Seminar in Organizational Theory and Environmental Context (3) Organizational structure and basic systems influencing individual, group and organizational behavior with an emphasis on environmental context impacting worker performance and opportunities for learning transfer. Ecological approach to organizational effectiveness is addressed. Prereq: 602 and 603.

606 Research in Human Resource Development (3) Theory and application of qualitative approaches to social science and human resource development research. Emphasis is on ethnographic methods to obtain in-depth information about behaviors and beliefs of people in natural settings. Use of methods: structured interviews using heuristic elicitation methodology, participants observation and case studies. Prereq: 602 and 603.

607 Seminar in Organizational Communication Processes (3) Students study how the elements and complexities of organizational communication lead to potential miscommunications. This course involves analysis of contemporary and leading-edge organizational communication systems and processes. Students address prevention and minimization of destructive system and process complexities, and maximization of constructive elements; and explore organizational and individual accountability for creating, sustaining, and improving organizational communication systems, processes, and environments. Prereq: 602 and 603.

608 Seminar in Work/Life Interface Issues (3) Interface of work/life topics: how does work and life issues interconnect and influence each other from a psychosocial perspective? The goal of the course will be to help human resource professionals better understand and address the critical linkages between work and life to encourage personal and professional well-being. Prereq: 602 and 603.

609 Seminar in Technological Frameworks for Human Resource Development (3) Provides instruction and discussions on technology and human performance issues in today’s organization. Topics include technology diffusion, performance improvement technologies, and privacy and ergonomic issues in utilizing technologies to improve human performance in organizations. Prereq: 602 and 603.

511 Internship in Human Resource Development (3) Field experience in relevant organizations. Prereq: Consent of instructor. May be repeated. Maximum 6 hours. Satisfactory/No Credit grading only.

613 Seminar in Selected Topics (3) Topics in human resource development. May be repeated. Prereq: 602 and 603.

**INDUSTRIAL AND ORGANIZATIONAL PSYCHOLOGY**

(Interdepartmental)

http://bus.utk.edu/iopsych

David J. Woehr, Liaison and Director

**Committee**

James, L.R., Management
Judge, W.Q., Management
Ladd, R.T., Management
Rentsch, J.R., Management
Rush, M.C., Management
Schumann, D.W., Marketing and Logistics
Woehr, D.J., Management

**MAJOR DEGREE**

Industrial and Organizational Psychology .................................................. PhD

The doctoral program is designed to prepare students for personnel, managerial, and organizational research; for university teaching; and for consulting relationships with industry. The program emphasizes a scientist/practitioner model in applying and conducting research based on accepted theory, organizational behavior, psychology, management, and statistics. The degree program is administered by a committee appointed by the Dean of Graduate Studies on recommendations from the Management Department Head and the Program Director.

It is intended that students entering the Industrial/ Organizational Psychology program will represent widely different undergraduate and graduate backgrounds including psychology, business administration, engineering, science, and liberal arts. The first-year program provides the opportunity to take courses that will assist the students in attaining a reasonable level of sophistication in areas of deficiency.

**DOCTOR OF PHILOSOPHY**

Industrial And Organizational Psychology Major

**ADMISSION**

Applicants for admission should request information and application forms from both the Office of Graduate Admissions (218 Student Services Building) and the Director, Industrial and Organizational Psychology Program, (408 Stokely Management Center, the University of Tennessee, Knoxville, Tennessee 37996-0545).

Two separate applications must be completed: one Graduate Application for Admission (apply for major in industrial and organizational psychology) and one application for admission to the Industrial and Organizational Psychology program. Deadline: New students are admitted in fall semester only, and applications must be received by Graduate Admissions by February 1.

The master’s degree in Industrial and Organizational Psychology is generally not required of individuals pursuing a doctoral degree.
At least one year of college mathematics and one course in statistics are required. Ordinarily, an undergraduate grade point average of 3.7 or above is required with no evidence of special weakness in mathematics and physical sciences.

Test scores on each section of the general portion (verbal and quantitative) of the Graduate Record Examination (GRE) are required. Customarily, those students admitted to the program have performed at or above the 69-79th percentile on the general tests. (This corresponds to a raw score of approximately 600 on each of the tests.)

REQUIREMENTS

The PhD with a major in industrial and organizational psychology can be completed with a minimum of 90 semester hours in the major. Students must be in residence full time for one year: must maintain an overall 3.0 grade point average with no more than one grade below B in the Industrial/Organizational Psychology, General Psychology, and Research core; must complete an applied research project prior to beginning dissertation work; must pass a comprehensive examination; and must pass a final oral examination on their dissertation research.

Course Requirements

<table>
<thead>
<tr>
<th>Course Description</th>
<th>Hours</th>
<th>Credit</th>
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<tbody>
<tr>
<td>1Industrial/Organizational Psychology Core</td>
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<tr>
<td>Research Core</td>
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<td></td>
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<tr>
<td>1General Psychology Core</td>
<td>9</td>
<td></td>
</tr>
<tr>
<td>1Industrial/Organizational Psychology Seminars</td>
<td>9</td>
<td></td>
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<tr>
<td>Approved Electives</td>
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<tr>
<td>Supervised Practicum, Internship, or Field Training (690)</td>
<td>15</td>
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<td>Ethics (635 or equivalent)</td>
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<td>Dissertation (600)</td>
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1Industrial and Organizational Psychology 567, 568, and 569.
2Statistics 537 and 538 or equivalents, 579, 679 or equivalent, 605 or equivalent.
3One course in each of the following areas: biological bases of behavior, cognitive bases of behavior, history, and systems of psychology.
4600 level Industrial/Organizational Psychology courses, from a program committee approved list.
5Courses supporting the student’s course of study.

GRADUATE COURSES

Industrial and Organizational Psychology (568)

502 Research for Use of Facilities (1-15) Required for the student not otherwise registered during any semester when student uses university facilities and/or faculty time before degree is complete. May not be used toward degree requirements. May be repeated. Satisfactory/No Credit grading only.

525 Research in Industrial/Organizational Psychology (1-3) Available only to students admitted to program or by rearrangement with program director. May be repeated. Maximum 6 hours. Satisfactory/No Credit or letter grade.

567-568 Proseminar in Industrial/Organizational Psychology (3,3) Basic thought, concepts, and issues required for advanced graduate study in industrial and organizational psychology. Must be taken during first year of study in program. Consent of instructor required for non-program students.

569 Applied Measurement for Industrial/Organizational Psychology (3) Basic techniques for collection and evaluation of individual and organizational data using both classical and modern psychometric techniques. Relevant statistical models: reliability analysis, and exploratory and confirmatory factor analyses.

600 Doctoral Research and Dissertation (3-15) P/NP only.

605 Advanced Research Methods in Psychology (3) Critical analysis of new and evolving techniques for psychological research; new statistical and psychometric methods.

610 Individuals in Organizations Seminar (3) Bridging principles and processes which link individual attributes with more macro organization concerns: culture, climate, and group decision-making.

611 Seminar in Organizational Leadership (3) Current theories, concepts, and issues associated with psychology of organizational leadership. Prereq: 567-568 or consent of instructor.

612 Seminar in Work Motivation (3) Current theories, concepts, and issues associated with psychology of work motivation. Prereq: 567-568 or consent of instructor.

613 Seminar in Performance Appraisal (3) Current issues, problems, and research in performance appraisal and criterion development; applications in compensation. Prereq: 567-568 or consent of instructor.

614 Seminar in Employee Selection (3) Current issues, concerns, and methods used in employee selection. Prereq: 567-568 or consent of instructor.

615 Seminar in Organizational Training and Development (3) Current issues, problems, and research in training and development. Prereq: 567-568 or consent of instructor.

625 Topics in Organizational Psychology (3) Topics vary. May be repeated. Maximum 9 hours.

626 Topics in Industrial Psychology (3) Topics vary. May be repeated. Maximum 9 hours.

627 Structural Equation Models in Organizational Research (3) Issues related to analysis of organizational data using structural equation and related techniques.

628 Personality Assessment (3) Review of key domains of social cognition: measurement systems which use individual differences in social-cognitive biases as basis for measuring personality.

635 Ethical and Professional Issues in Industrial/Organizational Psychology (3) Issues involved with ethical practice in research, academic, organizational, and consulting situations.

690 Supervised Practicum, Internship or Field Training in Industrial/Organizational Psychology (1-15) One credit hour per 30 hours of practice. Satisfactory/No Credit or letter grade.

Department of MANAGEMENT

http://bus.utk.edu/mgt

William Q. Judge, Interim Head

Professors

James, L.R. (Pilot Oil Chair of Excellence in Management), PhD ……… Utah Judge, W.Q., PhD ……………………………… North Carolina Ladd, R.T., PhD ………………………………………… Georgia Miller, A. (William B. Stokely Professor of Management), PhD … Washington Neel, C.W., PhD ………………………………………… North Carolina Rentsch, J.R., PhD ………………………………………… Maryland Rush, M.C., PhD ………………………………………… Akron Stahl, M.J. (Distinguished Professor of Management), PhD ………… Rensselaer Polytechnic Institute Woehr, D.J., PhD ………………………………………… Georgia Institute of Technology

Associate Professor

Elenkov, D.S., PhD ………………………………Massachusetts Institute of Technology

Assistant Professor

Smith, A.D., PhD ……………………………… North Carolina

Lecturers


Emeritus Faculty

Dewhirst, H.D., PhD ……………………………… Texas Fowler, O.S., PhD ……………………………… Georgia Maddox, R.C., PhD ……………………………… Texas

MAJOR

DEGREES

Business Administration ……………………………… MBA, PhD
MASTER OF BUSINESS ADMINISTRATION
Business Administration Major · Operations Management Concentration

Minimum course requirements: 540, 541, and one course from the following: Management Science 526, 551, Statistics 566, Industrial Engineering 522, 526, or an applicable course approved by designated faculty.

DOCTOR OF PHILOSOPHY
Business Administration Major · Management Concentration

Minimum course requirements are:
- For operations management—541 and 542; two semesters of 640 (may be repeated for credit); one additional semester of approved doctoral seminar work.
- For strategic management—610, 611, 612, 613.

Environmental Policy Minor

The department participates in a program designed to give graduate students an opportunity to develop an interdisciplinary specialization in environmental policy. See Department of Economics for program description.

GRADUATE COURSES
Management (625)

502 Registration for Use of Facilities (1-15) Required for the student not otherwise registered during any semester when student uses university facilities and/or faculty time before degree is completed. May not be used toward degree requirements. May be repeated. Satisfactory/No Credit grading only.

511 Organizational Theory: Integrated Structure and Behavior (3) Cases, group projects, discussion, organizational theories, organizational effectiveness; contextual factors of organizations: environment, size, technology; organizational structure configurations, organization design; social influences on organization effectiveness: motivation, leadership, group behavior, intergroup relations, organization change and development.

521 Human Resource Management (3) Personnel functions and human resources management. Community relations, recruiting, selection, training, performance evaluation, wage and salary administration, legal framework as it affects personnel.

531 Management of Technology-Based Organizations (3) Role of technology and innovation in formulation and implementation of strategy. Management of research and development function and coordination with other functions. Management of scientists and engineers.

540 Logistics and Operations Management (3) Analysis of methods and models for understanding supply chain flows and processes. Introduction to management strategies and techniques applicable to design of systems in logistics and operations processes. Prereq: Business Administration 511, 512, and 513 or consent of instructor. (Same as Logistics 510.)

541 Operations Management (3) Techniques applicable to design of systems in operations planning and control in manufacturing and service industries. Modeling real-world systems through problem definition, supporting data structure design, model design, solution, implementation, and maintenance.

551 Management of New Ventures (3) Integration of various functional disciplines and their application to general management of ventures formed both within larger corporations and independently. Preparation of a venture plan, case analysis.

571 International Management (3) Analysis of environment of international business firms and impact of internal and external factors on managerial decisions.

593 Directed Independent Study (1-3) Topic of mutual interest. Available only by prearrangement with supervising faculty member. May be repeated. Maximum 6 hours. Satisfactory/No Credit or letter grade.

595 Selected Topics in Current Management Issues (3) In-depth consideration of current issues. Managerial impact of emerging topics. Prereq: Consent of instructor.

600 Doctoral Research and Dissertation (3-15) P/NP only.

610 Seminar in Advanced Organization Theory (3) Analysis of functioning of complex organizations. Classical and open systems models, organization growth and change, organizational effectiveness and design of complex organizations.

611 Seminar in Strategic Management I (3) Analysis of concepts and research in strategic management.

612 Seminar in Strategic Management II (3) Analysis of concepts and research in strategic management.

613 Seminar in Strategic Management III (3) Review and analysis of important books and monographs in strategic management. Understanding evolution of thought and emergence of distinct paradigms.

Department of MARKETING AND LOGISTICS

http://mlbus.uky.edu

Robert B. Woodruff, Head
Lloyd M. Rinehart, Graduate Liaison (Logistics)
D.W. Schumann, Graduate Liaison (Marketing)

Professors
Barnaby, D.J., PhD.................................................................Purdue
Cadotte, E.R., PhD..............................................................Ohio State
Davis, Jr., F.W., PhD.........................................................Michigan State
Mentzer, J.T. (Bruce Chair of Excellence in Business), PhD ....Michigan State
Schumann, D.W. (William J. Taylor Professor in Business), PhD .....Missouri
Woodruff, R.B. (Proffitt’s, Inc. Professor of Marketing), DBA ..............Indiana

Associate Professors
Dahbolikar, P.A., PhD.......................................................Georgia State
Foggin, J.H., DBA...........................................................Indiana
Gardial, S.F., PhD ..........................................................Houston
Holcomb, M.C., PhD .....................................................Tennessee
Kahn, K.B., PhD..............................................................Virginia Tech
Moon, MA, PhD ..............................................................North Carolina
Reizenstein, R.C., PhD ....................................................Cornell
Rentz, J.O., PhD ..............................................................Georgia
Rinehart, L.M., PhD .........................................................Tennessee
Stank, T.P. (Dove Professor of Logistics), PhD .........................Georgia

Assistant Professors
Esper, T.L., PhD ............................................................Arkansas
Flint, D.J., PhD ...............................................................Tennessee
Myers, M.B., PhD ........................................................Michigan State
Sahin, F., PhD .................................................................Texas A&M

Instructors
Collins, M.E., MBA ..................................................Middle Tennessee State

Emeritus Faculty
Dicer, G.N., DBA ..........................................................Indiana
Mundy, R.A., PhD ........................................................Penn State

MAJOR DEGREES
Business Administration .................................................MBA, PhD

MASTER OF BUSINESS ADMINISTRATION
Business Administration Major

Logistics Concentration

Minimum course requirements: Logistics 510, 546, and 547.

Marketing Concentration

Minimum course requirements: Marketing 520 and 530.
Graduate Courses

LOGISTICS (632)

502 Registration for Use of Facilities (1-15) Required for the student not otherwise registered during any semester when student uses university facilities and/or faculty time before degree is completed. May not be used toward degree requirements. May be repeated. Satisfactory/No Credit grading only.

510 Logistics and Operations Management (3) (Same as Management 540.)

546 Logistics and Supply Chain Strategy (3) Development of strategy for logistics systems and supply chain processes. Executive-level integration of logistics strategy with marketing, production, finance, and other decision areas. Prereq: 510 and Business Administration 511, 512, 513, and 514.


593 Independent Study (3-6) Directed research and study. Prereq: Consent of instructor. May be repeated.

599 Special Topics in Logistics (3-6) Seminar designed to study specific current problems in logistics. Topic announced prior to offering. Prereq: Consent of instructor. May be repeated.

600 Doctoral Research and Dissertation (3-15) P/NP only.

611 Theoretical Foundations (3) (Same as Marketing 611.)

612 Research Methods I (3) (Same as Marketing 612.)

613 Supply Chain Management Thought (3) Survey of concepts and research methods of interorganizational systems. Supply chains will be studied from multiple perspectives including the following: institutional design and structure, transaction cost economics, operations and logistics cost economics, exchange behaviors and strategies, supply chain relationship types, and evaluation of supply chain performance.

614 Evolution of Logistics Thought (3) Survey of concepts, frameworks, theory, research issues, and empirical research in content areas related to logistics and supply chain management. Conceptual foundations, issue controversies, and future directions.

615 Logistics Models (3) Analysis of contemporary models and methodologies in logistics research, topical coverage at discretion of instructor.

693 Independent Study (1-6) Directed research on subject of mutual interest to student and faculty. May be repeated. Prereq: Consent of instructor.

MARKETING (632)

502 Registration for Use of Facilities (1-15) Required for the student not otherwise registered during any semester when student uses university facilities and/or faculty time before degree is completed. May not be used toward degree requirements. May be repeated. Satisfactory/No Credit grading only.

510 Principles of Marketing Management for Non-MBA Students (3) For students from other disciplines interested in obtaining knowledge of marketing discipline at graduate level.

520 Marketing and Customer Value (3) Frameworks, techniques, and processes required for customer relationship management and demand planning in organizations. Twin problems of analyzing markets and customers and translating these analyses into actionable marketing strategies. Prereq: Business Administration 511, 512, and 513 or consent of instructor.

530 MBA Marketing Concentration (6) Product management: Complex, interdisciplinary nature of product development and product management. Strategic issues during product life cycle, from idea conception to product development to commercialization to eventual product dismissal. Integrated communications: Strategies and tactics associated with communicating value to customers. One-to-one marketing approaches, role of personal selling in communication mix, and advertising and promotions management. Global marketing management: Cross-national forces that enable firms to design and maintain competitive marketing and supply chain networks across multiple geographic locations. Prereq: 520 and Business Administration 511, 512, 513, and 514.

593 Independent Study (3) Directed research and study. Prereq: MBA Core and consent of instructor. May be repeated. Maximum 6 hours.

599 Special Topics Seminar (3) Topics vary: market forecasting, market segmentation, services marketing, marketing channels, and related issues. Prereq: Consent of instructor. May be repeated. Maximum 6 hours.

600 Doctoral Research and Dissertation (3-15) P/NP only.

611 Theoretical Foundations (3) Theoretical foundations and frameworks common to business research. Historical and philosophical science perspectives.

612 Research Methods I (3) Research process: philosophical foundations, problem formulation, grounded theory, qualitative methods and analysis, measurement, sources of error, experimental design and analysis, and survey design and analysis.

613 Research Methods II (3) Examination of qualitative research theoretical foundations and methodologies. Application of qualitative research methods to theory building research. Topics include formulating research questions, designing qualitative research studies, sampling, data generation techniques, data analysis/techniques, evaluating qualitative research, and writing qualitative research reports.

614 Contemporary Marketing Thought (3) Representative topics comprising content of marketing knowledge: macromarketing, markets, channels, and competitor behavior; marketing strategy; marketing mix tools; and ethical issues in marketing. Examination of research for contributions to advancing knowledge and opportunities for new research.

615 Consumer Behavior Research (3) Theoretical perspective and research processes describing people in their roles as buyers, users, and evaluators of goods and services. Important research issues and practical applications related to consumer behavior.

616 Measurement (3) Measurement and measurement process: design and development of tools, process of testing, and determination of reliability and validity.

617 Special Topics (3) Topics vary: marketing strategy, advanced consumer behavior, research methodology, influence and persuasion theory and strategy, pricing issues, international marketing issues, and nonprofit organization marketing issues.

693 Independent Study (1-6) Directed research on subject of mutual interest to student and staff member. May be repeated.
MANAGEMENT SCIENCE

MASTER OF SCIENCE

Management Science Major

The MS program in management science is designed as preparation for a career in the application of quantitative techniques for the solution of complex problems. The program’s flexibility also makes it appropriate as preparation for doctoral study in management science.

Management science coursework will expose students to both the theoretical development of quantitative techniques and their application to managerial decision making. In addition to the development of sufficient mathematical maturity for creative use of quantitative skills, the program requires concentrated study in a supporting area.

Supporting areas are available in other departments of the College of Business Administration as well as in computer science, public administration, geography, health, and other areas, subject to approval by the Management Science Committee.

ADMISSION

The master’s program requires three applicant recommendation forms and the GRE or GMAT. Applications are encouraged from all majors, but a mathematics background equivalent to the completion of at least two years of college calculus and proficiency in a computer language is required. The program is designed to be completed in four semesters by full-time students. However, students may start the program in any semester and may pursue an MS in management science on a part-time basis.

DOCTOR OF PHILOSOPHY

Management Science Major

The PhD in management science is designed to prepare students for research related to the application of mathematical tools to complex decision making. Three primary objectives of the program are:

• to provide, through management science coursework, a thorough knowledge of common management science/operations research mathematical models and their uses;

• to provide sufficient advanced study in a supporting area to qualify the graduate for a joint faculty position in the supporting area and management science. The candidate may choose from the business functional areas (accounting, finance, marketing, management, and transportation and logistics) or other disciplines, (e.g., computer science, forestry, ecology, and public administration);

• to develop in the student, through coursework in mathematics, statistics and computer science, a high degree of mathematical maturity to enhance a potential career in management, research, or teaching.

ADMISSION

The doctoral program requires three applicant recommendation forms and the GRE or GMAT, in addition to the Graduate Council’s requirements.

REQUIREMENTS

A minimum of 48 semester hours of coursework taken for graduate credit (exclusive of thesis or dissertation) is required. Some of this may be the coursework from a master’s program although a master’s is not a prerequisite for the doctorate. The candidate must complete a minimum of 24 semester hours at the University of Tennessee, Knoxville, at least 6 of which must be
at the 600 level. Both of these requirements are also exclusive of thesis or dissertation credits. Entering students who have completed graduate studies in applicable fields will be granted course credits for work which is equivalent to required courses in the program.

The program includes approximately 16 to 20 semester hours of coursework in the applied area.

Qualifying Examinations

The student must demonstrate mastery of probability theory and statistical inference, Statistics 563, 564, by passing a written qualifying examination.

Mastery of 12 to 14 semester hours in mathematics coursework must be demonstrated by passing a written qualifying examination. Topics normally include numerical analysis, either Mathematics 471, 472, 453, and 571, or 571-572, and real analysis, Mathematics 445-446. Other options may be approved. In exceptional circumstances, the faculty will consider waiving the mathematics and/or statistics qualifying examinations.

These requirements generally are completed by the end of the first year of the program.

There is no foreign language requirement.

Comprehensive Examination

Prior to admission to candidacy for the degree, and normally after completion of the second year of the program, the student must pass a written comprehensive examination covering the theory of deterministic and stochastic management science models. Topics included in this examination are determined on an individual basis. Students will be expected to demonstrate an integrative ability that goes beyond simple mastery of course content.

Research and Dissertation

The student must complete 24 semester hours of Management Science 600: Doctoral Research and Dissertation, through which he/she is expected to make a significant contribution to the science. A final oral examination is conducted over the dissertation and such other segments of the program that the faculty committee deems appropriate. This effort, which is beyond the minimum 48 hours of coursework, normally is completed in the third year of the program.

Academic Standards

A graduate student in the College of Business Administration whose grade point average falls below 3.0 will be placed on probation. A student on probation will be dropped from the program unless his/her cumulative graduate grade point average is 3.0 or higher at the end of the probationary period. The probationary period is defined as the next semester’s coursework as established by the degree program for full-time students and the next two semester’s coursework as established by the degree program for part-time students.

Prerequisites For Management Science Courses

The management science program is interdisciplinary and students in other degree programs are encouraged to enroll in management science courses. Course prerequisites are designed to indicate the level at which courses are taught. Interested students whose prior coursework does not match the prerequisites are encouraged to seek the instructor’s guidance and consent to enroll.

STATISTICS
MASTER OF SCIENCE
Statistics Major

The MS program in statistics provides students with the foundations in theory and practice required for careers in applied statistics. In addition to the education traditionally offered in such a program, the department offers a concentration in industrial statistics, which provides unique opportunities for experiences in practical applications of statistics. Through involvement in the University of Tennessee Practical Strategies for Process Improvement Institute and related programs, department faculty participates in a variety of consulting and research projects in industry. Students may supplement their classroom study with an industrial internship and participation in research projects dealing with industrial problems. Department faculty also collaborates with researchers from many academic disciplines. Statistics graduate students may gain consulting experience by working with faculty involved in these consulting activities. All students are encouraged to participate in supervised internship or consulting activities as part of their graduate program.

Individuals with undergraduate or graduate degrees in other disciplines are encouraged to enter the program. The candidate’s mathematics background should include differential and integral calculus of several variables. Individuals with limited mathematics background should seek departmental guidance regarding specific ways in which they may prepare themselves for the program by taking coursework as non-degree students. Requests for application forms and further information may be sent to the Director of Graduate Studies, Department of Statistics, Operations and Management Science, Stokely Management Center, University of Tennessee, Knoxville, Tennessee 37996-0532 or mleitnaker@utk.edu or http://stat.bus.utk.edu.

ADMISSION

Applicants for statistics must submit results of the Graduate Record Examination (GRE) general portion, although GMAT exam scores may be substituted. Applicants for the statistics program must have completed at least two years of college-level mathematics, including the calculus of several variables and matrix algebra, and be proficient in a computer language. Applicants whose native language is other than English must submit results of the Test of English as a Foreign Language (TOEFL).

REQUIREMENTS

A minimum of 33 credit hours must be completed for the master’s degree. Required of all students are 6 hours in statistical methods, 6 hours in statistical theory and 1 hour in statistical computing. Students must complete a minimum of 21 hours in approved statistics courses, exclusive of consulting, internship, independent study, or thesis.

Thesis or Independent Study

The thesis option for the master’s degree requires the student to complete 6 hours for the thesis. Alternatively, the non-thesis option requires a minimum of 3 hours for an independent study project.
Comprehensive Examination

Students must pass a two-part written comprehensive examination covering theory and methods. Upon failing either part of the examination, the student may retake it. The result of the second examination is final. For students writing a thesis, this examination must be passed before the thesis is defended.

INTERCOLLEGIATE GRADUATE STATISTICS PROGRAM

The intercollegiate graduate statistics program (IGSP) is a formal University of Tennessee academic program established to enable students to earn either a minor or an MS in statistics simultaneously with a master’s or doctoral degree in another department. Approved coursework taken to meet doctoral requirements in the student’s home department may also be credited toward the MS in statistics. Similarly, approved coursework in statistics taken to meet the requirements for a master’s or doctoral degree in another department may also count toward the minor in statistics. The program is open to graduate students in all departments, which have an approved minor, and/or MS joint major curriculum offered through the program. The program is administered by an executive committee, consisting of college representatives from all colleges with approved programs, with advisory input from the program faculty.

Requirements

<table>
<thead>
<tr>
<th>Degree Program</th>
<th>Hours in Approved IGSP Courses</th>
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<tbody>
<tr>
<td>Master’s in home department, minor in statistics</td>
<td>9</td>
</tr>
<tr>
<td>Master’s in home department, MS in statistics*</td>
<td>24</td>
</tr>
<tr>
<td>Doctorate in home department, minor in statistics</td>
<td>15</td>
</tr>
<tr>
<td>Doctorate in home department, MS in statistics*</td>
<td>24</td>
</tr>
</tbody>
</table>

*The MS in statistics requires 33 hours.

Course options consist of courses in statistics, offered either by the Department of Statistics, Operations and Management Science or by other departments, which have been reviewed and approved by the IGSP Executive Committee. Students taking an MS in statistics must pass the two-part comprehensive examination covering statistical theory and methods. Students taking a minor in statistics in conjunction with a doctorate in another field must pass a written comprehensive examination in statistics, constructed and evaluated by the student’s examination committee. No formal comprehensive examination is required of students earning a statistics minor along with a master’s in another field beyond questions, which the home department wishes to include as part of the comprehensive examination for the master’s degree.

Procedures

- The student’s home department must have approved a program of courses with the Executive Committee. That program will specify the sequences of statistics courses, chosen from the IGSP approved list, that are considered appropriate by the home department. Students who wish to participate in this program should contact their college representative or the Chair of IGSP in the Department of Statistics, Operations and Management Science.
- The student’s graduate committee must include a member of the IGSP faculty. For students seeking doctoral degrees or the MS in statistics, the committee member must be a faculty member in the Statistics, Operations and Management Science Department.
- The student’s Admission to Candidacy form must contain all courses required for the chosen degree program set off in a group and labeled “Statistics courses required for the minor or MS in statistics.” Should the student not decide to apply for admission to the program until after completion of some of the courses, the student’s major professor should file a program change with the cooperating departments and assist the student in obtaining a Department of Statistics, Operations and Management Science faculty member to serve on the student’s graduate committee.

Successful completion of the statistics MS or minor is recognized by appropriate documentation on the student’s transcript. Students who do not complete the requirements of the minor or MS will still receive academic credit for the statistics courses they have successfully completed.

For information contact msyounger@utk.edu or http://www.bus.utk.edu/stat/igsp.

DOCTOR OF PHILOSOPHY

Business Administration Major · Statistics Concentration

This concentration provides students with a broad knowledge of the field of statistics, the ability to apply statistics in practical situations to problems of business and industry and the ability to develop new statistical methods; all of which takes place while students are exposed to coursework in the basic functional areas of business.

Minimum course requirements are: 592, 662, 663, 664, 691, and two courses chosen from 666, 673, 674, 679.

Graduate Certificate in Applied Statistical Strategies

The Department of Statistics offers a graduate certificate in applied statistical strategies. The program is designed for the part-time student, and several of the courses are offered through distance education.

The 12-credit certificate is available by completing two required courses, 571-572, and two electives selected from the following: 573, 575, 579, and 585 or 566 or other graduate statistics courses as approved by the Statistics Graduate Program Committee Chair.

Graduate Courses

Management Science (627)

500 Thesis (1-15) P/NP only.
502 Registration for Use of Facilities (1-15) Required for the student not otherwise registered during any semester when student uses university facilities and/or faculty time before degree is completed. May not be used toward degree requirements. May be repeated. Satisfactory/No Credit grading only.
526 Advanced Applications of Systems Modeling and Simulation (3) (Same as Industrial Engineering 526.)
531 Mathematical Programming (3) Linear programming solution procedures, duality, sensitivity, and parametric analysis, linear fractional, piecewise-linear, separable and integer programming, transportation linear programs. Prereq: Fundamentals of matrix algebra.

532 Stochastic Models in Management Science (3) Discrete-time Markov chains, Poisson processes, continuous-time Markov chains, renewal theory, and queueing theory. Prereq: Statistics 563 and Mathematical Analysis or consent of instructor.

533 Computational Mathematical Programming (3) Computational aspects of mathematical programming models, in particular for large systems. Prereq: 531 and proficiency in computer language.

534 Management Science Methods in Business (3) Application of methods from 531, 532, and 533 to real world problems in business/industry.

551 Leveraging Information Through Descriptive and Prescriptive Modeling (3) Concepts and tools for emulating business operations (descriptive modeling) and for determining optimal operational or tactical strategies (prescriptive modeling). Visualization, optimization, and simulation concepts reinforced through hands-on experience with technologies: geographic information systems (GIS), spreadsheet-based models, simulation packages, and supply chain optimization software.

593 Management Science Problems (1-6) Directed study on subject of mutual interest.

600 Doctoral Research and Dissertation (3-15) P/NP only.

621 Network Flows (3) Treatment of network optimization algorithms, transportation and transshipment models and primal-dual and primal basis tree methods. Prereq: 531 or equivalent.

631 Integer Programming (3) Theoretical and computational aspects of linear programming with integer variables, branch and bound, cutting plane, and group theoretic algorithms. Prereq: 531 or equivalent.

651 Nonlinear Optimization (3) Kuhn-Tucker theory in nonlinear programming solution procedures for constrained and unconstrained nonlinear programs, search techniques, quadratic programming, duality and sensitivity analysis. Prereq: 531 or equivalent, proficiency in computer language. (Same as Industrial Engineering 602.)

681 Special Topics (3) Prereq: 531, 532 and consent of instructor. May be repeated. Maximum 9 hours.

691-92 Management Science Seminar (1, 1) Subjects selected from current literature. Satisfactory/No Credit grading only.

**Statistics (962)**


500 Thesis (1-15) P/NP only.

502 Registration for Use of Facilities (1-15) Required for the student not otherwise registered during any semester when student uses university facilities and/or faculty time before degree is completed. May not be used toward degree requirements. May be repeated. Satisfactory/No Credit grading only.

531 Survey of Statistical Methods I (3) Univariate and bivariate data collection and organization, statistical estimation and hypothesis testing; analysis of relationships for categorical and numerical data, including Chi-square tests and simple linear and quadratic regression. Use of computing facilities required. Prereq: 531 and 537. Credit not given for both 531 and 537.

532 Survey of Statistical Methods II (3) Multiple linear regression, including use of dummy variables; single and multiple factor analysis of variance and covariance; issues in experimental design and analysis. Use of computing facilities required. Prereq: 531.

537 Statistics for Research I (3) Principles and application of statistical methodology, integrated with considerable use of major statistical computing system. Probability and probability distributions, forming and testing hypotheses using parametric and nonparametric inference methods. Matrix-based simple linear regression and correlation. Credit not given for both 531 and 537. Prereq: 1 year of undergraduate mathematics and 1 undergraduate statistics course.

585 Principles of Statistical Process Management (1-3) Statistical and other techniques applied to management of organizational processes. Prereq: Consent of department head.

587 Graduate Seminar (1) Directed readings and active participation in colloquium program of Department of Statistics and of student’s minor program. Prereq: Consent of statistics department director of graduate studies. May be repeated. Maximum 2 hours. Satisfactory/No Credit grading only.

592 Internship (1-6) Supervised off-campus experience in application of statistical principles and methods in business, industry, or government. Written and oral report. Prereq: 4 courses in graduate-level statistics or consent of statistics department director of graduate studies. May be repeated. Maximum 6 hours. Satisfactory/No Credit grading only.
593 Independent Study (2-6) Faculty directed readings and investigation of specified topic in probability or statistics. Written report and oral presentation. Prereq: 2 courses in statistics and consent of the statistics department director of graduate studies. May be repeated. Maximum 6 hours. Satisfactory/No Credit or letter grade.

595 Statistical Consulting Practicum (1-6) Supervised experience helping on-campus researchers plan, manage data, and develop and perform analyses specific to designs and hypotheses. Discussion of activities in regular seminar meetings. Final written reports and/or detailed diaries. Prereq: 572 or 538. May be repeated. Maximum 6 hours.

600 Doctoral Research and Dissertation (3-15) P/NP only.

662 Computational Methods in Statistics (3) Up-to-date computational methods in statistics: open architecture interactive computational languages supplemented by other statistical packages with graphical capabilities. Statistical computing, numerical methods for linear models and generalized linear models, nonlinear statistical methods, matrix computations and special matrices, essentials of Monte Carlo simulation, and resampling techniques. Prereq: Knowledge of programming language and 572 or consent of instructor.


670 Advanced Sparse Linear Models (3) Experimentation for product and process improvement: response surface methodology and robust design methods; mixture experiments; optimal design topics; distribution theory and inference for linear models. Prereq: 573 or consent of instructor.


677 Statistical Modeling (3) Modern techniques of statistical modeling: predictive, likelihood, Bayesian, and information-based model selection and evaluation paradigms. Application of techniques in various types of models for both continuous and discrete data modeling problems. Interactive computational tools. Prereq: 564 and 572 or 538, or consent of instructor.

679 Multivariate Statistical Modeling (3) Modern information based techniques and model selection in multivariate analysis, informational tests of significance with multivariate data, multivariate analysis of variance, multivariate regression and variable selection, multivariate cluster analysis, common principal component model, factor analysis model, covariance structural models with latent variables, mixture-model cluster analysis. Prereq: Matrix algebra and 564, or matrix-based linear models with experience in interactive computing, or consent of instructor.

683 Special Topics in Statistics (1-3) Presentation of specialized topics in statistics. May be repeated. Maximum 6 hours.

691 Graduate Seminar in Applied Statistics (3) Reading of literature and discussion of open problems of importance to industry: design of experiments, modeling, process control, regression, and reliability. Prereq: Consent of instructor. Satisfactory/No Credit or letter grade.

693 Independent Study (1-6) Directed research on subject of mutual interest to student and faculty member. May be repeated. Maximum 6 hours.