Admission Requirements
Applicants must have completed a B.A. in either French, German or Spanish to be accepted into this program. Both graduates of institutions in the United States and those with undergraduate degrees from institutions outside the United States must have a grade point average of at least 3.0. Consideration will also be given to applicants who do not have an undergraduate degree in one of the three foreign languages but do have the equivalent of an undergraduate major in one of them.

Degree Requirements
Candidates must complete a minimum of 63 semester hours of coursework beyond the bachelor's degree in addition to 24 hours of doctoral research and dissertation. For candidates with French or Spanish as a first concentration, two tracks are available:

The coursework for Track I must be distributed as follows: at least 39 hours in the first concentration; at least 18 hours in the second concentration; and at least 6 hours in a cognate field.

The coursework for Track II must be distributed in this way: at least 45 hours in the first concentration; at least 12 hours in the second concentration; and at least 6 hours in a cognate field. Because Track II students will have taken 12 graduate hours instead of 18 hours in the second concentration, they will normally not be eligible to teach that field at institutions which follow SACSCOE guidelines for college foreign language teaching.

The coursework for all concentrations must be distributed as follows:

1. First Concentration: German. A minimum of 39 hours of German courses beyond the bachelor's degree, distributed as follows:
   - 400 level: A maximum of 6 hours of 400-level classes taken for the M.A. may be applied.
   - 500 level: A minimum of 21 hours must be taken. These must include German 512, 519, 520, and 560. Thesis hours are excluded. If 512 is used as part of a second concentration in applied linguistics, another course must be substituted in the first concentration.
   - 600 level: A minimum of 12 hours must be taken, exclusive of dissertation hours.

2. Second Concentration: A minimum of 12 (German or Track I) or 18 (Track II) hours, beyond the bachelor's degree, taken in the field of applied linguistics or in a second language, either French, German, Italian, Portuguese (Track II only), Russian or Spanish. For Track I and German, 12 of these hours must be at the 500 level or above. For Track II, 3 of these hours must be at the 500 level or above.

   French students choosing applied linguistics must take French 421 or 429, 425, 512, and 9 (Track I) or 3 (Track II) hours of appropriate electives in English or French. German students choosing applied linguistics must take German 425, 435, 510, or 512, 3 hours of German linguistics, such as 426, 436, 631, or 632, and 6 hours of linguistics electives in English or German. Spanish students choosing applied linguistics must take Spanish 421 or 425, 426, 512, and 9 (Track I) or 3 (Track II) hours of appropriate electives in English or Spanish. The student's graduate advisor must approve the electives chosen.

3. Cognate Field. Six hours in graduate courses numbered 400 and above in a field outside the department of language family of the first concentration but related to the student's principal area of research.

Students choosing applied linguistics as a second concentration are strongly urged to take their cognate work in a second language.

4. Additional requirements: For any languages taken as a first or second concentration, a student must demonstrate competence by taking a test. The test will include reading, writing, listening, and speaking, and should be completed by the time the student reaches 40 hours of study beyond the bachelor's degree. Standardized examinations that may be used for this purpose include applicable portions of either the National Teacher's Exam, the M.A. Examination for Teachers and Advanced Students, or the proficiency standards of the United States Foreign Service Institute (FSI).

   If a student has not chosen a third language as his or her cognate area, basic competence (determined by a reading examination with translation into English administered by the department) in a third language is required. If the student's first and second languages are Romance languages, the third language should be chosen from another language family.

   For students choosing applied linguistics as an area of second concentration, reading competence in a second language is required. Competence will be determined by translation of a text from the foreign language into English, the test to be administered by the department.

   A comprehensive examination on the language and literature of the first and second concentrations must be passed before the student may be admitted to candidacy. The candidate is required to defend his/her dissertation in an oral examination. Central emphasis is put on the doctoral dissertation as a final test of the candidate's scholarly qualifications.

   Graduate Teaching Assistants with a second concentration in another language may have the opportunity and will be strongly encouraged to instruct in the languages of both their first and second concentration, subject to staffing needs.

   Doctoral students are strongly encouraged to reside and study abroad and will be assisted in identifying potential sources of financial support (e.g., Fulbright, McCleire, Rotary fellowships).

Modern Foreign Languages and Literatures

ACADEMIC COMMON MARKET
An agreement among southern states for sharing graduate programs allows legal residents of some states to enroll in certain programs at UT on an in-state tuition basis. The A.M. program in Modern Foreign Languages is available to residents of the state of Alabama. Additional information may be obtained from the Admissions Specialist in the Office of Graduate Admissions and Records.

Asian Languages

GRADUATE COURSES
431 Readings in Chinese Literature (3) Prereq: Mastery of intermediate-level Chinese or consent of instructor. May be repeated. Maximum 9 hrs.
451 Readings in Japanese Literature (3) Prereq: Mastery of intermediate-level Japanese or consent of instructor. May be repeated. Maximum 9 hrs.

French

GRADUATE COURSES
411 French Literature of the 16th Century (3) Highlights of 16th-century French literature. Excerpts from Rabelais and Montaigne, readings of poems from writers from Lyon and members of Pléiade. Prereq: 300-level literature course.
413 French Literature of the 18th Century (3) Major works of Enlightenment. Prereq: 300-level literature course.
414 French Literature of the 19th Century (3) Major works of Realism, Naturalism and Naturalism. Prereq: 300-level literature course.
416 Survey of Francophone Literature (3) Examination of French literature outside metropolitan France, particularly Africa and Caribbean. Prereq: 300-level literature course.
420 French Cinema (3) French cinema from earliest days through New Wave directors. Prereq: 300-level literature course.
421 French Cinema (3) French cinema from earliest days through New Wave directors. Prereq: 300-level literature course.
421 Phonetics (3) Foundation in science of phonetics. Practical exercises in individual performance. Laboratory training highly recommended. Graduate credit not allowed for departmental majors. Prereq: Intermediate Composition and Conversation or equivalent.
422 Advanced Grammar (3) Improving one's written French by studying basic and more refined structures of French language. Writing creative free-style compositions. Prereq: Intermediate Composition and Conversation or equivalent.
423-4 Advanced Conversation (1,1) Informal conversatio...
German

**GROUNDCOURSES**

331-32 Elements of German for Upper-Division and Graduate Students (3,3) Elements of language, elementary and advanced readings, and a final 10,000 word translation project. Open to graduate students preparing for language examinations, and upper-division students desiring reading knowledge of the language. No credit for students having completed 101-02 or 107. 332 may be repeated. Maximum 6 hrs. Undergraduate credit only.

411-12 Advanced Conversation and Composition (3,3) Prereq: 311-12 or equivalent or consent of department.

415 Special Topics (3) Topics vary. May be repeated. Maximum 6 hrs.

420 Selected Topics in German Literature from 1750 to the Present (3) Prereq: 6 hrs of 300-level courses (excluding 331-32 and courses in English translation) or equivalent.

421 German Lyric Poetry (3) Prereq: 6 hrs of 300-level courses (excluding 331-32 and courses in English translation) or equivalent.

422 German Drama (3) Prereq: 6 hrs of 300-level courses (excluding 331-32 and courses in English translation) or equivalent.

423 German Narrative Prose (3) Prereq: 5 hrs of 300-level courses (excluding 331-32 and courses in English translation) or equivalent.

424 German Literary Movements (3) Survey of major periods in development of German literature since 1750: problems and pitfalls of periodization.

425 Introduction to Descriptive Linguistics (3) (Same as French 425, Spanish 425, and Linguistics 425.)

426 Methods of Historical Linguistics (3) Phonetics, distinctive feature analysis, sound change types, nature of sound change, principles of reconstruction, and fundamental assumptions about language change through time. Survey of non-phonological linguistic change, language families, Proto-Indo-European, and other proto languages. Prereq: 6 hrs of upper division foreign language courses (excluding courses in translation or graduate reading courses). (Same as French 426, Spanish 426, and Linguistics 426.)

435 Structure of the German Language (3) Con-structive German-English segmental and suprasegmental phonology, contrastive English-German linguistic structures, selected topics in advanced German grammar and syntactic analysis. Prereq: 6 hrs of upper division German language courses (excluding courses in translation or graduate reading courses). (Same as Linguistics 436.)

436 History of the German Language (3) Deve-lopment of German language from Indo-European through Proto-Germanic, High German, Middle High German to New High German. Internal and external linguistic history of German speech. Prereq: 6 hrs of upper division German language courses (excluding courses in translation or graduate reading courses). (Same as Linguistics 436.)

485 Business German (3) Survey of German used in fields of business, government, administration, and economics. Prereq: 6 hrs of upper division German excluding courses in translation and graduate reading courses.

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

502 Registration for Use of Facilities (3-15) 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. S/NC only. E

510 German Phonetics and Advanced Grammar (3) Advanced work in phonetics, pronunciation, and selected topics in German grammar. For teachers and prospective teachers. Prereq: Consent of instructor.

520 Prossecinal (2) Advanced training in use of bibliographical and reference tools; illustrative problems; problem preparation.

541 Medieval German Language and Literature (3) Introduction to Middle High German.

550 Studies in German Literature (3) Content varies. May be repeated. Maximum 6 hrs.

552 German Enlightenment, Rococo, and Sturm und Drang (3) Content varies. May be repeated. Maximum 6 hrs.

553 German Classicism and Romanticism (3) Content varies. May be repeated. Maximum 6 hrs.

555 German Realism and Naturalism (3) Content varies. May be repeated. Maximum 6 hrs.

556 Modern German Literature 1890-1945 (3) Content varies. May be repeated. Maximum 6 hrs.

560 German Literary Theory and Criticism (3)

561-62 Directed Readings in German Language and Literature (3,3)

591 Foreign Study (1-15) See College of Arts and Sciences.

592 Off-Campus Study (1-15) See College of Arts and Sciences.

593 Independent Study (1-15) See College of Arts and Sciences. Letter grade or S/NC.

594-95 Directed Readings in German (3,3) Directed readings in German.

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

654-55 Directed Readings in German Language and Literature (3,3) Directed readings in German language and literature.

684-85 Directed Study in German Language and Literature (3,3) Directed study in German language and literature.
Modern Foreign Languages and Literatures 153

**Italian**

**GRADUATE COURSES**

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Prerequisites</th>
</tr>
</thead>
<tbody>
<tr>
<td>401</td>
<td>Dante and Medieval Culture (3) Introduction to significance of great Italian writer</td>
<td>Prereq: 212 or consent of instructor.</td>
</tr>
<tr>
<td>402</td>
<td>Petrarch and Boccaccio (3)</td>
<td>Prereq: 212 or consent of instructor.</td>
</tr>
<tr>
<td>403</td>
<td>Literature of the Rinascimento (3) From Pusio to Tasso, Quattrocento and Cinquecento</td>
<td>Prereq: 212 or consent of instructor.</td>
</tr>
<tr>
<td>405</td>
<td>Modern Italian Poetry (3)</td>
<td>From Pascoli to Montale. Prereq: Italian 212 or consent of instructor.</td>
</tr>
<tr>
<td>406</td>
<td>The Modern Italian Novel (3)</td>
<td>From Manzoni to Calvino. Prereq: 212 or consent of instructor.</td>
</tr>
<tr>
<td>409</td>
<td>Directed Readings (3)</td>
<td></td>
</tr>
<tr>
<td>410</td>
<td>Italian Theatre (3) Survey of Italian theatre from Renaissance to present.</td>
<td>Prereq: Intermediate Italian or consent of instructor.</td>
</tr>
<tr>
<td>421</td>
<td>Topics in Italian Literature and Cinema (3) Italian literature and cinema from 1930</td>
<td>Prereq: 212 or consent of instructor.</td>
</tr>
<tr>
<td>422</td>
<td>Advanced Grammar (3) Fine points of grammatical structures.</td>
<td>Required for all majors. Available to non-native speakers only. Prereq:</td>
</tr>
<tr>
<td>423</td>
<td>Advanced Conversation (3) Develops speaking skills to advanced level through wide range of activities. Available to non-native speakers only. Prereq: Intermediate Conversation and Composition</td>
<td>Intermediate Conversation and Composition or Consent of Instructor.</td>
</tr>
<tr>
<td>424</td>
<td>Advanced Composition (3) Develops writing skills to advanced level through numerous compositions on assigned topics. Available to non-native speakers only. Prereq: 422 or consent of instructor.</td>
<td>Intermediate Conversation and Composition or Consent of Instructor.</td>
</tr>
<tr>
<td>425</td>
<td>Introduction to Descriptive Linguistics (3) (Same as French 425, German 425, and Linguistics 425.)</td>
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</tr>
<tr>
<td>426</td>
<td>Methods of Historical Linguistics (3) (Same as French 428 and Linguistics 428.)</td>
<td></td>
</tr>
<tr>
<td>429</td>
<td>Romance Linguistics (3) (Same as French 426 and Linguistics 426.)</td>
<td></td>
</tr>
<tr>
<td>430</td>
<td>History of Spanish Language (3) Evolution of Spanish language from its origins to present</td>
<td>Major differences between Hispanic-American and Iberian Spanish. Prereq: Intermediate Composition and Grammar.</td>
</tr>
<tr>
<td>431</td>
<td>Spanish Civilization (3) Social, economic, and cultural achievements of Spanish people from origin of their civilization until today. Prereq: Aspects of Spanish and Spanish-American Literature or equivalent.</td>
<td></td>
</tr>
<tr>
<td>435-36</td>
<td>Survey of Spanish Literature (3,3) 435--Spanish literature through Golden Age, 436--Spanish literature since 1700. Prereq: Aspects of Spanish and Spanish-American Literature or equivalent.</td>
<td></td>
</tr>
<tr>
<td>450</td>
<td>Hispanic Drama (3) Close reading and analysis of representative works by selected dramatics of each period, either Spanish or Spanish-American. Topics vary. Prereq: Aspects of Spanish and Spanish-American Literature or consent of instructor.</td>
<td>May be repeated with consent of department. Maximum 6 hrs.</td>
</tr>
<tr>
<td>451</td>
<td>Hispanic Prose (3) Close reading and analysis of representative works by selected novelists, essayists, and short story writers of Spain or Spanish America. Topics vary. Prereq: Aspects of Spanish and Spanish-American Literature or equivalent.</td>
<td>May be repeated with consent of department. Maximum 6 hrs.</td>
</tr>
<tr>
<td>452</td>
<td>Hispanic Poetry (3) Major poets of each period, either Spanish or Spanish-American. Topics vary.</td>
<td></td>
</tr>
</tbody>
</table>

**Spanish**

**GRADUATE COURSES**

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<th>Course Code</th>
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</tr>
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<tbody>
<tr>
<td>421</td>
<td>Phonetics (3) Prereq: Intermediate Conversation and Composition or Consent of Instructor</td>
<td></td>
</tr>
<tr>
<td>422</td>
<td>Advanced Grammar (3) Fine points of grammatical structures.</td>
<td>Required for all majors. Available to non-native speakers only. Prereq:</td>
</tr>
<tr>
<td>423</td>
<td>Advanced Conversation (3) Develops speaking skills to advanced level through wide range of activities. Available to non-native speakers only. Prereq: Intermediate Conversation and Composition or Consent of Instructor.</td>
<td>Intermediate Conversation and Composition or Consent of Instructor.</td>
</tr>
<tr>
<td>424</td>
<td>Advanced Composition (3) Develops writing skills to advanced level through numerous compositions on assigned topics. Available to non-native speakers only. Prereq: 422 or consent of instructor.</td>
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</tr>
<tr>
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<td>Introduction to Descriptive Linguistics (3) (Same as French 425, German 425, and Linguistics 425.)</td>
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<td>426</td>
<td>Methods of Historical Linguistics (3) (Same as French 428 and Linguistics 428.)</td>
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<tr>
<td>429</td>
<td>Romance Linguistics (3) (Same as French 426 and Linguistics 426.)</td>
<td></td>
</tr>
<tr>
<td>430</td>
<td>History of Spanish Language (3) Evolution of Spanish language from its origins to present</td>
<td>Major differences between Hispanic-American and Iberian Spanish. Prereq: Intermediate Composition and Grammar.</td>
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<td>431</td>
<td>Spanish Civilization (3) Social, economic, and cultural achievements of Spanish people from origin of their civilization until today. Prereq: Aspects of Spanish and Spanish-American Literature or equivalent.</td>
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<tr>
<td>435-36</td>
<td>Survey of Spanish Literature (3,3) 435--Spanish literature through Golden Age, 436--Spanish literature since 1700. Prereq: Aspects of Spanish and Spanish-American Literature or equivalent.</td>
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<td>450</td>
<td>Hispanic Drama (3) Close reading and analysis of representative works by selected dramatics of each period, either Spanish or Spanish-American. Topics vary. Prereq: Aspects of Spanish and Spanish-American Literature or consent of instructor.</td>
<td>May be repeated with consent of department. Maximum 6 hrs.</td>
</tr>
<tr>
<td>451</td>
<td>Hispanic Prose (3) Close reading and analysis of representative works by selected novelists, essayists, and short story writers of Spain or Spanish America. Topics vary. Prereq: Aspects of Spanish and Spanish-American Literature or equivalent.</td>
<td>May be repeated with consent of department. Maximum 6 hrs.</td>
</tr>
<tr>
<td>452</td>
<td>Hispanic Poetry (3) Major poets of each period, either Spanish or Spanish-American. Topics vary.</td>
<td></td>
</tr>
</tbody>
</table>

**Portuguese**

**GRADUATE COURSES**

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<th>Course Code</th>
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</tr>
</thead>
<tbody>
<tr>
<td>400</td>
<td>Portuguese for Speakers of Another Romance Language (3) Accelerated class for beginning students of Portuguese with strong background in another Romance language. Introduction to grammar, reading and culture of Portugal and Brazil. Prereq: 3 hours at 300 level in another Romance language or equivalent.</td>
<td></td>
</tr>
<tr>
<td>431-32</td>
<td>Topics in the Literature &amp; Language of Portuguese-speaking World (3,3) Outstanding works of literature and culture from Portuguese countries. Topics may vary. Prereq: At least one course at the 300 level or the equivalent. May be repeated. Maximum 12 hrs.</td>
<td></td>
</tr>
<tr>
<td>550</td>
<td>Studies in Russian Literature (3) Content varies. May be repeated. Maximum 9 hrs.</td>
<td></td>
</tr>
<tr>
<td>551</td>
<td>Directed Readings (3) Survey of Italian theatre from Renaissance to present.</td>
<td>Prereq: Intermediate Italian or consent of instructor.</td>
</tr>
<tr>
<td>552</td>
<td>Independent Study (1-15) See College of Arts and Sciences.</td>
<td></td>
</tr>
<tr>
<td>553</td>
<td>Off-Campus Study (1-15) See College of Arts and Sciences.</td>
<td></td>
</tr>
</tbody>
</table>

**Russian**

**GRADUATE COURSES**

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<tbody>
<tr>
<td>401-02</td>
<td>Advanced Grammar, Conversation, and Composition (3,3) Prereq: Russian Composition and Conversation or equivalent. (Same as Russian and East European Studies 401-02.)</td>
<td></td>
</tr>
<tr>
<td>430-52 Senior Seminar (3,3) For majors in Russian: minors admitted at discretion of instructor. Internal study of language, literary style, and literary criticism based on selected major novels. (Same as Russian and East European Studies 451.)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>510</td>
<td>Russian Phonetics and Advanced Grammar (3) Phonetics, pronunciation, stylistics, and selected topics in Russian grammar. For teachers and prospective teachers. Prereq: Consent of instructor.</td>
<td></td>
</tr>
<tr>
<td>515</td>
<td>Russian Studies in Russian Literature (3) Content varies. May be repeated. Maximum 9 hrs.</td>
<td></td>
</tr>
<tr>
<td>591</td>
<td>Foreign Study (1-15) See College of Arts and Sciences.</td>
<td></td>
</tr>
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<td>592</td>
<td>Off-Campus Study (1-15) See College of Arts and Sciences.</td>
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<td></td>
</tr>
</tbody>
</table>

**Modern Foreign Languages and Literatures 153**
movements, or other aspects contributing toward
definition of Spanish American literature.

571 Spanish American Novel: Mexico and the
Caribbean (3) Critical study of novel authors from
Mexico, Central America, Caribbean, and Venezuela.
Modern period.

572 Spanish American Novel: Andean Nations (3)
Major novels from Colombia, Ecuador, Peru, and
Bolivia. Modern period.

573 The Spanish American Novel: Chile and the
River Plate Nations (3) Novela from Chile, Argentina,
Uruguay, and Paraguay. Modern world.

575 Spanish American Modernismo (3) Various
facets of Spanish American Modernismo in poetry
and prose, 1880-1920.

576 Contemporary Spanish American Poetry (3)
Major poets in Spanish American from post-modern
to present day.

577 Spanish American Drama (3) Major playwrts of
20th century Spanish America.

578 Spanish American Essay (3) Major essays
published during 19th and 20th centuries. Theme of
Latin American identity.

579 The Spanish American Short Story (3) Short
story by major writers in Spanish America from
Romanticism to present day, theory and criticism of
genre.

591 Foreign Study (1-15) See College of Arts and
Sciences.

592 Off-Campus Study (1-15) See College of Arts
and Sciences. Letter grade or S/NC.

593 Independent Study (1-15) See College of Arts
and Sciences. Letter grade or S/NC.

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

621 Seminar in Spanish Literature (3) Topics vary
in field of Peninsular literature. May be repeated with
consent of department. Maximum 9 hrs.

631 Seminar in Spanish American Literature (3)
Topics vary. May be repeated with consent of depart-
ment. Maximum 9 hrs.

Music
(College of Arts and Sciences)

MAJOR DEGREES

Music............................. M.M.

Wayne Bailey, Head

Professors:

Bailey, Wayne, D.M.A........... Colorado
Bitzas, George C., M.M........ Converse
Brook, John P., M.M........... Alabama
Coker, J., M.A.................. Sam Houston
Combs, F. M., M.A............ Missouri
Jacobs, K. A., D.M.A........ Texas
McClelland, D. K., M.A........ Columbia
MacMorran, W. S., M.M........ Wisconsin
Moore, M. C., Ph.D............. Michigan
Northington, D. B., D.M.A..... Yale
Pederson, D. M., Ph.D......... Iowa
Sousa, G., Ph.D................. Ohio State
Stutzenberger, D. R., D.M.A..... Maryland

Associate Professors:

Adams, Fay, M.M............... Tennessee
Boling, M. E., M.M............ Indiana
Brown, Donald R., Hs.D........ Tennessee
Brunell, D. E., D.M............ Indiana
Carter, P., S. M................. Colorado

Davis, Dolly C., M.M........... Tennessee
Gay, Jr., L. C., Ph.D........... Columbia
Hough, Don, M.M.............. New Mexico
Leach, C. F., M.M.............. New Mexico
Murphy, B. A., Ph.D........... Yeshiva
Searle, S. M., M.M............ Tennessee
Smith, C., B. M., M.M......... SUNY-Fredonia
Sper, G. R., M.M.............. Indiana
Zelmanovich, Matus, M.A........ Lvov

Assistant Professors:

Baldwin, Wesley, M.M......... New England
Batay, A. L., D.M.A........... South Carolina
Binder, S. L., D.M............. Florida State
Fremont, Carroll, M.P.A........ Oklahoma City
Haar, Paul, M.M.............. Kansas
Hawthorne, W., Ph.D......... Cincinnati
Richter, Jorge, M.S........... Andrews
Wentzel, A. N., M.M......... Southern Cal

The School of Music offers the Master of
Music degree with concentrations in accompa-
nying, choral conducting, composition,
instrumental conducting, jazz, music
education, music theory (with an optional
emphasis in music technology), musicology,
performance (organ, piano, strings, voice,
wind, and percussion), and piano pedagogy
and literature.

Applicants must have completed an
undergraduate degree that is approximately
equivalent in music requirements to degrees
certified by UT, with a major appropriate to
the applicant's prospective area of concen-
tration.

Decisions to pursue the
concentration in performance or music
education are required to audition for the
appropriate area faculty. Applicants for
admission to the program in composition must
submit scores and tape recordings of
representative works. Applicants for the
concentration in jazz must audition in jazz
improvisation and piano proficiency and
interact with members of the faculty in this
area. Other applicants are required to have
an interview with members of the faculty of
the prospective area of concentration.

All entering master's degree students are
required to take Diagnostic Examinations in
music theory, ear-training, and music history/literature. These examinations are given by
the School of Music at the beginning of each
semester.

THE MASTER'S PROGRAM

A minimum of 33 semester hours of coursework is required for the Master of
Music degree. These hours are specifically
distributed according to the area of concen-
tration. All concentrations require coursework in music bibliography, music
history/analysis, and music theory and allow
for elective courses. Specific curricula are
available from the department. All concen-
trations require a written and oral final examina-
tion.

A thesis is required of students in
composition, musicology, and music theory. A
graduate recital or performance project is
offered in lieu of thesis by students with
concentrations in performance, pedagogy,
jazz, accompanying, choral conducting, and
instrumental conducting.

Music Education

GRADUATE COURSES

510 Foundations of Music Education (3) Historical,
philosophical and aesthetic bases. Prereq: Consent of
instructor.

520 Research in Music Education (3) Definition of
research problems, data collection and analysis, and
research report writing. Application of knowledge of
research techniques to analysis of existing music
research. Prereq: Consent of instructor.

550 Curriculum Development and Evaluation in
Music Education (3) Principles of curriculum develop-
ment applied to music education programs. Formulating
objectives, construction of evaluation instruments,
survey of appropriate literature. Prereq: Consent of
instructor.

560 Advanced Studies in General Music (3) Current
trends, methodologies, and strategies appropriate for
general music classroom. Study of Dalcroze, Orff,
Kodaly, cooperative learning, critical thinking, Practi-
cal application for teaching students K-8.

570 Studies in Multicultural Music Education (3)
Study of music literature, art and customs of various
cultures appropriate for students in K-8. Strategies and
techniques for teaching music at this level.

571 Musical Repertoire Laboratory (1) Performance
of music from various cultures: production of musicals
appropriate for students in grades K-8. Singing, danc-
ing, acting, composition, set design, traditional and
non-traditional instrumental ensembles. Limited to students
majoring or concentrating in art, dance or theatre.

574 Analysis for Teaching for Professional Devel-
opment (2) Strategies to document and analyze
effectiveness of teaching and professional develop-
ment. Study and application of various approaches.

575 Professional Internship in Teaching (1-8) Teach-
ing and teaching-related experiences in professional
settings in public schools. Enrollment limited to post-
graduates in professional year program. Prereq: Admission to Teacher Education program and
consent of School of Music. May be repeated. Max-

580 Seminar in Music Education (3) Class investiga-
tion and individual reporting of pertinent topics and
issues in music education. Prereq: Consent of instruc-
tor. May be repeated. Maximum 6 hrs.

590 Special Topics In Music Education (1-3) Prereq:
Consent of instructor. May be repeated. Maximum 6 hrs.

591 Clinical Studies (4) Group and individual seminar
activities during full-time internship. Application and
evaluation of professional components. Completion and
presentation of portfolio and analysis of teaching experience. Coreq: 575.

593 Special Problems in Music Education (3) Prereq:
Consent of instructor. May be repeated. Maximum 6 hrs.

Music Ensemble

GRADUATE COURSES

503 Small Jazz Ensemble (1) May be repeated.
Maximum 12 hrs.

504 Jazz Ensemble (1) May be repeated.
Music in the Renaissance (3) From 1400 to 1600. Mass, motet, chansons, madrigal, and other vocal and instrumental forms and genres.

Music Bibliography (3) Bibliographic methodology in music.

Music in Christian Worship (3) Hymnody, liturgies, and liturgical music.

Music Aesthetics (3) Nature of music and music experience, sense perception and emotions, music, and role of artist in society. Aesthetic viewpoint of individuals and historical eras through selected writings.

Music in the Baroque Period (3) From c. 1600 to 1750; role of opera and oratorio, sacred and secular cantatas, instrumental forms, performance practices.

Music in the Classic Period (3) Evolution of classical style from pre-classic music to music of Haydn, Mozart, and early Beethoven.

Music in the Romantic Period (3) Nineteenth-century musical styles from Beethoven to post-romantics.

Music in the Twentieth Century (3) From 1890, Debussy, to present, Stockhausen and others.

Introduction to Ethnomusicology (3) Ethnomusicology as scholarly discipline. History, theories, and methodologies as applied to study of music in culture. Prereq: Music in World Culture or equivalent.

Independent Study (1-15) See College of Arts and Sciences.

Music Instrumental

GRADUATE COURSES

490 Instrumental Conducting (3) Development of knowledge and skills in instrumental conducting; study of various periods and composers and relationship of different styles to conductor's art; musical analysis and practice in conducting. Prereq: Music Education 220 or equivalent.

580 Band History and Literature I (3) Antiquity to 1900.

581 Band History and Literature II (3) 1900 to present.

583 Recitative for Instrumental Conductors (1) Problems in conducting recitatives. Prereq: Consent of instructor. S/NC only.

584 Practicum for Instrumental Conductors (1) Intern experience in field other than area of major interest. S/NC only.

593 Instrumental Conducting Performance (1) Preparation and juned performance of band or orchestral work(s). Prereq: Consent of instructor.

Music Jazz

GRADUATE COURSES

410 Advanced Improvisation (3) Further development of individual skills and solving individual problems in jazz improvisation. Prereq: 210 and 220.

420 Jazz Pedagogy (1) Methods and materials relating to teaching of jazz, designing and administering jazz programs, and rehearsal techniques for jazz ensembles. Prereq: Studio music and jazz major or consent of instructor.

520 Seminar in Jazz (3) Topic varies.

Music Keyboard

GRADUATE COURSES

420-30 Piano Literature (1-3) From 1750 to middle 19th century; 430--Middle 19th century to present.

460-70 The Organ and Its Literature (3) Development of organ and organ literature from Middle Ages to present; problems of style and interpretation; pedagogical literature and methods; organ design. Prereq or coreq: Music History 220 and consent of instructor.

485-95 Suzuki Piano Method I (2, 2) Psychology, procedures, and literature of Suzuki piano method. Must be taken in sequence. Prereq: Consent of instructor.

520 Piano Literature Seminar (3) Topics vary. May be repeated. Maximum 6 hrs.

531-41 Recital Project (2, 2) Preparation and accompanying of full recital for accompanying concentrations only. 531--Vocal recital, 541--Instrumental recital. Prereq: Consent of instructor.

Music Performance

GRADUATE COURSES

All performance courses require an audition and consent of instructor. May be repeated. Maximum 8 hrs toward M.M. degree.

403 Flute (1-4)

405 Oboe (1-4)

410 Bassoon (1-4)

415 Clarinet (1-4)

420 Saxophone (1-4)

425 Horn (1-4)

430 Trumpet (1-4)

435 Trombone (1-4)

440 Baritone (1-4)

445 Tuba (1-4)

450 Percussion (1-4)

455 Voice (1-4)

460 Violin (1-4)

465 Viola (1-4)

470 Cello (1-4)

475 String Bass (1-4)

476 Electric Bass (1-4)

479 Guitar (1-4)

480 Piano (1-4)

485 Harpsichord (1-4)

490 Organ (1-4)

494 Composition I (1-3)

495 Composition with Electronic Media (1-3)

499 Improvisation (1-2) May not be used toward applied music requirement.

503 Flute (1-4)

505 Oboe (1-4)

510 Bassoon (1-4)

515 Clarinet (1-4)

520 Saxophone (1-4)

525 Horn (1-4)

530 Trumpet (1-4)
Music Voice

GRADUATE COURSES

410-20 Song Literature I, II (2, 2) 410-German songs, 420-French, Italian, Russian, Scandinavian, Czechoslovakian, British, and American art songs. Graduate credit not available for students in vocal performance.

425 Functional Diction for Singers (3) Comprehensive survey of singing diction in six languages: English, French, German, Italian, Latin, and Spanish. Basic instruction in International Phonetic Alphabet; development of basic-diction skills; overview of diction styles and traditions in each language; survey of diction resources and reference materials. Does not fulfill deficiency requirements for graduate students in voice or accompanying.

490 Church Music Methods, K-12 (3) Development of child's voice through teenage years, vocal/choral techniques for various age groups through high school, choral literature for the youth church choir, non-vocal musical activities appropriate to various age groups as used in church music programs (e.g., Orff, handbells, rhythm activities, etc.).

510 Vocal Literature Seminar (3) Topics vary. May be repeated. Maximum 6 hrs.

520 Music Theatre Performance Techniques (1) Improvisation, movement, and basic techniques for dramatic vocal performance. Prereq: Vocal major or consent of instructor. May be repeated for credit. Maximum 2 hrs.

530 Opera Performance (2) Prereq: Consent of instructor. May be repeated, Maximum 4 hrs.

540 Production (1-3) Prereq: Consent of instructor. May be repeated, Maximum 6 hrs.

550 Advanced Vocal Pedagogy I, II (2, 2) 550-Study of vocal production, examination of different types of vocal techniques. Prereq: Consent of instructor. May be repeated. Maximum 6 hrs.

570 Vocal Chamber Music Performance (2) Prereq: Consent of instructor.

580-85 Choral Literature I, II (2, 2) Choral music from middle ages to present with consideration of historical development of major choral genres.

590 Advanced Choral Conducting (3) Expansions and continued refinement of conducting technique; development of choral rehearsal skills. Prereq: Consent of instructor.

594 Project in Choral Conducting Performance (1-3) Public performance, critical document; recording project. Prereq: Consent of instructor. May be repeated.

595 Choral Conducting Seminar (3) Score reading and preparation; problems of interpretation, performance practices, and conducting techniques. Prereq: 590 or consent of instructor. May be repeated.

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Nuclear Engineering

(College of Engineering)

MAJOR

DEGREES

Nuclear Engineering M.S., Ph.D.

H. L. Dodds, Head

Professors:

Dodds, H. L., PE, Ph.D. Tennessee
Mihalczko, J. T., Ph.D. Tennessee
Miller, L. F., PE, Ph.D. Texas A&M
Mynatt, F. R., Ph.D. Tennessee
Shannon, T. E., Ph.D. Tennessee

---

Uhrig, R. E. (Distinguished Prof.), PE, Ph.D. Iowa State
Upadhyaya, B. R., PE, Ph.D. California

Associate Professors:

Groer, P. G., Ph.D. Vienna
Hines, J. W., Ph.D. Ohio State
Peverly, R. E., PE, Ph.D. Tennessee
Ruggles, A. E., Ph.D. Rensselaer
Scott, T. H., PE, Ph.D. Florida
Townsend, L. W., Ph.D. Idaho

THE DEPARTMENT OF NUCLEAR ENGINEERING offers programs leading to the Master of Science and Doctor of Philosophy degrees. Students may elect a traditional nuclear engineering M.S. or Ph.D. program (focusing on fission energy or fusion energy) or a radiological engineering concentration at the master’s level.

The radiological engineering concentration prepares students for careers in the radiation safety field (health physics). The program is designed for graduates of undergraduate programs in engineering, physics, and chemistry.

All entering students must have, as a minimum, competency in mathematics through ordinary differential equations, competency in atomic and nuclear physics, and competency consistent with a course in introductory nuclear engineering. If these competencies do not exist, the student must take appropriate courses for undergraduate credit.

The department head is the contact for all interested students, both those with nuclear engineering degrees and those from other disciplines.

THE MASTER’S PROGRAM

A graduate program leading to the Master of Science is available to graduates of recognized undergraduate curricula in engineering and physics. Each applicant will be advised as to the necessary prerequisite courses before he/she enters the program.

The student must complete 24 semester hours of coursework approved by the student’s advisory committee that includes the following:

1. A major consisting of a minimum of 12 semester hours of graduate courses in nuclear engineering. This must include at least one of the following sequences: 511, 512, 551, 552, 571, 572.

2. A minor of 6 semester hours of elective courses in mathematics, statistics or computer science.

3. Six semester hours in either nuclear engineering or a related field.

The M.S. candidate must also demonstrate research or design capability. This requirement may be satisfied by a thesis project or engineering practice projects as described below:

Thesis - The student performs independent research on a topic approved by the graduate committee. He/she submits a thesis on this research in the student then must pass an oral examination on the thesis and all graduate coursework. The student must enroll for six semester hours of NE 500 (Thesis).

Engineering Practice - The student performs independent research on two to four separate topics approved by his/her
graduate committee. Each project is similar to a thesis project but smaller in scope. He/She submits a report, in thesis format, on each project. The student must then pass an oral examination on his/her engineering practice report along with an oral defense of the project. All graduate courses must be taken in courses numbered 500 or above.

**GRADUATE COURSES**

403 Nuclear and Radiological Engineering Laboratory II (3) Cross section measurements, diffusion properties of neutrons, shielding, dynamics and control, and introduction to the development of differential conservation equations for reactivity, energy, and momentum; exact and approximate solutions of equations of motion; boundary layer analysis; numerical analysis of fluid flow and heat transfer.

404 Nuclear Fuel Cycle (3) Mining, milling, fabrication, in-core management, reprocessing, waste disposal, regulatory and radiation health issues and requirements. Prereq: 470 or equivalent.

406 Radiation Shielding (3) Types of radiation sources, fundamentals of dose and neutron attenuation, biological effects, approximate methods of shielding design, computerized dosimetry, and Monte Carlo. Prereq: Physics 235.

421 Introduction to Nuclear Criticality Safety (3) Fundamentals of nuclear criticality safety, criticality accidents, safety standards; overview of experiments, computational methods, and applications. Prereq: Introduction to Nuclear Engineering.


432 Radiation Risk Analysis (3) Radiation risk estimates for internal and external radiation, dose response models, dose rate effects, prediction of radiation risks, radiation safety standards.

463 Introduction to Fusion Energy I (3) (Same as Electrical Engineering 463.)

464 Introduction to Fusion Energy II (3) (Same as Electrical Engineering 464.)

470 Nuclear Reactor Theory I (3) Fundamentals of reactor physics relative to cross sections, kinematics of elastic scattering, reactor kinetics, reactor systems and nuclear data. Prereq: Nuclear and Radiological Engineering Laboratory I. Core analysis methods and codes. Prereq: 470.

483 Introduction to Reliability Engineering (3) Probabilistic failure models, parameter estimation (maximum likelihood and Bayes techniques), model identification and comparison, first and second order methods, availability, survivability, perturbation theory, and system reliability, preventive maintenance and guarantees. Prereq: Senior standing or consent of instructor.

484 Introduction to Maintenance Engineering (3) Principles of maintenance and reliability engineering and maintenance management. Information extraction from machinery, measurements, rotating machinery diagnostics, nondestructive testing, fault detection, failure models, lubrication oil analysis, establishing predictive maintenance programs, and computerized maintenance management systems. Prereq: Senior standing in engineering and consent of instructor. (Same as Materials Science and Engineering 484.)

494 Special Topics in Nuclear Engineering (3) Problems related to recent developments and practice. Prereq: Senior standing and consent of instructor. May be repeated. Maximum 6 hrs.

500 Thesis (1-15) P/M only. E

502 Registration for Use of Facilities (3-15) Required for the student not otherwise registered during any semester when USE is not utilized. Facilities for use are those available in the Nuclear Science Building and/or faculty time before degree is completed. May not be used toward degree requirements. May be repeated. S/N only. E

511-12 Transport Processes in Nuclear Engineering (3,3) Rheology of nano- and non-fluids; integral and surface conservation equations for single and multi-component fluids; development of differential conservation equations for reactivity, energy, and momentum; exact and approximate solutions of equations of motion; boundary layer analysis; numerical analysis of fluid flow and heat transfer.

521 Nuclear Systems Dynamics and Control (3) Introduction to state variables methods for system dynamics and control analysis and application of these methods to nuclear plant dynamics, simulation and control problems.


541 Reactor Fuel Management (3) Topics relative to in-core and out-core management. Applicable topics in reactor physics, fuel depletion, isotopic inventories, reactivity control and numerical methods. Prereq: 540.


543 Selected Topics in Nuclear Criticality Safety (3) Criticality safety computational and experimental methods for enrichment, fabrication, storage, reprocessing, and transport applications; overview of safety practices and regulations. Prereq: 540 or consent of instructor.

550 Radiation Measurements Laboratory (3) Physics and electronics associated with radiation detection and measurement, methods, and devices. Applicability of particular detector measurements and fundamental of radiation detection instrumentation operation. Prereq: 551.

551 Radiation Protection (3) Fundamental concepts and definitions used in radiation protection, radiation interactions, phenomena, and regulations. Introduction to current radiation protection standards and regulations. Prereq: Introduction to Nuclear Engineering, Mathematis 431, or equivalent.

552 Radiological Assessment and Dosimetry (3) Transport and radiological protection, food chain pathways, internal dosimetry and personnel dosimetry. Prereq: 551 or consent of instructor.

553 Radiation Risk Analysis (3) Methods for radiological protection, criticality, analytical and numerical techniques. Prereq: 552 or consent of instructor.

571 Reactor Theory and Design (3) Analytical and numerical techniques for reactor systems, fuel depletion, and reactor design. Prereq: 575 or consent of instructor.

572 Nuclear System Design (3) Design and analysis of a nuclear reactor, interface with non-nuclear aspects of system design, system reliability and economics; computer simulation; analysis. Prereq: 571 or consent of instructor.

576 Expert Systems in Engineering (3) Application of expert systems in engineering: logic and rationale, development of expert systems, advanced topics. Prereq: 575 or consent of instructor. (Same as Mechanical Engineering 576 and Engineering Science 576.)

577 Neural Networks in Engineering (3) Neural network technology for use in intelligent systems, control, for neural computing, structure of neural computing systems, programming. Prereq: Consent of instructor. (Same as Mechanical Engineering 577 and Engineering Science 577.)

578 Fuzzy Systems in Engineering (3) Fuzzy models, fuzzy environment, uncertainty and randomness, approximate reasoning, fuzzy models and structures, decision processes for fuzzy environment, fuzzy computing, fuzzy logic controllers, fuzzy expert systems.
579 Advanced Monitoring and Diagnostic Techniques (3) Fundamentals of machinery monitoring and diagnostic and application of advanced statistical and artificial intelligence based techniques such as ridge regression, principal component analysis (PCA), linear and non-linear partial least squares (PLS), neural networks, and fuzzy logic. Prereq: Graduate standing or consent of instructor.


582 Monte Carlo (3) Analysis of radiation transport problems in radiative shielding by Monte Carlo method, description of MORSE code. Random sampling, evaluation of integrals, analog particle transport, techniques of variance reduction, forward and adjoint modes of analysis, importance function biasing, splitting weight window survival biasing and contribution theory. Prereq: 581.

585 Process System Reliability and Safety (3) Qualitative and quantitative techniques for assessing and improving process systems reliability and safety. Fault tree analysis and associated dependent failure analysis. (Same as Chemical Engineering 585.)

597 Special Topics in Nuclear Engineering (3) Lectures and recitation on recent advances in nuclear engineering. Prereq: Consent of instructor. May be repeated with consent of department.

598 Nuclear Engineering Practice (3-6) Experience in solving and reporting on engineering problems. Prereq: Approval of department. May be repeated. Enrollment limited to alternative plan students. S/N only.

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

611-12 Selected Topics in Reactor Theory (3.3) Transport theory, control rod theory, stochastic methods. Select topics from literature. Prereq: 572.

621 Selected Topics in Radiation Protection (3) Prereq: 551, 552. May be repeated with consent of department.

635 Theory of Information Processing (3) Modern system theoretical methods for evaluating system performance from dynamic measurements. Prereq: 522 or equivalent.

671 Advanced Topics in Applied Artificial Intelligence (3) Recent advances in engineering applications of artificial intelligence. Prereq: 577. (Same as Mechanical Engineering 671 and Engineering Science 671.)

697 Special Topics in Nuclear Engineering (3) Investigation of new developments. Prereq: Consent of instructor.

Nursing (College of Nursing)

MAJOR

Nursing ........................................ M.S.N., Ph.D.

Joan L. Cresaia, Dean

Martha Alligood, Director of M.S.N. Program

Sandra Thomas, Director of Ph.D. Program

Professors:

Alligood, Martha R., Ph.D. ............... New York
Cresaia, Joan L., Ph.D. .......... Maryland
Droppleman, Patricia G., Ph.D. ....... Tennessee
Farr, Glen, Pharm.D. .................. Tennessee
Groer, Maureen, Ph.D. ............. Illinois
Mozingo, Johnnie N., Ph.D. .......... Walden

Pierce, Joan U., Ph.D. ................ Utah
Seavor, Carol, Ed.D. ....... Massachusetts
Thomas, Sandra P., Ph.D. .......... Tennessee

Associate Professors:

Bowen, Sheila, Ph.D. ..................... Tennessee
Davis, Mitzi, Ph.D. ..................... Tennessee
Ellison, Kathy Jo, Ph.D. Alabama (Birmingham)

Fenske, Mildred, Ph.D. .......... Vanderbilt
Hall, Joanne, Ph.D. .............. San Francisco

McGuire, Sandra, Ed.D. ............. Tennessee
Smith, Helen, Ph.D. .................. Maryland
Wallace, Debra C., Ph.D. .......... South Carolina

Assistant Professors:

Brown, Allie J., M.S.N. Alabama (Birmingham)
Brown, Mary Lynn, Ph.D. ......... Tennessee

Conlon, Kathleen P., M.S.N. .... SUNY (Buffalo)
Evans, Ginger W., M.S.N. ....... Tennessee

Fox, Marie X., M.S.N. ............ Tennessee
Helton, Sally M., M.S.N. .......... Texas Women's
Kollar, Mary, Ph.D. ............... Tennessee
Nalle, Maureen, Ph.D. .............. Tennessee
Pierce, Margaret, M.S.N. .......... Tennessee

THE MASTER’S PROGRAM

The College of Nursing offers the Master of Science in Nursing degree with concentrations in adult health nursing, family nurse practitioner, mental health nursing, nursing administration, and nursing of women and children. The program is accredited by the National League for Nursing Accrediting Commission and is conditionally approved by the Tennessee Board of Nursing.

The purpose of the Master's program in nursing is to prepare leaders, managers, and practitioners who facilitate the delivery of health care services. The program prepares advanced practice nurses for a career in adult health nursing, nursing of women and children, and mental health nursing as well as role preparation as nurse practitioners, clinical nurse specialists or nursing administrators.

Advanced practice nursing involves the delivery of care, management of resources, interdisciplinary collaboration, and application of technology, information systems, knowledge, and critical thinking.

Admission Requirements

1. Meet requirements for admission to The Graduate School.
2. Achieve a score of 500 or above on the verbal and on the quantitative portions of the Graduate Record Examination.
3. Achieve a TOEFL score of 550 or above if native language is not English.
4. Hold a Bachelor's degree in Nursing (BSN) from a National League for Nursing accredited program.

a. Hold or be eligible for licensure to practice nursing in Tennessee.

b. Have an undergraduate GPA of 3.0 or higher on a 4-point scale, or a GPA of 3.3 for courses in the undergraduate major,

c. Have completed a health assessment and physiology course within the past five years.

 hold a bachelor's degree in a discipline other than nursing (master's entry student or RN) from an accredited college or university.

a. Have a cumulative undergraduate GPA of at least 3.0 on a 4-point scale.

b. Have satisfactorily completed the following prerequisite courses: chemistry (8 hrs); microbiology (including lab); anatomy and physiology (6-8 hrs); nutrition (covering lifespan in health and illness); behavioral sciences (12 hrs in sociology, anthropology, psychology, and development, and at least one general psychology course); undergraduate research course or equivalent; 3 hours of graduate level statistics prior to enrollment in graduate research course.

5. New students normally are admitted to the program only at the beginning of fall semester. However, under special circumstances and on a space available basis, a B.S.N. graduate may be admitted at the beginning of spring or summer terms in a temporary non-degree status. Applications from full-time BSN and master's entry students for fall admission must be received by February 1. Part-time and post-master's applications must be received by October 1.

Special Requirements

1. Each student must hold personal professional liability insurance.

2. Registered nurses must be licensed to practice nursing in Tennessee.

3. Each student must present proof of hepatitis B vaccination and rubella and rubella immunization or sufficient titer for immunity; TB status.

4. Each student must present evidence of current 2-person CPR certification.

5. Non-registered nurse students must have completed courses in chemistry, nutrition, microbiology, anatomy, and physiology plus 12 semester hours of behavioral science courses.

6. Contact student services for more detailed information about the application process: Student Services/MSN Program, UT College of Nursing, 1200 Volunteer Blvd., Knoxville, TN 37996-4180; phone: 865 974-7606.

Thesis and Non-Thesis Options

The thesis option is available for interested students and is especially encouraged for those who are considering pursuit of doctoral degrees sometime in the future. Students who choose the non-thesis option must register for 582 Scholarly Inquiry for Advanced Practice Nursing.

Program Requirements

All students must complete a minimum of 33 semester hours distributed as follows:

Core (9 credits)

503 Health Promotion in Advanced Practice Nursing 3

510 Theoretical Foundations of Nursing 3

520 Advanced Practice Nursing and Health Delivery Systems 3

Advanced Practice Core (9 credits)

504 Advanced Health/Physical Assessment 3

505 Advanced Clinical Pharmacology 3

515 Advanced Pathophysiology for Nursing Practice 3

or
**Research (6-9 credits)**

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<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
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<tbody>
<tr>
<td>501</td>
<td>Nursing Research: Methods, Design &amp; Analysis</td>
<td>3</td>
</tr>
<tr>
<td>500</td>
<td>Thesis</td>
<td>6</td>
</tr>
<tr>
<td>582</td>
<td>Scholarly Inquiry for Advanced Practice Nursing</td>
<td>3</td>
</tr>
</tbody>
</table>

**Concentration (12-17 credits)—choose one**

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>530-31</td>
<td>Adult Health Nursing I, II</td>
<td>12</td>
</tr>
<tr>
<td>550-51</td>
<td>Nursing of Women and Children, I</td>
<td>16</td>
</tr>
<tr>
<td>560-61</td>
<td>Mental Health Nursing I, II</td>
<td>12</td>
</tr>
<tr>
<td>570-71</td>
<td>Family Nurse Practitioner I, II, III</td>
<td>17</td>
</tr>
<tr>
<td>590-91</td>
<td>Nursing Administration I, II</td>
<td>12</td>
</tr>
</tbody>
</table>

**Elective (6 credits)—Required for students in nursing administration concentration only.**

*Not required for nursing administration concentration.*

Students who enter the program as non-RNs must complete the following undergraduate nursing courses in addition to meeting the requirements listed above:

<table>
<thead>
<tr>
<th>Course</th>
<th>Credits</th>
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</thead>
<tbody>
<tr>
<td>301 Clinical Pharmacology</td>
<td>3</td>
</tr>
<tr>
<td>302 Introduction to Professional Nursing</td>
<td>5</td>
</tr>
<tr>
<td>304 Nursing Assessment and Health Promotion</td>
<td>4</td>
</tr>
<tr>
<td>306 Health Deviation Concepts I</td>
<td>3</td>
</tr>
<tr>
<td>316 Health Deviation Concepts II</td>
<td>4</td>
</tr>
<tr>
<td>330 Nursing of Adults</td>
<td>6</td>
</tr>
<tr>
<td>414 Community Mental Health Nursing</td>
<td>6</td>
</tr>
<tr>
<td>415 Family/Community Health Nursing</td>
<td>6</td>
</tr>
<tr>
<td>431 Nursing of Children</td>
<td>4</td>
</tr>
</tbody>
</table>

Registered nurses whose bachelor's degrees are not in nursing must have completed courses in chemistry, nutrition, microbiology, anatomy, and physiology plus 12 hours of behavioral science courses. They must also complete 305, 332, 405, and 433 and complete or successfully challenge the following:

<table>
<thead>
<tr>
<th>Course</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>301 Clinical Pharmacology</td>
<td>3</td>
</tr>
<tr>
<td>304 Nursing Assessment and Health Promotion</td>
<td>4</td>
</tr>
<tr>
<td>306 Health Deviation Concepts I</td>
<td>3</td>
</tr>
<tr>
<td>316 Health Deviation Concepts II</td>
<td>4</td>
</tr>
<tr>
<td>330 Nursing of Adults</td>
<td>6</td>
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<tr>
<td>401 Family Health Nursing</td>
<td>6</td>
</tr>
<tr>
<td>411 Psychosocial Long Term Nursing</td>
<td>6</td>
</tr>
<tr>
<td>431 Nursing of Children</td>
<td>4</td>
</tr>
</tbody>
</table>

A total of 16-18 credits can be obtained by successful completion of the NLN Nursing Mobility Profile Examination. See undergraduate catalog for other challenge options. RNs who are in the process of completing a BSN at UT with the intent of enrolling in the MSN program follow the same plan with the addition of 313.

**Final Examination Requirements**

All students must successfully complete a final examination as required by the Graduate School. For thesis students, the examination will consist of an oral defense of the thesis as well as other written or oral questions designed to measure student mastery of the entire program of study. For non-thesis students, the written examination will cover the entire program of study and may, at the discretion of the student's committee, be followed by an oral examination.

**Special Policies**

1. If the clinical performance of any student for any course is found to be unsatisfactory, the student will receive a grade of "F" for the course.
2. If a student achieves a final grade of "D" or "F" for any required undergraduate or graduate nursing course, he or she will not be permitted to repeat the course and will be required to withdraw from the program.
3. If the clinical performance of any student is characterized by unethical, unprofessional or unsafe behavior, or behavior that places the client in jeopardy, the student will be required to withdraw from the program.

**THE DOCTORAL PROGRAM**

The College of Nursing offers a doctoral program leading to the Doctor of Philosophy degree with a major in Nursing. This is a unified program offered jointly with the University of Tennessee, Memphis, College of Nursing. Students must complete all or part of the program at either site. The dissertation must be completed in its entirety at one site.

The doctoral program prepares nursing scholars capable of integrating research, theory, and practice into their roles as researchers, educators, and/or administrators. Specifically, the graduate of this program should be able to:

1. Analyze, test, refine, extend, and expand the theoretical basis of nursing practice.
2. Conduct nursing research that generates knowledge and advances nursing as a discipline.
3. Provide leadership as nurse researchers, educators, and/or administrators in current and emerging health care settings.
4. Collaborate with members of other disciplines in health-related research of mutual concern.
5. Analyze, develop, and recommend health care policy at various levels.

**Admission Requirements**

1. Meet requirements for admission to The Graduate School.
2. Hold a master's degree in nursing from a program accredited by the National League for Nursing. Some outstanding applicants who are prepared at the bachelor's level in nursing may be considered. In such cases, graduate level courses in nursing theory, concentration specialty, and/or research will be integrated into the graduate program of doctoral degree requirements.
3. Have a minimum cumulative graduate grade-point average of 3.3 on a 4.0 scale for previous college work.
4. Have a combined score of at least 1000 on the verbal and quantitative sections of the Graduate Record Examination.
5. Have successfully completed a basic statistics course and graduate nursing theory and research courses prior to enrollment in nursing doctoral level courses.
6. Have TOEFL scores of at least 550 if native language is not English.
7. Complete Graduate Program Data Form, College of Nursing.
8. Submit Graduate School Rating Forms from three college level instructors and/or nurses and administrators who have supervised applicant's professional work.
9. Submit a sample of scholarly writing (e.g., thesis, published paper).
10. Submit an essay describing personal and professional aspirations.
11. Submit Graduate Application for Admissions, academic transcript(s), Graduate Record Examination scores, and, if required, TOEFL scores to the Graduate School.

**Program Requirements**

The following courses are required for all students:

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
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<tr>
<td>620</td>
<td>Directed Research</td>
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<tr>
<td>601-02</td>
<td>Theory Analysis &amp; Construction I, II</td>
<td>6</td>
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<tr>
<td>605-06</td>
<td>Nursing Research Seminar</td>
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<tr>
<td>607</td>
<td>Qualitative Nursing Research</td>
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<td>608</td>
<td>Quantitative Nursing Research</td>
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<td>Research Practicum</td>
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<td>612</td>
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<td>615</td>
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<td>616</td>
<td>Cognates</td>
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<tr>
<td>600</td>
<td>Dissertations</td>
<td>24</td>
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<td>TOTAL</td>
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<td>72</td>
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</tbody>
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*Note: A minimum of 1 hour per semester must be taken for 4 semesters.*

Possible cognate areas include, but are not limited to, anthropology, child and family studies, psychology, education, management, medical ethics, public health, social work, philosophy, and statistics.

**Doctoral Committee**

Early in the student's program, a nursing faculty advisor will be selected by the student in consultation with the program director. The student's comprehensive examination committee consists of the faculty teaching core courses and one representative from the cognate area. The student then selects the dissertation committee. Four faculty holding the rank of assistant professor or above comprise the committee, three of whom (including the chair) must be approved by the Graduate Council to direct doctoral dissertations. At least one member of the committee must be from an academic unit other than nursing.

**Special Policies**

1. A maximum of 6 graduate hours taken before acceptance into the doctoral program may be applied toward the degree.
Academic Common Market

An agreement among southern states for sharing graduate programs allows legal residents of some states to enroll in certain programs at UT on an in-state tuition basis. The M.S.N. program in Nursing is available to residents of the state of Oklahoma (concentration in nursing of women and children). The Ph.D. program is available to residents of the state of Arkansas. Additional information may be obtained from the Admissions Specialist in the Office of Graduate Admissions and Records.

Graduate Courses

500 Thesis (1-15) P/NP only. E
501 Nursing Research: Methods, Design, and Analysis (3) Basic principles of research process in application to clinical questions; critical evaluation of nursing and health-related research. Prereq or coreq: 510, graduate level statistics. F, Sp
502 Registration for Use of Facilities (3-15) Required for the student not otherwise registered during any semester when student uses University facilities and/or facilities beyond degree is completed. May not be used toward degree requirements. May be repeated. S/NC or letter grade. Sp
503 Health Promotion in Advanced Practice Nursing (3) Principles of health promotion, education, and innovative strategies for achieving wellness of individuals, families, groups, and communities. F
504 Advanced Health/Physical Assessment (3) Development of advanced clinical reasoning and assessment skills to determine client health status and needs. Application of physical, psychological, and psychosocial concepts with implications for advanced practice nursing. Didactic (2.5) and lab (5).
505 Advanced Clinical Pharmacology (3) Pharmacological agents utilized to treat common, recurrent health problems; indications, contraindications, side and interactive effects of commonly prescribed drugs. Prereq: 501 or equivalent. F
509 Graduate Seminar in Public Health (1) Same as Public Health 509, Exercise Science 509, Nutrition 509, and Social Work 509. F
510 Theoretical Foundations of Nursing (3) Historical evolution of nursing science, nursing's metaparadigm and selected philosophies, conceptual models and theories as structures which guide critical thinking in analysis, reasoning, and decision making for advanced practice nursing. F, Sp
511 Statistical Applications to Nursing Research (3) Descriptive and inferential statistics: statistical concepts and applications to clinical settings and their applications to research design and data analysis. F
515 Advanced Pathophysiology for Nursing Practice (3) Advanced physiologic and pathophysiologic concepts, principles, and theories applied to deviations of human systems. Sp
520 Advanced Practice Nursing and Health Delivery Systems (3) Nursing's role in dynamic health care system; health care delivery organizational, social, ethical, political, economic and technological factors which impact advanced practice nursing and delivery of health care. Sp
530 Adult Health Nursing I (3) Advanced practice models and strategies for health promotion, restoration, and maintenance of young, middle-aged, and older adults. Theories and research to advanced practice with clinical clients in a variety of settings. Prereq: 504, or coreq: 501. Coreq: 520. Didactic (2) and practicum (4). Sp
531 Adult Health Nursing II (6) Continuation of 530. Planning, provision, and management of health care for adult groups and communities. Prereq: 530. Didactic (2) and practicum (4). F
543 Nurse Practitioner (9) Exploration and application of holistic nursing concepts to nursing management of common and chronic health problems. Role refinement and exploration of major issues in delivery of holistic primary nursing care. Clinical experiences vary depending on student's intent to pursue certification as family or adult nurse practitioner. Prereq: MSN in clinical concentration, 505 or equivalent, and consent of instructor. 3 hrs and 5 labs. Su
550 Nursing of Women and Children I (6) Advanced practice nursing for women and children; clinical experience in role of nurse practitioner or clinical nurse specialist in variety of settings. Health promotion and nursing interventions for actual or potential health problems of women and children. Prereq: 504, or coreq: 501. Coreq: 520. Didactic (2) and practicum (4). F
551 Nursing of Women and Children II (6) Continuation of 550. Role refinement of nurse practitioner or clinical specialist in health promotion and restoration for women, children, and families. Prereq: 550. Didactic (3) and practicum (5). F
552 Parent Child Nursing Field Work and Seminar (3) Seminar and intensive clinical practicum designed to facilitate further development of specialized knowledge and skills utilized for advanced parent-child nursing practice. Prereq or coreq: 551. 1 hr and 4 labs. Sp
557 Nurse Midwifery Seminar I (3) Exploration of art and science of midwifery, nature and scope of midwifery practice, professional and ethical issues in advanced nursing practice. Prereq or coreq: 510, 511. F
558 Nurse Midwifery Seminar II (3) Exploration of psychological, developmental, and sociocultural theories as related to individual and family patterns of illness and wellness. Role of nurse-midwife in advanced practice promoting optimal wellness within clients and community. Prereq: 501, 510, 570. Coreq: 520. Sp
559 Nurse Midwifery Seminar III (3) Exploration of state of science in nurse midwifery, innovative practice options, and related research. Prereq or coreq: 558. F
561 Mental Health Nursing II (6) Continuation of 560. Advanced practice nursing in community settings for families and groups with actual and potential mental health problems. Prereq: 560. Didactic (2) and practicum (4). F
565 Teaching Practicum (1-6) Individually designed teaching experience in collegiate nursing program or nursing practice setting. Objectives to be developed collaboratively by student and faculty. Prereq or coreq: 501. Didactic (2) and practicum (4). F
570 Family Nurse Practitioner I (4) Application of advanced health/physical assessment and diagnostic reasoning in nursing management and primary care and of individuals and their families with actual and potential acute health problems; clinical experience in role of family nurse practitioner in variety of settings. Prereq: 504, 515. Coreq: 520. Didactic (2) and practicum (2). Sp
571 Family Nurse Practitioner II (6) Continuation of 570. Nursing management and primary care of individuals and their families in all developmental life stages; clinical experience in variety of settings. Prereq: 540. Coreq or coreq: 501. Didactic (2) and practicum (4). F
572 Family Nurse Practitioner III (7) Continuation of 571. Nursing management of chronic health problems of individuals and families in all developmental life stages; role refinement and exploration of major issues in family nurse practitioner; clinical experience in variety of settings. Prereq: 571. Didactic (2) and practicum (5). Sp
577 Special Topics (1-3) Topic is determined by faculty and student interest. Prereq: Consent of instructor. May be repeated. Maximum 6 hrs. E
582 Scholarly Inquiry for Advanced Practice Nursing (3) Utilization of research process through experiential learning or critical evaluation of science in area of interest. Conducted under faculty guidance and culminating in scholarly paper. Coreq: 501. May be repeated. Maximum 6 hrs. E
583 Directed Clinical Practice I (1-9) Additional opportunities for advanced practice nursing practice. Objectives to be developed collaboratively by student and faculty. Prereq or coreq: 501. Didactic in or completion of graduate level courses in clinical nursing. Maximum 9 hrs. S/NC or letter grade. E
590 Nursing Administration I (6) Exploration, analysis, and application of selected organizational, management, and leadership theories and financial priorities as they relate to delivery of nursing services. Structure, functions, organization, behaviors, and adaptive processes of health care organizations. Prereq: 504. Prereq or coreq: 501, 520. 2 hrs and 4 labs. F
591 Nursing Administration II (6) Continuation of 590. Utilization of human and financial resources, conflict resolution, and organizational development with application to mid-level and top-level nursing administration positions. Prereq: 550. 2 hrs and 4 labs. F
593 Independent Study (1-3) Prereq: Consent of instructor. May be repeated. Maximum 6 hrs. E
600 Doctoral Research and Dissertation (3-15) P/NP only. E
601-02 Theory Analysis and Construction I, II (3, 3) Nurse theorist development, analysis of existing health and nursing theories, theory building from existing knowledge. Prereq: 510 or equivalent or consent of instructor. F, Sp
605-06 Nursing Research Seminar (2, 2) Selected topics pertaining to dissertation research process, research experience, and defense. Prereq: Completion of core courses. F, Sp
607 Qualitative Nursing Research (3) Exploration and analysis of qualitative methods, research design, data analysis, and dissemination of qualitative nursing research. Sp
608 Quantitative Nursing Research (3) Exploration and analysis of quantitative methods, research design, data analysis, and dissemination of quantitative nursing research. Prereq or coreq: Graduate level statistics course. F
609 Research Practicum (1-3) Supervised individual or group research experience under guidance of faculty. Prereq: Consent of instructor. May be repeated. Maximum 12 hrs. S/NC or letter grade. E
610 Nursing Science Seminar (2) Critical Analysis and synthesis of literature in selected focus area within nursing science. Prereq: Admission to doctoral program in nursing or consent of instructor. F
611 Advanced Nursing Seminar (2) Exploration of historical and current issues of interest to doctoral prepared nurses. F
Nutrition

(College of Human Ecology)

MAJORS

DEGREES

Human Ecology ...................................... Ph.D.
Nutrition .......................................... M.S., M.S.-M.P.H.

Michael B. Zemel, Head

Professors:
Beauchene, Roy E. (Emeritus), Ph.D., Kansas State
Carruth, Betty Ruth, Ph.D., Missouri
Namey, T. C., M.D., Washington (St. Louis)
Sachan, Dilip S., Ph.D., Illinois
Skinner, Jean D., Ph.D., Oregon State
Smith, John T. (Emeritus), Ph.D., Washington (St. Louis)
Zemel, Michael (Liaison), Ph.D., Wisconsin

Associate Professors:
Bailey, James W., Ph.D., Iowa State
Brooks, M. D. (Memphis), M.S., Alabama
Haughton, B., Ed.D., Columbus
Karlstad, Michael, Ph.D., Loyola
Moussa, Naima, Ph.D., Paris
Whelan, Jay, Ph.D., Penn State
Zemel, Paula, Ph.D., Wayne State

Assistant Professors:
Bittle, Joyce (Memphis), Ph.D., Tennessee
Chencharick, Judith (Memphis), Ed.D., Maryland

The Master of Science program is available in Nutrition, with a concentration in nutrition science or public health nutrition. A graduate degree combined with a Dietetic Internship (D.I.) beyond the baccalaureate degree qualifies the graduate to apply for the Registration Examination to become a Registered Dietitian (R.D.). Students may request information from the department about the D.I. program. The Dietetic Internship is currently granted accreditation by the Commission on Accreditation for Dietetics Education of The American Dietetic Association, 216 W. Jackson Blvd., Chicago, IL 60606-6995, Tel: 312 899-5400. Students may also select an interdisciplinary minor in gerontology.

ADMISSION REQUIREMENTS

A complete file for review includes the Graduate School application form, Graduate Record Examination (GRE) scores for the general section, and three Graduate School Rating Forms completed by individuals who can attest to the applicant's potential for graduate education. Forms may be obtained from the Departmental Office, 229 Jessop Harris Building, University of Tennessee, Knoxville, TN 37996-1900. Forms may also be obtained from the Department's website at http://nutrition.he.utk.edu.

Admission into the graduate program in the department is dependent on completion of undergraduate courses that give the necessary background for success in the graduate program. Required undergraduate courses include: general and organic chemistry, physiological chemistry/biochemistry, anatomy, physiology, and advanced nutrition. Admission to the Ph.D. program in Human Ecology with a concentration in Nutrition Science requires a master's degree. Applicants to all programs with related experience may be given preference.

THE MASTER'S PROGRAM

Students may choose a thesis or non-thesis option in Nutrition. Attendance at Nutrition 540 is required every semester. The Thesis Option: The program consists of a minimum of 36 hours with at least 16 hours of coursework in the department. NTR 511, 512, 540, 541 and 3 hours of graduate level statistics are required. Students in public health nutrition must take NTR 511, 512, 513, 514, 515, 541, and the minor in public health. Six hours of Thesis 500, and 2 hours outside the department are required. A minimum of 22 hours at the 500 or 600 level is required. An oral comprehensive examination is required upon completion of the thesis.

Non-Thesis Option: The program consists of a minimum of 36 hours with at least 18 hours of coursework in the department. NTR 511, 512, 540, 541, and 3 hours of graduate level statistics are required. Students in public health nutrition must take NTR 511, 512, 513, 514, 515, and the minor in public health. Six hours of coursework outside the department are required. A minimum of 24 hours at the 500 or 600 level is required. A written comprehensive examination is required for completion of the program.

DUAL M.S.-M.P.H. PROGRAM

The College of Human Ecology offers a coordinated dual program leading to the conferral of both the Master of Science with a major in Nutrition (public health nutrition concentration) and the Master of Public Health. The dual program allows students to complete both degrees in less time than would be required to earn both degrees independently.

The program is designed to meet the needs of students who are interested in the benefits of majors in both nutrition and public health. Therefore, it accommodates the interests of students who: 1) plan a career in public health nutrition and want to acquire the knowledge and skills of the nutritionist and public health professional; 2) plan a career in nutrition and want to acquire the knowledge and skills and the perspective of the public health professional; or 3) plan a career in public health and want to acquire the knowledge, skills and perspective of the nutritionist.

Admission Requirements

Applicants for the M.S.-M.P.H. program must meet separate admission criteria to, and be competitively and independently accepted by, the Department of Nutrition for the M.S. and Department of Health and Safety Sciences for the M.P.H., and the Public Health Academic Program Committee.

Students who have been accepted by both departments may apply for approval to pursue the dual program anytime prior to, or after, matriculation in either or both departments. Such approval will be granted, provided that dual program studies be started prior to entry into the fourth semester of the M.S. and M.P.H. programs.

Curriculum

A dual degree candidate must satisfy the requirements for both the M.S. (public health nutrition concentration) and the M.P.H. degrees, as well as the requirements for the dual program. All candidates for the dual degree must successfully complete both Health and Society (PH 555), two credits of Seminar in Public Health (PH 509), and a minimum of 50 credits. The Department of Nutrition will award a maximum of 12 semester hours of credit toward the M.S. degree for successful completion of approved graduate level courses offered in the Department of Health and Safety Sciences. The Department of Health and Safety Sciences will award a maximum of 11 semester hours of credit toward the M.P.H. degree for successful completion of approved courses offered in the Department of Nutrition. All courses for which such cross-credit is awarded must be approved by the Public Health Academic Program Committee and the student's graduate committee. A single block of field experience (or public health internship) is required of all students and the analytical field paper incorporates public health nutrition and the student's public health concentration. Dual degree students who withdraw from the program before completion of the requirements for both degrees will not receive credit towards the M.S. or M.P.H. degree for courses taken in the other program, except as such courses qualify for credit without regard to the dual program.

Approved Dual Credit

M.S. courses to be counted toward the M.P.H. program must include 10 semester hours of Field Study in Community Nutrition (NTR 515) and 1 semester hour of Graduate Seminar in Public Health (NTR 509). M.P.H. courses to be counted toward the M.S. include Public Health Administration (PH 520), Biostatistics (PH 530), and Epidemiology (PH 540).
THE PH.D. CONCENTRATION

The nutrition science concentration enables students to study the science of nutrition from the cellular level to the application of nutritional principles by people in a changing environment.

The doctoral program emphasizes cellular/molecular nutrition, human nutrition, nutritional epidemiology, and experimental nutrition. Cognitive areas may include anthropology, biochemistry, chemistry, communications, education, food technology, human development, physiology, public health, sociology, statistics, and/or toxicology.

Minimum requirements include:
1. Sixteen hours in nutrition including 4 hours at the 600 level (exclusive of dissertation);
2. NTR 511, 512, 541, and 2 hours from either 542-544;
3. Four hours of NTR 540, attendance required every semester;
4. Six hours of statistics;
5. Six hours in a cognate area;
6. Nine hours at the 600 level;
7. Students without college teaching experience are required to take the fall semester teaching seminar for GTAs and NTR 548 comprising a faculty-supervised problem in college teaching.

GRADUATE COURSES

500 Thesis (1-15) Pr/No P only. E
502 Registration for Use of Facilities (3-15) Required for the student not otherwise registered during any semester when the student uses University facilities and/or faculty time before degree is completed. May not be used toward degree requirements. May be repeated. S/NC only. E
509 Graduate Seminar in Public Health (1) Same as Public Health 500, Exercise Science 509, Nursing 509, and Social Work 509. E
511 Advanced Physiological Chemistry (4) Bioenergetics, flux control and hormonal interrelationships. Prereq: Advanced Nutrition or equivalent. F
513 Community Nutrition I (3) Orientation to community; assessment of nutrition problems, needs, and resources; functional roles of public health nutritionist. Concurrent field experiences. Prereq: Advanced Nutrition or consent of instructor. F
514 Community Nutrition II (3) Planning, implementation, and evaluation of public health nutrition programs. Concurrent field experiences. Prereq: 513 or consent of instructor. Sp
515 Field Study in Community Nutrition (1-12) Personal participation in an analysis of state or regional community nutrition program. Location of in-depth study to be selected in consultation with instructor. Prereq: 513, 514 and consent of instructor. S/NC only. Su
516 Maternal and Child Nutrition (3) Nutrition principles related to growth and development during pregnancy, infancy, and childhood to age 5, high risk conditions. Prereq: Advanced Nutrition or consent of instructor. F
517 Childhood and Adolescent Nutrition (3) Application of nutrition principles to school age children; effects of diseases on growth and health maintenance; nutritional assessment and counseling for nutrition, 518 Nutrition and Aging (3) Nutritional problems of adults: nutritional requirements, dietary intakes; effects of nutrition on biological aging. Prereq: Advanced Nutrition or consent of instructor. Sp
520 Nutritional Ecology (2) Examination of diseases on natural, political, physical, and social environments that impact availability of food and nutrients in U.S. food supply. F
521 Physiological Basis for Diet and Disease (2) Altered nutrient needs as result of metabolic changes that occur in selected diseases. Prereq: Nutrition in Disease or consent of instructor. F
522 Nutrition Counseling (2) Individual eating habits and disorders, evaluation strategies for effectiveness of helping process. Prereq: Nutrition in Disease or consent of instructor. F
524 Nutrition Education: Principles, Implementation, and Evaluation (3) Conceptual models, principles, application, and evaluation models in nutrition education research. Prereq: 508 or consent of instructor. Su
540 Seminar in Nutrition (1) May be repeated. S/NC only. E
541 Research Methods (1) Basic principles of planning, conducting, and interpreting nutrition and foodservice systems administration research. Prereq: 6 graduate hrs in nutrition and food systems administration and statistics. Sp
542 Advanced Experimental Nutrition (2) Application of research principles to individual project using experimental animals. Prereq or coreq: 541. Sp
544 Survey Methods in Nutrition and Food Nutrition (2) Application of survey research methods to nutrition projects: assessment of food consumption, nutrient intake, nutritional status, sociocultural-economic parameters, food production and service. Prereq or coreq: 541. Sp
547 Field Experience (3-9) Experience in food-related industry or agency under supervision of faculty member. Prereq: Consent of instructor. S/NC only. E
548 Directed Study in Nutrition (1-3) Advanced study in nutrition. Prereq: Consent of instructor. May be repeated. Maximum 6 hrs. E
549 Special Topics (1-3) Recent advances in nutrition or food systems administration. Prereq: Consent of instructor. May be repeated. Maximum 6 hrs. E
550 Doctoral Research and Dissertation (3-12) Pr/No P only. E
560 Advanced Topics in Nutrition Science (1-3) Comprehensive individual study and group discussion of topics related to current problems in nutrition. Prereq: 512 or consent of instructor. May be repeated.
562 Ornamental Horticulture and Landscape Design (College of Agricultural Sciences and Natural Resources)

MAJOR DEGREE

Ornamental Horticulture and Landscape Design ................................ M.S.

Robert N. Trigiano, Interim Head

Professors:
Albrocht, M. L., Ph.D. ................. Ohio State
Auge, R. M., Ph.D. .................... Washington State
Callahan, L. M. (Emeritus), Ph.D. .... Rutgers
Cramer, G. D., Ph.D. .................. Ohio State
Graham, E. T. (Emeritus), Ph.D. .... Penn State
McDaniel, G. L., Ph.D. ............... Iowa State
Samples, T. J., Ph.D. ................... Oklahoma State
Trigiano, R. N., Ph.D. ................. NC State
Williams, D. B. (Emeritus), Ph.D. ... Penn State

Associate Professors:
Day, J. W., Ph.D. ...................... Mississippi State
Rogers, S. M., M.A. .................. Georgia
Starman, T. W. (Liaison), Ph.D. .... Texas A&M
Witte, W. T., Ph.D .................... Maryland

Assistant Professors:
Hamilton, S. L., Ed.D. .............. Tennessee
Klingeman, W. E., Ph.D. ............ Georgia
Menendez, G. L., M.S. .............. Tennessee

The Department of Ornamental Horticulture and Landscape Design offers the Master of Science degree with concentrations in floriculture, landscape design, turfgrass, woody ornamentals, and public horticulture. Various interests may be emphasized in any of these commodity areas, including micropropagation, innovative production and management systems, and the molecular biology, genetics, physiology, ecology and stress physiology of ornamentals.

THE MASTER'S PROGRAM

Admission Requirements

Students having bachelor's degrees in fields both related and unrelated to ornamental horticulture may apply, although acceptance may require some prerequisite courses. For admission to the M.S. degree program, a student must meet all of the requirements of The Graduate School and must have completed (in semester hours): 12 hours of upper level ornamental horticulture and/or landscape design (in some cases, depending on individual student's interests and up to the discretion of a major professor in consultation with the OHLG Graduate Coordinator, upper level courses in other agricultural, biological or environmental subjects may substitute for some or all of these hours); 6 additional hours of biological science; 8 hours of math; 8 hours of chemistry. In addition, three completed rating forms and a written statement of career goals and interest in ornamental horticulture are required.

Students from non-science fields applying for the program may wish to enroll as non-degree graduate students while taking prerequisites. Both thesis and non-thesis options are available, each guided by a graduate committee with three or more faculty members. For further information see web site at http://ohld.ag.utk.edu, or contact the graduate liaison.

Degree Requirements

1. Approval of the academic program by the master's committee.
2. Successful completion of 12 hours of coursework in OHLG at the graduate level (400 or above), exclusive of 500, 502, and 503. Two of these hours must be 590. Six of
these hours may be satisfied by Botany 412, 521, 522, Plant and Soil Sciences 471, 522, Animal Science 571, Ecology and Evolutionary Biology 520, or Information Sciences 560. Human Resource Development 521, 522, 562, Art 481. 220. 496, 497.

3. Attendance at graduate seminar each semester enrolled.

4. Preparation of a publication-ready, written or oral communication.

**Thesis Option:**

1. Satisfactory preparation of a written thesis proposal and oral defense to the student's committee, prior to enrolling in 500.
2. Successful completion of 30 hours of graduate credit, which must include 6 hours of 500. At least 14 of these hours must be at the 500 level or above.

**Non-Thesis Option:**

1. Successful completion of 34 hours of graduate credit, which must include 2-4 hours of 500. At least 22 of these hours must be at the 500 level or above.
2. Completion of a project and preparation of a written report summarizing the project.
3. Passing written and oral examinations covering the project and coursework.

**Graduate Courses**

410 Nursery Management and Production (3) Modern management methods as applied to retail and wholesale nurseries and landscape contracting firms. Methods of producing liners, container and field-grown woody ornamental plants. Prereq: 220, 330, and Plant and Soil Science 210, or consent of instructor. 2 hrs and 1 lab. Sp

426 Public Horticulture (2) In-depth study of public horticulture industry. Diversity of public horticulture institutions, career opportunities, and research. Discussion of current topics and issues. Prereq: Senior standing in OHLD or consent of instructor. Sp

440 Advanced Turfgrass Management (4) Principles and scientific basis of turfgrass culture: adaptation, ecology, physiology, soil fertility, and grass nutrition. Climatic influences on turfgrass physiology and clipping and water management; design, construction, and management of golf courses; and physiological and environmental influences on production and control measures. Prereq: 340 or consent of instructor. 3 hrs and 1 lab. Sp

450 Special Topics in Landscape Construction (3) Methods of design, materials, and construction techniques for specialized components of landscape industry. Irrigation systems, outdoor lighting, garden ponds and water features. Prereq: Basic Landscape Construction. F

451 Plant Tissue Culture (3) (Same as Botany 451.)

460 Professional Practices in Landscape Construction and Management (2) Professionalism, salesmanship, contract management and/or client management in landscape service industry. Interaction with industry representatives through special presentations. Prereq: 350 or consent of instructor. F

480 Advanced Landscape Design (3) Comprehensive application of landscape design skills to variety of project experiences: landscape planning and analysis, planting design, and materials estimating. Prereq: Fundamental of Landscape Design and Supplemental Landscape Design Graphics. 2-3 hr labs. F, Sp


494 Professional Horticultural Communications (3) Communication for public horticulturists through written, oral and visual media. Communication skills using proper writing techniques and grammar for print media, brochure design using desktop publishing, slide show development, oral presentations, and video education and informal presentations in ornamental horticulture. Prereq: Agriculture 290 Microcomputer Applications to Problem Solving and senior standing.

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

501 Special Topics in Ornamental Horticulture and Landscape Design (1-3) Topics to be assigned. May be repeated. Maximum 6 hrs. Prereq: Consent of instructor. E

502 Registration for Use of Facilities (3-15) Required for the student not otherwise registered during any semester when student uses diversity facilities and/or faculty time before degree is completed. May not be used toward degree requirements. May be repeated. S/N only. E

503 Non-Thesis Project (1-2) Library, field, or laboratory project under supervision of faculty member. Not for thesis candidates. May be repeated. Maximum 4 hrs. E

507 Professional Development Seminar (1) (Same as Agriculture and Natural Resources 507, Animal Science 507, Biosystems Engineering 507, Biosystems Engineering Technology 507, Food Science and Technology 507, and Plant and Soil Sciences 507.) S/N only. F

509 Scientific Communication (1) (Same as Agriculture and Natural Resources 509, Animal Science 509, Food Science and Technology 509, and Plant and Soil Sciences 509.) F

511 Plant Disease Fungi (4) (Same as Entomology and Plant Pathology 510.)

521 Flowering Physiology (1) General phenomenology, photoperiodism, phytochrome, interactions of external factors, juvenility, and hormonal regulation. Prereq: Introductory Plant Physiology or equivalent. 3 hrs weekly for 5 weeks. Sp, A

522 Stress Physiology (1) Introduction to abiotic plant stress physiology: drought, flooding, salinity, light, pollutants, other stresses. Prereq: Introductory Plant Physiology or equivalent. 3 hrs weekly for 5 weeks. Sp, A

523 DNA Analysis (1) Practical experience in isolating genomic DNA from plants and fungi, amplification of DNA using arbitrary oligonucleotide primers. DNA profiling techniques (SDS, PAGE) and purification of amplified products. Data analysis of relationships between organisms. Prereq: 8 hrs biological/ botanical sciences, 8 hrs chemistry, consent of instructor. 1 hr and 4 labs weekly for 5 weeks. Sp, A

524 Protein Gel Electrophoresis (1) Practical experience in isolating native and denatured proteins from plants and fungi; determining protein concentrations, PAGE of proteins including total proteins and assays for specific enzymes (isozyme) analyses. Prereq: 8 hrs biological/botanical sciences, 8 hrs chemistry, consent of instructor. 1 hr and 4 labs weekly for 5 weeks. Sp, A

525 Plant Microtechnique (1) Practical light and scanning electron microscopy; computer for investigating aspects of plant development, histochimistry and pathological structures in ornamental forest and crop species. Prereq: 8 hrs biological/botanical sciences and consent of instructor. 1 hr and 4 labs weekly for 5 weeks. Sp, A

529 Public Garden Operations and Maintenance (3) Principles and practices of summer annuals production and installation; aquatics, soil cultivation and systems maintenance; spring fertilization programming; vegetative waste management; computer-based record keeping and lab methods; weed control measures for public spaces; and information dissemination methods for public outreach, using facilities and materials of the UT Institute of Agriculture Gardens. Enrollment limited to 12. Prereq: 220 Basic Landscape Plants, 370 Grounds Maintenance, 390 Fall Herbaceous Ornamental Plants, 430 Greenhouse Floral Crop Production or consent of instructor.

590 Seminar (1) Presentations and discussion of topics. May be repeated. Maximum 2 hrs. E

592 Internship (1-2) Application of horticulture and design principles and practices in supervised, professional settings approved by department. S/N only. E

593 Problems in Ornamental Horticulture and Landscape Design (1-3) Independent study. Current topic related to technology, science or design. May be repeated. Maximum 6 hrs. E

**Pathology**

See College of Veterinary Medicine and Comparative and Experimental Medicine

**Philosophy**

(Ph.D. Program)

MAJOR

DEGREES

Philosophy ........................................ M.A. only.
Charles Reynolds, Acting Head

Professors:

Aquila, Richard E., Ph.D. ........... Northwestern
Cohen, Sheldon M., Ph.D. .......... Northwestern
Davis, John W. (Emeritus), Ph.D. .... Emory
Edwards, Ram B. (Emeritus), Ph.D. ... Emory
Graber, Glenn C., Ph.D. .......... Michigan
Nelson, James L., Ph.D. .......... SUNY (Buffalo)
Postow, Betsy C., Ph.D. ........... Yale
Van de Vate, Dwight, Jr. (Emeritus), Ph.D.

Associate Professors:

Bennett, James O., Ph.D. .......... Tulane
Bosholdt, Kathleen Emmett (Liaison), Ph.D. .... Ohio State
Nolt, John E., Ph.D. .......... Ohio State

Assistant Professor:

Hamlin, H. Phillips, Ph.D. .......... Georgia
Kaplan, Jonathan, Ph.D. .......... Stanford

The Department of Philosophy offers graduate study leading to the Master of Arts and Doctor of Philosophy. The M.A. program includes thesis and non-thesis options and offers a concentration in medical ethics and in religious studies. The Ph.D. program also has a concentration in medical ethics. Detailed information may be obtained from the Director of Graduate Studies in Philosophy.

**THE MASTER'S PROGRAM**

The department offers both a thesis and a non-thesis option. The course requirements for an M.A. with thesis are 30 hours, including 6 hours in Philosophy 500. Of non-thesis hours, at least two-thirds must be in courses at or above the 500 level. No philosophy course numbered under 400 may be taken for graduate credit. There are no particular courses that M.A. students are required to take. The nature of the student's coursework should be determined in consultation with the student's faculty committee. The non-thesis M.A. requires 30
hours of coursework of which at least two-thirds must be in courses at or above the 500 level. Students seeking the non-thesis option must also pass a final written examination on all work offered for the degree. An additional oral examination may be required. As part of the Master's degree, and in addition to a final comprehensive examination, a culminating (capstone) experience is expected. Examples of culminating experiences include presenting a paper at a refereed national or regional philosophy conference, or presenting a paper at a departmental colloquium.

THE DOCTORAL PROGRAM

Students must hold an M.A. with a major in Philosophy or an equivalent degree when entering the Ph.D. program. Twenty-seven hours of coursework beyond the M.A. is required, of which 6 hours will be in courses numbered above 600. See the Philosophy Department Graduate Student Procedures for specific course requirements.

Students must demonstrate a reading knowledge of one foreign language, normally a living language in which there exists a significant body of philosophical literature. (In special circumstances relating to the area of dissertation research, the Graduate Committee may approve a language not satisfying these conditions.) This may be done by passing the doctoral language examination given by the appropriate department, if available, or by passing French 302 or German 332 with a B or better, or multilingual (normally, foreign) students, whose native language (other than English) is one in which there is a significant body of philosophical literature, are exempted from the foreign language requirement. Students receiving the Ph.D. with concentration in medical ethics are also exempted.

CONCENTRATIONS

Medical Ethics

The department has an M.A. and Ph.D. program of graduate study with a concentration in medical ethics. Detailed information concerning the program may be obtained from either the Director of Graduate Studies in Philosophy or the Director of the Medical Ethics Program.

Religious Studies

The department has an M.A. program of graduate study with a concentration in religious studies. Details concerning the program may be obtained from the Director of Graduate Studies in the Department of Religious Studies.

ACADEMIC COMMON MARKET

An agreement among southern states for sharing graduate programs allows legal residents of some states to enroll in certain programs at UT on an in-state tuition basis. The M.A. and Ph.D. programs in Philosophy are available to residents of the states of Alabama, Kentucky, or Texas; the Ph.D. program to residents of Louisiana, Mississippi, Virginia or West Virginia; and the M.A. program to residents of Delaware or Oklahoma. Additional information may be obtained from the Admissions Specialist in the Office of Graduate Admissions and Records.

GRADUATE COURSES

400 Special Topics (3) May be repeated when topic varies. Maximum 6 hrs.
411 Modern Religious Philosophies (3) Same as Religious Studies 411.
420 Topics in History of Philosophy (3) Figures or movements from antiquity through mid-twentieth century. Prereq: 6 hrs of philosophy or consent of instructor. May be repeated when topic varies. Maximum 9 hrs.
435 Intermediate Formal Logic (3) Metatheory of formal logic and philosophy of logic. Prereq: Consent of instructor.
440 Contemporary Ethical Theory (3) Topics in metaethics or ethics. Prereq: 6 hrs of philosophy or consent of instructor.
446 Theoretical Issues in Medical Ethics (3) Prereq: 240 or 345 or consent of instructor.
462 Philosophy of Biology (3) Current issues: nature of natural selection, adaptation, and fitness; level of selection debate; nature of species; interaction of environment and organism, and others. Prereq: upper division coursework in philosophy or biology or consent of instructor.
472 Philosophy of Language (3) Problems of meaning, reference and truth. Relation between words and world. How sentences manage to be about the world. What is true? Prereq: 3 philosophy courses 200 level or above.
473 Philosophy of Mind (3) Problems of mind and body in relation to consciousness and personal identity. Prereq: 6 hrs of philosophy or consent of instructor.
479 Studies in Recent Continental Philosophy (3) Selected thinkers or topics: existentialism, phenomenology, structuralism, post-structuralism. Prereq: 6 hrs of philosophy or consent of instructor. May be repeated when topic varies. Maximum 9 hrs.
500 Thesis (1-15) P/NP only. E
502 Registration for Use of Facilities (3-15) Required for the student not otherwise registered during any semester when University facilities and/or faculty time before degree is completed. May not be used toward degree requirements. May be repeated. S/NC only. E
510 Philosophical Research (3) Paper workshop (writing, revising papers, getting papers ready to publish). Does not count toward hours required for degree. May be repeated. S/NC only. E
520 Topics in Ancient or Medieval Philosophy (3) Intensive critical work on major philosopher or school. May be repeated. Maximum 9 hrs.
522 Topics in Modern Philosophy (3) Intensive critical work on major philosopher or school. May be repeated. Maximum 9 hrs.
524 Topics in Twentieth-Century Philosophy (3) Intensive critical work on major philosopher or school. May be repeated. Maximum 9 hrs.
528 Topics in Contemporary Philosophy (3) Intensive critical work on themes in late 20th-century philosophy. May be repeated. Maximum 9 hrs.
540 Topics in Ethics or Value Theory (3) May be repeated. Maximum 9 hrs.
542 Topics in History of Ethics (3) Dominant movements in history of ethics. May be repeated. Maximum 9 hrs.
544 Topics in Applied Ethics (3) Single author, tradition, or topic in ethical theory, application to issues in health, business, technology, ecology, and other practical fields. May be repeated. Maximum 9 hrs.
546 Orientation to Medical Ethics (3) Survey of ethical theories in application to issues in medical ethics.
547 Ethical Issues in Mental Health (3) Values in "mental health" and "mental illness," informed consent in psychiatry, competence, patients' rights, involuntary hospitalization and treatment, and behavior control therapies.
548 M.A. Clinical Practicum (3) Series of clinical rotations at one or more local health care institutions. Open only to graduate students concentrating in medical ethics. Prereq: 547 and consent of Medical Ethics Committee and the UT-MCK Graduate Education Committee.
577 Topics in Metaphysics and Epistemology (3) May be repeated. Maximum 9 hrs.
585 Special Topics (3) May be repeated. Maximum 9 hrs.
587 Advanced Clinical Medical Ethics (3) Critical concepts in medical ethics, relationship of theory to practice, and professional roles and responsibilities for health care ethics consultant. Open only to Ph.D. students concentrating in medical ethics. Prereq: Consent of Medical Ethics Committee.
590 Philosophy of Mind (3) Relation of mental to physical and of role of words in discourse for mental activities, thinking and feeling. May be repeated. Maximum 9 hrs.
591 Foreign Study (1-15) See College of Arts and Sciences.
592 Off-Campus Study (1-15) See College of Arts and Sciences.
593 Independent Study (1-15) See College of Arts and Sciences.
600 Doctoral Research and Dissertation (3-15) P/NP only. E
610 Topics in Ancient or Medieval Philosophy (3) Intensive critical work on major philosopher or school. May be repeated. Maximum 9 hrs.
620 Topics in Modern Philosophy (3) May be repeated. Maximum 9 hrs.
640 Topics in Ethics or Value Theory (3) May be repeated. Maximum 9 hrs.
646 Topics in Applied Ethics (3) Prereq: Consent of Medical Ethics Committee. May be repeated. Maximum 9 hrs.
675 Topics in Metaphysics and Epistemology (3) May be repeated. Maximum 9 hrs.

Physics and Astronomy

(Major of Arts and Sciences)

MAJOR

Physics (36) M.S., Ph.D.

Lee Riedinger, Head

Professors:

Bames, F. E., Ph.D. California
Bingham, C. R., Ph.D. Tennessee
Blass, W. E., Ph.D. Michigan State
Breinig, M., Ph.D. Oregon
Bugg, W. M., Ph.D. Tennessee
Burgdorfer, J. (Distinguished Prof.), Ph.D. Frie Universitat Berlin
Departmental graduate programs leading to the M.S. and Ph.D. are also available at The University of Tennessee Space Institute, Tullahoma, where opportunities for study and research are available in quantum optics and laser physics, atomic and molecular spectroscopy, fluid physics, and theoretical physics. For additional information, contact the department head.

ADMISSION REQUIREMENTS

A student who enrolls in The Graduate School with the intention of attaining an advanced degree in Physics will have completed an undergraduate major in Physics or its equivalent. Physics 311-12, 321, 361, 431-32, 421, 461, and 411-12 constitute the minimum courses prerequisite to graduate study.

A student who intends to present Physics as a graduate minor will have completed an undergraduate minor in Physics or its equivalent. Physics 311 and 431-32 constitute the minimum coursework prerequisite to a minor in Physics.

All first-year graduate students are required, for advising purposes only, to take a qualifying examination in undergraduate physics during the fall semester registration period.

THE MASTER'S PROGRAM

Thesis Option

This program is designed primarily for students intending to go into industrial or governmental laboratories as physicists. The course requirements include 24 semester hours of physics courses, which at least 12 semester hours are taken from Physics 511-12, 521-22, 531-32, 541-42, or 571-72. Each candidate must present an acceptable thesis, 6 hours of 500, and pass an oral examination on course material and thesis.

Non-Thesis Option

This program is designed primarily for students intending to teach in colleges or universities on the elementary or intermediate level, or for students specifically intending to work toward a Ph.D. Students seeking the non-thesis option must apply to the department's graduate committee for permission to enroll under this program. The requirements are the satisfactory completion of 30 hours of coursework composed of 18 semester hours from Physics 511-12, 521-22, 531-32, 541-42, and 571-72; 6 semester hours in a minor field; and 6 semester hours from other courses numbered above 400 (preferably of advanced laboratory nature). At least 20 hours must be taken at the 500 level or above. In addition, the candidate must pass a written examination administered by his/her committee.

THE DOCTORAL PROGRAM

All students are expected to take Physics 521-22, 531-32, 541-42, 551, 571-72, and 611. Physics 601-02 are normally required of students specializing in atomic physics; Physics 621-22 of students in nuclear physics; Physics 631-32 of students in elementary particle physics (and/or Physics 613-14 for students specializing in theoretical high-energy physics); Physics 671-72 of students in condensed matter and surface physics; and Physics 681-82 of students specializing in molecular spectroscopy. Students specializing in chemical physics may substitute Chemistry 572 for Physics 551, and should complete at least 6 semester hours from Chemistry 580, 670.

The courses Physics 531-32, 571-72, 521-22, 541-42 constitute the core curriculum. They are the usual basis for the departmental comprehensive examination which is normally taken by a well-prepared student after two years of graduate study. The dissertation topic will be chosen with reference to one of the fields in which research facilities can be made available either at The University of Tennessee Space Institute laboratories in Knoxville; The University of Tennessee Space Institute at Tullahoma, Tennessee; the Oak Ridge National Laboratory, Oak Ridge, Tennessee; or at other research facilities used by the University faculty.

THE DOCTORAL PROGRAM

Astronomy

GRADUATE COURSES

411 Astrophysics (3) Development of analytical physical models of galactic structure of universe, stellar and interstellar matter, and planetary systems. Topical and interdisciplinary, consideration of quasars, pulsars, black holes, and other phenomena. Credit will be allowed only to students who have not previously completed a graduate-level course in astrophysics. See Instructor for consent of instructor.

421 Modern Optics (4) Transmission of light in uniform, isotropic media; reflection and transmission at interfaces; mathematics of wave motion and interference effects. Rudiments of Fourier optics and holography. Preliminary. Consent of Instructor for consent of instructor.

431-32 Electricity and Magnetism (3,3) Electrodynamics, magnetostatics, coupled electric and magnetic fields, Maxwell's Equations, electromagnetic wave theory, and radiating wave. Preliminary. Consent of Instructor for consent of instructor.

431-32 Electricity and Magnetism (3,3) Electrodynamics, magnetostatics, coupled electric and magnetic fields, Maxwell's Equations, electromagnetic wave theory, and radiating wave. Preliminary. Consent of Instructor for consent of instructor.

Physics

GRADUATE COURSES


421 Modern Optics (4) Transmission of light in uniform, isotropic media; reflection and transmission at interfaces; mathematics of wave motion and interference effects. Rudiments of Fourier optics and holography. Preliminary. Consent of Instructor for consent of instructor.

431-32 Electricity and Magnetism (3,3) Electrodynamics, magnetostatics, coupled electric and magnetic fields, Maxwell's Equations, electromagnetic wave theory, and radiating wave. Preliminary. Consent of Instructor for consent of instructor.

431-32 Electricity and Magnetism (3,3) Electrodynamics, magnetostatics, coupled electric and magnetic fields, Maxwell's Equations, electromagnetic wave theory, and radiating wave. Preliminary. Consent of Instructor for consent of instructor.

431-32 Electricity and Magnetism (3,3) Electrodynamics, magnetostatics, coupled electric and magnetic fields, Maxwell's Equations, electromagnetic wave theory, and radiating wave. Preliminary. Consent of Instructor for consent of instructor.


555 Solid State Physics (3) Elementary solid state physics. Crystal structures, reciprocal lattice, bonding in solids, energy bands, semiconductors, phonons, free-electron gas theory of metals, superconductivity, magnetism, and other forms of broken symmetry. Prereq: 522 or consent of instructor.

561 The Theory of Relativity (3) Geometry of spacetime, relativistic electrodynamics, particle mechanics and continuum mechanics, Einstein's field equations, Schwarzschild solutions, the classical test of general relativity. Prereq or coreq: 531 and 542.

571-72 Mathematical Methods in Physics (3,3) Linear vector spaces, matrices, tensors, curvilinear coordinates, solutions of differential equations, data acquisition techniques including synchronous detection and magnetic flow, continuum, transitional and free-molecular flows; pipe flow, nozzle flow and nozzle-sonic expansion flows; reacting and nonreacting flows in shock-tube physics; and introduction to method of characteristics and Monte Carlo computational techniques.

592-3 Independent Study (1-15) See College of Arts and Sciences.

601-2 Advanced Atomic Physics (3,3) Atomic structure, Dirac equation for one-electron atoms, quantum electrodynamic corrections, high-energy one-electron atoms, quantum defects, self-consistent field approximation, electron correlation, auto-ionization, Bethe-Salpeter equation, correlation energy, angular momentum theory, atoms in external fields, interactions with radiation, oscillator strengths, laser and resonance phenomena, atomic collision processes. Prereq or coreq: 522.

605 Laser Spectroscopy (3) Applications of lasers to spectroscopy of atomic and molecular systems, absorption, laser-induced fluorescence, and Raman spectroscopy; molecular and atomic coherence, quantum beats, resonance fluorescence, photoexcitation, self-induced transparency, saturation and Doppler-free spectroscopy; laser cooling and trapping. Prereq: 541. Prereq or coreq: 542.

606 Nonlinear Optics (3) Nonlinear optical susceptibilities, wave propagation in nonlinear media, sum-frequency and difference frequency generation, harmonic generation, parametric amplification and oscillation, stimulated Raman processes, two- and multi-photon processes, four-wave mixing and phase con-
THE MASTER'S PROGRAM

The M.S.P. requires completion of at least 48 hours of graduate credit, at least 30 of which must be in planning. The following courses are the core curriculum required of all students: 510, 511, 512, 515, 520, 531, 532, 533, 534, and 570.

Students should plan to enter the program in the fall term to take core courses in the proper sequence.

Each student is required to develop an area of concentrated competence beyond the core curriculum. After selecting the area of concentration, usually by the end of the second semester, the student takes a minimum number of courses or hours from a prescribed set of courses in the subject area. Further enhancement of the concentration is gained by focusing the thesis or major study on the subject.

Concentration courses are drawn from the planning curriculum and from other departments in the University. Concentrations are available in land use planning, environmental planning, real estate development planning, and transportation planning.

Students have the latitude to propose an alternate specialization consisting of at least 9 hours of coursework, subject to approval of a faculty committee. Each student is required to demonstrate competence in individual research. This may be done in one of two ways: Thesis Option—Complete a thesis for 6 hours credit; Non-Thesis Option—Complete a major study with acceptable documentation. To be eligible for the major study option, the student must have completed at least 12 hours of graduate coursework, planning in at least a 3.5 cumulative grade-point average. The student meeting these criteria may present a proposal to his/her committee for a major study that will include at least 6 hours of subsequent coursework. The proposal shall justify the selection of the topic, describe the approach to the study, and describe the nature of the final product. The topics will normally be expected to reinforce or complement the student’s concentration.

Successful completion of a comprehensive exam is required before graduation. The exam will normally be given after completion of the core requirements in the major area. Based on the material generally used by the American Institute of Certified Planners (AICP), this requirement provides an additional capstone experience as well as preparation for meeting AICP professional certification requirements.

Student academic progress is monitored by the faculty. A student failing to maintain an acceptable grade-point average may be placed on probation or dismissed from the program.

MINOR IN ENVIRONMENTAL POLICY

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

ACADEMIC COMMON MARKET

An agreement among southern states for sharing graduate programs allows legal residents of some states to enroll in certain programs at UT on a graduate tuition basis. The M.S.P. program is available to residents of the states of Arkansas, Virginia, or West Virginia. Additional information may be obtained from the Admissions Specialist in the Office of Graduate Admissions and Records.

GRADUATE COURSES

401 The City in the U.S. (3) Development and character of U.S. cities. Contemporary issues and selected case studies. (Same as Urban Studies 401)

402 Survey of Planning (3) History of city development and of planning; U.S. experience in urban and other levels of planning. State of the art, process, comprehensive plan, implementation devices, planning issues in society. Not for credit for M.S.P. degree.


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

502 Registration for Use of Facilities (3-15) Required for the student not otherwise registered during any semester when the student uses University facilities and/or faculty time before degree is completed. May not be used toward degree requirements. May be repeated. S/NC only. E

510 Fundamentals of Planning (2) Principles of planning, development and public decision-making. Not for credit for M.S.P. degree. May be repeated. S/NC only. E

511 Graphic and Oral Communications in Planning (1)

512 Community Planning Process (1) Planning process, policy process and development process. Field reconnaissance of study community and development approaches for assessing community.

515 Theory of Planning (2) Analysis of nature and objectives of planning process; role of planner and planning function in public decision-making. Prereq: 510 or consent of instructor.

520 Planning Research Methods (3) Overview of planning decision-making; types of planning decisions, impact on society, systematic methods and tools, case histories, and planning research questions relevant to planning.

521 Information Systems and Networks in Planning (3) Use and impact of computer-based information systems and global networks in planning and public management. Development of practical skills in design of planning decision support systems, databases, Internet-based tools and geographic information systems (GIS). Prereq: Basic experience with computer software and hardware or consent of instructor.

523 Statistics for Planners (3) Applications of statistical techniques. Initiative explorations and practical applications. Computer analysis to explore concepts.


530 Policy and Land Use Analysis (4) Basic methods of policy analysis and planning. Concept and framework for land-use planning. Population, employment, and economic base studies, and forecasting techniques. Coreq: 520 or consent of instructor.

531 Urban and Regional Analysis (3) Past, present, and possible future patterns of urban and regional structures and evolution. Case histories. Coreq: 520 or consent of instructor.

532 Planning Methods (4) Preparation of comprehensive plans for urban areas or regions. Development of baseline data and forecast of regional trends. Formulation of alternative plans and strategies, and development of planning implementation programs. Extensive laboratory experience. Prereq: 510, 512, 520, 530 and 531 or consent of instructor.
Plant and Soil Sciences

(College of Agricultural Sciences and Natural Resources)

MAJOR

Plant and Soil Sciences .......... M.S., Ph.D.

FRED L. ALLEN, Head

Professors:

Allen, Fred L., Ph.D. .......... Minnesota
Ammon, J. Tom, Ph.D. .......... West Virginia
Bell, Frank F. (Emeritus), Ph.D. .. Iowa State
Coffey, David L., Ph.D. .......... Purdue
Congor, Bob V. (Distinguished Prof.), Ph.D. ... Washington State
Deyton, Dennis E., Ph.D. .......... NC State
Foss, John E. (Emeritus), Ph.D. .. Minnesota
Fribourg, Henry A., Ph.D. ....... Iowa State
Hayes, Robert M., Ph.D. ......... Illinois
Howard, Donald D., Ph.D. ........... Auburn
Lewis, Russell J. (Emeritus), Ph.D. .. NC State
Mullins, Charles A., Ph.D. ......... Tennessee
Parks, William L. (Emeritus), Ph.D. .. Purdue
Reynolds, John H., Ph.D. .......... Wisconsin
Sams, Carl E., Ph.D. .......... Michigan State
Springer, Maxwell E. (Emeritus), Ph.D. ... California
Swingle, Homer D. (Emeritus), Ph.D. .... Louisiana State
Tyler, Donald D., Ph.D. .......... Kentucky
West, Danny R., Ph.D. .......... Nebraska

Associate Professors:

Essington, Michael E. (Liaison), Ph.D. ....... California (Riverside)
Gwathmey, C. Owen, Ph.D. (California (Davis)
Lessman, Gary M., Ph.D. .......... Michigan State
Logan, Joanne, Ph.D. .......... Nebraska
Mueller, Thomas C., Ph.D. ......... Georgia
Mullin, Michael D., Ph.D. .......... NC State
Reich, Vernon H., Ph.D. .......... Iowa State
Wyatt, Jim E., Ph.D. .......... Florida

Assistant Professors:

Gal, Paula M. (UT Martin), Ph.D. .... Arkansas

Research Professors:

Lee, S. Y., Ph.D. ............. Wisconsin
Miller, Robert D., Ph.D. .......... Kentucky

Research Assistant Professor:

Pantalone, Vincent R., Ph.D. .......... NC State

The Department of Plant and Soil Sciences offers graduate programs leading to the Master of Science and the Doctor of Philosophy. Concentrations for the graduate programs are offered in soil science, plant breeding and genetics, and crop physiology and ecology.

For further information, contact the department head.
Political Science

Majors

Political Science M.A., Ph.D.
Public Administration M.P.A., J.D.-M.P.A.

Professors:

Cunningham, Robert B., Ph.D. Indiana
Fitzgerald, Michael R., Ph.D. Oklahoma
Freeland, Patricia K., Ph.D. Wisconsin (Milwaukee)
Gant, Michael M., Ph.D. Michigan State
Gorman, Robert A., Ph.D. New York
Lyons, William, Ph.D. Oklahoma
Peters, John, Ph.D. Illinois
Pleas, Hyram, Ph.D. Utah
Scheb, John M., Ph.D. Florida
Smith, T. Alexander, Ph.D. Ohio State
Stephens, Otto H. (Distinguished Prof.), Ph.D.

Associate Professors:

Fitzgerald, Michael R. (Emeritus), Ph.D. Iowa
Welborn, David M. (Emeritus), Ph.D.

Assistant Professors:

Kelly, Janet, Ph.D. Wayne State
Van Goll, Donna, Ph.D. Georgetown

The Department of Political Science offers the M.A., M.P.A., and Ph.D. The department also offers a dual program with the College of Law. Inquiries concerning all programs should be directed to the departmental office.

Admission Requirements

Three departmental recommendation forms must be submitted to The Graduate School, at least two of which must be completed by instructors at the institution most recently attended. In addition, scores on the general portion of the Graduate Record Examination must be submitted.

The Master of Arts Program

A bachelor's degree or its equivalent is required for admission. Normally an overall average of 3.0 is also required together with an average of 3.2 in the last two years of political science or social science. In addition, a composite score of at least 1100 on the verbal and quantitative parts of the GRE is normally required.

Students pursuing the Master of Arts degree may follow one of two options:

Thesis Option: (30 hours)
Coursework, preparation of a thesis, and an oral examination on coursework and the thesis is required. At least 12 of these hours must be in political science, with 6 in the field of methodology (Political Science 510 and either 511 or 512). Six hours may be earned through thesis credit.

Non-Thesis Option: (36 hours)
Coursework, plus a written comprehensive examination on all coursework is required. At least 12 of these hours must be in political science, with 6 in the field of methodology (Political Science 510 and either 511 or 512), and 3 hours in the 600-level research seminar in the student's first field of interest.

The Master of Public Administration Program

The M.P.A. program is intended to prepare students for public service careers by acquainting them with management principles, analytical tools, and the ethical dilemmas they will face as public administrators. It consists of a total of 39 semester hours, including a core program, an elective specialization and a recommended internship.

Applicants for admission to the program must have a bachelor's degree or its equivalent. Normally, an overall average of 3.0 and an average of 3.2 in the last two years of political science or social science courses is required. In addition, a composite score of at least 1100 on the verbal and quantitative parts of the GRE is normally required.

Students must demonstrate proficiency in the use of software applications for the personal computer. This requirement can be fulfilled by achieving a satisfactory grade in Political Science 596, Workshops in Computer Applications. Exceptions to this requirement will be considered on an individual basis.

The M.P.A. is a non-thesis program requiring 32 hours. Specific requirements include the following:

1. Core Curriculum (24 hours)
   a. General perspectives (9 hours) - 550 Public Administration Theory; and any one of the following: 539 State and Local Government; 540 Public Law; 546 Law and the Administrative Process; 548 Public Policy Process; 558 The Politics of Administration; or 566 Ethics, Values, and Morality in Public Administration.
   b. Analytical skills (6 hours) - 512 Quantitative Political Analysis; 514 Research and Methodology in Public Administration.
   c. Management skills (9 hours) - 560 Public Budgeting and Finance; and any two of the following: 562 Public Management; 564 Human Resources Management; 556 Policy Analysis.

2. Specialization (9 hours)
   A specialization is designed by the student in consultation with the coordinator of the M.P.A. degree program. Possible specializations include general government, public health, budgeting and finance, planning, natural resources, program evaluation, criminal justice, public relations, personnel, and others.

3. Recommended Internship (6 hours)
   Internships are arranged in consultation with the coordinator of the M.P.A. degree program.

4. Final Examination
   A written final examination, which may be followed by an oral examination, is required.

Dual J.D.-M.P.A. Program

The College of Law and the Department of Political Science in the College of Arts and Sciences offer a coordinated dual degree program leading to the conferment of both the Doctor of Jurisprudence and Master of Public Administration degrees. In this program, a student may earn the M.P.A. and J.D. degrees in about four years rather than the five years that otherwise would be required. Students pursuing the dual degree program should plan to enroll in coursework or an internship for one summer term in addition to taking normal course loads for four academic years.

Admission

Applicants for the J.D.-M.P.A. program must make separate application to, and be independently accepted by, the College of Law for the J.D. degree and the Department of Political Science and The Graduate School for the M.P.A. degree. Applicants must also be accepted by the Dual Degree Committee. All applicants must submit a Law School Admission Test (LSAT) score. An applicant's LSAT score may be substituted for the Graduate Record Examination (GRE) score, which is normally required for admission to the M.P.A. program. Application may be made prior to or after matriculation in either the J.D. or the M.P.A. program, but application to the dual program must be made prior to entry into the last 29 semester hours required for the J.D. degree and prior to entry into the last 15 hours required for the M.P.A. degree.

Curriculum

A dual degree candidate must satisfy the requirements for both the J.D. and the M.P.A. degrees, as well as the requirements for the dual program. The College of Law will award a maximum of 9 semester hours of credit toward the J.D. degree for successful completion of approved graduate level courses (500 or 600 level) offered in the Department of Political Science. The M.P.A. program will award a maximum of 9 semester hours of credit toward the M.P.A. degree for successful completion of...
approved courses offered in the College of Law. All courses for which such cross-credit is awarded must be approved by the J.D.-M.P.A. coordinators in the College of Law and the Department of Political Science. All candidates for the dual degree must successfully complete Administrative Law (Law 821) and are encouraged to take Local Government (Law 824). An internship is strongly recommended for students in the dual degree program, as it is for all M.P.A. candidates, but an internship is not required. During the first two years in the dual program, students will spend one academic year completing the required first year of the College of Law curriculum and one academic year taking courses solely in the M.P.A. program. During those first two years, students may not take courses in the opposite area, without the approval of the J.D.-M.P.A. coordinators in both academic units. In the third and fourth years, students are strongly encouraged to take both law and political science courses each semester. Dual degree students who withdraw from the program before completion of the requirements for both degrees will not receive credit toward either the J.D. or the M.P.A. degree for courses taken in the other program except as such courses qualify for credit without regard to the dual program.

Awarding of Grades
For grade recording purposes in the College of Law and the Department of Political Science, grades awarded in courses in the other unit will be converted to either Satisfactory or No Credit and will not be computed in determining a student's GPA or class standing. The College of Law will award a grade of Satisfactory for an approved M.P.A. course in which the student earns a grade of B or higher and a grade of No Credit for any lower grade. The Political Science Department will award a grade of Satisfactory for an approved law course in which the student earns a grade of 2.3 or higher and a grade of No Credit for any lower grade. The official academic record of the student maintained by the Registrar of the University shall show the actual grade assigned by the instructor without conversion.

THE DOCTORAL PROGRAM
The Ph.D. program prepares students for careers in college teaching, as well as careers in other occupations related to service in the public or private sectors. Applicants for admission to the program should normally have completed a master's degree in political science, or a related field, with a 3.5 GPA and have earned a composite score of at least 1100 on the verbal and quantitative parts of the Graduate Record Examination. Doctoral students admitted to the program must complete 96 hours beyond the bachelor's degree, including 24 hours of coursework beyond the master's degree, graded A-F, must successfully pass written and oral comprehensive examinations in three broad subfields of political science, and must pass a final oral examination on the dissertation. In addition, students must satisfy a research tool requirement. Usually, students meet this requirement by completing 12 hours of coursework numbered above 500 in empirical theory and research methodology. However, if a student's advisor and program committee certify that competency in a foreign language is a more appropriate research tool, a foreign language can be used instead.

In addition to the total hours required for the degree, the following requirements must also be met.
1. At least 63 hours must be in political science courses.
2. At least 54 hours in political science must be in courses numbered above 500.
3. Completion of Political Science 510, 511, and 512.
4. Completion of at least three courses or seminars in each of the three broad subfields in which the student takes examinations.
5. Completion of at least one course or seminar in each of the six broad subfields in which the student takes examinations.
6. At least 6 hours must be earned in political science courses numbered above 600.
7. A total of 24 hours must be earned by writing the dissertation.

MINOR IN ENVIRONMENTAL POLICY
The department participates in a program designed to give graduate students an opportunity to develop an interdisciplinary specialization in environmental policy. See Economics for program description.

GRADUATE COURSES
430 United States Constitutional Law: Sources of Power and Restraint (3) Analysis of judicial review, constitutional powers of President and Congress, federalism, sources of regulatory authority, and constitutional protection of political and economic rights.
431 U.S. Constitutional Law: Civil Rights and Liberties (3) Analysis of current issues in civil rights and liberties including first amendment freedoms, equal protection, privacy and rights of accused.
435 Criminal Law and Procedure (3) Substantive and procedural law in criminal justice field; constitutional questions and public policy issues.
442 Administrative Law (3) Legal dimensions of administrative power and procedures, and constitutional controls over administrators.
452 Black African Politics (3) Recent evolution and current political environment of Black African nations. (Same as Afro-American Studies 452.)
454 Government and Politics of China and Japan (3) Examination of the political setting, structure and political processes in China and Japan.
459 Government and Politics of the Soviet Union (3) Origins and development of Soviet political system, and study of selected policy areas.
461 Policy Making in Democracies (3) Comparative approach to theory and process of making public policies.
463 Contemporary Middle East Politics (3) Governments and movements in the Middle East, their characteristics, bases, and interrelationships.
470 International Law (3) Nature and development of international law and compliance. Function of international law in context of international conflict.
475 Ancient and Medieval Political Thought (3) Survey of major western political thinkers from Socrates to Marsilio of Padua.
615 Formal Political Analysis (3) Assumptions and implications of management information technology. May be repeated with consent of department. Maximum 9 hrs.

610 Special Topics in Empirical Theory and Methods in political analysis of public problems and policy solutions. May be repeated with consent of department. Maximum 9 hrs.

598 The Politics of Administration (3) Examination of public administration in context of American political system, policy making and political roles of public administrators and agencies. May be repeated with consent of department. Maximum 9 hrs.

580 Public Budgeting and Finance (3) Technical and political aspects of public budgeting, preparing and adopting government budgets. Management implications of revenue collection, debt management, treasury function, accounting, internal auditing, purchasing public sector. May be repeated with consent of department. Maximum 9 hrs.

566 Ethics, Values, and Morality in Public Administration (3) Moral, ethical, and value dilemmas of public administrators in American political system.

569 Internship in Public Administration (1-9) Open to students participating in approved internships. May be repeated with consent of department. Maximum 9 hrs. S/NC only.

570 Comparative Government and Politics (3) Selected topics in modern governments. May be repeated with consent of department. Maximum 9 hrs.

572 The Politics of Development (3) Selected topics dealing with political problems of less developed countries. May be repeated with consent of department. Maximum 9 hrs.

574 Area Seminar in Comparative Government and Politics (3) Selected topics in area studies: African, Latin America, Middle East, Soviet Union and Eastern Europe. May be repeated with consent of department. Maximum 9 hrs.

580 International Politics (3) Survey of international relations and major aspects of international politics. May be repeated with consent of department. Maximum 9 hrs.

591 Foreign Study (1-15) See College of Arts and Sciences.

592 Off-Campus Study (1-15) See College of Arts and Sciences.

593 Independent Study (1-15) See College of Arts and Sciences.

594 College Teaching in Political Science (1-3) Consent of instructor. May be repeated. Maximum 15 hrs.

595 Readings and Special Problems in Political Science (1-3) Consent of instructor. May be repeated. Maximum 15 hrs.

596 Workshops in Computer Applications (1) Training in software applications to support research and decision making tasks in public service. Successful completion certifies proficiency of MPA students in use of software applications for personal computer. S/NC only.

600 Doctoral Research and Dissertation (3-15) open to students. May be repeated. Maximum 9 hrs.

628 Topics in Political Theory (3) Selected issues and problems in normative political theory. Specific content determined by instructor. May be repeated with consent of instructor. Maximum 9 hrs.

630 Special Topics in American Government and Politics (3) Advanced study of selected topics. May be repeated with consent of instructor. Maximum 9 hrs.

640 Special Topics in U.S. Constitutions (3) Systematic analysis of published research and judicial decision; development of constitutional law as major component of public policy. May be repeated with consent of department. Maximum 9 hrs.

645 Contemporary Public Policies (3) Problems in one or more public policy areas from political and administrative perspectives. Topics selected by instructor. May be repeated with consent of department. Maximum 9 hrs.

660 Contemporary Perspectives on Public Administration (3) Development of theory in public administration with a focus on contemporary critiques and alternatives. May be repeated with consent of instructor. Maximum 9 hrs.

668 Special Topics in Public Administration (3) Analysis of selected issues and problems in public administration. May be repeated with consent of department. Maximum 9 hrs.

670 Special Topics in Comparative Government and Politics (3) Research into selected topics. May be repeated with consent of department. Maximum 9 hrs.

672 Theory and Analysis of U.S. Foreign Policy Processes (3) Theoretical approaches to decision making in foreign policy area and analysis of policy process. May be repeated with consent of department. Maximum 9 hrs.

680 Contemporary Perspectives on Public Administration (3) Selected issues and problems in international politics. Specific content determined by instructor. May be repeated with consent of instructor. Maximum 9 hrs.

688 Special Topics in International Politics (3) Selected topics in international politics. Specific content determined by instructor. May be repeated with consent of instructor. Maximum 9 hrs.

THE MASTERS' PROGRAM

Graduate study leading to the M.A. degree in psychology is available with a concentration in experimental psychology. This program is appropriate for students who desire a master's degree as part of their progress toward a doctorate or for those who wish to complement a degree in a different field.

Admission

Any student with a B.A. or B.S. may apply to the Department of Psychology for admission to the master's program. All students must also submit scores from the Graduate Record Examination (general and subject).

Major Advisor and Committee

Initially, the Director of Experimental Psychology will advise the student. As soon as possible, the student must select an advisor and obtain his or her approval for registration. Subsequently, the advisor and student will select two additional faculty members to comprise the student's master's committee. Final committee approval comes from the Graduate Dean upon recommendation by the Department Head.

Program Requirements

All students must complete 30 semester hours of graduate level courses in psychology. These hours must include 504-05, or Statistics 531-32 or an equivalent sequence; 565 or 420; six semester hours of Thesis 590; and twelve hours of 500- or 600-level foundation courses. Students must earn a grade of B or better in all courses that are to count toward the 30-hour total. Students must also propose, conduct and successfully defend an original piece of research in the form of a master's thesis.

THE DOCTORAL PROGRAM

A student with a B.A. or B.S. may apply to the Department of Psychology for admission to the doctoral program with a concentration in experimental psychology or clinical psychology. The doctoral program with a concentration in ethology is offered through the Life Sciences program. Doctoral study in industrial and organizational psychology is offered through the Intercollegiate program in Industrial and Organizational Psychology, to which application is made through the Department of Management.
**Experimental Psychology**

The Ph.D. program in Psychology with a concentration in experimental psychology is designed to allow students to select from a variety of specializations oriented toward careers in research, teaching, and application of psychology in academic, institutional, or industrial settings. The program is flexible, individualized, and emphasizes a professional apprenticeship model of training. A full description of the program is given in the "Handbook for Students in Experimental Psychology," available from the department.

The basic requirements are:

1. Twelve semester hours of statistics and research (504-05 or Statistics 531-32 or equivalent and 6 additional hours in research methods or design).
2. Fifteen semester hours in experimental psychology (565 or equivalent and 4 courses from the following: 510, 511 or 512, 513, 543, 546 or 547, 550, 660, and 570 or 571).
3. Six semester hours of research practicum (509).
4. Psychology 528 - preparation for college teaching.
5. Two 600-level graduate seminars.
6. Six semester hours of graduate level courses outside the Psychology Department.
7. Predissertation research project involving the collection of original data or the original analysis of existing data, reported in publishable form and accepted by the student's advisory committee.
8. Comprehensive examination, determined and evaluated by the student's doctoral committee. This examination is comprised of an integrative review or theoretical paper and an oral exam or additional questions.
9. Twenty-four hours of dissertation research (600).
10. An original piece of research in the form of a doctoral dissertation, proposed, conducted, and defended.

**Clinical Psychology**

This program is designed to lay the groundwork for a career as a clinical psychologist capable of working in both academic and applied settings. The program emphasizes the theoretical foundations of psychology as well as supervised experience oriented toward the development of practical skills. The program embodies a model of clinical psychology in which practice and research are integrated.

Clinical program students must complete a predissertation research project by the end of the second year. After forming the doctoral committee, students must then pass a comprehensive examination administered and evaluated by the committee. This examination is comprised of two papers, one addressing a topic of the student's choice, and the second addressing an understanding of one individual's personality and cognitive functions. All doctoral students must complete a minimum of 78 hours of graduate level courses, including coursework toward their program; at least 6 hours in courses outside of psychology; and at least 24 hours of dissertation research (Psychology 600). Finally, students must complete an acceptable doctoral dissertation and conduct a satisfactory oral defense of the dissertation. Requirements are as follows:

**GRADUATE COURSES**

400 Cognitive Psychology: Language and Symbolic Processes - Psychology of knowing, explaining, and understanding, directed and associative thinking, memory, problem-solving, and concept formation. Prereq: General Psychology or consent of instructor.
409 Group Facilitation - Study of theory and techniques through supervised experience in small groups. Prereq: General Psychology or consent of instructor.
410 Sensory Processes & Perception - Survey of physiological and psychological theories of perception, audition, and vision. Prereq: General Psychology or consent of instructor.
415 Psychology of Religion - History of psychology of religion; various philosophical and empirical orientations. Prereq: General Psychology or consent of instructor.
420 History and Systems of Psychology - History of psychological thought. Classical approaches and recent developments. Prereq: General Psychology or consent of instructor.
424 Psychology and the Law - Psychological aspects of legal systems. Prereq: General Psychology or consent of instructor.
430 Health Psychology - Survey of psychological factors related to health and illness; stress, personality, and environment. Applications of psychological treatments to physical illness. Prereq: General Psychology or consent of instructor.
434 Psychology of Gender - Biological, psychological, and social factors in gender: importance of gender roles and sex differences in behavior and experience. Prereq: General Psychology or consent of instructor.
440 Organizational Psychology - Social-psychological aspects of organizations, role-theory and systems theory. Prereq: General Psychology and Social Psychology or consent of instructor.
450 Comparative Animal Behavior - (Same as Biology 450.)
459 Comparative Animal Behavior Laboratory - Coreq: 450. (Same as Biology 450.)
461 Physiological Psychology - Nervous system and physiological correlates of behavior. Biological basis of emotion, learning, memory, and stress. Prereq: General Psychology or consent of instructor.
470 Theories of Personality - Survey of major theories of human personality and their development. Prereq: General Psychology or consent of instructor.
475 Adolescent Development - Theoretical perspectives and empirical research findings pertinent to adolescent development. Prereq: General Psychology or consent of instructor.
480 Theories of Learning - Classical and current approaches to learning and cognition. Prereq: General Psychology or consent of instructor.
482 Topics in Psychology - Intensive analysis of special topics: Afro-American psychology or evaluation of programs in community. Prereq: General Psychology or consent of instructor. May be repeated. Maximum 8 hrs.
489 Supervised Research (1-9) - Prereq: Consent of instructor. May be repeated. Maximum 12 hrs in 489, 491, 492, and 493 combined may apply toward undergraduate major.
500 Thesis (1-15) - P/NP only. E
502 Registration for Use of Facilities (3-15) - Required for the student not otherwise registered during any semester when student uses University facilities and/or faculty time before degrees is completed. May not be used toward degree requirements. May be repeated. S/N only: E
studies provide opportunity for students in a variety of disciplines to pursue work in religious studies as a graduate concentration.

GRADUATE COURSES

405 Modern Jewish Thought (3) History, culture, and geography of the Jews from the time of the Second Temple to the present. Prereq: Consent of instructor.

411 Modern Religious Philosophies (3) Religious Implications of major Western thinkers and movements from Niccolini of Cusa to twentieth-century German Idealists. (Same as Philosophy 411.)

412 Classical Indian Systems of Philosophy: The Nastha Tradition (3) Investigation of selected writings and philosophical problems of traditions of Samkhya, Yoga, Vedanta, Buddhism, or Jainism. Prereq: 374 or consent of instructor.

425 Seminar in Western Religions (3) Selected figures, themes, movements, and problems. Content varies. Prereq: Consent of instructor. May be repeated. Maximum 6 hrs.

430 Seminar in American Religion (3) Selected figures, themes, movements, and problems. Content varies. Prereq: Consent of instructor. May be repeated. Maximum 6 hrs.

440 Seminar in Comparative Religion (3) Selected figures, themes, movements, and problems. Content varies. Prereq: Consent of instructor. May be repeated. Maximum 6 hrs.


452 Readings in the History of Religions (3) Prereq: Consent of instructor.

499 Proseminar in Religious Studies (3) Prereq: Consent of instructor. May be repeated. Maximum 6 hrs.


506 Historical and Comparative Studies of Religions (3) Description and analysis of religious traditions, phenomena, and themes. May be repeated. Maximum 6 hrs.

507 Religion, Power and Society (3) Studies of religions in relation to social structure and political institutions: issues of gender, class, race, ethnicity, caste, slavery, religion and the state, globalization and human rights. May be repeated. Maximum 6 hrs.

512 Religion, the Arts, and the Media (3) Material and expressive culture: religion, journalism, mass communication technologies, popular culture, issues of representation, cultural studies methodologies. May be repeated. Maximum 6 hrs.

514 Religion and Healing (3) Ecology of religion, nature, shamanism, healing of body and mind, spirituality, religious dimensions of medical ethics. May be repeated. Maximum 6 hrs.


520 Readings in the Study of Religion (1-6) May be repeated. Maximum 12 hrs.

532 Topics in the History of Religions (3) Prereq: Consent of instructor.
Advanced Standing

The University of Tennessee College of Social Work has an advanced standing program. Admission to advanced standing requires: (1) a B.S.W. from an accredited program, (2) an overall undergraduate GPA of 3.0 or greater, and (3) personal qualifications acceptable for entrance into the professional practice of social work.

Students admitted into advanced standing are required to complete a minimum of 36 hours of study in either of the college’s concentrations - clinical social work practice or social work management and community practice. These students will follow the curriculum plan and meet all requirements of the concentration during three semesters of study in the program.

Specific information about the advanced standing program is available from the college. Application for admission to the advanced standing program is through the regular admission process.

Extended Study

Planned part-time programs are available in all three locations of the college. Admission requirements are the same as for full-time study. Coursework can be completed over a three-year period.

Financial Aid

Students may apply directly to the University’s Financial Aid Office for assistance such as the National Direct Student Loan or the Work-Study Program. Information regarding scholarships administered by the College is made available after admission.

General Requirements

1. The program requires successful completion of a minimum total of 60 semester hours including completion of the foundation curriculum (30 hours) and 30 hours in one of the two concentrations (clinical social work practice or social welfare management and community practice).

2. Students may select a thesis or non-thesis option. Students pursuing the thesis option must complete a research study that contributes to the process of professional identification and presents a comprehensive, broad base of theory, knowledge and skills from which to practice.

3. Successful completion of a comprehensive exam or thesis defense.

4. An overall GPA of 3.0 or better on all graded courses and satisfactory performance in field.

The Professional Foundation Curriculum

All students must complete 30 semester hours in the foundation curriculum consisting of 24 hours in foundation classroom courses and 6 hours in field practice. The foundation is the initial phase of the master’s program and contributes to the process of professional identification and develops a comprehensive, broad base of theory, knowledge and skills from which to practice. The foundation classroom courses include:

- Foundations of Social Work Practice I, II and III
- Human Behavior in the Social Environment I and II
- Social Welfare Policy and Services
- Social Work Research
- Social Work and Oppression

Students also complete a two-semester field placement, Field Practice (6 hours). Upon successful completion of the foundation curriculum, all students must complete a minimum of 30 hours in the concentration curriculum including field practice (12 hours). Students select a concentration in clinical social work practice or social welfare management and community practice.

Clinical Social Work Practice: The clinical social work practice concentration focuses on students developing expertise in clinical social work practice with client systems, including individuals and small groups, particularly with clients from high-risk and vulnerable groups. The concentration emphasizes theoretical and empirical knowledge and practice skills in differential assessment, clinical interventions and practice evaluation. The concentration also emphasizes knowledge and skills directed toward (1) the development of complex psycho-social, interpersonal problems; (2) ethically sound and culturally sensitive practice; and (3) influencing the development of services and programs that are responsive to the needs of vulnerable, high-risk clients and groups.

Required courses:
- 521 Clinical Social Work Practice with Individuals (3 hours)
- 525 Clinical Social Work Practice with Groups (3 hours)
- 526 Evaluating Clinical Practice (3 hours)
- 582-83 Field Practice (12 hours)

Minimum of three (total of 9 hours) advanced course electives as follows:
- One or more from a pool of advanced clinical practice courses.
- One or more from a pool of advanced general courses.

Social Welfare Management and Community Practice: The social welfare management and community practice concentration focuses on students’ developing skills directed toward the management and analysis of complex service delivery needs within organizations and communities, knowledge and skills in the development of service intervention strategies to address such related needs; and the organizational and management skills that enable practitioners to work in a variety of challenging and turbulent environments. The concentration emphasizes theory and skills related to leadership and administration, and permits flexibility in tailoring a program to fit the student’s individual interests, capabilities, and career goals.

Required courses:
- 541 Leadership and Management in Human Services (3 hours)
- 543 Financial Management and Resource Development (3 hours)
- 547 Evaluation Research (3 hours)
- 582-83 Field Practice (12 hours)

Minimum of three (total of 9 hours) advanced course electives as follows:
- One course in advanced policy (3 hours). Two courses from a pool of advanced general courses.

Field Practice

Field instruction is a critical component of the student’s first- and second-year programs. Through cooperation with a wide range of social agencies and human service programs throughout Tennessee, the college is able to provide field placements in a variety of social work practice areas. The faculty works closely with the placement agencies and the field instructors to insure that students have quality field practice experiences, meeting the objectives of the core curriculum and the concentration.

The college uses a concurrent class and field plan. Students are in field two days per week during the first year and three days per week in the second year.

First-year agency placements are selected to provide practice experiences related to the foundation curriculum content. Within the placement, each student’s experiences are planned and designed according to educational objectives.

Second-year placements are selected according to the student’s areas of concentration, individual career interests, and educational needs. The student actively participates with the field practice coordinator and the educational committee in selection of the second-year placement. The second-year field placement experience focuses on the integration of social work knowledge and values, and emphasizes the acquisition and development of practice skills.

Students are responsible for meeting the requirements of their placement agencies in terms of office hours and workload coverage. This responsibility takes precedence over scheduled University breaks and may result in variations in holidays and office hours for the student.

Students receiving a grade of NC in field practice may not repeat the field practice.

Transfer Credits

Coursework equivalent to the first year of the master’s program, completed in another accredited graduate social work program, is usually accepted toward degree requirements. Applicants must meet the admission requirements of The Graduate School and the College of Social Work. Transfer courses must be approved as equivalent to required and/or elective courses taken for graduate credit and passed with a grade of B or better. An S (earned on an SGSC system) for the field practicum is also accepted. In addition, transfer courses must be part of an otherwise satisfactory graduate program (B average) and be approved by the dean. This coursework must be completed within the six-year period prior to the receipt of the degree.

A maximum of 6 semester credits from work earned in disciplines other than social work may be transferred as elective credits. The student’s academic committee must approve the request and the transfer credit must meet Graduate School requirements.

Proficiency Examination

Students in the master’s program may earn a maximum of nine hours by proficiency examination, with the exception of field practice courses. Students interested in proficiency examinations are referred to The Graduate School statement describing the procedure for applying for examination.

THE DOCTORAL PROGRAM

The College of Social Work offers the Doctor of Philosophy with a major in Social Work.

The focus of social work education at the doctoral level is to foster the development of an attitude of scientific inquiry, knowledge of the scientific method, ability to extend the
knowledge base of social work practice, and effective participation in leadership roles in social work education, research, and practice.

The emphasis of the doctoral program is upon:

--Analysis of direct intervention and social and of the interrelationships among each of them and their social policy, organizational, and community contexts.

--Research-based knowledge to inform and guide social work practice, social policy, and social welfare program development.

The program consists of foundation courses, elective courses, and dissertation research. The courses are available only in Nashville and Memphis based on the availability of dissertation resources.

Students have the opportunity to work in the Children's Mental Health Services Research Center as part of their training. The Center focuses on services to children who have experienced mental health problems associated with abuse, neglect, violence and a variety of psychosocial problems.

Admission Requirements

The Ph.D. program is designed for students who have completed a master's degree in an accredited school of social work and have post-master's social work/ social welfare experience. Applicants who do not meet these requirements, but believe they have equivalent credentials should contact the Chair of Ph.D. program for further information regarding admissions criteria.

General Requirements

1. A minimum of 66 hours beyond the master's degree including: a) completion of 27 hours of required coursework, b) completion of 15 credits of advanced electives, at least 12 of which are taken outside the department, and 9 of those 12 related to the dissertation, and c) completion of at least 24 credit hours of dissertation coursework.

2. Successful completion of qualifying and comprehensive examinations.

3. Completion and defense of the dissertation.

Curriculum

The curriculum of the Ph.D. program consists of foundation coursework, electives, and dissertation research. The foundation curriculum consists of 27 hours of coursework in the history and philosophy of social work, issues in direct service and administration and planning, areas of practice, and research methodology and statistics. Upon this foundation, students and their academic committees develop a plan of study consisting of coursework in Social Work and other departments of the University.

Typically, the 24 hours of foundation coursework are completed and electives coursework begun during the first year of study. Social Work 670 and the elective requirement are completed and dissertation research begun in the second year of study, and dissertation research is continued in the third year of study. While it is generally expected that the coursework will be completed on a full-time basis, dissertation research can be completed on a part-time basis.

Specific courses required are 601, 602, 612, 613, 640, 650, 670, and Statistics 531 and 532 or any two graduate level statistics courses approved by the Doctoral Program Chair.

Examinations

All doctoral students are required to pass a qualifying examination and a comprehensive examination. The qualifying examination covers the foundation curriculum. The comprehensive examination is administered by members of the doctoral committee and is designed for the student to demonstrate comprehensive knowledge of the major and cognate areas and the dissertation topic. In case of failure of either examination, the student may request a retake. The result of the second examination is final.

Financial Aid

Financial aid is available to qualified students in the form of fellowships, scholarships, and teaching and research assistantships. Graduate assistantships and other forms of assistantship are awarded on the basis of merit and interest to applicants who are accepted into the Ph.D. program.

MINOR IN GERONTOLOGY

Graduate students in the College of Social Work, at the Knoxville location, may pursue a specialized minor in gerontology. This interdisciplinary/interdisciplinary minor gives the student an opportunity for combining the knowledge about aging in American society with his/her major concentration. Please refer to Human Ecology for specific requirements.

POST-MASTER'S CERTIFICATE IN MANAGEMENT AND COMMUNITY PRACTICE

The College of Social Work offers a 15-credit hour post-master's certificate program designed for social workers desiring supervisory, management, administration and community practice training and education to enhance career advancement or career redirection. Required for admission is a master's degree in social work or closely related field.

Course requirements are 541, 543, 547, and four courses selected from 550, 551, 552, 555.

ACADEMIC COMMON MARKET

An agreement among southern states for sharing graduate programs allows legal residents of some states to enroll in certain programs at UT on an in-state tuition basis. The M.S.S.W. and Ph.D. programs in Social Work are available to residents of the state of Arkansas; the Ph.D. to residents of Delaware, Oklahoma or West Virginia. Additional information may be obtained from the Admissions Specialist in the Office of Graduate Admissions and Records.

GRADUATE COURSES

NOTE: Graduate students majoring in fields other than social work are admitted to certain social work courses with the approval of the College of Social Work and the student's major professor.

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

501 Foundations of Social Work Practice I (3) Survey of history, mission, and identity of profession. Basic theory, professional values and ethics, and methods generic to social work practice at various levels. Assessment, planning, communication, intervention, and evaluation skills.

502 Registration for Use of Facilities (3-18) 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. S/NC only. E

503 Foundations of Social Work Practice II (3) Generalist practice with family and small group systems. Ecological theory to frame understanding of such systems and their adaptation to environments. Various social work roles and intervention strategies pertaining to client systems.

504 Foundations of Social Work Practice III (3) Basic theory, methods, problems, and strategies in implementing planned change within and among larger social systems: task groups, human service organizations, and community systems. Various practice roles: planner, program developer, supervisor, administrator, advocate and task group leader.

506 Social Work Research (3) Research methodologies with respect to evolution and application to social work theory and practice. History and philosophies of science; problem formulation; research design; statistics; instrument use and construction; data collection; analysis and reporting; and evaluation and utilization of research.

508 Practicum in Social Work Research (3-6) Supervised practice in application of research methods to social work. May be repeated. Maximum 6 hrs. S/NC only.

509 Graduate Seminar in Public Health (1) (Same as Public Health 509, Exercise Science 509, Nutrition 509, and Nursing 509.)

514-15 Human Behavior in the Social Environment I, II (3,3) Major social science theories that inform social work practice and preparation to understand human behavior and social systems from a sociological perspective. Interactions among biological, social, psychological, and cultural systems on development across the life cycle. Effects of ethnic, racial, and cultural differences on human behavior. Effects of gender and sexual orientation variables. 514—Life cycle from infancy through adolescence. 515—From young adulthood through senescence.

516 Social Welfare Policy and Services (3) Development of contemporary social policy at local, state, national, and international levels. Contribution of social work professionals to formal policy-making process through which microsocial change is effected and through which aggregate social welfare services are proposed, authorized, financed, and programmed. Theories of complex organizations applied to social welfare service delivery settings.

518 Social Work and Oppression (3) Sources, dynamics, and impact of oppression in U.S. society as manifested in both social and economic systems and personal experiences. Analysis of causes and consequences of various forms of oppression: racism, sexism, classism, and heterosexism, and forces that perpetuate such conditions.

521 Clinical Social Work Practice with Individuals (3) Theories, knowledge, and skills for clinical practice with individuals from ecological perspective. Theoretical process and intervention strategies, incorporating current concepts of psychodynamic and cognitive practice models, and specific client problems.

523 Clinical Social Work Practice with Families (3) Concepts related to understanding and analyzing family dynamics and interactional patterns from perspective of major family therapy models. Techniques of intervention in terms of application to families with varied system and individual problems and to families from varied social and cultural backgrounds.

525 Clinical Social Work Practice with Groups (3) Theoretical and historical approaches to social work
with groups and clinical principles supporting specific
types of group work used in clinical practice and 
associated leader interventions.

526 Evaluating Clinical Practice (3) History and 
philosophies, conceptual approaches, techniques and 
methods in the planning and use of practice research 
as applied to implementation and evaluation of direct 
services to clients.

530 Seminar in Clinical Social Work (2-3) Topics in 
theory and practice of clinical social work with individu-
als, couples, families and groups. May be repeated. 
Maximum 6 hrs.

532 Short-Term Interventions (3) Theory and prac-
tice of planned short term, emergency, and 
crisis interventions.

533 Social Work Interventions with Couples (3) 
Theories regarding contemporary marital/partnering 
lifestyles, problems in relationships, methods and 
skills for problem resolution.

534 Social Work Interventions with Children and 
Adolescents (3) Various practice modalities for 
assessing and intervening with children and adolescents.

535 School Social Work (3) Place of school as 
community institution and resource. Methods, pro-
cesses, and techniques employed in school social 
work.

541 Leadership and Management in Human Ser-
vices (3) Management practices and leadership skills 
required in the administration and management of human 
services delivery systems. Emphasis is given to human 
resources management, resource allocation, strategic 
planning, and organizational dynamics.

543 Financial Management and Resource Develop-
ment (3) Administrative decision-making related to 
financial planning and resource allocation in human 
service organizations. Knowledge in budgeting, 
allocating, expenditure control, fundraising, grant 
writing, marketing, and evaluation.

547 Evaluation Research (3) History and philosop-
phies, conceptual approaches, techniques and meth-
ods, and issues in practice and utilization of evaluation 
research as applied to development and evaluation of 
social work programs and policies. Issues pertaining to 
strengths and limitations of various evaluation meth-
ods, microcomputer application, and measurement 
of program goals and objectives.

550 Seminar in Management and Community Prac-
tice (2-3) Topics in theory and practice of management 
and community practice. May be repeated. Maximum 
6 hrs.

551 Seminar in Social Welfare Policy (3) Advanced 
social welfare policy and community practice in specific fields of 
practice. May be repeated. Maximum 6 hrs.

552 Community Organization (3) Locality develop-
ment, social planning and social action as practice 
models for development of resources and meet human 
needs.

555 Current Issues in Management and Community 
Practice (3) Major problems affecting delivery of human 
services and requisite knowledge and problem solving 
skills needed to address them: board/leadership 
development, coalition building, conflict management, and 
team development.

561 Supervision and Consultation in Social Work 
(3) Roles, techniques, and practices of social work 
supervision and consultation.

564 Substance Abuse (3) Survey and analysis of 
social, cultural, medical, and psychological factors 
underlying substance use and drug abuse; policies; 
recent research and practice innovations.

566 Social Gerontology (3) Physical, psychological 
and social aspects of aging, and major social policies 
and programs.

580 Field Practice (3) Instruction and supervision in 
clinical social work practice. S/NC only.

581 Field Practice (3) Instruction and supervision in 
clinical social work practice. S/NC only.

582 Field Practice (6) Instruction and supervision in 
clinical social work/practice and management and 
community practice. S/NC only.

583 Field Practice (6) Instruction and supervision in 
clinical social work practice or management and 
community practice. S/NC only.

584 Field Practice (2-6) Instruction and supervision in 
clinical social work practice. May be repeated. S/NC only. E

586 Seminar in Gerontology (1) (Same as Human 
Ecology 585, Counselor Education and Counseling 
Psychology 585, Exercise Science 585, Nursing 585, 
Public Health 585, Psychosocial Services 585, 
and Sociology 585.)

593 Independent Study (1-6) Individualized study, 
student selects, designs, and completes examination 
of special issue or problem. May be repeated. 
Maximum 6 hrs.

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

601 Research for Social Work Practice I (3) Episte-
malological and methodological considerations for both 
quantitative and qualitative research for social work 
practice.

602 Research for Social Work Practice II (3) Episte-
malological and methodological considerations for both 
quantitative and qualitative research for social work 
practice.

604 Research in Social Service Settings (3) 
Advanced research, under faculty supervision, of prac-
tice issues in community agency. Prereq: First 
year required. Ph.D. courses or consent of instructor. 
May be repeated. Maximum 9 hrs. F,Sp

608 Evaluative Research for Social Work Practice, 
Programs and Policy (3) Techniques and strategies for 
quantitative and qualitative research for social policy's 
impact on individuals and groups and for 
evaluating processes and outcomes of social work 
practice.

612 Social Work Practice and its Social Context I 
(3) Critical analysis of knowledge bases of major 
practice modalities in direct intervention.

613 Social Work Practice and its Social Context II 
(3) Critical analysis of knowledge bases of major 
practice in administration and planning.

640 History of American Social Work (3) Social, 
cultural, economic and political contexts for deve-
lopment of social work profession, development of 
education for profession, and modern welfare system.

650 Programs and Legislation for Children and 
Families (3) Background, purposes, and current is-
sues surrounding major social welfare and health 
programs serving disadvantaged children and their 
families. Social Security Act (Title IV, Child Welfare 
and AFDC, Title V, Adoption and Child Welfare Block 
Grant; Title XIX, Medicaid), Head Start, WIC and 
other nutrition programs, and Healthy Start. Current 
issues and controversy; legislative changes.

660 Issues in Social Work Knowledge Building (3) 
Advanced seminar in theory and model building in direct 
intervention, administration and planning. Prereq: First 
year required. Ph.D. courses or consent of instructor. 
May be repeated. Maximum 9 hrs. F,Sp

670 Critical Literature Reviews (3) Techniques and 
methods for conducting critical reviews of literature; 
conceptual and methodological critiques of 
existing research.

693 Directed Study in Social Work Research (3) 
Advanced individual study, under faculty guidance, of 
social work practice issues. Prereq: First year required. 
Ph.D. courses or consent of instructor. May be repeated. 
Maximum 9 hrs. F,Sp

Sociology

(College of Arts and Sciences)

DEGREES

MAJOR

Sociology...................................M.A., Ph.D.

Suzanne B. Kurrth, Head
505 or 560. Sociology 534, 622, and Statistics 532 are recommended. Sociology courses at the 400 level may be taken with the approval of the student's committee. A student's plan of study should follow one of the following approaches: Plan 1, 6 hours in one of the department's concentrations and 6 hours in a second area, including an area outside the department, subject to the approval of the student's committee; Plan 2, 12 hours in a special area of study approved by the student's committee and the Graduate Program Committee. Students are encouraged to prepare a paper synthesizing their knowledge of the concentration(s). Students who incorporate supervised field experience in their programs are encouraged to prepare a report based on those experiences that demonstrates their understanding of research, theory, and report writing. All students must take final written and oral examinations that include questions on their general coursework in theory and methods and on their special areas of study.

Subject to approval by the student's committee, up to 12 hours may be taken in courses outside the department for either program.

THE DOCTORAL PROGRAM

Coursework

Twenty-four hours of coursework beyond the master's degree are required. Twelve hours of course credit in Sociology at the 600 level are required. Students who enter the program without the courses required for the M.A. degree (521, 531, Statistics 531) or their equivalents must take them as remedial work which does not apply to their residence. Students must complete Sociology 622, 534, 563, 633, or 636 and Statistics 532 or another advanced course in statistics. Completion of 9 hours in each of two concentrations is encouraged. A student who cannot achieve his/her educational goals within the time allotted must construct an individualized course of study subject to the approval of the student's doctoral committee and the Graduate Program Committee. Sociology courses at the 400 level may not be taken without the consent of the student's advisor and the Graduate Program Committee. Six hours may be taken in related fields without petitioning; the Graduate Program Committee for approval. The student's program may include a minor or cognate field.

Comprehensive Examinations

Written examinations in four areas are required (sociological theory, research methodology, and two substantive areas). Doctoral students are eligible to take the theory and methodology examinations when offered. Substantive examinations may be taken upon completion of theory and methodology examinations. Detailed information on examinations and examination options (generalist, specialist, and collateralist) may be obtained from the department.

Dissertation and Final Examination

A dissertation based on original research must be completed (24 hours). The candidate must pass an oral defense of the dissertation, including the theory and methodology related to the research, in accordance with the deadlines specified by The Graduate School.

MINOR IN ENVIRONMENTAL POLICY

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

MINOR IN GERONTOLOGY

Graduate students in the Department of Sociology may pursue a specialized minor in gerontology. This interdisciplinary minor gives the student an opportunity for combining the knowledge about aging in American society with his/her major concentration. Please refer to Human Ecology for specific requirements.

ACADEMIC COMMON MARKET

An agreement among southern states for sharing graduate programs allows legal residents of some states to enroll in certain programs at UT on an in-state tuition basis. The M.A. program in Sociology is available to residents of the state of Virginia (concentration in criminology only); the Ph.D. to residents of Florida (concentration in criminology only), or West Virginia. Additional information may be obtained from the Graduate Admissions Office.

GRADUATE COURSES

405 Sociology of Sport (3) Social meaning, organization, and process of sport. Prereq: 291 or consent of instructor.

414 Sociology of Health Care (3) Organization of healthcare facilities, staff-patient relationships, demographic characteristics, and prevalence of disease.

415 Sociology of Aging (3) How roles and statuses change with age in relation to major social institutions; the impact that rapidly increasing numbers of older people have on society, effect of society on older people.

446 The Modern World System (3) Critical examination of capitalist institutions, state as social system, its coherence, boundaries, regions, classes, major groups, cleavages, and patterns of conflict. Analysis of who gets what, why, and how in global political economy.

451 Criminal Justice (3) Critical assessment of criminal justice apparatus and its components; types of crime, social control, social problems, and crime policy.

455 Society and Law (3) How laws and legal processes are affected by social change, social impact of legal sanctions, relations between law and social justice.

459 Organizational and Corporate Crime (3) Analysis of crime and deviance committed by organizations. Case studies of corporate and organizational crime, organizational dynamics of crime, theories of corporate crime, and organized responses to this type of crime by governmental regulatory agencies.

460 Political Economy (3) Demographic factors and social structure; trends in fertility, mortality, population growth, migration, distribution, and composition; population policy.

484 Urban Ecology (3) Relation of humans to their environment; conservation and use of appropriate technology. (Same as Urban Studies 484.)

485 Social Values and the Environment (3) Social dimensions of ecosystem management and public policy. Applied focus on social values activated within specific biophysical and social settings. Prereq: 110 Social Problems and Social Change or 120 General Sociology or consent of instructor.

471 Sociolinguistics (3) (Same as English 471 and Linguistics 471.)

480 Diffusion of Agricultural Technology (3) (Same as Rural Sociology 480.)

500 Thesis (1-15) P/NP only; E

502 Registration for Use of Facilities (3-15) Required for the student not otherwise registered during any semester when student uses University facilities and/or facility time before degree is completed. May not be used toward degree requirements. May be repeated. S/NC only; E

504 Sociological Foundations of Political Economy (3) Survey of contemporary sociological theories of political economy, sources of political and economic power and conflict.

505 Foundations of Criminology (3) Critical overview of contemporary developments in criminology, theories of crime causation and theories of responses to crime. Prereq: 350 or equivalent.

507 Foundations of Social Psychology (3) Current and classical theoretical perspectives in social psychology.

510 Teaching Sociology (3) Art and craft of teaching sociology, curricular considerations, teaching techniques, and analysis.

531 Research Methods in Sociology (3) Research design, measurement, sampling, and quantitative and qualitative data collection techniques, data analysis, and analysis.

534 Advanced Sociological Analysis (3) Underlying assumptions and logical procedures used by sociologists in formulating explanations; foundations of sociological research strategies and techniques.

540 Occupations (3) Occupations in relation to individuals and society, economic stratification, and social organizations.

541 Collective Behavior, Social Movements, Social Change (3) Basic theory and research on conditions of social unrest in human collectivities and efforts of collectives to change existing society.

543 Sociology of Development (3) Sociological theories and studies of development: modernization, colonialism, dependency; comparative impact of various development paths upon social structures and change.

551 Delinquency and the Social Structure (3) How study of delinquency and juvenile justice is affected by changing social conditions of childhood and adolescence, changing demographic and institutional influences, and changes in society.

560 Environmental Sociology (3) Systematic treatment of current research in environmental sociology. Social impact analysis and conflicts over environmental issues.

563 Demographic Techniques (3) Standard rates and measures of demographic variables, life table analysis, and survey techniques of population analysis.

580 Advanced Rural Sociology (3) (Same as Rural Sociology 580.)

584 Seminar in Gerontology (1) (Same as Human Ecology 585, College of Education and Counseling Psychology 585, Exercise Science 585, Nursing 585, Public Health 585, Psychosocial Studies 585, and Social Work 585.)

589 Foreign Study (1-15) See College of Arts and Sciences.

592 Off-Campus Study (1-15) See College of Arts and Sciences.

593 Independent Study (1-15) See College of Arts and Sciences.
Speech Communication

(College of Communications)

MAJORS

Communications .......................... S.M., Ph.D.

John W. Haas, Head

Professors:

Julian, Faye D. (Liaison), Ph.D. ...... Tennessee
Lester, Lorayne W., Ed.D. ...... Tennessee
Yeomans, G. Allan (Emeritus).

Ph.D. .............. Louisiana State

Associate Professors:

Ambrester, M. L., Ph.D. ............... Ohio
Cook, N. C., M.A. ............... Alabama
Glenn, Robert W., Ph.D. ............... Northwestern
Haas, John W., Ph.D. ............... Kentucky

Assistant Professors:

Amler, R. S., Ph.D. ............... Ohio State
Grant, Charles H., Ph.D. ............... South Florida
Violanti, Michelle T., Ph.D. ............... Kansas

The Department of Speech Communication offers a concentration area for the master's degree with a major in Communications and participates in the interdisciplinary doctoral program. See Communications for additional information.

Graduate courses in Speech Communication also provide opportunities for students in a variety of disciplines to investigate how oral language can affect changes in the knowledge, the understanding, the ideas, the attitudes, or the behavior of other human beings.

GRADUATE COURSES

420 Communication and Conflict (3) Communication as significant factor in development, management, and resolution of conflict at interpersonal, small group, organizational or societal levels.

425 Interpersonal Health Communication (3) Interpersonal communication in health care settings: provider-client interactions, social support groups, stigma and disease, and contemporary models explaining use of health-related information.

440 Organizational Communication (3) Organizational setting and variables of communication that affect quality of human interaction both within and outside organization.

466 Rhetoric of the Woman's Rights Movement to 1930 (3) Historical and critical study of public address in campaign for women's rights in United States from 1830's through 1920's. (Same as Women's Studies 466.)

476 Rhetoric of the Contemporary Feminist Movement (3) Historical and critical study of rhetoric in campaign for women's rights in United States from 1940's to present. (Same as Women's Studies 476.)

505 Research Methods (3) Understanding of wide array of data collection and analysis procedures used in speech communication research. Development of project / thesis proposal.

510 Orientation to Teaching Assistantship (1) Curriculum, classroom management, and other issues associated with teaching at college level. For departmental GTAs.

526 Seminar in Interpersonal Health Communication (3) Current research in health communication: support groups, medical ethics, medical narratives, doctor-patient communication, or interpersonal communication theoretical perspectives in medicine.

550 Organizational Culture (3) Clarification of complex nature of organizational culture to communicate meaning and its usefulness to organizational effectiveness: challenges created by today's changing organizations and workforces.

560 Special Topics in Speech Communication (3) Contemporary topics. Prereq: Consent of instructor. May be repeated. Maximum 6 hrs.

580 Contemporary Rhetorical Theory (3) Current theoretical contributions to rhetoric: Burke, Perelman, Weaver, feminist and critical scholars.

590 Directed Reading and Research (3) May be repeated. Maximum 6 hrs.

591 Foreign Study (1-15) Independent study outside U.S. Prior to departure student must have plan of study approved by department head and supervising faculty member. Credit given only upon fulfilling all requirements set by department. May be repeated. Maximum 15 hrs.

592 Off-Campus Study / Internship (1-6) Independent study outside traditional classroom setting: community involvement and/or work experiences. Credit given only upon fulfilling all requirements set by department. May be repeated. Maximum 6 hrs.

593 Independent Study (1-6) Independent study under individual direction of faculty member. Must obtain approval of faculty member and department prior to study.

Statistics

(College of Business Administration and Intercollegiate Program)

MAJORS

Statistics .......................... S.M., Ph.D.

Robert W. Mee, Head

Professors:

Bozdogan, Hamparsum, Ph.D. ............... Illinois
Guess, Frank M., Ph.D. ............... Florida State
McLean, Robert A. (Emeritus), Ph.D. ............... Purdue
Mee, Robert W., Ph.D. ............... Iowa State
Perre, William C., Ph.D. ............... Southern Methodist
Philpot, John W. (Emeritus), Ph.D. ............... VPI
Sanders, Richard D. (Emeritus), Ph.D. ............... Texas
Sylvester, David L., Ph.D. ............... Stanford
Thigpen, Charles C. (Emeritus), Ph.D. ............... VPI

Associate Professors:

Lehnaker, Mary G., Ph.D. ............... Kentucky
Lodén, Ramón V., Ph.D. ............... Florida State
Walker, Esteban, Ph.D. ............... VPI
Younger, M. S. (Emeritus), Ph.D. ............... VPI
Additional Intercollegiate Program Faculty:

Aikens, Charles, Engineering; Bates, Ben, Communications; Bunting, Dewey, Arts and Sciences; Chu, Hui, Business Administration; Chute, Chad, Engineering; Dessart, Don, Education; Dyer, Carl, Human Ecology; Eastwood, David, Agricultural Sciences and Natural Resources; Fitzpatrick, Ben, Arts and Sciences; Fribourg, Henry, Agricultural Sciences and Natural Resources; Glass, Charles, Social Work; Gross, Louis, Arts and Sciences; Huck, Schuyler, Education; James, Lawrence, Business Administration; Ladd, R. T., Business Administration; Lounsbery, John, Arts and Sciences; Lyons, William, Arts and Sciences; McLemore, Dan, Agricultural Sciences and Natural Resources; Miller, Mark, Communications; Orme, John, Social Work; Rajput, Balram, Arts and Sciences; Richardson, Jr., Lillard, Arts and Sciences; Rosinski, Jan, Arts and Sciences; Samejima, Fumiko, Arts and Sciences; Sexton, Arnold, Agricultural Sciences and Natural Resources; Singletary, Michael, Communications; Smith, Julius, Arts and Sciences; Wagner, Carl, Arts and Sciences; Xiong, Jie, Arts and Sciences.

THE MASTER'S PROGRAM

The M.S. 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 participate 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 collaborate 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 for the program by taking coursework or other measures. Requests for application forms and further information may be sent to the Director of Graduate Studies, Department of Statistics, Stokely Management Center, University of Tennessee, Knoxville, TN 37996-0532 or ewalker@utk.edu or http://www.pemba.utk.edu/igsp.

Admission Requirements

General admission requirements for The Graduate School are stated beginning on page 12. Applicants for Statistics must submit results of the Graduate Record Examination (GRE) general portion, although GRE Mathematics scores may be substituted. The GRE scores must be sent directly to the University of Tennessee by ERB, the educational testing company. Applicants for the statistics graduate 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 working knowledge of a modern language. Applicants whose native language is other than English must submit results of the Test of English as a Foreign Language (TOEFL).

Curriculum

A minimum of 33 credit hours must be completed for the master’s degree. Required of all students are 6 hours in statistical methodology, 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 two written examinations covering 1) theory and 2) methods. Upon failing either part of the examination, the student may retake the test. 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 a minor or an M.S. in Statistics simultaneously with a master’s or doctoral degree in another department. Approved coursework taken to meet doctoral requirements for the student’s home department may also be credited toward the M.S. 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 or M.S. 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.

Degree Program

Doctorate in home department, minor in Statistics

Master’s in home department, minor in Statistics

Bachelor’s in home department, minor in Statistics

Course options consist of courses in statistics, offered either by the Department of Statistics or by other departments, which have been reviewed and approved by the IGSP Executive Committee. Students taking an M.S. 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.

General Admissions and Degree Requirements

1. The student’s home department must have approved a program of courses with the Executive Committee. That program will specify the sequence 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.

2. The student’s graduate committee must include a member of the IGSP faculty. For students seeking doctoral degrees or the M.S. in Statistics, the committee member must be a faculty member in the Statistics Department.

3. 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 M.S. 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 faculty member to serve on the student’s graduate committee.

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

BUSINESS ADMINISTRATION CONCENTRATION

For complete listing of MBA program requirements, see Business Administration. MBA Concentration: Statistics. Minimum course requirements are 571, 566, 572 with prerequisites or corequisites 561, 511, 571. Ph.D. Concentration: Statistics. This degree 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: 673, 666, 691, and 592.

CERTIFICATE IN APPLIED STATISTICAL STRATEGIES

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

The 12-credit certificate is available by completing two required courses, 571-72, 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.

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 semesters' coursework as established by the degree program for part-time students.

GRADUATE COURSES


473 Experimental Design and Analysis (3) Design and analysis of single factor and many-factor studies. Residual analysis and variance analysis. Use of standard computer programs. Sample size determination and power analysis. Analysis of variance for complex experiments. Computer oriented strategies. The program is designed for part-time students, and several of the course are offered through distance education.

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

502 Registration for Use of Facilities (3-15) 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. S/NC only. E


531 Survey of Statistical Methods (3) Univariate and bivariate data collection and organization, statistical estimation and hypothesis testing; analysis of relation- ships for categorical and numerical data, including Chi-square tests and simple and linear and quadratic regression. Use of computing facilities required. Prereq: Not given for both 531 and 537. Prereq: 1 yr. college mathematics.

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; introduction to computing facilities; introduction to computing facilities; introduction to computing facilities; introduction to computing facilities; introduction to computing facilities; introduction to computing facilities; introduction to computing facilities; introduction to computing facilities; introduction to computing facilities; introduction to computing facilities; introduction to computing facilities; introduction to computing facilities; introduction to computing facilities; introduction to computing facilities; introduction to computing facilities; introduction to computing facilities; introduction to computing facilities; introduction to computing facilities; introduction to computing facilities; introduction to computing facilities; introduction to computing facilities; introduction to computing facilities; introduction to computing facilities; introduction to computing facilities; 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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. S/NC or letter grade.

Theatre
(College of Arts and Sciences)

MAJOR DEGREE
Theatre ............................................. M.F.A.

Bill Black, Acting Head

Professors:
Black, W., M.F.A. ........................................ Illinois
Custer, M., M.F.A. ........................................ Wisconsin
Lester, L. W., Ed.D. ...................................... Tennessee

Associate Professors:
Craven, E. H., M.A. ....................................... Tennessee
DeCuir, L. J. (Liaison), M.F.A. .......................... Tulane
Gould, B. K., M.F.A. ..................................... Catholic

Assistant Professors:
Coleman, R., M.F.A. ..................................... Yale
Van den Berg, Klaus, Ph.D. .............................. Indiana
Weber, T., M.F.A. ......................................... Alabama

The Department of Theatre offers the Master of Fine Arts degree with a major in Theatre, concentrations in costume design, international performance studies in acting, international performance studies in directing, lighting design, scenic design, and theatre technology. Not all areas of concentration accept applicants every year.

Applicants must have completed undergraduate degrees approximately equivalent in requirements to those specified for degrees conferred by The University of Tennessee.

Three letters of recommendation and interviews with appropriate faculty are required of all applicants. Applicants for admission to the M.F.A. design/technical theatre programs must submit samples of their work. Auditions are required of M.F.A. degree acting applicants.

For detailed information about the graduate program, contact the Director of Graduate Studies, Department of Theatre.

THE MASTER OF FINE ARTS PROGRAM

At least 60 semester hours, 40 of which must be at the 500 level or above, are required for the degree of Master of Fine Arts with a major in Theatre, which is normally to be completed in three consecutive years of full-time residence. Theatre 501 is required in the first year of residence. Three additional hours at the 500 level are required from history, literature, or dramaturgy. Students in the M.F.A. degree program are evaluated annually by juried performance or portfolio submission. Continuation in the program is with the approval of the faculty committee for the M.F.A. degree program. Theatre 599, Projects in Lieu of Thesis, and an oral defense of the project must be completed satisfactorily before the degree is conferred.

In addition to the core requirements listed above, each area of concentration has specific requirements:

**Design/Technical Production**

Required courses are at least 12 hours of Theatre 560, Design and Technical Production Seminar, and at least 6 hours in the projects courses. Theatre 401, Principles of Design is required in the first year of residence.

**International Performance Studies in Acting**

Theatre 520-21-22-23-24-25 Master Class are required, along with one course in directing and two hours each in voice and dance.

**International Performance Studies in Directing**

Theatre 530-31-32-33-34-35 Master Class are required along with Theatre 401 Principles of Design. Directing candidates are also expected to take art and music survey courses and language courses as advised.

**REQUIREMENTS FOR SECOND MASTER'S DEGREE**

Students admitted to the MFA program who have already earned a master's or a doctoral degree may apply up to 12 credit hours from the previous graduate program to the MFA degree with approval of the student's committees, the Dean of the College of Arts and Sciences, and the Dean of The Graduate School.

Any such credits applied from a previous graduate program would be from courses that are directly relevant to the student's MFA curriculum and must have been earned within the time limit (6 years) established for completion of the MFA degree.

**GRADUATE COURSES**

**440-41 Advanced Theatre Costume Design (3,3)** Costume as expressive element in dramatic production. Prereq: 340.

**445 Advanced Costume Construction (3)** Advanced studies in construction technique, tailoring, vacuum forming, plastic molding, and coloring. Prereq: 345 or consent of instructor.

**446 Costume Patterning (3)** Draping patterns for period costumes. Construction and study of historic patterns 1500-1900. Prereq: 345 or consent of instructor.

**450 Advanced Scenery Technology I (3)** Study and practice of stage rigging for theatrical productions; production participation required. Prereq: 200. Graduate credit to theatre M.F.A. students only.

**451 Advanced Scenery Technology II (3)** Study and practice of metaworking and plastics for theatrical productions; production participation required. Prereq: 250. Graduate credit to theatre M.F.A. students only.

**462 Advanced Lighting Design (3)** Advanced problems in lighting design and theory, lighting musical theatre, opera, and dance. Prereq: 362 or consent of instructor.

**464 Computer Assisted Design for Theatre (3)** Advanced techniques in computer assisted design for theatre. Work with CAD, Computer Drawing, Graphics, and/or 3D Modeling software for preparation of theatrical designs. Specific content varies with semester. Admission by consent of instructor only. May be repeated. Maximum 9 hrs.

**470-71 Playwriting (3,3)** Advanced instruction in writing of plays. Prereq: Consent of instructor.

**491 Foreign Study (1-15)** See College of Arts and Sciences.

**492 Off-Campus Study (1-15)** See College of Arts and Sciences.

**493 Independent Study (1-15)** See College of Arts and Sciences.

**501 Introduction to Graduate Research in Theatre (3)** Research tools and methods for theatre artist and scholar.

**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. S/N only. 15 hrs.

**510 Studies in Theatre History (3)** Intensive study of selected topics in theatre history. May be repeated. Maximum 9 hrs.

**512 Dramatic Literature Analysis (3)** Dramaturgical strategies of major playwrights, using variety of analytical approaches from Aristotelian to deconstruction.

**520-21-22-23-24-25 Master Classes in Acting (6,6,6,6,6)** Master classes in acting techniques, voice, and movement. Theatre MFA students only.

**530-31-32-33-34-35 Master Class in Directing (6,6,6,6,6)** Master classes in directing techniques. Prereq: Admission to MFA program.

**536 Projects in Play Directing (3)** Practical work in play directing involving various lengths and kinds of scripts. May be repeated. Maximum 9 hrs.
Theory and Practice in Teacher Education

(College of Education)

MAJORS

DEGREES

L. Knight, Leader

Education ................... M.S., Ed.S., Ed.D., Ph.D.

Professors:

Alexiander, J. Estill. (Emeritus), Ed.D. ............... Kentucky
Benner, Susan M., Ed.D. ................. Columbia
Brozo, William G., Ph.D. ................. South Carolina
Christensen, Mark A. (Emeritus), Ph.D. ............... Kansas
Cole, Laurence J., Ph.D. .............. Kent State
Davis, A. R., Ph.D. .................. Ohio State
Davis-Wiley, Patricia E.D. ............. Houston
Hargis, Charles H. (Liaison), Ed.D. ................ Colorado State
Harris, G. A., Jr., Ph.D. .................. Michigan
Hatch, J. Amos, Ph.D. .............. Florida
Huff, P. (Emeritus), Ph.D. ........ Ohio State
Hull, Howard N. (Emeritus), Ed.D. ...... Peabody
Josef, Carl. J., Ed.D. ................. Oklahoma
Knight, Lester N., Ph.D. ................ Texas
Lindsey, LaVerne B., Ed.D. .... Mississippi State
Long, Vena M., Ph.D. ................ Missouri (Columbia)
Rowell, C. Glennon, Ed.D. ........ George Peabody
Schindler, W. Jean, Ph.D. ........ Kent State
Turner, T. N., Ed.D. ........ Penn State

Associate Professors:

Cagle, Lynn C., Ed.D. ............... Georgia
Chance, Charles A., Ph.D. ........ Ohio State
Hannum, Michael C., Ed.D. ........ Northern Colorado
Hodge, R. L., Ph.D. ................. Texas
Judge, Sharon L., Ph.D. ............... California (Santa Barbara)
Melear, Claudia T., Ph.D. ........ Ohio State
Peckett, Kathleen S., Ph.D. ........ Tennessee

Assistant Professors:

Bell, Sherry M., Ph.D. ................ Tennessee
Gilrane, Colleen P., Ph.D. ........ Illinois
Hendricks, D. A., Ph.D. ............... Alabama
Mollanen, Mark B., Ph.D. ........ Wisconsin
Rearden, Kristen T., Ph.D. ........ Texas A&M

The Department of Theory and Practice in Teacher Education offers graduate programs leading to degrees, majors, and concentrations in:

Master of Science

Education

Track 1-art education
Track 1-elementary education
Track 1-English education
Track 1-social science education
Track 2-modified and comprehensive special education
Track 2-foreign language/ESL education
Track 2-secondary teaching
Track 2-special education: early childhood

Education: Specializations

Education

Elementary education
English education
Foreign language/ESL education
Mathematics education
Reading education
Science education
Social science education

Doctor of Education

Education

Literacy, language education, and ESL education
Teacher Education

Doctor of Philosophy

Education

Early childhood education
Literacy, language education, and ESL education
Teacher Education

See Education under Fields of Instruction for full description of all degree requirements. The department also houses programs for students seeking licensure in early childhood, primary, and middle school education (grades K-6), reading endorsement, special education licensure, and secondary education. Early childhood licensure and degree programs are also available through the College of Human Ecology. The department houses three areas of interest: holistic teaching/learning, early childhood education, and secondary content teaching. The holistic teaching/learning area's central emphasis is on holistic, integrative, and interdisciplinary teaching/learning as opposed to teaching disciplinary subject content (e.g., science, mathematics, language arts) as separate entities. The focus is on integration which is similar to how children learn and how language is central to the teaching/learning process. Faculty believe that students should be prepared as teachers who can facilitate learning rather than merely dispense content. Central to the philosophy of holistic teaching and learning is knowing each individual child's learning style, abilities, and interests.

The early childhood education area is focused on preparing teachers for the education of all young children with and without disabilities in inclusive settings. Young children are defined as children from birth to age eight, including children of poverty, those of color, with disabilities, with advanced development and "mainstreamed" children.

The secondary content teaching area's mission is the preparation of teachers for instruction in art, ESL, English, foreign language, mathematics, social science and science. The emphasis is on how these disciplines are taught in context of different cultures.
Graduate Courses

510 History and Philosophy of Art Education (3) United States from 1860's to present. Prereq: Consent of Instructor.

520 Studies in Art Education (3) Issues and topics current to the field of art education. Prereq: Consent of instructor.

530 Production and Critical Analysis of Art (3) Relationship of production and critical analysis of works of art to discipline-based art education.

540 Instructional Materials and Production Related to the Teaching of Art (3) Development and use of instructional aids concerned with all aspects of teaching art: videotapes, audiotapes, slides, charts, and learning packs.

Early Childhood Education

Graduate Courses

445 Early Childhood Education: Program Development and Teaching in Kindergarten (3) Curriculum planning, classroom organization and management practices for teaching young children; relationship of kindergarten to elementary school. Prereq: Admission to teacher education. F

471 Early Childhood Special Education (6) Assessment, curriculum planning and development and teaching approaches used in early childhood special education. Prereq: Admission to teacher education. F

515 Seminar (1-3) Curriculum, instructional technology, elementary education, secondary education, or other social foundations as related to goals of students' programs. May be repeated. Maximum 6 hrs. S/NC only. E

554 Assessment in Early Childhood Special Education (3) Development of knowledge and skills in appropriate formal and informal assessments of handicapped infants and young children: screening, identification, diagnosis, placement and programming assessment issues. Prereq: 553 or consent of instructor.

566 Curriculum for Early Childhood Education (K-3) (3) Theoretical foundations and current research in content and skill areas of curriculum for kindergarten-grade 3, application to local school setting. Prereq: Consent of instructor. May be repeated. Maximum 9 hrs. S/NC only. E

577 Early Childhood Special Education: Theories and Interventions (3) Theoretical perspectives of early childhood special education; exploration of programmatic models, family-focused concepts and curricular development.

584 Seminar in Early Childhood Education (3) Analysis of research and theory in early childhood education; educative process of young children. Prereq: Course in early childhood education or consent of instructor. May be repeated. Maximum 6 hrs. F, Su

590 Advanced Studies in Early Childhood Education (3) Issues and topics current to the field of early childhood education. Prereq: 2 graduate courses in early childhood education and consent of instructor. May be repeated. Maximum 6 hrs. S/NC only. E

English Education

Graduate Courses

459 Teaching English in the Secondary School (3) Techniques of teaching composition, language, and literature. Prereq: Admission to teacher education. F

460 Teaching Reading and Literature in the Secondary School (3) Techniques of teaching reading and literature. Prereq: Admission to teacher education. Sp

461 Developing Reading Skills in Content Fields (3) Techniques for teaching reading and study skills in content areas of school program. Maximum 6 hrs. S/NC only. E

507 Teaching Poetry Grades 7-12 (3) Research and theory in application to teaching of poetry. Design of strategies and materials for teaching and writing of poetry. Practice of texts and materials. F

508 Teaching Composition in the Secondary School (3) Techniques of teaching composition, language, and literature. Prereq: Admission to teacher education. F

521 Interdisciplinary Aesthetics (3) Courses, seminar and independent study in the fields of art, music, drama, dance, photography, and film. Prereq: Consent of instructor.

533 Reading in Community College: Research and Theory (3) Analysis and evaluation of components of effective community college reading programs. Prereq: Consent of instructor. F

556 English as a Second Language Practicum (3) Experiences designing, implementing and assessing second language instruction in college classroom setting. Prereq: 587 or consent of instructor.

558 Teaching Foreign Languages in Secondary Schools (3) Techniques and materials for teaching foreign languages. Prereq: 587 or consent of instructor.

559 Teaching Drama Grades 7-13 (3) Techniques and materials for teaching drama and preparing students to participate in drama. Prereq: Consent of instructor. F

601 Studies in English Education (3) Issues and research in teaching of English. Su

605 Organizing and Administering Reading Programs (3) Analyzing and synthesizing instructional, learning, and materials components into classroom and school systems. Prereq: 2 500-level courses in reading education or consent of instructor.

Foreign Language/ESL Education

Graduate Courses

465 Teaching of Foreign Languages, Grades 7-12 (3) Instructional methods, lesson planning, peer-teaching, materials for teaching foreign language and culture evaluation techniques. Required for certification in modern foreign languages and Latin. Prereq: Completion or near completion of foreign language hours for certification and Admission to teacher education.

559 Foreign Language in the Elementary Schools Practicum (3) Experiences designing, implementing and assessing second language instruction in elementary school setting. Prereq: 587 or consent of instructor.

556 English as a Second Language Practicum (3) Experiences designing, implementing and assessing English instruction to non-native English speakers. Required course for ESL certification. Prereq: 578 or consent of instructor.

578 Teaching English as a Second Language (3) Instructional methods, lesson planning, peer-teaching, materials for teaching foreign language and culture evaluation techniques. Required for Tennessee ESL (K-12) licensure. Prereq: 587 or consent of instructor. Sp

587 Teaching Foreign Languages in Secondary Schools (3) Advanced instructional techniques and evaluation procedures: materials analysis and preparation, research papers, and research in modern foreign languages and Latin. Prereq: Consent of instructor.

678 Advanced Studies in English as a Second Language (3) Research, curriculum, assessment, trends
and issues in English as a second language. Prereq: 578 or consent of instructor.

687 Advanced Studies in Foreign Language Education (3) Research, curricula, assessment, trends and issues in foreign language education. Prereq: 587 or consent of instructor.

Mathematics Education

GRADUATE COURSES

485 Teaching Mathematics, Grades 7-12 (3) Preparation of teaching plans, evaluation, materials for teaching mathematics; teaching simulation and directed observation in schools. Prereq: Admission to teacher education.

522 Programs and Materials in Elementary School Mathematics (3) Examination, development and use of materials for creating an active learning environment for learning mathematics in elementary and middle schools. Prereq: 530, 543, or equivalent. Su.

530 Teaching Mathematics to Young Children: K-4 (3) Unit planning, daily planning, grouping, and other strategies of teaching mathematics. For those with little preparation in teaching elementary school mathematics. Sp.

543 Teaching Mathematics in Middle School: 5-8 (3) Unit planning, daily planning, grouping, and other strategies of teaching mathematics. For those with little preparation in teaching middle school mathematics. Sp.

581 Seminar in Mathematics Education (3) Current issues influencing instruction in mathematics in schools, elementary through college. Related teaching methodologies. Opportunities for work on special problems. Prereq: 485 or equivalent. F.

582 Teaching Enrichment Mathematics in Middle and Junior High Schools (3) Topics to enrich middle and junior high mathematics. Geometrical, laboratory, and problem solving activities. Special attention to metric system. Opportunities for individual projects. Prereq: 485 or equivalent. F.

583 Teaching Mathematics in Senior High Schools and Community Colleges (3) Topics appropriate for high school and community/junior college mathematics curriculum. Special problems related to enrichment, problem solving, and use of microcomputers. Opportunities for special projects. Prereq: 485 or equivalent.

586 Teaching Probability & Statistics (3) Teaching of probability and statistics in schools, elementary through college. Probabilities and statistical experiments, demonstrations, and applications. Prereq: 485 or equivalent.

687 Advanced Studies in Mathematics Education (3) Analysis of current research in mathematics education and implications of research for classroom practice. Prereq: Two graduate courses in mathematics education.

Science Education

GRADUATE COURSES

496 Teaching Science Grades 7-12 (3) Methods, materials, recent trends in science and environmental education programs for secondary schools. Prereq: Admission to teacher education program. F.

531 Teaching Science in Elementary and Middle Schools (3) Recent trends in methods, materials, and content in teaching elementary school science. Prereq: Course in teaching elementary school science or consent of instructor. F.

565 Instructional Trends and Issues in Science Education (3) Analysis of current research in science instruction, instructional issues facing elementary, secondary, and community college science teachers, and application of learning theory to teaching biological, physical, and environmental sciences. Prereq: 496, teaching methods, or equivalent. Su.

572 Nature of Mathematics and Science Education (3) Teaching and assessment of mathematics and science based upon student conceptions of nature of mathematics and science. Su.

Social Science Education

GRADUATE COURSES

454 Teaching Strategies and Issues in Social Studies Education (3) Goals, objectives, techniques, materials, and evaluation; directed observation in public schools, preparation of teaching plans and materials; simulated teaching experiences. Prereq: Admission to teacher education.

521 Teaching Social Studies in Elementary and Middle Schools (3) Planning and techniques. Trends in curriculum, development of concepts and generalizations, integration of social sciences. Prereq: Course in teaching of social studies or consent of instructor. Sp.

525 Strategies, Programs, and Materials for Teaching Elementary Social Studies (3) Analysis of new and innovative social studies program materials and techniques. Exploration of current trends in social studies education. Prereq: Previous course in teaching of social studies or consent of instructor.

585 Teaching Secondary School Social Studies (3) Strategies, projects, materials, and programs in social studies. Prereq: Undergraduate course in teaching of social studies. F.

599 Seminar in Social Studies Education (3) Research, trends, and issues in secondary social studies. Su.

621 Seminar in Social Studies Research and Theory (2) Status of research and theory. Needed research, related research from other fields, and application of research. Prereq: Recent course in teaching of social studies or consent of instructor. May be repeated. Maximum 4 hrs. F.

Special Education

GRADUATE COURSES

419 Psychology and Education of Students with Mild Disabilities (6) Nature and characteristics of persons with mild handicaps; educational strategies appropriate for these persons. Prereq: Special Education Principles, Special Education Strategies, and admission to teacher education program. Coreq: 420. F.

420 Field Experience in Modified Programs (3) Practicum in teaching in modified programs: planning, developing, implementing and evaluating instruction. Prereq: Special Education Principles, Special Education Strategies, and admission to teacher education program. Coreq: 420. S/NC only. F.

431 Field Experience in Comprehensive Programs (3) Prereq: Special Education Principles, Special Education Strategies, and admission to teacher education program. Coreq: 430. S/NC only.

432 Psychology and Education of Students with Moderate/Severe Disabilities (6) Nature and characteristics of persons with moderate/severe disabilities and educational strategies appropriate for those persons. Prereq: Special Education Principles, Special Education Strategies, and admission to teacher education program.

454 Education of the Gifted and Talented Children (3) Orientation to psychometric and behavioral studies of giftedness. Analysis of past and present school practices in reference to curriculum and program implementation. Su.

456 Speech and Language Basis of Learning Disabilities in the Classroom (3) Normal communication development; understanding of speech and language impairments in school-age students: integration of oral/ written, communication skills into existing curriculum. Sp.

470 Psychology of the Exceptional Child (3) Varieties of exceptional children; general characteristics and educational needs. Implications of developmental
variations for functioning as adults. Opportunity to expand study upon particular exceptionality. Enrollment limited to non-special education majors.

504 Clinical Experience in Teaching and Supervision of Exceptional Children (3-9) Placement in educational settings. May be repeated. Maximum 8 hrs. S/N or letter grade. (Same as Rehabilitation and Deafness 504.)

506 Internships in Teaching in Special Education and Rehabilitation (3-15) Placement in professional settings in public schools or agencies under supervision of master practitioners. Enrollment limited to those in fifth-year program. S/N only.

553 Assessment of Exceptional Students (3) Current issues related to assessment. Advanced study of evaluation models for special education, dyamic and other innovative assessment approaches; advanced study of application to educational programming: basic statistics and application in assessment.

555 Characteristics of Affective/Motivational Functioning in Children with Disabilities (3) Definition, methods, identification and symptoms of children with affective/motivational development in disabled youngsters. Comparison to normal development and that of children labeled disturbed or behavior disordered.

556 Instructional Systems for Affective/Motivational Education for Children with Disabilities (3) Educational strategies and models of instruction; simulation, demonstration, and media. Teaching techniques, materials, and teacher/pupil/family interactions. Therapeutic forms of education through art, music, role play, puppets, bibliotherapy, and group interactions. Prereq or coreq: 555 or consent of instructor.

557 Positive Preventive Discipline (3) Instructional, classroom and preventive/proactive strategies for use in classrooms which positively affects efficiency of classroom. Research on how curriculum can encourage appropriate interactions of children and youth. Prereq: Admission to graduate program.

558 Neuromuscular and Health Disorders: Educational Implications (3) Neurological impairments, physical disabilities and special health conditions, autism. Investigation of instructional techniques and adaptations.

564 Psychosocial Development of Gifted and Talented Children (3) Phenomena of talent development in context of home, school, and society. Implications of maladjustment. Practices for promoting social and emotional development. Prereq: 451 and 452 or equivalent or consent of instructor.

565 Instructional Systems for the Gifted and Talented (3) Instructional methods in systems evaluated in terms of effectiveness in various educational environments. Prereq or coreq: 563 or consent of instructor.

575 Creative Problem-Solving Strategies for Special Educators (3) Techniques for solving problems encountered by special educators in any setting.

586 Seminar in Research Techniques in Special Education (3) Evaluation of appropriate research methodologies with handicapped populations.


590 Application of Microcomputer Technology in Special Education and Vocational Rehabilitation (3) Application of microcomputer technology with emphasis on categories of exceptionalities and across all chronological and functional age ranges. Microcomputer adaptive software, special switch access, authoring systems, telecommunication, and strategies for cognitive development.

620 Internship in Research in Special Education and Rehabilitation (3-9) Placement with professional engaged in theoretically-based research in public schools, institutions, agencies or university settings. May be repeated. Maximum 8 hrs. S/N or letter grade. (Same as Rehabilitation and Deafness 620.)

630 Internship in Institutional Leadership in Special Education and Rehabilitation (3-9) Advanced level field experiences under supervision of practitio-nner. Prereq: Consent of instructor. May be repeated. Maximum 9 hrs. S/N or letter grade.

Theory and Practice in Teacher Education

GRADUATE COURSES

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

502 Registration for Use of Facilities (3-15) Required for the student not otherwise registered during any semester when the student uses University facilities and/or faculty time before degree is completed. May be used toward degree requirements. May be repeated. S/N or letter grade. E

503 Problems in Place of Use of Facilities (3-15) May be repeated. Maximum 9 hrs. S/N or letter grade. E

517 Seminar in Theory and Practice in Teacher Education (3) Curriculum, instructional technology, elementary education, secondary education, or special foundations as related to students' programs. May be repeated. Maximum 6 hrs. S/N or letter grade. E

518 Educational Specialist Research and Thesis (3) May be repeated. P/NP or letter grade. E

560 Action Research and Practical Inquiry in Education (3) Principles of action research and practical inquiry for practitioners in early childhood and school settings and methods for conducting such inquiries in professional role. Prereq: Admission to graduate program.

561 Clinical Studies (4) Relationship between educational theory and application during internship; research project, development of portfolio, and capstone experience.

563 Independent Study (1-3) May be repeated. S/N or letter grade. E

596 Clinical Experience in Assessment and Instruction (3) Academic remediation applied in field setting; tasks related to teaching; assessment, preparation of lessons, and delivery of instruction. Coreq: 553, S/N or letter grade. F

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

604 Seminar in Curriculum and Instruction (1) Required 2 consecutive semesters. S/N or letter grade. E

610 Internship in College Teaching and Supervision (3-9) Supervised practice in college teaching and supervision. Prereq: Admission to doctoral program or consent of instructor. May be repeated. Maximum 9 hrs. S/N only.

617 Trends and Issues in Curriculum and Instruction - An Interdisciplinary Perspective (3) Current trends and issues in field of curriculum and instruction. Prereq: Admission to Ed.S. program.


689 Internship (1-3) Experience in application of principles and practices of curriculum development and instructional improvement. Prereq: Program prerequisites and consent of instructor. May be repeated. Maximum 9 hrs. S/N or letter grade. E

693 Independent Study (1-3) May be repeated. S/N or letter grade. E

694 Supervised Reading (1-3) May be repeated. S/N or letter grade. E

695 Special Topics (1-3) May be repeated. S/N or letter grade. E

Transportation

See Marketing, Logistics and Transportation

Veterinary Medicine

(College of Veterinary Medicine)

MAJOR DEGREE

Veterinary Medicine.......................... D.V.M.

Comparative and Experimental Medicine .......... M.S., Ph.D.

THE PROFESSIONAL PROGRAM

Admission Requirements

To qualify for admission to the professional program of the College of Veterinary Medicine, a candidate must have completed at least the minimum preprofessional course requirements listed below. These may be completed at any accredited college or university that offers courses equivalent to those at The University of Tennessee. Preprofessional course requirements must be completed by the end of spring term of the year in which the student intends to enroll. Biochemistry requirements must have been satisfactorily completed within five years of the time the applicant wishes to enter the program.

Subject Area Semester Hours

English ........................................... 6

Humanities and Social Sciences** ........... 18

Physical Science ................................ 8

General Chemistry ............................. 8

Organic Chemistry ............................. 8

Biochemistry** .................................. 4

General Biology ............................... 8

Genetics ........................................ 3

Cellular Biology*** .............................. 6

TOTAL ........................................ 66

**May include, for example, courses in English literature, speech, music, art, philosophy, religion, language, history, economics, anthropology, political science, psychology, sociology and geography.

***Exclusive of laboratory.

**It is expected that this requirement will be fulfilled by a course in cellular or molecular biology.

Admission Procedures

Admission of new students is for the fall semester, with first priority given to residents of Tennessee. The College of Veterinary Medicine utilizes the Veterinary Medical College Application Service (VMCAS) for all applicants. Forms and instructions for making application for admission may be obtained beginning June 1, 2000 from the Office of the Associate Dean, The University of Tennessee, College of Veterinary Medicine, P.O. Box 1071, Knoxville, TN 37901-1071.

Note: The deadline for receipt of the completed application materials by VMCAS is November 1. NON-TENNESSEE APPLICANTS MUST HAVE A MINIMUM CUMULATIVE GRADE-POINT AVERAGE OF 3.2 ON A 4.0 SCALE FOR APPLICATION TO BE CONSIDERED.

Applications are accepted only from U.S. citizens or permanent residents of the U.S.
### THE GRADUATE PROGRAM

The College also administers a graduate program involving all departments which leads to the Doctor of Philosophy degrees. Because of the interdisciplinary departmental administration of the College of Veterinary Medicine, the faculty have opportunities in the graduate programs of other instructional units, including Animal Science (nutrition, physiology, genetics and animal behavior), Microbiology (bacteriology, virology and immunology), Ecology and Evolutionary Biology (environmental toxicology), Public Health, and Comparative and Experimental Medicine. (Refer to other sections of this catalog for a full description of these programs.) The majority of the graduate students and graduate faculty of the College of Veterinary Medicine are involved in the Comparative and Experimental Medicine program. This program provides a wide spectrum of interdisciplinary training that prepares graduates for teaching and/or research careers in the health sciences.

### PROFESSIONAL COURSES

<table>
<thead>
<tr>
<th>Code</th>
<th>Course Title</th>
<th>Credits</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>801-02-03</td>
<td>Application Based Learning Exercise (ABLE) I, II, III (2.1) Small group, student-centered learning sessions with facility for self discovery of new information.</td>
<td>1.5</td>
<td>Offers an educational experience that is designed to enhance professional growth and is intended to enhance professional growth, concentration in an area of interest and career opportunities.</td>
</tr>
<tr>
<td>804-05-06</td>
<td>Application Based Learning Exercise (ABLE) II, III (2.2) Week-long small group, student-centered learning sessions with facility for self discovery of new information.</td>
<td>1.5</td>
<td>Focuses on specific clinical case or problem, and integration of basic science and clinical material.</td>
</tr>
<tr>
<td>811-813-814</td>
<td>Infection and Immunity I-III-Bacteriology and Mycology 1, 11-11 (2) Fundamental aspects of microbiology and cell biology related to pathogenesis of bacterial and fungal diseases of animals: antimicrobial actions and mechanisms of bacterial resistance.</td>
<td></td>
<td>Focuses on specific clinical case or problem, and integration of basic science and clinical material.</td>
</tr>
<tr>
<td>815-816-817</td>
<td>Infection and Immunity I-III—Immunology 1, 11, 11 (1, 2, 2) Correlations between basic science material from concurrent courses and practice of veterinary medicine.</td>
<td>1.5</td>
<td>Focuses on specific clinical case or problem, and integration of basic science and clinical material.</td>
</tr>
<tr>
<td>818-819-820</td>
<td>Clinical Correlations and Ethics 1, 11 (1, 2) Correlations between basic science material from concurrent courses and practice of veterinary medicine.</td>
<td>1.5</td>
<td>Focuses on specific clinical case or problem, and integration of basic science and clinical material.</td>
</tr>
<tr>
<td>821-22</td>
<td>Veterinary Anatomy I, II, III (4, 4, 4) In-depth study of the anatomic, histologic, and physiologic structure and function of the body.</td>
<td>12.5</td>
<td>Focuses on specific clinical case or problem, and integration of basic science and clinical material.</td>
</tr>
<tr>
<td>823-24-25</td>
<td>Physiology I, II, III (4, 4, 4) In-depth study of the anatomic, histologic, and physiologic structure and function of the body.</td>
<td>12.5</td>
<td>Focuses on specific clinical case or problem, and integration of basic science and clinical material.</td>
</tr>
<tr>
<td>826-27</td>
<td>Special Problems in Animal Science (1-9) Extramural and specially designed study for students interested in selecting topics in animal science.</td>
<td>1-9</td>
<td>Focuses on specific clinical case or problem, and integration of basic science and clinical material.</td>
</tr>
<tr>
<td>831-832</td>
<td>Physical Diagnosis (1) Basic care, feeding, restraint, and handling of domestic animals.</td>
<td>1.5</td>
<td>Focuses on specific clinical case or problem, and integration of basic science and clinical material.</td>
</tr>
<tr>
<td>833-834</td>
<td>Epidemiology and Evidence Based Medicine (2) Study of distribution and etiologies of disease in animal populations.</td>
<td>3.0</td>
<td>Focuses on specific clinical case or problem, and integration of basic science and clinical material.</td>
</tr>
<tr>
<td>835-836</td>
<td>Pathophysiology (3) Principles of anesthesiology: pharmacology of anesthetic agents, and introduction to anesthetic techniques in veterinary medicine.</td>
<td>3.0</td>
<td>Focuses on specific clinical case or problem, and integration of basic science and clinical material.</td>
</tr>
<tr>
<td>837-838</td>
<td>Toxicology (2) Principles of anesthesiology: pharmacology of anesthetic agents, and introduction to anesthetic techniques in veterinary medicine.</td>
<td>3.0</td>
<td>Focuses on specific clinical case or problem, and integration of basic science and clinical material.</td>
</tr>
<tr>
<td>839-840</td>
<td>Hematology and Immunology (3) Principles of anesthesiology: pharmacology of anesthetic agents, and introduction to anesthetic techniques in veterinary medicine.</td>
<td>3.0</td>
<td>Focuses on specific clinical case or problem, and integration of basic science and clinical material.</td>
</tr>
<tr>
<td>841-842</td>
<td>Cardiovascular System (2) Pathophysiology, special pathology, medicine and surgery of diseases of cardiovascular system.</td>
<td>3.0</td>
<td>Focuses on specific clinical case or problem, and integration of basic science and clinical material.</td>
</tr>
<tr>
<td>843-844</td>
<td>Respiratory System (2) Pathophysiology, special pathology, medicine and surgery of diseases of respiratory system.</td>
<td>3.0</td>
<td>Focuses on specific clinical case or problem, and integration of basic science and clinical material.</td>
</tr>
<tr>
<td>845-846</td>
<td>Nervous System (3) Pathophysiology, special pathology, medicine and surgery of diseases of nervous system: clinical neurology and neuropathology.</td>
<td>3.0</td>
<td>Focuses on specific clinical case or problem, and integration of basic science and clinical material.</td>
</tr>
<tr>
<td>847-848</td>
<td>Neurology/Ophthalmology (4) Clinical training in specialty services: ophthalmology and neurology.</td>
<td>4.0</td>
<td>Focuses on specific clinical case or problem, and integration of basic science and clinical material.</td>
</tr>
</tbody>
</table>
FACILITIES FOR RESEARCH AND SERVICE
Facilities for Research and Service
Facilities for Research and Service

Bureau of Evaluation, Research, and Service
(College of Education)
Ian R. Rockett, Director

The Bureau is responsible for the coordination of research and evaluation activities and for the development of college research and service activities based in external funding. In addition, it may be called upon to provide brokering services to connect faculty expertise with needs for consultant services, technical assistance, and possible professional development activities. The Bureau directly coordinates select development of research proposals, as well as college grant and contract review, administration, and fiscal processes. The Bureau also provides the administrative home for the interdisciplinary Center for Literacy Studies, the Appalachian Rural Systemic Initiative Resource Collaborative, and the High School Equivalency Program (Migrant Education).

Center for Business and Economic Research
(College of Business Administration)
William Fox, Director

In its economic research endeavors, CBER today has the same basic mission determined at its inception over 60 years ago at the request of the Tennessee Legislature—to produce and disseminate new information in the field of economic research and in the specific areas of regional economic development and fiscal policy. The mission has also expanded to include influencing decision quality in the public and private sectors and integrating departmental research through cooperative ventures in the international arena. In addition to the annual Economic Report to the Governor and the biennial Tennessee Statistical Abstract, the Center publishes research on a wide range of socioeconomic and policy issues, including taxes, banking, telecommunications, environmental concerns, and employment prospects.

While its core mission remains little changed, the scope of the CBER unit has expanded from a largely individualistic fiscal assistance program to a regional economic research, policy analysis, and communications technology arm of the College of Business Administration. With a staff of three senior research faculty and a support staff in areas of research, information technology and information dissemination, CBER is located at 100 Glocker.

Center for Executive Education
(College of Business Administration)
John E. Riblett, Director

The College of Business Administration’s executive/management education efforts are facilitated through the Center for Executive Education, 708 Stokely Management Center. The mission of the Center is to promote the learning and dissemination of an integrated framework of managerial excellence. The Center defines excellence in terms of competitive world standards of quality, efficiency, and service to the recognized concerns of all constituencies (customers, employees, suppliers, owners, students, and society in general). This mission includes the accepted responsibility for (1) developing close strategic partnerships with a selected set of companies to better facilitate learning and development of the knowledge which is truly externally valued, and (2) acting as a facilitator in driving this knowledge into the credit curriculum of the College.

The Center prides itself on the development of long-term relationships with organizations that provide a living laboratory to test and validate the new knowledge of the Center that is disseminated in a variety of forms. Executive and Management Education Programs are one form of dissemination. The Center has provided custom and public programs for 80 of the Fortune 500 companies.

The Center emphasizes consistent, high-quality programming, small class sizes, outstanding faculty who bring the added value of experience in the private and public sectors to the classroom, a highly interactive style of instruction, and an applied orientation. The focus is on longer term, more developmentally oriented programs of one to four weeks in length such as the four-week University of Tennessee Executive Program, three-week Practical Strategies for Process Improvement Institute, and one-week Lean Enterprise Systems Design Institute.

Center for Information Studies
(School of Information Sciences)

The Center for Information Studies (CIS) was established in June 1989 to be a focal point for research related to information systems and services. The Center, located at 304 Temple Court, has performed research for the federal government, state and local governments, and business and industry. Projects have ranged from strategic planning efforts to information system and service evaluations, to modeling of scientific and technical communication. Staff of the Center have been actively involved in proposal development and project performance with faculty and staff in other centers and departments at the University.

Areas of interest to the Center include information systems design, information organization and retrieval in very large databases, directories and locator tools in a networked environment, design of regional...
library and information system networks, new technology applications, information system support for educational reform, modeling of information processes, development of measures and methods for evaluating information system performance and effectiveness.

Center for Literacy Studies  
(College of Education)

The Center for Literacy Studies was founded in 1988. The Center's purpose is to bridge theory and practice in the field of adult learning and literacy. To achieve its purpose, the Center collaborates with practitioners, policy makers, and other research organizations on projects that address five common themes: 1) building the capacity for literacy delivery systems that can meet the needs of a changing society; 2) forming partnerships with practitioners who are working to make changes in their practice of adult education; 3) developing innovative approaches to adult learning and literacy; 4) developing innovative technology applications for the field; and 5) disseminating results to the field.

Center for Physical Activity and Health  
(College of Education)

The mission of the Center for Physical Activity and Health is to integrate scientific research, education, and practical applications of exercise and health science in a manner that enhances health, fitness, performance, and quality of life. The Center is a service-oriented organization designed to educate the UT and Knoxville communities about the benefits of regular physical activity as well as warn about the serious potential health outcomes of a sedentary existence.

The Center focuses its efforts in four main areas: training future leaders in exercise promotion, providing exercise opportunities for members of the UT community, promoting exercise within the UT and Knoxville communities, and providing exercise testing and assessment.

For additional information about services, contact Dr. Dixie L. Thompson at (865) 974-1271 or via e-mail at dixlee@utk.edu.

Center for Excellence for Materials Processing

The Center for Materials Processing is one of the "Centers of Excellence" created by the State of Tennessee. It has an interdisciplinary program designed to bring together individuals with appropriate expertise to solve important materials processing problems. It emphasizes (1) the development of desirable materials properties through the control of composition, molecular structure and microstructure, (2) measurement of process variables, and (3) control of those variables to ensure proper processing. The Center conducts basic research and teaching in materials processing and carries out research results to private industry. A major aspect of the Center is student participation in industry-sponsored research programs.

The Center is located in 513 East Stadium Hall, 974-0816. For further information, contact Dr. G. J. McHargue, 974-7680.

Centers and Chairs of Excellence

In 1984, the General Assembly appropriated and the governor approved $10 million for the first Centers of Excellence throughout the state. The public colleges and universities submitted their proposals for Centers of Excellence to the Tennessee Higher Education Commission, which made the final determinations. Now four of the University's ten Centers of Excellence are sponsored by UT or located in Knoxville.

Concurrently, the University has received state funding which it must match dollar for dollar, for Chairs of Excellence. These Chairs are $1 million endowed professorships in areas of significance to the University and to the individual, foundation, or corporation providing the matching gift money.

Chairholders are members of our respective academic units. The Chairs of Excellence are:

- Bernadotte E. Schmitt Chair of Excellence in History
- Benard Blasingame Chair of Excellence in Agricultural Policy
- Chair of Excellence in Science, Technology and Medical Writing
- Clayton Homes Chair of Excellence in Finance
- College of Business Administration Chair of Excellence in Policy Studies
- Condra Chair of Excellence in Computer Integrated Engineering and Manufacturing
- Condra Chair of Excellence in Power Electronics Applications
- Goodrich Chair of Excellence in Waste Management and Environmental Engineering
- Hodges Chair of Excellence in English
- J. Fred Holly Chair of Excellence in Public Economy
- Nancy Gore Hunger Chair of Excellence in Environmental Studies
- UT Willis Lincoln Chair of Excellence in Physics
- Pilot Chair of Excellence in Management
- Ivan Racheff Chair of Excellence in Ornamental Horticulture
- Ivan Racheff Chair of Excellence in Materials Science and Engineering
- Forrest & Patry Shumway Chair of Excellence in Romance Languages

The combination of the Centers of Excellence and Chairs of Excellence adds a dimension to The University of Tennessee that is not easily equaled by other institutions. UT's reputation as the premiere university in the state and as a regional and national leader in instruction, research, and public service is enhanced as a result of the infusion of these special funds.

For information concerning the individual centers sponsored by UT, contact:

Center of Excellence for Livestock Diseases and Human Health  
Dr. G. M. H. Shires, Director
College of Veterinary Medicine
UT
109 Morgan Hall
Knoxville, TN 37996  
(865) 974-7262
The Science Alliance
Dr. Thomas A. Callcott, Director
LIT
101 South College
Knoxville, TN 37996
(865) 974-6765

Waste Management Research and Education Institute
Dr. Gary Sayler, Director
676 Dabney Buehler
Knoxville, TN 37996-0845
(865) 974-8080

Child Development Laboratories
(College of Human Ecology)
Anne Miller Stott, Staff Director
The Child Development Laboratories, operated by the Child and Family Studies department within the College of Human Ecology since 1927, currently offer child care programs for young children ages six weeks to five years. The Child Development Laboratories serve three purposes: to promote observation, participation, and research activities of the department and other university faculty and students; to prepare undergraduate and graduate child development professionals for working effectively with young children; and to provide a model early childhood education program for children, families and early childhood professionals.

The programs are equipped with a telemetry laboratory that features unique videotaping capabilities in all classrooms, small group research rooms, and observation booths that facilitate teacher training and research. A variety of research projects (such as the development of creativity in young children, emergent literacy, children's political socialization, mainstreaming, and peer interactions) involves students and faculty in the college and many departments on campus. Graduate Assistants in the Laboratories participate in teaching, assessment, and research activities while working with children and families under the guidance of faculty and staff. The Child Development Laboratories are accredited by the National Academy of Early Childhood Programs, a division of the National Association for the Education of Young Children.

For more information, check Web site at http://web.utk.edu/~utkcdl/.

Communications Research Center
(College of Communications)
The Communications Research Center, 426 Communications Bldg., is an adjunct to the communications graduate program. Objectives of the Center are: (1) to conduct original research in mass and public communications; (2) to disseminate research-generated information; and (3) to provide research services to faculty and students, professional communicators, and others interested in improving the quality of human communications.

Division of Information Infrastructure
The Division of Information Infrastructure (DII) provides computing and telecommunication resources and services for students, faculty, and staff. DII consists of four operating units: Computing and Networking Services, Customer Technology Support, Innovative Technologies Collaborative, and Telephone Services. Information about DII is available on the website http://www.utk.edu/technologylab.

DII provides the core information technology infrastructure for The University of Tennessee. DII provides public-access computer labs, central computing, administrative information systems and network services, as well as information security for UT.

Individual computer accounts are provided at no charge for all UT students, faculty and staff for the duration of their affiliation with UT. These accounts may be used for e-mail, coursework, research, and personal Web pages. Information and on-line registration for computer accounts is available at http://dii.utk.edu/accounts.html.

Students on the Knoxville campus may access the Internet through direct Ethernet or dial-up accounts. For on-campus students, each dorm room is provided with two switched 10 Mbit Ethernet ports. For off-campus students, the Enhanced Remote Access (ERA) pool is sustained by 756 modems supporting 56 Kbps analog and 64Kbps/128Kbps ISDN connections. Complete information on this service is available at http://dii.utk.edu/students/remote_access.html.

To provide access to computing facilities on campus, DII maintains six staffed computing labs, 15 unstaffed labs, and supports computing installations in residence halls. The computing labs are equipped with more than 300 microcomputers and eight workstations including current models of Apple, IBM, Sun, Dell, and Gateway machines. In addition, there are laser printers, scanners and zip drives available. A variety of industry standard software applications are available for use on the machines in the computing laboratories. Please refer to http://www.dii.utk.edu/labs.html for more information.

Division of Information Infrastructure

Student Information Systems supports the bulk of information pertaining to students at UT. Main functions of SIS include student records, recruiting, admissions, financial aid and accounts receivable. SIS interfaces with other computer systems and databases across campus, including Housing and Dining, VoICOR (UT), Parking, and other auxiliary offices. Other interfaces include federal agencies that work with student financial aid and state agencies that require reporting from institutions of higher education.

Telephone Services offers services that not only assist in education, but also provide a more pleasant Residence Halls and University Residence Apartments experience. Service offerings to Residence Halls include: long distance packages, voice mail, second telephone line to rooms, and the campus TV service.

Service offerings to University Residence Apartments include: local telephone service, second line and long distance packages and voice mail. Visit the website www.dii.utk.edu for a more comprehensive and detailed description of telephone and TV services and how to order them.

DII HELP DESK
DII provides the telephone Help Desk as a centralized source of information and service for the computer and network resources managed by DII. Help Desk services are available to all students, faculty, and staff of UT. Questions about UNIX account setup and billing, desktop hardware and software, e-mail, Internet usage and Web page design, domain connectivity—all can be handled by the Help Desk staff. Call 974-9900 (students) or 974-8800 (faculty/staff) or send e-mail to helpdesk@utk.edu (UNIX, Internet, e-mail, or general) or info@utk.edu (connectivity problems or questions).

DII CUSTOMER SERVICE CENTER
DII maintains a Customer Service Center that centrally locates all contact points for walk-in computer support. When students need to get an internet account, get their network card installed, register for an e-mail account, have their UNIX password reset, retrieve portions of a research paper from a virus-infected diskette, learn how to construct Web pages, or learn how to download or transfer files across the network, they can come to Aconda Court at the corner of Volunteer and Cumberland.

WALK-IN CONSULTING
The walk-in consulting center devotes its time to solving problems and teaching. The consulting center is staffed with people who believe that sitting down with someone and actually working through a problem on a computer is often the best way to get results. Assistance is given on Web page construction, use of scanner hardware and software, and uploading files and scanned images to a Web page. Students, faculty, and staff can come to the consulting center to register for an e-mail account or to get assistance with UNIX password problems. Users are taught how to Telnet, how to download and use virus protection pro-
grams, how to use the CBT courses, how to use Webmail, Lotus Notes or Pipe, how to surf the Internet on both Netscape and Microsoft Explorer, and how to access the campus computer system through a modem. No question is too basic. Introductory PC and Macintosh skills are taught, even things as simple as using a mouse. After-hours consulting can be arranged on an emergency basis.

**ENHANCED REMOTE ACCESS (ERA) AND SUPPORT**

DII supports approximately 6,000 users of ERA. Currently DII provides up to 128K ISDN connections and 56K analog connections. Any UT student, staff, or faculty member can obtain an ERA account that will give them access to the UT computer network, computer resources, and Internet access, all from home. The cost of these services is below that of an off-campus vendor and is further reduced for students by the Technology Fee. The Enhanced Remote Access office is located in room 103 Aconda Court at the corner of Volunteer and Cumberland. The ERA office personnel will help set up accounts as well as provide technical assistance either over the phone or for walk-in customers.

**COMMUNICATIONS SOFTWARE DISTRIBUTION**

DII distributes communications software to students, faculty and staff through the Enhanced Remote Access office located in room 103 Aconda Court. This software is free of charge. The software can be used to access the resources on the UT network and the Internet. Programs are provided for both PC and Macintosh computers and are available on CD. These software packages allow a person to check e-mail, surf the Web and transfer files.

**DORM ETHERNET CARD INSTALLATION**

DII has wired every dorm room on campus for network access. Each network port in the rooms is a 10Mbps dedicated Ethernet connection. Students living in the dorms with network capable computers will be connected for free of charge. Students with computers which do not have network cards installed may obtain a network card at a reduced price. Technicians are available to install the network card and communications software free of charge.

**TECHNOLOGY TRAINING**

Several courses are offered aimed at improving skills with the technology available at UT. For example, "Life Preserver: An Introduction to UT Computing," is offered several times each semester on supported application software and operating systems. Other courses include those about MS Office products, using the Internet and search engines, and Web Page Essentials which offers four levels of HTML training. There is also a series of courses on Adobe Photoshop.

**COMPUTER-BASED TRAINING**

Computer-Based Training (CBT) is a self-paced series of interactive, Web delivered, learn-as-you-go courses offered on many computing topics. CBT offers courses for Microsoft products (Word, Excel, etc.), Lotus Notes (database management, etc.), Internet topics (How to create a Web page, etc.), and more advanced topics, such as JavaScript, HTML, object-oriented techniques, and open systems. There are over 500 courses available. This training is free to UT students, faculty, and staff. For registration and access to the CBT courses on the Web go to DII.UTK.EDU and click on "CBT."

**STATISTICAL AND COMPUTATIONAL CONSULTING CENTER**

The mission of the Center is to enhance the quality of research by effectively applying statistical and computer techniques. Assistance is offered to UT students, faculty and staff, as well as other organizations and individuals. For students, the Technology Fee covers the cost of services for up to two hours per month (10 hours per semester). Beyond that, the fee provides a subsidized rate of $20 per hour. Faculty and staff are offered five hours per month of centrally-funded consulting. Consulting is provided on:

- SAS, SPSS, and JMP
- Research planning and design
- Sample size determination
- Data entry and management
- Access to outside data sources such as census, stock market, ICPSR
- Analysis and interpretation
- Statistical graphics
- Review of journal articles, grant proposals, theses or dissertations
- Computer programming (not centrally funded)
- Training in the use of statistical and computing techniques

**DII WEBSITE AND DOCUMENTATION**

The DII Website is located at [http://www.DII.utk.edu](http://www.DII.utk.edu). The DII Web page provides access to information about, and access to, the many DII technology services that are available. On-line and printed documents describe use of resources available to students, faculty and staff. This documentation includes The Life Preserver, a manual to help get started using the UNIX account and sending/receiving e-mail, quick reference guides, and frequently-asked questions (FAQ) Web pages.

**INNOVATIVE TECHNOLOGIES COLLABORATIVE**

The Innovative Technologies Collaborative (ITC) enriches the educational experience of UT students by supporting the academic community in advancing learning through the use of instructional technologies. The ITC's services and resources are available to all UT faculty, academic teaching staff, and graduate teaching assistants. The ITC staff is available to consult with instructors on everything from developing technology-driven course components to offering fully online curricula. At the heart of the ITC is a team of highly skilled professionals. The group has expertise in instructional, multimedia, graphical interface, and Web design. They also have expertise in technology assessment and integration, computer programming, and information science.

Each semester, the ITC offers a comprehensive selection of courses and workshops to all members of the UT academic teaching staff. In addition to the hands-on approach used during instruction, online components are available for reference and practice.

In response to current trends in higher education to move instructional materials and courses onto the World Wide Web, the ITC hosts Blackboard's CoursesInfo as the campus course management system. CoursesInfo allows instructional staff to create, edit, and add course materials, organize content flow, communicate with students, manage grades and student materials, and evaluate the course either wholly online or in conjunction with a face-to-face course. This service not only makes publishing class materials on the Web easier, it is free and hosted by the ITC on a restricted server, protecting intellectual property and student privacy. The ITC maintains the Online@UTK Website ([online.utk.edu](http://online.utk.edu)) with links to UT courses with a Web presence and courses powered by CoursesInfo and the Get Online@UTK Website ([itc.utk.edu/getonline](http://itc.utk.edu/getonline)) for access to training and support for the CoursesInfo initiative.

The ITC maintains a variety of hardware and software resources for instructional use ([itc.utk.edu/itc/resources](http://itc.utk.edu/itc/resources)). The ITC Development Lab is a multi-platform computer laboratory equipped with updated peripherals, software, and resources for designing, developing, authoring, producing, and evaluating online courseware and multimedia prototypes. Faculty may reserve a station and work independently, or consult with one of the ITC staff. In addition to the lab, the ITC maintains a small inventory of equipment that faculty may checkout for instructional use. The ITC works with Academic Affairs to prioritize needs and standardize and implement technology-enhanced upgrades and renovations for classrooms and labs. This initiative includes oversight for the electronic delivery of instruction and the establishment of policies for the use, support, and maintenance of these facilities. Smart classroom information, equipment use, and training classes are available upon request ([itc.utk.edu/itc/smtclass/home.html](http://itc.utk.edu/itc/smtclass/home.html)).

The ITC also maintains the "UT Homepage" ([www.utk.edu](http://www.utk.edu)) as the Internet portal to the University of Tennessee. This site is an educational and information resource for current and prospective students, alumni, faculty, staff, and the general public. The site averages more than four million hits a month.

The Innovative Technologies Collaborative is located at 4th floor of Dunford Hall, 915 Volunteer Blvd., Tel: 865-974-9670, FAX: 865-974-2050, E-mail: itc@utk.edu, ITC Website: itc.utk.edu. Hours: 8 a.m. to 5 p.m., Monday through Friday, or by appointment.
The objectives of the Tennessee Agricultural Experiment Station are the creation and utilization of new knowledge through research. Fundamental research is directed toward: (a) Understanding the basic science of the processes of plant and animal production through conversion into usable products and services; (b) Understanding the resource and market forces which affect the production, transfer, processing, and utilization of agricultural commodities and the resulting impact on the economic well-being of the agricultural sector, rural areas, and the State of Tennessee; (c) Understanding the interaction of agricultural production and land use on natural resources and the environment as they relate to long-term productivity and affect the quality of rural life; (d) Understanding the impact of food and fiber resources and the chemicals used in their production on people's well-being and the quality of life. Applied research utilizes these understandings to formulate effective production and marketing systems and to foster the development of a physical and economic environment that provides for the needs of rural, farm, and urban citizens.

The investigations of the Station follow a systematic method of gaining and applying knowledge efficiently to the biological, physical, and economic phases of producing, processing, and distributing farm and forest products; to the social and economic aspects of rural living; and to consumer health and nutrition. Both farm and urban populations gain from the accomplishments of the Agricultural Experiment Station. Examples of some of these accomplishments are new and improved varieties of crops, new and better methods of controlling crop and livestock pests, more efficient production of crops and livestock through improved fertilization and mechanization, and more efficient feeding and management of livestock.

The program is designed and administered through ten subject matter departments located at Knoxville. A majority of the faculty have teaching responsibilities in addition to their research. To assist in the research program, the Station supports about 100 graduate students. To serve Tennessee's diverse agriculture, branch stations are operated at Crossville, Grand Junction, Greeneville, Jackson, Knoxville, Lewisburg, Martin, Milan, Oak Ridge (forestry), Springfield and Spring Hill. Professional and technical staff are in residence at these locations.

AGRICULTURAL EXTENSION SERVICE

Charles L. Norman, Dean

The Agricultural Extension Service was established in 1914. Its purpose is to extend through various educational means agricultural and home economics information to farm families and others in the state who do not have the opportunity to enroll in resident courses of instruction at colleges.

The educational program is carried on through offices in each of the 95 counties of the state. Educational emphasis includes work in four major program areas: agriculture and natural resources, community resource development, home economics, and education of young people through 4-H Clubs. County Extension staff members working directly with local people are supported in the various information fields by a specialist staff, members of which are stationed either in Knoxville, Nashville, or Jackson.

The Agricultural Extension Service operates administratively as one of four units of the Institute of Agriculture. For administration, the state is divided into five districts with supervisors located in their respective districts. District headquarters are maintained in Knoxville, Chattanooga, Cookeville, Nashville, and Jackson.

The Agricultural Extension Service operates as a three-way partnership among county, state, and federal governments. The University of Tennessee represents state and federal government and a County Agricultural Extension Committee represents county government in this partnership.

Libraries, The University of Tennessee

Aubrey H. Mitchell, Associate Dean

Professors:

Associate Professors:

Assistant Professors:

The University of Tennessee Libraries own approximately 2.1 million volumes and
subscribe to more than 16,600 periodicals and serial titles. The Libraries' membership in the Association of Research Libraries reflects the University's emphasis on graduate instruction and research and the support of large, comprehensive collections of library materials on a permanent basis.

The UT Libraries consists of the main library (John C. Hodges Library), four branches on the Knoxville campus (Agriculture-Veterinary Medicine Library, Map Library, Music Library, and Special Collections), and the Social Work Library in Nashville.

Research assistance is available at the reference desk in each library. Free self-searching of selected databases is also available in the reference area and remotely, through the World Wide Web.

Users can search the catalog of holdings at any library branch or via the UT Libraries' Web site at www.lib.utk.edu. Materials that are not available in the UT Libraries can be requested through Interlibrary Services.

The services and facilities of the University Libraries are accessible to persons with disabilities. Adaptive equipment such as a Kurzweil Personal Reader and TDD are available in the John C. Hodges Main Library (1015 Volunteer Blvd.) is a 350,000 square-foot facility housing collections in all subject areas. The Hodges Library has over 300 student carrels, 200 faculty study areas, and comfortable study space for more than 2,000 people.

The Agriculture-Veterinary Medicine Library (Room A-113, Veterinary Teaching Hospital) has a strong collection in agriculture, veterinary, comparative and human medicine, and related biological sciences. Most of the publications of the U.S. Department of Agriculture and the State Agricultural Experiment Stations and Extension Services are collected.

The Map Library (Room 15, basement of the Hoskins Library, Cumberland Ave. & 15th St.) maintains and develops a collection of sheet maps, atlases, journals, and books related to cartography. Materials in print, film, and digital formats are acquired from commercial sources as well as the Government Depository program.

The Music Library (301 Music Bldg.) has a comprehensive collection of music and music literature, including books, scores, audio and video recordings, current periodicals, and microfilm. All materials in the Library of Congress "M" classification are located here. Special Collections (2nd floor, west wing, of the Hoskins Library) is a repository of primary source materials and costly modern library materials. The University Archives are also housed here. The Archives contain official records of the University; items published officially and unofficially; and other materials that document University of Tennessee life. Materials from Special Collections are placed for library users from closed stacks for use in the Reading Room.

The Social Work Library (1720 West End Ave., Nashville) serves College of Social Work students in field practice across the state. The library has a working collection of materials in social work and related disciplines.

The Law Library on the Knoxville campus and the libraries located on the campuses in Chattanooga, Martin, Memphis, and Tullahoma are individually administered. Each library of the University of Tennessee is accessible to all students and faculty of the University.

Data describe the Knoxville campus, excluding the Law Library.

### Maintenance and Reliability Center

#### (College of Engineering)

**Thomas V. Byrseth, Director**

The Maintenance and Reliability Center (MRC), located at East Stadium Hall, was created in 1996 to provide an international center for research, development and application of advanced maintenance and reliability engineering. Over 25 industrial firms and a network of universities and national laboratories have joined with UT in this endeavor. The four-fold mission of the MRC consists of education, research and technology assessment, information sharing, and business support and alliances. The mission has established maintenance and reliability engineering as an interdisciplinary activity with application across a broad spectrum of industrial activities. The MRC stresses the development of management techniques that will provide industry with the means to assess the availability, costs and benefits of advanced maintenance engineering practices.

The MRC involves all departments in the College of Engineering. Interested and qualified students may affiliate as interns with the MRC program while pursuing a degree in any of the engineering departments. Maintenance and reliability engineering courses are available. Research opportunities and graduate assistantships are also available for qualified students.

### Measurement and Control Engineering Center

#### (College of Engineering)

**Arlene Garrison, Director**

The Measurement and Control Engineering Center, 512 East Stadium Hall, is sponsored by the College of Engineering, the Oak Ridge National Laboratory, and the National Science Foundation. The Center's program combines education, research, and technology transfer. Graduate assistantships are available for qualified students. The research is funded by major U.S. industrial companies and focuses on theoretical and practical developments in measurement and control, concentrating on areas that will significantly improve the productivity, reliability, and safety of industrial systems and processes. Center sponsored research is carried out in the fields of process control, signal and image processing, and sensor development. Research in process control concentrates in the areas of process analysis, process modeling, control system design, and real-time expert systems. Fiber optic sensor systems development is underway for monitoring and control of chemical processes.

### Nutrition Institute

#### (College of Human Ecology)

**Michael B. Zemel, Director**

**Thomas C. Namey, Associate Director**

The Nutrition Institute is a system wide, multidisciplinary consortium of faculty who are engaged in clinical and experimental nutrition research, teaching and service. Its expertise and resources are multifaceted including tools and techniques used in cell biology, epidemiology, metabolism and clinical training.

The multidisciplinary nature of nutrition has created a situation where nutrition research and teaching is dispersed among a number of academic units, including the Department of Nutrition in the College of Human Ecology as well as in several departments in the colleges of Agricultural Sciences and Natural Resources, Arts and Sciences, Medicine, and Veterinary Medicine. The Institute provides a communication link among all efforts in nutrition sciences, coordinates collaborative research programs in nutrition and provides a unified forum for exchange and interactions with the national and international nutrition community.

In addition, by creating formal ties among the units within the University that are involved in undergraduate, graduate and professional education in nutrition, teaching resources may be pooled to strengthen nutrition-related instruction in these units. The Institute publishes an on-line magazine "Nutrition Uncovered" which addresses current issues and controversies in the field. It may be found on the Web at http://nutrinst.he.utk.edu/.

### Off-Campus Graduate Centers

#### KINGSPORT GRADUATE PROGRAM

**体现-off-campus programs in engineering and Human Resource Development at the master's level. Students who enroll in these programs must be admitted to The Graduate School of UT. Information and application forms may be obtained from the ETSU/UT at Kingsport, 1501 University Boulevard, Kingsport, Tennessee 37660.**

**OAK RIDGE GRADUATE PROGRAM**

UT offers graduate programs at Oak Ridge leading to the master's degree in several engineering and related technical areas. Students can earn a master's degree in Chemical Engineering, Environmental Engineering (concentrations in mixed waste management, environmental risk assessment), Industrial Engineering (engineering
management or traditional industrial engineering concentrations), Nuclear Engineering (radiological engineering concentration), or Safety Education.

Students who enroll in these programs must be admitted to The Graduate School at UT. Information and application forms may be obtained from the University Evening School, 451 Communications Bldg., Knoxville, TN 37996-0341, or Website at http://www.acad.utk.edu/evening.

CHATTANOOGA EDUCATION PROGRAM

UT offers a graduate program in education leading to the Doctor of Education degree with a major in Education, interdisciplinary concentration in leadership for teaching and learning. Students who enroll in this program must be admitted to The Graduate School at UT. Information and application forms may be obtained from the UT/UTC Graduate Center, UTC, 120 Race Hall, Chattanooga, Tennessee 37403.

COLLEGE OF SOCIAL WORK

UT offers a fully accredited two-year program leading to the Master of Science in Social Work through the College of Social Work, with programs in Knoxville, Nashville, and Memphis. The UT College of Social Work also offers a Doctor of Philosophy with a major in Social Work. For complete information concerning the programs, see Social Work under Fields of Instruction.

Psychological Clinic

(College of Arts and Sciences)

Leonard Handler, Director

The Psychological Clinic supports graduate research and training in clinical psychology. Psychological assessment and psychotherapy are offered on an outpatient basis to the general public as well as to University students and staff.

Research Consortiums

The University of Tennessee is a member of three not-for-profit research consortiums: Oak Ridge Associated Universities (ORAU); Southeastern Universities Research Association (SURA); and Universities Research Association, Inc. (URA).

1. ORAU is a nonprofit consortium of colleges and universities and a management operating contractor for the U.S. Department of Energy (DOE) located in Oak Ridge, Tennessee. ORAU works with its member institutions to help their students and faculty gain access to federal research facilities throughout the country; to keep their members informed about opportunities for fellowship, scholarship, and research appointments; and to organize research alliances among its members.

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Through the Oak Ridge Institute for Science and Education (ORISE), the DOE facility that ORAU manages, undergraduates, graduates, postgraduates, as well as faculty enjoy access to a multitude of opportunities for study and research. Students can participate in programs covering a wide variety of disciplines including business, earth sciences, epidemiology, engineering, physics, pharmacology, ocean science, biomedical science, nuclear chemistry, and mathematics. Appointment and program length range from one month to four years. Many of these programs are especially designed to increase the numbers of underrepresented students pursuing degrees in science- and engineering-related disciplines. A comprehensive listing of these programs and other opportunities, their disciplines, and details on locations and benefits can be found in the Resource Guide which is available by calling the contacts below.

ORAU's Office of Higher Education Initiatives (HEI) seeks opportunities for collaborative research and development alliances among its members, private industry, and major federal facilities. HEI sponsors the Visiting Industrial Scholars program and the Junior Faculty Enhancement Awards.

2. SURA is a nonprofit consortium of 41 universities in thirteen Southeastern states and the District of Columbia. SURA's goals are to foster excellence in scientific research, to strengthen the scientific and technical capabilities of the nation and the Southeast, and to provide outstanding training opportunities for the next generation of scientists and engineers. The SURA-Oak Ridge National Laboratory (ORNL) Summer Cooperative Research Program in Materials Science and Engineering was established in 1989 to promote collaborations between individual university investigators and ORNL researchers. The SURA Continuous Beam Accelerator Facility (CEBAF) Graduate Fellowship Program offers awards to promising graduate students enrolled or enrolling in master's or doctoral programs at SURA member institutions and whose research interests are consistent with research activities to be conducted at CEBAF (i.e., nuclear and related particle physics, accelerator physics, and associated scientific and engineering fields).

3. URA, Inc. is a nonprofit corporation consisting of 86 major research-oriented universities in the United States, Canada, and Japan and is a management operating contractor for the U.S. Department of Energy (DOE) for the design, construction, and operation of the Fermi National Accelerator Laboratory (Fermilab) located near Batavia, Illinois. URA provides funds to support courses for graduate students at Fermilab. Member institutions have graduate study programs in science and are active in particle physics and astrophysics.

For more information about ORAU and its programs, contact Dr. Michael D. Devine, Office of Research and ORAU Council member at 685-974-3466 or mdevine@utk.edu; or contact Jonnie E. Champion, ORAU Corporate Secretary at 865-576-9306. Additional information may also be found at the World Wide Web sites at http://www.orau.gov and http://cebasf.gov/ura.

Tourism Institute

(College of Human Ecology)

Nancy Fair, Director

The Tourism Institute at UT uses a systems approach to enhance economic development in Tennessee and the Southeast region. Formed in the Department of Consumer and Industry Services Management, the Institute integrates faculty expertise from the hotel and restaurant administration program, the recreation and tourism management program, and the retail and consumer sciences program to address emerging issues and needs. The Institute is also supported by the Graduate School of Planning and the College of Agricultural Sciences and Natural Resources.

Textiles and Nonwovens Development Center

(College of Human Ecology)

Billie J. Collier, Interim Director of Operations and Resources

Larry C. Wadsworth, Senior Executive for Marketing and Technology

The Textiles and Nonwovens Development Center (TANDEC) was officially dedicated in October 1990. TANDEC was made possible through a grant from Exxon Chemical Company.

Nonwovens products loom large in a number of markets and TANDEC looms large in both basic research and nonwoven product development. Nonwovens research programs at UT include structure-property-process relationships in melt blowing, polyolefins, polyesters, nylon, elastomeric polymers, engineering thermoplastics and recycled plastics, mechanism of melt blown web formation, modeling of melt blowing and spunbonding processes, development of on-line optical measurements for control of the critical properties of melt blown webs, and electrical measurement of fiber alignment and bonding in nonwovens webs; thermal bonding and characterization of cotton/synthetic fiber nonwovens; computational analysis of heat transfer behavior in thermal calendaring, study of protective apparel for agricultural, industrial and medical uses; and finishing of nonwovens. In addition to the basic research, technology transfer has been accomplished during the past several years by assisting companies in applied projects, primarily in the melt blowing area. Collaboration is ongoing with faculty in the College of Engineering.

The primary missions of TANDEC are to conduct nonwoven and textile grant research programs and to develop new product applications. The TANDEC facilities further allow production of nonwovens by industrial companies. The nonwovens laboratory hosts numerous guests from industry and academia, and the facilities are planned to meet their needs, while safeguarding research confidentiality.
Successful tourism requires attractions to draw tourists and supporting businesses that provide high quality food, lodging and related consumer goods and services. The mission is to deliver research, development, and training projects that will promote sustainable tourism in Tennessee and the Southeast Region. The Space Institute pursues research studies to better understand the needs of the state’s and region’s tourist customers to enable the industry to provide the goods and services that will increase and diversify the tourist base. It works with agencies and businesses to develop strategies for creating and expanding tourism enterprises. It also provides management level personnel to the tourism industry through the degree programs in the department and assists the industry in workforce training.

University of Tennessee Space Institute

T. Dwayne McCay, Senior Vice President for Research and Information Technology

The Space Institute is a graduate education and research institution located on a 365 acre lakeshore campus in Middle Tennessee. UTSI was established in 1964 and has evolved into an internationally recognized institution for graduate study and research in engineering, physics, mathematics, and computer science. The accredited academic programs and educational policies of the Space Institute have their origins in appropriate departments of The University of Tennessee. The more than 40 faculty members of the Institute carry out these accredited academic programs through classroom teaching, informal seminars, active research, and directing the research of their students in an environment of creative work and advanced study. Programs are available to students devoting full-time or part-time effort toward M.S. and Ph.D. degrees, those interested in continuing education for updating and broadening knowledge, and those who wish to pursue post-doctoral research.

Graduate degree programs are available with majors in Aerospace Engineering, Aviation Systems, Chemical Engineering, Computer Science, Electrical Engineering, Engineering Science, Industrial Engineering (engineering management concentration), Mathematics, Mechanical Engineering, Metallurgical Engineering, and Physics. In addition to the fundamental studies characteristic of each discipline, research opportunities are available in many areas including aerodynamics, fluid mechanics, advanced space propulsion, neural networks, energy conversion processes, superconducting materials, thermal sciences, coal combustion, magneto-hydrodynamics, plasma physics, space systems, propulsion, computational fluid dynamics, and other aspects of atmospheric and space flight.

The Institute has an established Center of Excellence in Laser Applications and offers graduate studies and research opportunities in laser diagnostics, laser materials interactions, pico-second processes, and coherent and non-linear optics.

The Institute was established in part to increase the research and educational resources of Tennessee through education and practice in relevant scientific and technical areas and in part to interface University faculty and student research with the Air Force Arnold Engineering Development Center. The faculty, research activities, and facilities of the Institute, and those available at Arnold Center through appropriate contractual arrangements, provide students an unusual opportunity for significant research in these areas. Students who enroll at UTSI are admitted to The Graduate School, The University of Tennessee. Graduate Research Assistantships are available for qualified students. Further information may be obtained from the Dean for Academic Affairs, The University of Tennessee Space Institute, Tullahoma, Tennessee 37368.

University Outreach and Continuing Education

Robert Leter, Dean
Norvel Burkett, Associate Dean of Non-Credit Programs
John Muldowny, Associate Dean of Credit Programs
Robert Jackson, Assistant Dean for Technology and Development
M.K. Warden, Assistant Dean for Credit Programs

The University of Tennessee is committed to its land-grant mission of public service. The university meets that mission by extending its continuing education services and programming resources through outreach initiatives. University Outreach and Continuing Education works with UT academic units to offer courses, educational services and programs to students, teachers and faculty. The division offers programs using a variety of modes, helping people of all ages achieve degrees and certificates, accomplish professional development goals, and pursue recreational and intellectual interests.

Programs and courses are based upon student needs and desires, whether for self-motivated learning; for leisure and recreational programs; or for professional promotion, certification, licensure, re-certification, or mid-career changes. The Division provides these opportunities through program coordination and development of the six departments: Department of Conferences, Department of Distance Education and Independent Study, English Language Institute, University Evening School, Summer School and Special Programs, and UT Professional and Personal Development.

For more information, contact: University Outreach and Continuing Education, 1534 White Avenue, Knoxville, TN 37996-1526, Phone: (865) 974-3181, FAX: (865) 974-6629, E-mail: outreach@utk.edu, Website: www.outreach.utk.edu.

DEPARTMENT OF CONFERENCES
Norvel Burkett, Associate Dean and Director
Robert Gibbs, Assistant Director

UT Conferences, housed in the Conference Center Building in downtown Knoxville, provides management services to UT departments and faculty or outside groups that desire to hold a high quality conference or meeting anywhere in Tennessee or across the United States.

UT Conferences assists organizations in designing and managing programs to meet the needs of meeting attendees. The staff provides professional guidance and management for small group meetings as well as for major conventions of several thousand delegates. Consulting and support services can include planning and budgeting, lodging, food services, speakers, promotional materials, meeting-site management and all details to ensure a successful event. Some programs qualify for Continuing Education Units (CEUs), which become a permanent record maintained by the Division.

Professional groups and interested individuals can request interactive videoconferencing to locations worldwide. Arrangements can also be made to receive (downlink) programming or transmit (uplink) programming via satellite.

Additional information may be obtained from: UT Conferences, P.O. Box 3949, Knoxville, TN 37901, Phone: (865) 974-0250, FAX: (865) 974-0264, E-mail: conferences@utk.edu, Website: www.outreach.utk.edu/conferences.

ENGLISH LANGUAGE INSTITUTE

Dale A. Myers, Director
Jan G. Hill, Assistant Director

The English Language Institute (ELI) offers a non-credit language-study program. It is designed to assist students in their pursuit of career goals or educational objectives in the United States. The courses emphasize development of communicative ability in listening, speaking, reading, and writing. Faculty members are trained in teaching English to speakers of other languages and different national backgrounds with varying proficiency in English. The curriculum consists of eight proficiency levels: 101-108, Introductory through Pre-Academic.

Classes meet 3-5 periods each day with emphasis on English Structure (Grammar); Listening Comprehension, Writing/Composition (Rhetoric); Conversation Practice for Communicative Purposes, Reading and Vocabulary.

Classes also assist students in pronunciation, test-taking strategies, U.S. culture orientation, and university study skills.

Additional information may be obtained from: English Language Institute, 305 Mountcastle Street, Knoxville, Tennessee 37996-3505, Phone: (865) 974-3404, FAX: (865) 974-6833, E-mail: eli@utk.edu, Website: www.outreach.utk.edu/ELI.

UT PROFESSIONAL AND PERSONAL DEVELOPMENT

Norvel Burkett, Acting Director
Nissa Dahlin-Brown, Assistant Director

UT Professional and Personal Development provides a comprehensive array of non-credit courses, certificates, and