SMU

DEDMAN COLLEGE
OF HUMANITIES AND SCIENCES

GRADUATE PROGRAMS

SOUTHERN METHODIST UNIVERSITY

2013–2015

NOTICE OF NONDISCRIMINATION

Southern Methodist University will not discriminate in any employment practice, educational program or educational activity on the basis of race, color, religion, national origin, sex, age, disability, genetic information or veteran status. SMU's commitment to equal opportunity includes nondiscrimination on the basis of sexual orientation and gender identity and expression. The Office of Institutional Access and Equity has been designated to handle inquiries regarding the nondiscrimination policies and may be contacted at Southern Methodist University, Dallas TX 75275; phone: 214-768-3601; email: accessequity@smu.edu.

Southern Methodist University publishes a complete bulletin every two years. The undergraduate catalog and the Cox, Dedman Law, Hart eCenter and Simmons graduate catalogs are updated annually. The Dedman College, Lyle, Meadows and Perkins graduate catalogs are updated biennially. The following catalogs constitute the General Bulletin of the University:

> Undergraduate Catalog
> Cox School of Business Graduate Catalog
> Dedman College of Humanities and Sciences Graduate Catalog
> Dedman School of Law Graduate Catalog
> Hart eCenter Graduate Catalog
> Lyle School of Engineering Graduate Catalog
> Meadows School of the Arts Graduate Catalog
> Perkins School of Theology Graduate Catalog
> Simmons School of Education and Human Development Graduate Catalog

In addition, certain locations or programs provide their own schedules:

> Continuing Education   SMU-in-Plano
> J Term   SMU-in-Taos (Fort Burgwin)
> SMU Abroad   Summer Studies

Every effort has been made to include in this catalog information that, at the time of preparation for printing, most accurately represents Southern Methodist University. The provisions of the publication are not, however, to be regarded as an irrevocable contract between the student and Southern Methodist University. The University reserves the right to change, at any time and without prior notice, any provision or requirement, including, but not limited to, policies, procedures, charges, financial aid programs, refund policies and academic programs.

Catalog addenda are published online at www.smu.edu/catalogs. An addendum includes graduation, degree and transfer requirements that do not appear in a specific print or online catalog but apply in that academic year.

Additional information can be obtained by writing to the Undergraduate Office of Admission or to the appropriate school (listed above) at the following address:

> Southern Methodist University
> Dallas TX 75275

Information also is available at www.smu.edu.

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OFFICIAL UNIVERSITY CALENDAR

ACADEMIC YEAR 2013–2014

This calendar includes an addendum listing religious holidays for use in requesting excused absences according to University Policy 1.9. For religious holidays not listed, students should contact the Office of the Chaplain.

Graduate programs in the Cox School of Business, Perkins School of Theology, Dedman School of Law, and Department of Dispute Resolution and Counseling within the Simmons School of Education and Human Development have different calendars.

Fall Term 2013

April 8–26, Monday–Friday: Enrollment for fall 2013 continuing students for all undergraduates and for graduates in Dedman College, Lyle and Meadows.

May, July, August – TBA: Academic Advising, Enrollment and Orientation conferences for new first-year and transfer undergraduate students. Additional information about AARO is available from New Student Programs, Student Life Office, 214-768-4560, www.smu.edu/newstudent.

August 24, Saturday: Residence halls officially open at 9 a.m.

August 25, Sunday: Opening Convocation, McFarlin Auditorium.

August 26, Monday: First day of classes.

August 30, Friday: Last day to enroll, add courses or drop courses without grade record. Also, last day to file for graduation in December.

September 2, Monday: Labor Day. University offices closed.

September 11, Wednesday: Last day to declare pass/fail, no credit or first-year repeated course-grading options. Also, last day to request an excused absence for the observance of a religious holiday.

October 1, Tuesday: Early intervention grades due for first-year undergraduate students.

October 4–5, Friday–Saturday: Family Weekend.

October 9, Wednesday: Last day for continuing undergraduate students to change their majors before November enrollment.

October 14–15, Monday–Tuesday: Fall break.

October 25–26, Friday–Saturday: Homecoming Weekend.

October 27, Sunday: Midterm grades due for first-year and sophomore students.

October 28, Monday: 60 percent point of the term that federal financial aid has been earned if a student officially withdraws from SMU; prior to this date, a partial calculated return to federal programs will be required.

November 4–22, Monday–Friday: Enrollment for spring 2014 continuing students for all undergraduates and for graduates in Dedman College, Lyle and Meadows.

November 8, Friday: Last day to drop a course.

Fall Term 2013 (continued)

November 14, Thursday: Last day for December graduation candidates to change grades of Incomplete.

November 22, Friday: Students should file for May graduation. The last day to file is January 25, 2014.

November 26, Tuesday: Last day to withdraw from the University.

November 27, Wednesday: No classes.

November 28–29, Thursday–Friday: Thanksgiving holiday. University offices closed.

December 4–9, Wednesday–Monday: No final examinations or unscheduled tests or papers.

December 5, Thursday: Last day for oral/written examinations for December graduate degree candidates.

December 9, Monday: Last day of instruction.

December 10–11, Tuesday–Wednesday: Reading days.

December 12–18, Thursday–Wednesday: Examinations. (No examinations scheduled for Sunday.)

December 19, Thursday: Residence halls close at 10 a.m. for winter break. (December graduates should contact the Department of Residence Life and Student Housing.)

December 21, Saturday: Official close of the term and date for conferral of degrees. Also, December Commencement Convocation.

December 24–January 1, Tuesday–Wednesday: University offices closed.

December 25, Wednesday: Christmas Day.

January Interterm 2014

Note: Some areas of instruction offer selected courses during the January interterm, December 19, 2013–January 15, 2014.

January 1, Wednesday: New Year's Day. University offices closed.

J Term 2014 at SMU-in-Plano

January 6, Monday: First day of classes.

January 7, Tuesday: Last day to declare pass/fail.

January 14, Tuesday: Last day to drop/withdraw from the University.

January 15, Wednesday: Last class, including exam.

Spring Term 2014

November 4–January 24, Monday–Friday: Enrollment for spring 2014 continuing students for all undergraduates and graduates in Dedman College, Lyle and Meadows.

January – TBA: Academic Advising, Enrollment and Orientation conferences for new first-year and transfer undergraduate students. Additional information about AARO is available from New Student Programs, Student Life Office, www.smu.edu/newstudent, 214-768-4560.

January 1, Wednesday: New Year's Day. University offices closed.

January 14, Tuesday: Residence halls officially open at 9 a.m.

January 17, Friday: First day of classes.

January 20, Monday: Martin Luther King, Jr. Day. University offices closed.

January 24, Friday: Last day to enroll, add courses or drop courses without grade record. Also, last day to file for May graduation.

February 4, Tuesday: Last day to declare pass/fail, no credit or first-year repeated course-grading options. Also, last day to request an excused absence for the observance of a religious holiday.

February 24, Monday: Early intervention grades due for first-year undergraduate students.

March 8–16, Saturday–Sunday: Spring break.

March 26, Wednesday: Midterm grades due for first-year and sophomore students.

March 28, Friday: 60 percent point of the term that federal financial aid has been earned if a student officially withdraws from SMU; prior to this date, a partial calculated return to federal programs will be required.

April 2, Wednesday: Last day for continuing undergraduate students to change their majors before April enrollment.

April 7–25, Monday–Friday: Enrollment for summer 2014 and fall 2014 continuing students for all undergraduates and for graduates in Dedman College, Lyle and Meadows.

April 8, Tuesday: Last day to drop a course.

April 10, Thursday: Last day for May graduation candidates to change grades of Incomplete.

April 14, Monday: Honors Convocation, 5:30 p.m.

April 17, Thursday: Students should file for August or December graduation. Last day to file for August graduation is June 5. Last day to file for December graduation is the last day to enroll for fall 2014.

April 18, Friday: Good Friday. University offices closed.

April 20, Sunday: Easter Sunday.

April 25, Friday: Last day to withdraw from the University.

April 30–May 5, Wednesday–Monday: No final examinations or unscheduled tests or papers.

Spring Term 2014 (continued)

May 1, Thursday: Last day for oral/written examinations for graduate students who are May degree candidates.

May 5, Monday: Last day of instruction.

May 6, Tuesday: Reading day.

May 7–13, Wednesday–Tuesday: Examinations. (No examinations scheduled for Sunday.)

May 14, Wednesday: Residence halls officially close for nongraduating students.

May 16, Friday: Baccalaureate.

May 17, Saturday: Commencement.

May 18, Sunday: Residence halls officially close for graduating seniors.

Campus May Term 2014

Note: *Classes meet 4 hours a day, Monday–Friday.*

May 15, Thursday: First day of classes.

May 16, Friday: Last day to enroll or add courses. Also, last day to declare pass/fail or no credit or first-year repeated course-grading options.

May 26, Monday: Memorial Day. University offices closed.

May 27, Tuesday: Last day to drop/withdraw from the University.

May 30, Friday: Last day of classes.

June 5, Thursday: Last day to file for August graduation.

Note: Students planning to complete their degree requirements during the May term should complete an Application for Candidacy to Graduate (via the Student Center) for August degree conferral. Specific information is available from the student's academic degree counselor.

SMU-in-Taos May Term 2014

Note: *The following dates are applicable only for SMU-in-Taos. Permission of the SMU-in-Taos program is required for all enrollments.*

May 14, Wednesday: Travel day and arrival of students, 2–6 p.m.

May 15, Thursday: First day of classes.

May 30, Friday: Examinations.

May 31, Saturday: Departure of students.

Summer Term 2014

Summer term consists of three primary sessions: first session, second session and a full summer session. Each primary session has different deadline dates. There are also shorter and longer sessions to accommodate the particular needs of the various instructional units such as SMU Abroad, SMU-in-Taos and the Perkins School of Theology.

Full Summer Term Session 2014

Note: Classes meet 2 hours, 15 minutes twice a week or 1 hour, 30 minutes three times a week.

May 26, Monday: Memorial Day. University offices closed.

June 2, Monday: First day of classes.

June 5, Thursday: Last day to enroll, add courses or drop courses without grade record. Also, last day to file for August graduation.

June 11, Wednesday: Last day to declare pass/fail, no credit or first-year repeated course-grading options.

July 4, Friday: Independence Day. University offices closed.

July 17, Thursday: Last day for August graduation candidates to change grades of Incomplete.

July 24, Thursday: Last day to drop a course.

July 30, Wednesday: Last day to withdraw from the University.

August 4, Monday: Follows a Friday schedule.

August 5, Tuesday: Last day of instructions and examinations. Also, official close of the term and date for conferral of degrees.

First Summer Session 2014

Note: Classes meet 2 hours a day, Monday–Friday.

May 26, Monday: Memorial Day. University offices closed.

June 2, Monday: First day of classes.

June 3, Tuesday: Last day to enroll, add courses or drop courses without a grade record.

June 5, Thursday: Last day to declare pass/fail, no credit or first-year repeated course-grading options. Also, last day to file for August graduation.

June 24, Tuesday: Last day to drop a course.

June 25, Wednesday: Last day to withdraw from the University.

July 1, Tuesday: Last day of instruction and examinations.

SMU-in-Taos Summer I Session 2014

Note: The following dates are applicable only for SMU-in-Taos. Permission of the SMU-in-Taos program is required for all enrollments.

June 4, Wednesday: Arrival of students, 4–6 p.m.

June 5, Thursday: First day of classes.

June 6, Friday: Last day to enroll, add courses and drop courses without a grade record.

July 2, Wednesday: Examinations.

July 3, Thursday: Departure of students.

Second Summer Session 2014

Note: Classes meet 2 hours a day, Monday–Friday.

June 5, Thursday: Last day to file for August graduation.

July 4, Friday: Independence Day. University offices closed.

July 7, Monday: First day of classes.

July 8, Tuesday: Last day to enroll, add courses or drop courses without a grade record.

July 10, Thursday: Last day to declare pass/fail, no credit or first-year repeated course-grading options.

July 16, Wednesday: Last day for August graduation candidates to change grades of Incomplete.

July 28, Monday: Last day to drop a course.

July 30, Wednesday: Last day to withdraw from the University.

August 5, Tuesday: Last day of instruction and examinations. Also, official close of the term and conferral date.

SMU-in-Taos August (Summer II) Term 2014

Note: The following dates are applicable only for SMU-in-Taos. Permission of the SMU-in-Taos program is required for all enrollments.

August 5, Tuesday: Arrival of students, 4–6 p.m.

August 6, Wednesday: First day of classes.

August 7, Thursday: Last day to enroll, add courses or drop courses without a grade record.

August 21, Thursday: Examinations.

August 22, Friday: Departure of students.

Major Religious Holidays
(August 2013–August 2014)

The following list of religious holidays is for use in requesting excused absences according to University Policy 1.9. For religious holidays not listed, the instructor or supervisor may contact the Office of the Chaplain.

Christian

Christmas: December 25, 2013

Easter Sunday: April 20, 2014

Good Friday: April 18, 2014

Easter Sunday (Orthodox): April 20, 2014

Hindu

Janmashtami: August 28, 2013

Diwali: November 3, 2013

Dasera: October 14, 2013

Jewish

Rosh Hashanah: September 5–6, 2013

Hanukkah: November 28–December 5, 2013

Yom Kippur: September 14, 2013

Pesach (Passover): April 15–16, 2014

Sukkot: September 19–20, 2013

Shavuot: June 4–5, 2014

Note: All holidays begin at sundown before the first day noted and conclude at sundown on the day(s) noted.

Muslim

Ramadan: July 9–August 7, 2013

Ashura: November 14, 2013

Eid al Fitr: August 8, 2013

Mawlid an Nabi: January 13, 2014

Eid al Adha: October 15, 2013

Ramadan: June 28–July 28, 2014

Islamic New Year: November 4, 2013

Eid al Fitr: July 28, 2014

DESCRIPTION OF THE UNIVERSITY

THE VISION OF SOUTHERN METHODIST UNIVERSITY

To create and impart knowledge that will shape citizens who contribute to their communities and lead their professions in a global society.

THE MISSION OF SOUTHERN METHODIST UNIVERSITY

Southern Methodist University will create, expand and impart knowledge through teaching, research and service, while shaping individuals to contribute to their communities and excel in their professions in an emerging global society. Among its faculty, students and staff, the University will cultivate principled thought, develop intellectual skills and promote an environment emphasizing individual dignity and worth. SMU affirms its historical commitment to academic freedom and open inquiry, to moral and ethical values, and to its United Methodist heritage.

To fulfill its mission, the University strives for quality, innovation and continuous improvement as it pursues the following goals:

- Goal one: To enhance the academic quality and stature of the University.
- Goal two: To improve teaching and learning.
- Goal three: To strengthen scholarly research and creative achievement.
- Goal four: To support and sustain student development and quality of life.
- Goal five: To broaden global perspectives.

SOUTHERN METHODIST UNIVERSITY

As a private, comprehensive university enriched by its United Methodist heritage and its partnership with the Dallas Metroplex, Southern Methodist University seeks to enhance the intellectual, cultural, technical, ethical and social development of a diverse student body. SMU offers undergraduate programs centered on the liberal arts; excellent graduate and continuing education programs; and abundant opportunities for access to faculty in small classes, research experience, international study, leadership development, and off-campus service and internships, with the goal of preparing students to be contributing citizens and leaders for our state, the nation and the world.

SMU comprises seven degree-granting schools: Dedman College of Humanities and Sciences, Edwin L. Cox School of Business, Dedman School of Law, Bobby B. Lyle School of Engineering, Meadows School of the Arts, Perkins School of Theology, and Annette Caldwell Simmons School of Education and Human Development.

Founded in 1911 by what is now the United Methodist Church, SMU is nonsectarian in its teaching and is committed to the values of academic freedom and open inquiry.

At its opening session in 1915, the University had two buildings, 706 students, a 35-member faculty and total assets of $633.540.

Today, the University has more than 100 buildings, a total enrollment that has averaged more than 10,000 the past 10 years, a full-time faculty of 723 and assets of $2.2 billion – including an endowment of $1.2 billion (market value, May 31, 2012).

Offering only a handful of degree programs at its 1915 opening, the University presently awards baccalaureate degrees in more than 80 programs through five undergraduate schools and a wide variety of graduate degrees through those and one professional school.

Of the 10,893 students enrolled for the 2012 fall term, 6,249 were undergraduates and 4,644 were graduate students. The full-time equivalent enrollment was 6,155 for undergraduates and 3,256 for graduate students.

Nearly all the students in SMU's first class came from Dallas County, but now 48 percent of the University's undergraduate student body comes from outside Texas. In a typical school year, students come to SMU from every state; from more than 90 foreign countries; and from all races, religions and economic levels.

Undergraduate enrollment is 51 percent female. Graduate and professional enrollment is 42 percent female.

A majority of SMU undergraduates receive some form of financial aid. In 2012–2013, 80 percent of first-year students received some form of financial aid, and 37 percent of first-year students received need-based financial aid.

Management of the University is vested in a Board of Trustees of civic, business and religious leaders – Methodist and non-Methodist. The founders' first charge to SMU was that it become not necessarily a great *Methodist* university, but a great *university*.

ACADEMIC ACCREDITATION

Southern Methodist University is accredited by the Southern Association of Colleges and Schools Commission on Colleges to award bachelor's, master's, professional and doctoral degrees. Contact the Commission on Colleges at 1866 Southern Lane, Decatur, Georgia 30033-4097 or call 404-679-4500 for questions about the accreditation of Southern Methodist University. Note: The commission is to be contacted only if there is evidence that appears to support an institution's significant noncompliance with a requirement or standard.

Individual academic programs are accredited by the appropriate national professional associations.

In Dedman College, the Department of Chemistry is accredited annually by the Committee on Professional Training of the American Chemical Society, and the Psychology Department's Ph.D. program in clinical psychology is accredited by the American Psychological Association.

The Cox School of Business is accredited by AACSB International, the Association to Advance Collegiate Schools of Business (777 South Harbour Island Boulevard, Suite 750, Tampa, Florida 33602-5730; telephone number 813-769-6500). The Cox School was last reaccredited by AACSB International in 2007.

The Dedman School of Law is accredited by the American Bar Association.

In the Linda and Mitch Hart eCenter, The Guildhall at SMU's Master of Interactive Technology is accredited by the National Association of Schools of Art and Design for the two specializations in art creation and level design.

The Lyle School of Engineering undergraduate programs in civil engineering, computer engineering, electrical engineering, environmental engineering and mechanical engineering are accredited by the Engineering Accreditation Commission of ABET, http://www.abet.org. The undergraduate computer science program that awards the degree Bachelor of Science (B.S.) is accredited by the Computing Accreditation Commission of ABET. The undergraduate computer science program that awards the degree Bachelor of Arts (B.A.) is not accredited by a Commission of ABET. ABET does not provide accreditation for the discipline of management science.

In the Meadows School of the Arts, the Art and Art History programs are accredited through the National Association of Schools of Art and Design, the Dance Division is accredited by the National Association of Schools of Dance, the Music Division is accredited by the National Association of Schools of Music, the Music Therapy program is approved by the American Music Therapy Association, and the Theatre program is accredited by the National Association of Schools of Theatre.

Perkins School of Theology is accredited by the Commission on Accrediting of the Association of Theological Schools (ATS) in the United States and Canada (10 Summit Park Drive, Pittsburgh, Pennsylvania 15275-1110; telephone number 412-788-6505) to award M.Div., C.M.M., M.S.M., M.T.S. and D.Min. degrees.

Accredited programs in the Simmons School of Education and Human Development include the Teacher Education undergraduate and graduate certificate programs, which are accredited by the State Board of Educator Certification (SBEC) and the Texas Education Agency (TEA). The undergraduate program is approved annually by TEA. The Learning Therapist Certificate program, which is accredited by the International Multisensory Structured Language Education Council, was last re-accredited in 2011.

DEDMAN COLLEGE GENERAL INFORMATION

HISTORY

Dedman College of Humanities and Sciences has been the intellectual heart of the University since SMU was founded in 1911. The college, one of the nation's premier liberal arts institutions, has earned a reputation for the breadth and depth of its graduate programs and the quality of its learning and research resources.

Graduate work at the master's level has been offered at SMU since the University first opened its doors in 1915. Doctoral work was begun in 1959. Graduate faculty members are actively engaged in research and have a strong commitment to student participation in their projects. Excellent students are attracted from all regions of the United States and from many foreign countries.

For information in addition to that given in this catalog, contact the Office of Research and Graduate Studies at 214-768-4345 or smugrad@smu.edu.

FIELDS OF STUDY AND DEGREES

The degrees available through the graduate faculty of Dedman College are the M.A., M.S. and Ph.D. Those fields of study that are starred indicate the areas in which doctoral programs are offered.

* * Anthropology
    * Medical Anthropology
* * Biological Sciences
* * Chemistry
    * Earth Sciences
        * * Geology
        * * Geophysics
            * Applied Geophysics
* * Economics
    * Applied Economics
* * English-Literature
* * History
* * Computational and Applied Mathematics
    * Medieval Studies
* * Physics
* * Psychology
    * Clinical
* * Religious Studies
* * Statistical Science
    * Women's and Gender Studies

ADMISSION

Admission may be of three types:

1. **Full,** without restriction.
2. **Provisional,** when some essential document is lacking or the record suggests the advisability of a trial period. Provisional status is reviewed when the deficiency has been corrected or after the student has completed a minimum of 12 term hours of coursework. If, on review, the record is found satisfactory, the status is altered by the Office of Research and Graduate Studies to full admission with credit from the time of first enrollment.

3. **Nondegree,** when the student needs background courses or desires transferable graduate credit for certification or some other purpose but is not undertaking a degree program. Nondegree admission is selective. Not more than six term hours of graduate credit earned under nondegree status may be applied toward an advanced degree in Dedman College.

No student is allowed to enroll unless notified of admission by the Office of Research and Graduate Studies.

Admission Requirements

Applicants holding the bachelor's degree from an institution of standard collegiate rank, recognized by the accrediting agencies in whose jurisdiction the college is located, may apply for admission to graduate studies. Graduates of colleges not fully recognized will be treated as special cases and required to produce evidence attesting to the quality of their programs. Any student whose bachelor's degree is not equivalent to the comparable baccalaureate degree from Southern Methodist University may be required to take sufficient additional work to make up the deficiency. All applicants must have adequate subject preparation in the chosen major field, normally an overall grade point average of 3.000 (on a 4.000 scale) and a satisfactory score on the GRE graduate school admission test.

International Students

Applicants from countries where the predominant language is not English are required to supply scores on the TOEFL English language proficiency test administered by the Educational Testing Service. The minimum TOEFL score for admission is 80 on the Internet-based test. The Test of Spoken English or equivalent is required for teaching assistants. International English Language Testing System scores also are accepted.

Applicants who have completed studies at and received diplomas or professional titles from institutions outside the United States should ordinarily have completed 16 years of study: 12 years at the elementary and secondary school level and four years at the university level. Eligibility is judged by grades (marks), class obtained or rank achieved in class. Evidence of class placement therefore should be specifically set forth in the official records submitted.

Applicants holding bachelor's degrees from foreign universities should not assume that these degrees will be automatically accepted in U.S. universities. Applicants who have achieved first or high second class from universities that confer classes based on grades (marks) will be preferred. Applicants holding bachelor's degrees with honors or master's degrees have a better chance of being accepted in U.S. universities. Also, decisions will be based on the academic standing of the institutions from which the applicant has graduated. Professional diplomas and higher certificates from technical or vocational schools are normally not considered as equivalent to a bachelor's degree. Departments have the option of making authentication of transcripts part of the process of offering assistantships to international students.

Application Procedure

The online application (www.applyweb.com/apply/smugr/menu.html) is available from August 15 to May 1. Students should contact smugrad@smu.edu for more information.

A complete application should include the following:

1. The online application.
2. An official transcript for all schoolwork after high school.
3. The application fee of $75 collected online.
4. Three letters of recommendation submitted online.
5. GRE graduate school admission test scores submitted electronically.
6. TOEFL English language proficiency test scores for international applicants.
7. Writing samples required for history or English programs.

An application will be considered when all the aforementioned items have been received in the Graduate Office.

Application Deadlines

Fall	**December 1:**	Psychology Ph.D.
	December 31:	Religious Studies M.A., Ph.D.
	January 15:	Anthropology M.A., Ph.D., English Ph.D.
	February 1:	For all other departments, applicants must apply by this date in order to be considered for department assistantships and/or first-round admissions decisions
	March 1:	Second round of admission decisions
	May 1:	Final deadline
Spring	**November 30 :**	Final deadline

Due to the extra time necessary for visa processing, international applicants are advised to have their completed application sent to the Office of Research and Graduate Studies at least two months before these deadlines. Students who apply for departmental assistantships should submit their applications by **February 1** as noted.

McNair Scholars Program

SMU encourages McNair Scholars to apply for graduate studies in Dedman College of Humanities and Sciences by waiving their application fee. In addition, 10 tuition fee waivers (five through Dedman College and five through the Lyle School of Engineering) are designated for admitted McNair Scholars applicants. SMU supports the aims of this program – to identify and mentor undergraduates as they prepare for graduate school – and would like to participate in helping students realize their goals. McNair Scholars should identify themselves as such on their application. Questions can be directed to smugrad@smu.edu.

Institute for Recruitment of Teachers Applicants

As the newest member of a consortium of universities working with the Institute for Recruitment of Teachers, SMU extends a welcome to applicants seeking graduate degrees. SMU provides an application fee waiver and invites applicants to apply to Dedman College's graduate programs. Departments award assistantships based on the merits of the applicant and the limits of the budget.

FINANCIAL INFORMATION

TUITION, FEES AND LIVING EXPENSES

A catalog supplement, the *Financial Information Bulletin,* is issued each academic year. It provides the general authority and reference for SMU financial regulations and obligations, as well as detailed information concerning tuition, fees and living expenses. The supplement can be accessed at www.smu.edu/bursar ("Financial Bulletin" link).

Continuing students registering must ensure that payment for the full amount of charges is posted to their account by the payment due date showing on their bill. The due dates are also published on the Bursar website.

Billing notifications are sent to the student's SMU email address and to the designated authorized payer(s) email address when a bill is generated. The billing notification will provide instructions on how to view the bill online through SMUpay. If notification is not received two weeks prior to the due date, the student and/or designated authorized payer(s) should contact the Office of the University Bursar.

Payments made in person or mailed must be received by the Office of the University Bursar, located on the first floor of the Laura Lee Blanton Student Services Building, no later than 4 p.m. on the payment due date. Payments made online via electronic check or credit card must be posted no later than 11:59 p.m. Central Standard Time on the payment due date. Students and/or those paying on behalf of the student who pay online automatically receive an electronic confirmation of payment; students and/or designated authorized payer(s) paying through other methods can also verify receipt of payment online.

Students enrolling after the payment due date must pay at the time of enrollment. Students whose accounts are not cleared by the payment due date or at the time of enrollment are subject to a late payment fee of $50 for balances between $250 and $999.99, and $150 for balances between $1,000 and $5,000. Balances over $5,000 are charged 3 percent of the outstanding balance, not to exceed $750. Also, after the monthly payment due date has passed, a 1.5 percent past due fee will be assessed on the unpaid student and/or miscellaneous account each month until the balance is paid. The enrollment of students whose accounts remain unpaid after the payment due date may be canceled at the discretion of the University. Students are individually responsible for their financial obligations to the University.

All refunds except federal parent PLUS loans, prepayment accounts, the SMU Monthly TuitionPay Payment Plan and international wires will be made payable to the student. International wires will be refunded by wire to the originating wire account less a $35 wire-processing fee. The PLUS loan borrower can request the refund to be processed to the student by submitting a Parent PLUS Release form, located on the Bursar website. If the refund is issued by check, the student may request, in writing, that the refund be sent to another party.

Any outstanding debts to the University will be deducted from the credit balance prior to issuing a refund check. Any outstanding debts to the University that include Title IV funds must have an Authorization to Credit Account form and/or an Authorization to Credit Account Parent form on file in order to transfer funds to cover current award year debts. Students need to sign the ACA form and the federal parent PLUS loan borrower needs to sign the ACAP form.

Any outstanding debts to the University that do not include Title IV funds will be deducted from the credit balance prior to issuing a refund. All other debts should be paid directly by the student.

A student whose University account is overdue or who in any other manner has an unpaid financial obligation to the University will be denied the recording and certification services of the Office of the Registrar, including the issuance of a transcript or diploma, and may be denied readmission until all obligations are fulfilled. The Division of Enrollment Services may stop the registration, or may cancel the completed registration, of a student who has a delinquent account or debt, and may assess all attorney's fees and other reasonable collection costs (up to 50 percent) and charges necessary for the collection of any amount not paid when due. Matriculation in the University constitutes an agreement by the student to comply with all University rules, regulations and policies.

Arrangements for financial assistance from SMU must be made in advance of registration and in accordance with the application schedule of the Division of Enrollment Services, Financial Aid. A student should not expect such assistance to settle delinquent accounts.

Students who elect to register for courses outside of their school of record will pay the tuition rate of their school of record.

REFUNDS FOR WITHDRAWAL FROM THE UNIVERSITY

Note: No refunds are made without an official withdrawal. Policies for official withdrawal, including medical and mandatory administrative withdrawal, are found under Withdrawal From the University in the Academic Records, General and Enrollment Standards section of this catalog.

Reduction of tuition and fees is determined by the effective date of the withdrawal and is based on the schedule listed in the *Financial Information Bulletin*, which can be accessed online at www.smu.edu/bursar ("Financial Bulletin" link).

Note: For students receiving financial aid (scholarships, grants or loans), when the withdrawal date qualifies for reduction of tuition and fees charges, the refund typically will be used to repay the student aid programs first and go to the student/family last. Further, government regulations may require that SMU return aid funds whether or not the University must reduce its tuition and fees (based on the *Financial Information Bulletin*); hence, a student whose account was paid in full prior to withdrawal may owe a significant amount at withdrawal due to the required return of student aid. Therefore, students who receive any financial aid should discuss, prior to withdrawal, the financial implications of the withdrawal with the Financial Aid Advising Office.

Medical withdrawals and mandatory administrative withdrawals allow a prorated refund of tuition and fees.

PAYMENT PLAN OPTIONS
SMU Monthly Payment Plan

The SMU TuitionPay Payment Plan administered by Sallie Mae allows term charges to be paid in monthly installments. Students can enroll in a payment plan at www.tuitionpaymentplan.com/smu. Sallie Mae consultants are available at 877-279-6092 to answer questions or help with the online enrollment process.

Annual payment plans are available in twelve-month, ten-month and eight-month formats. Term payment plans are available in four-month, five-month and six-month formats. The summer payment plan is three months.

SMU Prepayment Plan

The SMU Prepayment Plan (a single payment up front for all terms) allows families to avoid the effects of tuition and fee increases by paying for two, three or four years in one single payment at the current rate of tuition and fees. Questions should be addressed to the Division of Enrollment Services, Southern Methodist University, PO Box 750181, Dallas TX 75275-0181; phone 214-768-1096.

GRADUATE AND PROFESSIONAL STUDENT AID

University grants, scholarships, fellowships and assistantships are awarded in the school or department in which the graduate student will enroll. Schools and departments that offer master's or Ph.D. degrees offer a significant number of tuition scholarships and teaching or research assistantships each year. For more information, students should contact the appropriate school or department.

Grants and loans for Texas residents, private and federal loans, and employment programs may be available by filing the Free Application for Federal Student Aid. The FAFSA may be completed online at www.fafsa.gov. A personal identification number can be obtained at www.pin.ed.gov, which can be used to electronically sign the application. SMU Title IV school code number is 003613.

More information is available online at www.smu.edu/financial_aid.

ACADEMIC RECORDS, GENERAL AND ENROLLMENT STANDARDS

The standards herein are applicable to all students at the University and constitute the basic authority and reference for matters pertaining to University academic regulations and records management. Enrollment in the University is a declaration of acceptance of all University rules and regulations. A complete *University Policy Manual* is available at www.smu.edu/policy. Additional information regarding rules and regulations of the University can be found in this catalog.

GENERAL POLICIES
Confidentiality of Education Records

The Family Educational Rights and Privacy Act of 1974 is a federal law that grants students the right to inspect, obtain copies of, challenge, and, to a degree, control the release of information contained in their education records. The act and regulations are very lengthy, and for that reason, SMU has issued its own FERPA-based guidelines that are available at the University Registrar's Office FERPA website. Policy 1.18 of the *University Policy Manual* also discusses this law.

In general, no personally identifiable information from a student's education record will be disclosed to any third party without written consent from the student. Several exceptions exist, including these selected examples: 1) information defined by SMU as directory information may be released unless the student requests through Access.SMU Self-Service that it be withheld, 2) information authorized by the student through Access.SMU Self-Service may be released to those individuals designated by the student and 3) information may be released to a parent or guardian if the student is declared financially dependent upon the parent or guardian as set forth in the Internal Revenue Code. Additional information is available at www.smu.edu/ferpa.

Student File Number

The University assigns each student an eight-digit SMU identification number. The student should furnish the SMU ID number on all forms when requested, as this number is the primary means the University has to identify the student's academic records and transactions related to the records.

Name Change

A student who has a change in name must provide to the University Registrar's Office his or her Social Security card or the form issued by the Social Security Administration. A valid passport may also be used to complete a name change. Enrollment or records services for the student under a name different from the last enrollment cannot be accomplished without one of the above documents. All grade reports, transcripts and diplomas are issued only under a person's legal name as recorded by the University Registrar's Office.

Mailing Addresses, Telephone, Email Address and Emergency Contact

Each student must provide the University Registrar's Office with a current home address, telephone number and local mailing address as well as the name, address and telephone number of a designated emergency contact. Students enrolling at SMU authorize the University to notify their emergency contacts in the event of a situation affecting their health, safety, or physical or mental well-being, and to provide these contacts with information related to the situation.

Students are expected to keep current all their addresses and telephone numbers, including emergency contact details, through Access.SMU, the University's Web-based self-service system. Students may be prevented from enrolling if their information is insufficient or outdated. Changes to parent information should be reported by contacting records@smu.edu, and the email should include the student's full name and SMU student ID number.

The University issues all students an email address. Students may have other email addresses, but the University-assigned email address is the official address for University electronic correspondence, including related communications with faculty members and academic units (except for distance education students).

Official University correspondence may be sent to students' mailing addresses or SMU email addresses on file. It is the responsibility of students to keep all their addresses current and to regularly check communications sent to them since they are responsible for complying with requests, deadlines and other requirements sent to any of their mailing addresses on file or to their SMU email.

Cell Phones

The University requests that students provide cellular telephone numbers, as they are one means of communicating with students during an emergency. Cellular telephone numbers may also be used by University officials conducting routine business. Students who do not have cellular telephones or do not wish to report the numbers should provide this information to the University through Access.SMU Self-Service. Students may be prevented from enrolling if their cellular telephone numbers are not on file or if they have not declared "no cellular telephone" or "do not wish to report cellular number" in Access.SMU.

Ethnicity

SMU requires that a valid ethnic group category be on file for all students. SMU's policies and the Family Educational Rights and Privacy Act of 1974 protect the confidentiality and privacy of this information. A student's ethnic group category can be viewed in Access.SMU, Self-Service Student Center.

U.S. Citizens or Permanent Residents. Ethnicity is self-determined. Students of multiple ethnic backgrounds may select multiple ethnic group categories. If the ethnic group value is incorrect, the student should go to the University Registrar's Office in the Laura Lee Blanton Student Services Building and complete an Ethnic/Racial Category Update Form.

International Students Living in the U.S. While Attending School. Selecting an ethnic group category is not required unless the student becomes a U.S. citizen or permanent resident.

Transcript Service

A transcript is an official document of the permanent academic record maintained by the University Registrar's Office. The permanent academic record includes all SMU courses attempted, all grades assigned, degrees received and a summary of transfer hours accepted. Official transcripts and certifications of student academic records are issued by the University Registrar's Office for all students. Copies of high school records and transfer transcripts from other schools must be requested from the institutions where the coursework was taken.

Transcripts are $12.25 per copy. Additional copies in the same request mailed to the same address are $3.50. Additional copies mailed to different addresses are $12.25 a copy. PDF transcripts are $16.00 per email address and are available only for students who attended after summer 1996. **Note:** No incomplete or partial transcripts, including only certain courses or grades, are issued. Transcripts cannot be released unless the student has satisfied all financial and other obligations to the University. Instructions for requesting a transcript to be mailed or picked up on campus are available at www.smu.edu/registrar ("Transcript Requests" link). A student may request his or her official transcript through the online Access.SMU Student Center. Requests are processed through the National Student Clearinghouse. Telephone and email requests are not accepted. Students or their specified third party can pick up their transcripts at the University Registrar's Office, 101 Blanton Student Services Building. Transcripts may be delayed pending a change of grade, degree awarded or term grades.

SMU is permitted, but not required, to disclose to parents of a student information contained in the education records of the student if the student is a dependent as defined in the Internal Revenue Code.

Transcripts may be released to a third party as specified by the student on the Student's Consent for SMU to Release Information to Student's Specified Third Party form accessible at www.smu.edu/ferpa ("Forms" link).

Note: Chapter 675, S.B. 302. Acts of the 61st Texas Legislature, 1969 Regular Session, provides the following: *Section I.* No person may buy, sell, create, duplicate, alter, give or obtain; or attempt to buy, sell, create, duplicate, alter, give or obtain a diploma, certificate, academic record, certificate of enrollment or other instrument which purports to signify merit or achievement conferred by an institution of education in this state with the intent to use fraudulently such document or to allow the fraudulent use of such document. *Section II.* A person who violates this act or who aids another in violating this act is guilty of a misdemeanor and upon conviction is punishable by a fine of not more than $1,000 and/or confinement in the county jail for a period not to exceed one year.

Veterans

The University Registrar's Office certifies veterans each term for their benefits under federal programs, including the Yellow Ribbon Program. Most academic programs at SMU qualify for U.S. Department of Veterans Affairs benefits, making an SMU education accessible and affordable. Veterans are required to provide specific documents before they can be certified with the VA's Veterans Benefits Administration. Specific information regarding the certification process is available from the University Registrar's Office at www.smu.edu/registrar ("Veterans Affairs" link).

Final Examinations

Final course examinations shall be given in all courses where they are appropriate, must be administered as specified on the official examination schedule and shall not be administered during the last week of classes. Exceptions to the examination schedule may be made only upon written recommendation of the chair of the department sponsoring the course and with the concurrence of the dean of that school, who will allow exceptions only in accordance with guidelines from the Office of the Provost.

Academic Grievance and Appeals Procedures for Students With Disabilities

The University policy for academic grievance and appeals procedures for students with disabilities is available in the Office of Disability Accommodations and Success Strategies and the University Registrar's Office.

Term Hour Loads

The unit of measure for the valuation of courses is the *term hour*, i.e., one lecture hour or three laboratory hours per week for a term of approximately 16 weeks (including final examinations).

Enrollment for nine hours of coursework per term is recognized as a full load for students engaged in graduate studies. Individuals who enroll for fewer than these minimum hours are designated as part-time students.

Cautionary Note: Federal financial aid agencies and some other agencies require a minimum number of hours of enrollment for full-time status and do not make exceptions for internship, co-op or student-teaching enrollments. Students on financial aid should consult a Financial Aid Office adviser regarding minimum enrollment requirements for their situation.

Minimum and Maximum Course Loads. Minimum and maximum course loads allowed are based on the school of record.

Stop Enrollment/Administrative Withdrawal

Insufficient or improper information given by the student on any admission or enrollment form – or academic deficiencies, disciplinary actions and financial obligations to the University – can constitute cause for the student to be determined ineligible to enroll or to be administratively withdrawn.

Transfer Courses From Other Institutions

The policy for transfer credit is found under Degree Requirements in the XX section of this catalog.

Official college transcripts are required for all college-level work attempted, regardless of transferability. Military transcripts are also required for students receiving VA benefits; more information is available at www.smu.edu/registrar ("Veterans Affairs" link). Students are responsible for making sure a transcript of all transfer work attempted is sent to the University Registrar's Office immediately following completion of the work.

ENROLLMENT POLICIES

Course Scheduling and Enrollment Cycles

When students enter their school of record and into a specific degree program, they are assigned an academic adviser. Students should consult with the adviser for course scheduling, schedule changes, petitions, degree requirements and other such academic concerns. Advisers normally will have established office hours. The academic dean's office or the school's records office monitors progress and maintains official degree plans for all students in a school. Students should schedule conferences with staff in the dean's office or the school's records office upon admission to a school and prior to their final term to ensure that they are meeting all University and graduation requirements.

Each fall, spring and summer term has an enrollment period during which the formal process of enrollment in the University is completed. Prior to each enrollment period, the University Registrar's Office will publish enrollment instructions.

Each student is personally responsible for complying with enrollment procedures and for ensuring the accuracy of his or her enrollment. Students are expected to confirm the accuracy of their enrollment each term. Students who discover a discrepancy in their enrollment records after the close of enrollment for the term should immediately complete an Enrollment Discrepancy Petition. Petitions are to be submitted to the appropriate academic dean's office or records office within six months of the term in which the discrepancy appeared; contact information for submission of an Enrollment Discrepancy Petition can be viewed on the University Registrar's Office website at www.smu.edu/EnrollmentDiscrepancy. Petitions submitted later than six months after the discrepancy may not be considered.

Schedule Changes

The deadline for adding courses, dropping courses without grade record and changing sections for each enrollment period is listed on the Official University Calendar (www.smu.edu/registrar). Students are encouraged to seek assistance from their advisers when considering whether to add or drop a course. A student may drop a course with a grade of *W* (Withdrew) through approximately midterm by using the student Access.SMU Self-Service. The specific deadline is listed on the Official University Calendar.

After the deadline date on the Official University Calendar, the student may not drop a class. All schedule changes must be processed by the deadline date specified on the Official University Calendar. **Note:** Schedule changes are not complete for official University record purposes unless finalized in the University Registrar's Office.

Student-Athletes. Students must consult with the Athletic Compliance Office prior to dropping a course. In the consultation, the student will review the effects the drop might have on his or her athletic participation and financial aid. After the consultation, the Athletic Compliance Office will update Access.SMU Self-Service to allow the student to process the drop, if necessary. The consultation is advisory; students are responsible for their enrollment. For assistance regarding scholarships or other aspects of being a student-athlete, students should contact the Office of the Assistant Athletic Director for Student-Athlete Development.

International Students. Students must consult with the International Center prior to dropping a course. If dropping a course will cause the student to be enrolled in fewer than the required number of hours to remain a full-time student, the student's immigration status could be affected. After the consultation, the International Center will update Access.SMU to allow the student to process the drop, if necessary. The consultation is advisory; students are responsible for their enrollment.

Students on Merit or Need-Based Financial Aid. Students should consult with their financial aid adviser prior to dropping a course. If dropping a course will cause the student to be enrolled in fewer than the required number of hours to remain a full-time student, the student's financial aid status may be affected. After the consultation, the student may drop a course through Access.SMU Self-Service. The consultation is advisory; students are responsible for their enrollment. Questions regarding

this procedure or financial aid should be directed to the Office of the Associate Financial Aid Director.

Withdrawal From the University

Note: Policies on refunds for withdrawal from the University are found in the Financial Information section of this catalog and in the *Financial Information Bulletin*, which can be accessed online at www.smu.edu/bursar ("Financial Bulletin" link). No refunds are made without an official withdrawal.

Students should be aware of the difference between a *drop* and a *withdrawal* and remember that they have different deadlines and separate financial policies. The deadlines for each are posted each term on the Official University Calendar at www.smu.edu/registrar. A *drop* occurs when a student removes one or more courses from his or her schedule and remains enrolled in at least one credit hour for the term. A *withdrawal* occurs when removing the course or courses will result in the student being enrolled in **zero** hours for the term.

If a student removes all courses from his or her schedule **prior to the first day of the term**, the transaction is considered a *cancellation* and does not result in financial penalty or impact the student's transcript.

A student who wishes to withdraw (resign) from the University before the end of a term or session must initiate a Student Petition for Withdrawal form and secure approval from his/her academic dean. The academic dean's office will then submit the form to the Office of the University Registrar. The effective date of the withdrawal is the date on which the Student Petition for Withdrawal is processed in the University Registrar's Office. Discontinuance of class attendance or notification to the instructors of intention to withdraw does not constitute an official withdrawal.

The enrollment of students who withdraw on or before the fifth day of regular classes as listed on the Official University Calendar will be canceled. Courses and grades are not recorded for canceled enrollments; however, the student will owe a portion of his/her tuition and fees. Additional information is available in the *Financial Information Bulletin*, which can be accessed online at www.smu.edu/bursar ("Financial Bulletin" link). A student who withdraws after the fifth class day will receive the grade of *W* in each course in which he or she enrolled.

Medical withdrawals and mandatory administrative withdrawals allow a prorated refund of tuition and fees and have conditions that must be met prior to reenrollment at SMU. Medical withdrawals can only be authorized by a licensed physician or psychologist counselor in the SMU Memorial Health Center. Mandatory administrative withdrawals can be authorized only by the vice president for student affairs. As a matter of University policy, and in compliance with federal regulations, retroactive medical withdrawals cannot be granted. The last day for a medical withdrawal is the last day of class instruction for the term from which the student is withdrawing.

Withdrawing students living in SMU housing must check out of the residence halls with the Department of Residence Life and Student Housing per established procedures.

Audit Enrollment (Course Visitor)

Students desiring to audit (visit) a class, whether or not concurrently enrolled for regular coursework, are required to process an Audit Enrollment Request Form. Forms are available at www.smu.edu/registrar ("Forms Library" link). Space must be available in the class. The following regulations are applicable:

1. Classroom recitation and participation are restricted; availability of course handouts, tests and other materials is restricted; no grade is assigned and no credit is recorded; no laboratory privileges are included.
2. The student's name does not appear on class rosters or grade rosters.
3. Regular admission and enrollment procedures are not conducted for auditors.
4. The audit fee is nonrefundable.
5. If credit is desired, the course must be enrolled for and repeated as a regular course, and the regular tuition must be paid.

No-Credit Enrollment

Enrollment for no credit is accomplished in the conventional manner of enrollment, with regular admission and enrollment procedures being required. The student pays the regular tuition and fees, participates in class activities, and receives the grade of *NC* upon completion of the coursework. The student must indicate in writing no later than the 12th day of classes (the fourth day during summer terms or sessions) that he or she wishes to take a course for no credit. Permission of the instructor or department is required for this type of enrollment, and the student is listed on class rolls. This enrollment is different from audit enrollments, for which no enrollment or grade is recorded.

Class Attendance

Regular class attendance is required. The instructor of each class announces at the beginning of the course policies regarding the effect of class attendance on the student's standing in the course. These policies may include dropping a student from the course for nonattendance after a certain number of absences. All reasons for absence should be submitted at once to the instructor.

The satisfactory explanation of absence may release a student from disciplinary action but does not relieve a student from responsibility for the work of the course during his or her absence. A student who misses an announced test, examination or laboratory period in a regular course of study and has the permission of the instructor may be given an opportunity to make up the work at the instructor's convenience. The instructor determines in all instances the extent to which absences and tardiness affect each student's grade.

Students may be dropped by a course instructor or academic dean for nonattendance or tardiness with a grade of *W* until the calendar deadline to drop. After the deadline, students must remain enrolled in the course.

Students may also be dropped by a course instructor for inappropriate classroom behavior. The instructor must submit the request by the University deadline to drop. After the deadline, the student must remain enrolled in the class and receive a final grade of *F*.

Absence Due to Illness

SMU's Memorial Health Center does not provide documentation for granting excused absences from class. If students are absent for illness, they should talk to their professors about how they might catch up with the material missed. If students are seriously ill and require hospitalization or an extended absence, students should talk to their professors and the Office of Student Life to decide how to deal with the interruption in their studies.

Interpretation of Course Numbers

Each SMU course has a four-digit course number. The first number indicates the general level of the course: 1 – first year; 2 – sophomore; 3 – junior; 4 – senior; 5 – senior or graduate; 6, 7, 8, 9 – graduate. The second digit specifies the number of credit hours ("0" for this digit denotes no credit, one-half hour of credit, or 10–15 hours of credit; for theology courses, a "1" denotes one or one and one-half hours of credit). The third and fourth digits are used to make the course number unique within the department.

GRADE POLICIES

A student's grades are available to him or her through Access.SMU Student Center.

Grade Scale

The grade of a student in any course is determined by the instructor of the course. The following grades are authorized for recording on the student's official graduate academic record maintained by the University Registrar's Office.

Grades	Description	Grade Points per Term Hour
A	Excellent Scholarship	4.000
A-	Excellent Scholarship	3.700
B+	Good Scholarship	3.300
B	Good Scholarship	3.000
B-	Good Scholarship	2.700
C+	Fair Scholarship	2.300
C	Fair Scholarship	2.000
C-	Fair Scholarship	1.700
D+	Poor Scholarship	1.300
D	Poor Scholarship	1.000
D-	Poor Scholarship	0.700
F	Fail	0.000
P, CR	Pass, Credit	*
I	Incomplete	*
NC	No Credit Received	*
X	No Grade Received in Registrar's Office	*
WP/W	Withdrawal Passing/Withdrew	*

Grades not included in GPA

Grade of F, D or W

Failing is graded *F*. If the student's work is incomplete, poor quality and not acceptable, a grade of *F* will be given. After such a grade, credit may be obtained only by repeating the course.

The grade of *D* represents performance below average expectations. Students receiving a *D* in a course that is a prerequisite to another course should consult with their advisers about repeating the course so that they will be adequately prepared for work in the following course.

The grade of *W* cannot be recorded unless completion of the official drop or withdrawal process has occurred by the applicable deadline *during the term of enrollment*. Only the grade of *W* may be recorded if the student has officially dropped courses from the schedule or withdrawn (resigned) from the University. The grade of *W* may not be revoked or changed to another grade because the act of officially dropping/withdrawing is irrevocable.

Grade of Incomplete

A student may temporarily receive a grade of Incomplete (*I*) if a substantial portion of the course requirements have been completed with passing grades, but for some justifiable reason acceptable to the instructor, the student has been unable to complete the full requirements of the course.

The grade of *I* is normally changed to a final grade within one year but no later than the time of graduation.

At the time a grade of *I* is given, the instructor must stipulate in writing to the student and to the University Registrar's Office the requirements and completion date that are to be met and the final grade that will be given if the requirements are not met by the completion date.

The maximum period of time allowed to clear the Incomplete is 12 months. If the Incomplete grade is not cleared by the date set by the instructor or by the end of the 12-month deadline, the grade of *I* will be changed to the grade provided by the instructor at the time the Incomplete was assigned or to a grade of *F* if no alternate grade was provided.

The grade of *I* is not given in lieu of a grade of *F* or *W*, or other grade, each of which is prescribed for other specific circumstances.

The grade of *I* in a course does not authorize a student to attend or enroll in the course during a later term. Graduation candidates must clear all Incompletes prior to the deadline on the Official University Calendar. Failure to do so can result in removal from the degree candidacy list and/or conversion of the grade of *I* to the grade indicated by the instructor at the time the grade of *I* was given.

Grade Point Average

A student's grade point average (cumulative GPA) is computed by multiplying the term hours of each course attempted by the grade points earned in the particular course and then dividing the total number of grade points by the total number of hours attempted, excluding those hours for which grades are shown with an asterisk on the grade chart. The GPA is truncated, not rounded, at three decimal places.

Grade Changes

Changes of grades, including change of the grade of *I*, are initiated by the course instructor and authorized by the academic chair and by the academic dean of the school in which the course was offered. If a student requests a grade change, the instructor may ask the student to provide the request as a written petition, which may become an official part of any further process at the instructor's discretion. Changes of grades may be made only for the following authorized reasons: to clear a grade of *I*, to correct a processing error or to reflect a re-evaluation of the student's original work. A change of grade will not be based on additional work options beyond those originally made available to the entire class.

Changes of grades of *I* should be processed within a calendar year of the original grade assignment. Other changes of grades must be processed by the end of the next regular term. No grade will be changed after 12 months or after a student's graduation, except in cases where a grade is successfully appealed – provided that written notice of appeal is given within six months following graduation – and in extenuating circumstances authorized by the academic dean and approved by the University Registrar's Office.

Grades for Repeated Courses

Students will be allowed to repeat courses according to the following rules: Both the initial and the second grades will be recorded on the student's permanent academic record. Both grades will be included in the calculation of the GPA and in the determination of academic probation, suspension, dismissal, honors and graduation. Only the repeated course and not the initial credit hours count toward the number of hours needed for graduation.

Pass/Fail Option

Students should consult with their advisers before declaring the pass/fail option for any course, as some courses may not be taken pass/fail.

Grade Appeals

A student who feels that an assigned grade is other than the grade earned must first discuss the matter with the course instructor to determine if the discrepancy is caused by error or misunderstanding. At the time of the initial discussion, the student may be asked to provide a written petition requesting the change of grade.

A student who is not satisfied by the instructor's decision on a request for a grade change, and who maintains that the original grade was capriciously or unfairly determined, may appeal to the chair of the department in which the course was offered (or, in the case of a nondepartmental course, to a faculty agent designated by the dean of the school offering the course). After discussing the matter with the student, and bearing in mind that the final authority in matters of academic judgment in the determination of a grade rests with the course instructor, the chair (or faculty agent) will consult with the course instructor, who will subsequently report to the student the disposition of the appeal.

A student who is not satisfied by the disposition of the appeal may appeal the decision to the dean of the school offering the course. The dean will take action as he or she deems appropriate. A student may appeal the dean's decision to the provost. In their actions, the dean and the provost must respect the principle that the determination of a grade rests with the course instructor.

ACADEMIC ADVISING AND SATISFACTORY PROGRESS POLICIES

Academic Advising

For an effective advising relationship, the student must be prepared when meeting with the adviser. The student must initiate the advising appointment. The adviser will give assistance to the student, but the student has the final responsibility for the accuracy of the enrollment, the applicability of courses toward the degree requirements, and his or her academic performance.

Students are assigned an academic adviser by their academic dean's office or records office. A student who enrolls without first meeting with his or her assigned academic adviser may be subject to sanctions including, but not limited to, cancellation of the term enrollment and restriction from the self-service enrollment functions.

Leave of Absence

A leave of absence is a temporary leave from the University – a kind of "time out" – that may be necessary during an academic career. Students may elect to take leaves of absence for a variety of reasons, including 1) medical reasons due to accident or illness, 2) family crises or other personal situation that requires an extended absence from school, 3) financial issues that may take time to resolve, and 4) academic difficulties that may best be handled by taking time to refocus on college work.

Typically, a leave of absence is for one term or one academic year. A student may extend a leave of absence by contacting his or her academic department representative. The process to return to SMU after a leave-of-absence period can be an easy one, especially if the student has gone through the steps to file for a leave of absence and planned ahead for the return. Following SMU's leave-of-absence guidelines helps 1) assure that the degree requirements per the catalog of record when the student initially matriculated at SMU still apply upon return, 2) assist with financial aid processing, and 3) provide the support needed to successfully return to SMU and finish the degree.

The SMU Leave of Absence Policy provides students with a formal process to "stop out" of SMU for either voluntary or involuntary reasons. Typically, *a leave of absence* is for a temporary departure from the institution; however, *intended permanent withdrawals* from SMU will also be processed under the Leave of Absence Policy.

The first step to effect a leave of absence is for the student to arrange an appointment to meet with his or her academic adviser, who will then assist the student with the process.

Academic Progress

Failure to meet established minimum acceptable standards of academic or disciplinary performance can result in probation, suspension or dismissal. Information regarding disciplinary action can be found under Code of Conduct in the Student Affairs section of this catalog.

Graduate students must maintain a cumulative GPA of 3.000. If in any term the student falls below this cumulative GPA, the student will be placed on probation for one regular term. If at the end of the term of probation the cumulative GPA is not up to 3.000, the student may be removed from the program at the discretion of the dean's office or records office.

Definitions: Academic Probation, Academic Suspension, Academic Reinstatement and Academic Dismissal

Academic Probation. Academic probation is a serious warning that the student is not making satisfactory academic progress. A student on academic probation is still eligible to enroll and is considered in good standing for enrolling in classes and for certification purposes. Academic probation is not noted on the permanent academic record; however, a student on academic probation may be subject to certain conditions during the period of probation and will be subject to academic suspension if he or she does not clear academic probation.

   Academic Suspension. Academic suspension is an involuntary separation of the student from SMU. Academic suspension is for at least one regular term. The term of suspension might be for a longer period depending on the policy of the school of record or the terms of the individual student's suspension.

   The status of academic suspension is recorded on a student's permanent academic record. While on academic suspension, a student is not in good academic standing for certification purposes and is not eligible to enroll at SMU. Students who have served their suspension and who are eligible to return may not enroll for any intersession terms.

   Credits earned at another college or university during a term of suspension may not be applied toward an SMU degree. A grade point deficiency must be made up through enrollment at SMU.

   Academic Reinstatement. A student who has been on academic suspension once may apply for reinstatement to SMU. If reinstated, the student may enroll in classes, and he or she is considered in good academic standing for purposes of certification. A student who is reinstated remains on academic probation until the conditions of academic probation are satisfied.

   Academic Dismissal. A second suspension that is final results in an academic dismissal from the University. Academic dismissal is final, with no possibility of reinstatement or readmission. Academic dismissal is recorded on the student's permanent academic record.

Academic Petitions and Waivers

Petitions and/or requests for waivers concerning University requirements, graduation requirements and the evaluation of transfer work should be submitted to the dean's office or records office of the student's school of record.

Transfer Coursework

The policy for transfer coursework is found under Transfer Courses From Other Institutions in the General Policies section of this catalog.

GRADUATION POLICIES

Apply to Graduate

Students must file an Application for Candidacy to Graduate with their academic dean's office or records office at the beginning of the term in which they will complete all degree requirements. Applications should be filed by the deadline date on the Official University Calendar.

   Students who file an application after the published deadline may be required to pay a nonrefundable late fee. Late applications may be denied after the start of the next term, and the Application for Candidacy to Graduate applied to the next confer-

ral date. Students taking coursework at another institution and transferring the course(s) back to SMU are responsible for ensuring that the University Registrar's Office receives their official transcript in order for their degree to be conferred for the anticipated graduation term.

SMU has three degree conferral periods for most programs: fall (December), spring (May) and summer (August). Students who complete their degree requirements during a J Term (January) intersession, May term or August term will have their degrees conferred at the conclusion of the following conferral term.

Commencement Participation

An All-University Commencement Convocation is held in May for students on schedule and enrolled to complete degree requirements during the spring term. Students on schedule and enrolled to complete all degree requirements during the following summer session may also participate in the University Commencement Convocation, although their degrees will not be conferred until August. Students may also participate in departmental or school ceremonies following the University commencement according to the policies of the departments or schools.

An All-University Graduation Ceremony is held each December for students completing degree requirements during the fall term. Students who completed degree requirements during the previous summer session may also participate. Students on schedule and enrolled to complete all degree requirements during the following J Term (January) intersession may also participate in the December graduation ceremony, although their degrees will not be conferred until May.

A student may participate once in either the May All-University Commencement Convocation or the December graduation ceremony for a given degree, but not both.

To participate in a ceremony, a student must file with their academic dean's office or records office an Application for Candidacy to Graduate or Intent to Participate Form.

Statute of Limitations for Degree Plans

A student who has been readmitted to the University following an absence of more than three years will be expected to meet all current requirements for graduation.

DEGREE REQUIREMENTS

General requirements of graduate degree programs are described on the following pages. Additional requirements for specific programs are contained in the corresponding departmental section.

MASTER'S DEGREES

Distribution of Courses

Each master's degree program includes a minimum of 30 term hours of work. At least 18 term hours of the courses included in each student's program for a master's degree shall be those numbered 6000 or above.

At least 18 term hours of credit must be earned in the major departmental field. (In order to obtain graduate credit for these courses, however, the student must have taken at least 12 term hours of advanced credit in the major field, or else six term hours in that and six in a closely related field approved by the chair of the major department and the graduate dean.) The remaining hours may also be taken in the major field, or else in one or more minor fields approved as closely related to the major subject.

Credits

The term hour is a unit of credit that represents the work accomplished in one hour of lecture each week during a term. The great majority of courses offered meet three hours a week and have a value of three term hours. The second digit of each course number indicates the value in term hours of that course. All courses attempted for credit on a student's graduate program must average *B* (3.000) or better, with no grade less than *C* (2.000) applying toward the degree.

No course counted toward another degree may be counted toward a master's degree, either directly or by substitution, with the following exception: Upon approval of the departments concerned, work accomplished while in pursuit of a Ph.D. degree may be used to satisfy requirements for a master's degree, provided declaration of intent to receive the degree is received by the Office of Research and Graduate Studies before the date of receipt of the Ph.D. degree.

Transfer of Credits

Not more than six term hours of work from another institution shall apply toward a candidate's master's program. All credit for work transferred must show grades of *A* or *B* and is subject to the approval of the major department. An official record of such work must be on file in the graduate office of Southern Methodist University at least 30 days before the student expects to receive the degree. Upon approval of the dean, six term hours of credit may be taken by extension. No credit is allowed for study by correspondence.

Time Limit

No credit will be allowed toward the master's degree for courses taken more than six years before the date on which the degree is to be conferred. An appeal for a waiver of this regulation can be made only by faculty members of the department in which the student is doing his or her major work, following a written examination of the subject matter petitioned.

Master's En Route to the Doctor of Philosophy

In certain departments, the master's degree may be awarded to those Ph.D. degree candidates who have successfully completed all Ph.D. requirements except the dissertation.

Thesis

The thesis, if required, must be written under the guidance of a thesis director who is a member of the faculty. The director will be appointed by the departmental faculty after consultation with the candidate.

The thesis, typewritten in final form and accompanied by a statement of approval written by the thesis director, must be presented for inspection at the Office of Research and Graduate Studies.

Students who intend to graduate will apply online through Access.SMU by completing the Application for Candidacy to Graduate form. Requirements and deadlines are posted on www.smu.edu/graduate.

In submitting a thesis, the student thereby grants permission to the director of libraries at SMU to make copies at the director's discretion, upon the request of individuals or institutions.

Examinations

Each candidate must pass an oral and/or written examination, which will include a defense of the thesis if applicable and will test the candidate's knowledge of the major and minor fields. This examination must be taken before or on the date set by the University calendar.

With approval of the departmental faculty, the departmental chair or the departmental director of graduate studies, as appropriate, shall appoint a committee of the graduate faculty to review the thesis (if applicable) and to conduct the examination. The departmental chair or director will notify members of the committee of their appointments and report the committee membership to the dean of the Office of Research and Graduate Studies.

The committee for master's level shall consist of at least three members, two of whom must be the major adviser or a designate, who will serve as chair, and a tenured/tenure-track member of the candidate's major department. The third member (or additional members) of the committee may be an additional member of the candidate's major department or an external reviewer, appointed with the approval of the department chair.

The examination will be conducted by the committee and by any other members of the faculty who care to attend as nonvoting members. The chair of the examining committee will set a date, hour and place for the examination that is agreeable to the committee members and the candidate. A unanimous vote of the committee is necessary for approval of the examination. Students who fail the examination may be given a second examination, at a time to be determined by the committee, but not later than one year after the initial examination. Those who fail the examination the second time are thereby disqualified for a degree.

THE DEGREE OF DOCTOR OF PHILOSOPHY

The degree of Doctor of Philosophy is awarded in recognition of high attainment in a special field of knowledge, as evidenced by examination and by a dissertation presenting the results of significant and original research. General requirements are listed below. In many programs, however, there are additional requirements, and students should carefully check regulations in their particular programs.

Qualifying Examination

The purpose of the qualifying examination is to test the student's knowledge of the field of specialization, to assess familiarity with the published research in the field, and to determine whether the student possesses critical and analytical skill necessary for a scholarly career. The examination may be written and/or oral and normally is administered two or three years after matriculation in the program. When a faculty committee is responsible for this examination, the members should be drawn from the broad field of specialization so as to be able to assess the student's ability in breadth as well as depth. If a minor field also is involved, a faculty member in the minor area should participate in administering the qualifying examination. Even though it is not necessary for the qualifying examination committee to be the same as the dissertation committee, a significant overlap between the two committees is desirable for continuity.

A student who fails the qualifying examinations may apply for the privilege of a second examination. Failure on the second examination will render a student ineligible to continue in the Ph.D. program at SMU.

Admission to Candidacy

Admission to a graduate program does not imply admission to candidacy for the doctoral degree. To be admitted to candidacy, the student must satisfy the language requirements, if any, in the program and must pass the qualifying examination in the program of study. Upon completion of these requirements, the department will recommend to the dean that the student be admitted to candidacy. The recommendation will be made within five months of the qualifying examination or satisfying the language requirement, whichever comes later. Supporting documents will include the student's degree plan and the qualifying examination report (ORGS Form 1).

Residence and Coursework

The Ph.D. degree normally requires at least 48 hours of graduate work, of which a maximum of 12 hours can be in dissertation research. Normally, a transfer student may be granted up to 24 hours of credit. Additional transfer credit may be granted only with the approval of the graduate dean. The 48 hours may include research, reading and dissertation courses. Some departments may require additional hours. (See department requirements for details.)

Continuous enrollment is required of Ph.D. students, unless they are on research leave. Students undertaking full-time research off campus may petition the department for a research leave of a maximum of two years. When such leaves are granted, the Office of Research and Graduate Studies should be kept informed. Students who do not enroll for two consecutive terms without formal research leave will have to reapply for admission to the program. Students who do not enroll for one term with-

out formal research leave may petition the graduate dean for reinstatement of their student status. After a student has completed the required minimum credit hours toward the Ph.D. program, enrollment for research is possible without hourly credit or grades for four additional terms.

The minimum residence requirement is a total of 18 term hours completed within three terms of residence at SMU. International students may need to satisfy additional residence requirements to comply with U.S. Immigration and Naturalization Service regulations.

Time Limits

Ordinarily a student enrolled for full-time study should pass the qualifying examination by the end of the third year. An extension of one year may be granted by the dean upon submission of a petition by the student and the endorsement of the student's department. Except under unusual circumstances, extensions beyond the fourth year will not be granted.

The doctoral dissertation should be submitted and accepted within five years after the student has been admitted to candidacy. An extension of one year can be granted by the dean. After this time, the students will be dropped from candidacy and can be readmitted only by passing a second qualifying examination, except under special circumstances. In such cases, new time limits will be set by the student's committee with the approval of the dean.

Time spent on research leaves will not be counted as part of the time limit. If a student must take an unavoidable leave of absence for medical or family reasons, leaves may be granted without affecting time limits. The decision to grant such a leave of absence will be made by the department and approved by the graduate dean. In the case of part-time students, time limit requirements will be interpreted appropriately to allow for their part-time status.

Ordinarily, credit is not allowed for graduate courses (including transfers) that are more than six years old at the time of the qualifying examination. Should the time limits be exceeded, a department may petition the dean to revalidate the credits. Approval is granted only in cases of exceptional merit.

Dissertation

A candidate for the doctoral degree must present an acceptable dissertation within the major field of study. It must demonstrate that the candidate has technical competence in the field and has done research of an independent character. It must add to and modify what was previously known or present a significant interpretation of the subject based on original investigation.

Either at the time of the qualifying examination or later the candidate is required by the department to present the prospectus for the dissertation to a faculty committee. When this committee accepts the candidate's dissertation plan, the dissertation adviser will transmit a Dissertation Topic Report (ORGS Form 2) to the Office of Research and Graduate Studies for inclusion in the candidate's file.

Dissertation Defense

The defense is an examination administered by the student's dissertation and related material.

The Dissertation Committee shall consist of 1) the major adviser, who will serve as chair; 2) at least two other full-time members of the candidate's major department; and 3) at least one external reviewer who is either a faculty member outside the candidate's department or, with the approval of the department chair and the graduate dean, a scholar not associated with the University. For all candidates the major adviser (or designate) must be a full-time member of the department. Faculty members with joint appointments (excluding courtesy appointments) are considered internal members of the departments only, and they may not serve as outside members of the committee. The Dissertation Committee is appointed by the department chair or the director of graduate studies with the approval of the dean after the presentation of the prospectus, given well before the dissertation defense.

The examination will be conducted by the committee and by any other members of the faculty who care to attend as nonvoting members. The chair of the examining committee will set a date, hour and place for the examination that is agreeable to the committee members and the candidate, with notification at least a week in advance. Notice of the dissertation defense should be distributed to all department faculty, the dean of the college and the graduate dean. A unanimous vote of the committee is necessary for approval of the examination. Students who fail the examination may be given a second examination, at a time to be determined by the committee, but not later than one year after the initial examination. Those who fail the examination the second time are thereby disqualified for a degree. The examination report will be forwarded to the dean for certification of the candidate for graduation (ORGS Form 3).

Preparing the Dissertation for Submission

The basic requirements for preparing the dissertation are outlined in the *Thesis/Dissertation Guide* located online at www.smu.edu/graduate.

The dissertation must be completed to the satisfaction of the student's dissertation adviser and Dissertation Committee, and the Office of Research and Graduate Studies. Deadlines for the submission of dissertations are outlined at the beginning of each term. Upon successful completion of the dissertation defense, the half-title page must be signed by the Dissertation Committee. Students are responsible for all fees, including those for electronic publishing and microfilming.

In submitting a dissertation, the student grants permission to the director of libraries at SMU to make copies at the director's discretion, upon the request of individuals or institutions.

GRADUATE DEGREES

The following table identifies graduate degrees awarded and departmental requirements with respect to entrance examinations, languages and theses.

Field of Study	Degrees Offered	Language Requirement	Thesis/ Dissertation Requirement
Anthropology	M.A. (en route to Ph.D.)	Proficiency in one language and statistics	Optional
	Ph.D.	Departmental examination in a language	Mandatory
Medical Anth	M.A. (36 hours)	Individually prescribed	Prohibited
Biological Sciences	M.S. (30 hours)	Individually prescribed	Mandatory
	M.A. (36 hours)	Individually prescribed	Prohibited
	Ph.D.	Individually prescribed	Mandatory
Chemistry	M.S. (30 hours)	None	Mandatory
	Ph.D.	None	Mandatory
Earth Sciences			
Geology or Geophysics	M.S. (30 hours)	None	Mandatory
	Ph.D.	None	Mandatory
Applied Geophysics	M.S. (33 hours)	None	Optional
Economics	M.A. (30 hours)	None	Optional
	Ph.D.	None	Mandatory
Applied Economics	M.A. (36 hours)	None	
English	Ph.D. (60 hours)	Proficiency in one language	Mandatory
History	M.A. (30 hours)	Test administered by department	Mandatory
	M.A. (36 hours)	Test administered by department (special permission)	Prohibited
	Ph.D.	Credit for intermediate courses in one language, or test approved by department	Mandatory
Mathematics			
Computational & Applied Math	M.S. (33 hours)	None	Optional
	Ph.D.	None	Mandatory
Medieval Studies	M.A. (30 hours)	Competence in intermediate Latin and one world/medieval language, demonstrated by examination	Mandatory
Physics	M.S. (30 hours)	None	Optional
	Ph.D.	None	Mandatory
Psychology: Clinical	Ph.D. (70 hours)	None	Mandatory
Religious Studies	M.A. (30 hours)	Competence in a language other than native tongue, demonstrated by examination	Mandatory
	Ph.D.	Competence in two world languages, demonstrated by examination	Mandatory
Statistical Science	M.S. (30 hours)	None	Mandatory
	M.S. (36 hours)	None	Prohibited
	Ph.D.	None	Mandatory
Applied Statistics and Data Analytics	M.S.	None	Prohibited
Grad Certificate			
Women's & Gender Studies	Certificate	None	None

ACADEMIC INTEGRITY AND CODE OF CONDUCT

The Honor Code of Southern Methodist University

Intellectual integrity and academic honesty are fundamental to the processes of learning and of evaluating academic performance, and maintaining them is the responsibility of all members of an educational institution. The inculcation of personal standards of honesty and integrity is a goal of education in all the disciplines of the University.

The faculty has the responsibility of encouraging and maintaining an atmosphere of academic honesty by being certain that students are aware of the value of it, that they understand the regulations defining it, and that they know the penalties for departing from it. The faculty should, as far as is reasonably possible, assist students in avoiding the temptation to cheat. Faculty members must be aware that permitting dishonesty is not open to personal choice. A professor or instructor who is unwilling to act upon offenses is an accessory with the student offender in deteriorating the integrity of the University.

Students must share the responsibility for creating and maintaining an atmosphere of honesty and integrity. Students should be aware that personal experience in completing assigned work is essential to learning. Permitting others to prepare their work, using published or unpublished summaries as a substitute for studying required material, or giving or receiving unauthorized assistance in the preparation of work to be submitted are directly contrary to the honest process of learning. Students who are aware that others in a course are cheating or otherwise acting dishonestly have the responsibility to inform the professor and/or bring an accusation to the Honor Council.

Students and faculty members must share the knowledge that any dishonest practices permitted will make it more difficult for the honest students to be evaluated and graded fairly and will damage the integrity of the whole University. Students should recognize that both their own interest, and their integrity as individuals, will suffer if they condone dishonesty in others.

The Honor System

All SMU students, with the exception of graduate students enrolled in the Cox School of Business, Dedman School of Law or Perkins School of Theology, are subject to the jurisdiction of the Honor Code (www.smu.edu/studentlife, "Student Handbook" link) and as such are required to demonstrate an understanding of and to uphold the Honor Code. In support of the Honor Code, the Honor Council has the responsibility to maintain and promote academic integrity. The Honor Council is composed of a minimum of 27 members selected through an application and interview process organized by the Honor Council Executive Board. Five faculty members, nominated by the Faculty Senate, also serve on the Honor Council.

Academic dishonesty includes plagiarism, cheating, academic sabotage, facilitating academic dishonesty and fabrication. Plagiarism is prohibited in all papers, projects, take-home exams or any other assignments in which the student submits another's work as being his or her own. Cheating is defined as intentionally using or attempting to use unauthorized materials, information or study aids in any academic exercise. Academic sabotage is defined as intentionally taking any action that negatively affects the academic work of another student. Facilitating academic dishonesty is defined as intentionally or knowingly helping or attempting to help another to

violate any provision of the Honor Code. Fabrication is defined as intentional and unauthorized falsification or invention of any information or citation in an academic exercise.

Suspected cases of academic dishonesty may be handled administratively by the appropriate faculty member in whose class the alleged infraction occurred or referred to the Honor Council for resolution. Suspected violations reported to the Honor Council by a student or by an instructor will be investigated and, if the evidence warrants, a hearing will be held by a board composed of a quorum of four members of the Honor Council.

Any appeal of an action taken by the Honor Council shall be submitted to the University Conduct Council in writing no later than four calendar days (excluding school holidays) after notification of the Honor Council's decision.

Code of Conduct

The following are University procedures and standards with which every student must become familiar. The University considers matriculation at SMU an implicit covenant and a declaration of acceptance on the part of the student of all University regulations. As part of the Office of the Dean of Student Life, the Student Conduct and Community Standards Office (www.smu.edu/studentconduct) assists students in their personal development by providing a fair conduct process that issues consistent sanctions for behavior that is incongruent with the University's expectations for students.

Conduct. Standards of conduct are established through faculty, student and administrative efforts and are under continuous evaluation by the entire University community in order to assure reasonable and fair limits. At SMU, the student is assumed to have a high degree of loyalty and responsibility to the University and its well-being, as well as to himself or herself in personal, social and intellectual pursuits; the student's behavior both on and off campus is evidence of this.

Students at SMU will discover that they are encouraged to exercise a great amount of personal freedom as well as accompanying responsibilities. Through their personal capacities for intelligent thought and action, mature students understand that there are situations in which certain behavior must be modified for the benefit of others. The University stands firm in its commitments to the rights and freedoms of students, expecting in return the same respect and concern.

The University expects all students to be responsible citizens and to abide by all federal, state and local laws. Personal irresponsibility – including, but not limited to, that evidenced by dishonesty, gambling, hazing, irresponsible conduct and the misuse of drugs and alcohol – renders a student subject to disciplinary action. Although most specific regulations pertain to a student's behavior while on campus, a lack of personal responsibility and integrity is always considered grounds for discipline no matter where it occurs. Due respect for the entire University community, faculty, staff and one's fellow students is always expected.

Students are required to identify themselves when asked by a properly identified faculty or staff member, or by another student serving as a University staff member. Persons who are not members of the University community and without business on campus may be asked to leave.

Disciplinary Action. Clear disciplinary procedures are an important part of the mission of SMU as an educational institution. The intent of the system of due pro-

cess at SMU is to be educational and not merely punitive for students. The goal continues to be to produce quality citizens. It is pertinent to the purpose of discipline to remember that self-discipline is part of the entire educational process, whereby students become more fully aware of the importance of responsibility for themselves and others. Anytime a student displays irresponsible behavior, that student will be subject to discipline.

Depending on the degree of misconduct, a student may be subject to sanctions ranging from a conduct reprimand to expulsion from the University. Should a student be asked to leave the University, he or she should do so in an expeditious and peaceful manner. The student should remain off campus until he or she receives written permission from the Office of the Dean of Student Life to return to campus. In the event of such separation, a student is still responsible for University financial obligations.

The University believes in student representation on all disciplinary bodies. To ensure fairness and due process for all students in the conduct process, the student is granted an impartial hearing and the right to appeal to the University Conduct Council. A student who is appealing a sanction may remain in school until the decision and penalty are reviewed, unless considered harmful to the University, to any individual or to himself or herself. All actions by the council are subject to presidential review.

Having voluntarily enrolled as students at Southern Methodist University and assumed a place in the University community, all students are presumed to be knowledgeable of, and have agreed to abide by, the rules and regulations set forth in the Student Code of Conduct, as outlined in the *SMU Student Handbook,* which is available online at smu.edu/studentlife.

RESIDENCE ACCOMMODATIONS

The mission of the Department of Residence Life and Student Housing is to advance the goals and objectives of the University by creating residential communities that empower residents to value learning, citizenship and leadership. To support SMU's mission, goals and objectives, RLSH develops and sustains the residence halls and apartments as communities that support the broad range of student needs. To this end, RLSH seeks opportunities to promote an intellectual culture in residence halls that complements an already flourishing campus social culture. The University prides itself on offering a full living and learning experience for its resident students.

RLSH is responsible for the campus residential community, including all residence halls, approximately 40 SMU-owned apartments and 10 SMU-owned Greek chapter houses. This responsibility includes making sure that facilities are well maintained and that students have opportunities to grow personally and excel academically.

Housing Policy for All Students

All incoming first-year undergraduate students are required to live on campus for two years. Exceptions may be granted at the discretion of the dean of RLSH to those students from Dallas/Fort Worth who plan to live with a parent or legal guardian in the primary residence of the parent or guardian. For housing purposes, the *two years* means the first two years of college and successful completion of 48 SMU credit hours. For 2013–2014, upperclass, transfer and graduate students are not required to live on campus but may apply on a space available basis.

Graduate Residence Accommodations

The Department of Residence Life and Student Housing operates one apartment residence hall designated for graduate students. **Hawk Hall**, a one-bedroom apartment facility, houses single graduate students, married students (graduate and undergraduate) with families and some senior undergraduates. Families with no more than two children may be housed in Hawk Hall.

Special Housing Needs

Students having special housing needs because of a disability should contact the SMU Office of Disability Accommodations and Success Strategies in order to establish eligibility for accommodations. When applying for housing, students should also submit information to RLSH regarding a request for accommodations. DASS and RLSH will work together with the student on their specific situation to make necessary accommodations.

General Housing Information

Each apartment is equipped with a telephone, local telephone service, voice mail system and wireless Ethernet connections to the University's computer system. All residence halls are air-conditioned and some have individually climate-controlled rooms. Washing machines and dryers are located in all residence halls. Meal plans are not required in the graduate hall.

Applications for Residence

New graduate students should submit the completed application and contract to RLSH with a check or money order for $100 made payable to Southern Methodist University for the nonrefundable housing deposit. Priority of assignment is based on the date on which applications are received by RLSH. Notification of assignment will be made by RLSH. Rooms are contracted for the full academic year (fall and spring terms). Room charges for the fall term will be billed and are payable in advance for students who register before August 1, and room charges for the spring term will be billed and are payable in advance for students who register before December 1. Students who enroll after these dates must pay at the time of enrollment. Room charges for the full academic year will be due and payable should a student move from the residence hall at any time during the school year. Accommodations for shorter periods are available only by special arrangement with RLSH before acceptance of the housing contract.

For more information, students should visit www.smu.edu/housing or contact the Department of Residence Life and Student Housing, Southern Methodist University, PO Box 750215, Dallas TX 75275-0215; phone 214-768-2407; fax 214-768-4005; housing@smu.edu.

HEALTH SERVICES
SMU Memorial Health Center
www.smu.edu/healthcenter

The University's health facilities are located in the SMU Memorial Health Center, 6211 Bishop Boulevard. An outpatient primary care clinic, specialty clinics, pharmacy, and lab/X-ray facilities occupy the first floor. Counseling and Psychiatric Services, and the Office for Alcohol and Drug Abuse Prevention are located on the second floor. The Health Center is accredited by the Accreditation Association for Ambulatory Health Care Inc.

Outpatient Medical Services. SMU provides a convenient, economical medical clinic for diagnosis and treatment of illness and injury, as well as for immunizations and continuation of treatment such as allergy injections. The clinic is staffed by physicians, physician's assistants, registered nurses, medical assistants, and lab and X-ray technologists. Physicians are available by appointment 8:30 a.m.–4 p.m., Monday through Friday. For appointments and health information, students should call 214-768-2141.

Patient Observation. When ordered by a staff physician, a student may be held in observation between 8:30 a.m. and 5 p.m., Monday through Friday. Observation is available for most types of non-major medical treatment. When necessary, students are referred to medical or surgical specialists in Dallas. The patient will be responsible for the costs of these services.

Acute/After Hours Care. For emergency care after clinic hours, it is recommended that students call 911 or go to a hospital emergency room. Students should refer to the Health Center website (www.smu.edu/healthcenter) for hospital information and location of an urgent care facility.

Costs. Undergraduate and graduate students pay a mandatory health center fee and receive fully covered primary care physician services at the Health Center for that term, as well as counseling and psychological services and access to health education programs. Appointments with the gynecologist or dermatologist, lab, X-ray, pharmacy, and supplies are charged at reasonable rates.

Mandatory Health Insurance Policy. To ensure that students have appropriate health care coverage, SMU requires all domestic students, both undergraduate and graduate, taking nine or more credit hours to have health insurance through either an individual/family plan or the University-offered plan. All international students taking one or more credit hours must enroll in the University-offered plan unless they have a special waiver personally granted by the Health Center staff.

SMU's mandatory policy requires those students with the enrollment status mentioned above to provide documentation of current insurance coverage or to enroll in the Student Health Insurance Plan by the drop/add date each term. Students can enroll in SHIP, after they have enrolled for classes, by selecting the "Health Insurance" button on the "Student Center" component of Access.SMU. A domestic student who already has private health insurance coverage must waive SHIP coverage to avoid automatic enrollment into the plan and thereby have the semi-annual premium charge applied to his/her University account. Waivers will not be accepted nor will changes be made after the deadline each term. For more information and instructions on how to WAIVE or ELECT coverage, students should visit the website

www.smu.edu/healthinsurance. **Note**: Health insurance is separate from the student Health Center fees and is paid for independently.

Pharmacy. A complete pharmacy with registered pharmacists is open from 8:30 a.m. to 5 p.m., Monday through Friday. Many prescription plans are accepted, and the pharmacy will transmit pharmacy claims to a student's insurance company if provided with the student's pharmacy benefits information.

X-ray and Laboratory Services. X-ray and laboratory tests are available for nominal fees. All X-rays are interpreted by a radiologist.

Immunizations. All students (undergraduate, graduate, part-time and full-time, to include international and IEP/ESL students) are required to have an SMU medical history form on file in the SMU Health Center before registration. To comply with SMU policy, all students must also submit to the Health Center immunization records that provide proof of immunization against measles, mumps and rubella. These MMR immunizations must be documented by a physician, public health record, military health record or school health record. Students will not be allowed to register without immunization compliance.

Students are encouraged to check their Access.SMU account for immunization status. Immunizations are available at the Health Center. Health history forms are available on the Health Center's website at www.smu.edu/healthcenter.

Meningitis Vaccination. Effective January 1, 2012, Texas state law requires that all new students under the age of 30 must provide documentation demonstrating they have been vaccinated against bacterial meningitis. The documentation must show evidence that a meningitis vaccine or booster was given during the five-year period preceding and at least 10 days prior to the first day of class of the student's first term. Students should provide the documentation at least 10 days before the first day of class. Students seeking exemption from this requirement due to health risk or conscience, including religious belief, should see the second page of the SMU medical history health form. More information is found under Final Matriculation to the University in the Admission to the University section of this catalog.

Class Absence Due to Illness. Students should schedule appointments with physicians at times when classes will not be missed. The Health Center does not issue excuses from classes for illness. Students should refer to the Health Center website (www.smu.edu/healthcenter) for the Class Absence Policy.

Notification of Parents. Students are encouraged to call one or both parents when ill. Parents or guardians will be notified in cases of life-threatening illnesses. The Health Center staff may not speak to parents without the student's permission.

Health Service Records. All health service records are confidential. A copy of medical records may be released to a physician only with a written release by the student. Records are not made available to parents, SMU administrators, faculty or staff without the student's written consent.

Counseling and Psychiatric Services. CAPS provides psychiatric evaluation, crisis intervention and group/individual/couples psychotherapy for students. All interviews are conducted on a voluntary and confidential basis. There is no charge to students who have paid the University health fee. Students can seek confidential help for concerns such as anxiety, depression, relationship issues, career/life planning, sexual identity, eating/body image concerns and sexual assault/sexual harassment matters. Any laboratory tests or pharmaceuticals ordered will be charged to the student. For more information regarding scheduling appointments, students

should call 214-768-2277 between 8:30 a.m. and 5 p.m., Monday through Friday, or visit www.smu.edu/counseling.

   Testing Services. Testing Services offers testing to the Dallas-area community. These services include on-campus administration of national testing programs such as the SAT, LSAT, GRE Subject and PRAXIS. Other testing offered includes CLEP tests and correspondence examinations for other universities. For additional information, students should call the center at 214-768-2269.

   Office for Alcohol and Drug Abuse Prevention. This office provides a free and confidential source of help and information to the SMU community on issues related to substance abuse and addiction. Appointments for counseling or assessment can be made between 8:30 a.m. and 5 p.m., Monday through Friday by calling 214-768-4021. More information is available at www.smu.edu/liveresponsibly.

   Office of Health Education and Promotion. This office serves as a resource for health information on campus. It promotes programs and activities that focus attention on health-related issues affecting college students. Students can get involved with health education on campus through the Peer Advising Network. More information is available from the Health Center (phone: 214-768-2393; website: www.smu.edu/healthcenter/healtheducation.

DISABILITY ACCOMMODATIONS AND SUCCESS STRATEGIES

Housed within the Altshuler Learning Enhancement Center, DASS offers comprehensive disability services for all SMU students with disabilities. Services include classroom accommodations and physical accessibility for all students with a learning disability and/or attention deficit hyperactivity disorder, as well as other conditions such as physical, visual, hearing, medical or psychiatric disorders. For accommodations, it is the responsibility of the undergraduate and graduate students themselves to establish eligibility through this office. Students must provide 1) appropriate current documentation in keeping with SMU's documentation guidelines, and 2) a request indicating what kind of assistance is being sought, along with contact information. More information is available at www.smu.edu/alec/dass.

VETERANS SERVICES

The Division of Student Affairs provides a coordinator of veteran support and services through the Office of the Dean of Student Life. The coordinator helps veterans navigate the campus community and connect with available resources on campus and in the greater Dallas community. A chartered student organization, U.S. Military Veterans of SMU (SMU MilVets), meets regularly to provide support to fellow veterans and to participate in fundraisers, care package drives and other activities during football games. In addition, the University Registrar's Office certifies veterans each term for their benefits under federal programs and the Office of Financial Aid works to provide individual aid packages. More information regarding services and benefits for veterans is available at www.smu.edu/registrar ("Veterans Affairs" link).

RECREATIONAL SPORTS

Dedman Center for Lifetime Sports

Dedman Center for Lifetime Sports (www.smu.edu/recsports) is a facility designed for recreational sports and wellness. A 170,000-square-foot expansion and renovation was completed in 2006. The center provides racquetball courts; aerobic studios; an indoor running track; basketball courts; indoor and outdoor sand volleyball courts; climbing wall; bouldering wall; 25-meter, five-lane recreational pool; 15,000 square feet of fitness and weight equipment; lobby; and café. Various fitness classes are offered. These facilities are open to SMU students, faculty, staff and members. Services and programs available include, but are not limited to, intramural sports, sport clubs, the Outdoor Adventure program, personal training and assessments, massage therapy, swimming lessons and camps.

WOMEN'S CENTER

www.smu.edu/womenscenter

The Women's Center for Gender and Pride Initiatives of Southern Methodist University empowers students within the University to increase awareness and understanding of gender equity issues. The center aims to eliminate barriers, diminish prejudices, and create a supportive climate and space for all. Through advocacy, information, referral services and leadership experiences, the Women's Center provides a safe haven for students struggling with issues of injustice and oppression. Student organizations advised here include the Women's Interest Network; Campus YWCA; Women in Science and Engineering; and Spectrum, the lesbian, gay, bisexual, transgender and ally organization. Also housed in the Women's Center is the SMU Women's Symposium (www.smu.edu/womsym), which is part of The Education of Women for Social and Political Leadership series, established in 1966. The center provides an informal, homelike atmosphere where members of the SMU community can meet.

OFFICE OF THE CHAPLAIN AND RELIGIOUS LIFE

www.smu.edu/chaplain

The Office of the Chaplain and Religious Life offers resources of pastoral care and theological reflection that nurture the spiritual maturation, moral and ethical vision and character of students, faculty and staff.

EDUCATIONAL FACILITIES

SMU LIBRARIES

www.smu.edu/libraries

Service to Southern Methodist University students, faculty and staff is the primary goal of all libraries at SMU. The libraries of the University contain nearly four million volumes. The fully interactive Web-based library catalog system provides access to bibliographic records of materials housed in all SMU libraries and hypertext links to other databases, digitized collections and relevant websites. All SMU libraries offer wireless Internet access.

SMU libraries rank first in total volumes held among non-Association of Research Libraries universities in the United States. The SMU libraries comprise the largest private research library in Texas and rank third in the state in total volumes, after the University of Texas at Austin and Texas A&M University. SMU libraries are one of the greatest assets of the University. The University's library system is divided into a number of different units:

1. **Central University Libraries** (reporting to the Office of the Provost).
2. **Underwood Law Library** (reporting to Dedman School of Law).
3. **Bridwell Library** (reporting to Perkins School of Theology).
4. **Business Information Center** (reporting to Cox School of Business).

LABORATORIES AND RESEARCH FACILITIES

The University provides laboratories and equipment for courses in accounting; anthropology; art; biology; chemistry; languages; Earth sciences; communication arts; psychology; physics; health and physical education; dance; music; theatre; statistics; and civil, computer, electrical, environmental and mechanical engineering.

MUSEUM

The **Meadows Museum,** founded by the late philanthropist Algur H. Meadows and located at 5900 Bishop Boulevard, houses one of the finest and most comprehensive collections of Spanish art in the world, as well as selected masterpieces of modern European sculpture, from Rodin and Maillol to David Smith and Claes Oldenburg. The permanent collection of 670 objects includes paintings, sculpture, decorative arts and works on paper from the Middle Ages to the present. Artists represented include El Greco, Velázquez, Ribera, Zurbarán, Murillo, Goya, Picasso and Miró. The Meadows Museum hosts a regular program of loan exhibitions each year in its temporary exhibition galleries and sponsors an active program of public lectures, tours, films, concerts and symposia, as well as children's art programs and family days throughout the year. Museum collections are often used by SMU faculty in their courses. The museum membership program includes exhibition previews, tours of private collections and opportunities for travel. Docent tours of the collection are available to school, University and adult groups. The Meadows Museum, in addition to its collection, houses a museum store and special event rooms. Additional information is available at www.meadowsmuseumdallas.org.

OFFICE OF INFORMATION TECHNOLOGY

The Office of Information Technology, located in Fondren Library West, is responsible for providing computing and communications services in support of academic and administrative functions for students, faculty, staff, alumni and patrons of the University. These services include an SMU email account, access to enrollment and financial data online, Internet access, telephone services, Web-based services, technical support, and a variety of software and hardware discounts.

SMU offers high-speed network connections throughout campus. Students can take advantage of both wired and wireless connections throughout all areas of the residence halls. Wireless coverage also extends throughout the campus in most classrooms, libraries, common areas and several outdoor locations. In addition to on-campus Internet connections, OIT provides off-campus access to resources via a virtual private network connection.

All students receive an SMU email account, which remains active throughout their enrollment at the University. The email account may be accessed online via webmail.smu.edu. In addition, students have access to a variety of Web-based services, e.g., Access.SMU, personal Web space, network storage space and academic applications such as the Blackboard Course Management System. All academic information, including grade history, financial information, transcripts and class registration, is available through the Access.SMU system.

The IT Help Desk provides technical support for most computing issues from 8 a.m. to 6:30 p.m. Monday through Thursday, and from 8 a.m. to 5:30 p.m. on Friday. Evening and weekend support are available from our student staff via walk up or chat. Both phone and in-house support is available for on- and off-campus connectivity issues. The Help Desk also offers phone support for the Microsoft Office Suite and other common applications.

Although most students have their own computers, there are a number of public computer labs available for use. Almost all of the labs contain both Mac and PC workstations and support a variety of programs. There is also 24-hour computer access available in the Hughes-Trigg Student Center.

OIT also provides on-campus telephone and voicemail services for on-campus residents and discounts on cellular services, which students may obtain at any time throughout the year.

For additional information on services provided by IT, students should visit www.smu.edu/help or call the Help Desk: 214-768-HELP (214-768-4357).

ENGLISH AS A SECOND LANGUAGE PROGRAM

www.smu.edu/esl

Students whose first language is not English may encounter special challenges as they strive to function efficiently in the unfamiliar culture of an American university setting. The Office of the University Curriculum/GEC offers the following ESL resources to students from all schools and departments of SMU. Students may apply on the ESL website. Students enrolling in 2000-level Intensive English Program courses should download an application package via the IEP link on the website. More information about the ESL Program is available on the website or from the director, John E. Wheeler (jwheeler@smu.edu).

The Courses (ESL)

ESL 6001, 6002. SEMINAR FOR INTERNATIONAL TEACHING ASSISTANTS. Graduate students who speak English as a second language prepare for their teaching responsibilities with undergraduate students taking UC/GEC courses. The main components include language skills needed as international teaching assistants, ITA-related teaching methodology, cross-cultural communication within the American classroom, and presentation skills. Also, examination of case studies, microteaching demonstrations, and periodic out-of-class individual consultations on the student's language and pedagogical skills. The course is free of charge, noncredit bearing, and transcripted as pass or fail.

ESL 1001 (0). ESL COMMUNICATION SKILLS. The goal of this course is to improve ESL students' oral and aural interactive skills in speaking, giving presentations, pronunciation, listening, and American idiomatic usage so that they may become more participatory in their classes and integrate more readily with their native English-speaking peers. It is designed to meet the needs of undergraduate and graduate students who may be fully competent in their field of study yet require specialized training to effectively communicate in an American classroom setting. The course is free of charge, noncredit bearing, and transcripted as pass or fail. *Prerequisite:* ESL Program approval required.

ESL 1002 (0). ESL COMMUNICATION SKILLS II. Building on skills developed in ESL 1001, students make use of their knowledge and practice to explore various aspects of American studies. In addition to speaking and presentation skills, reading and writing are also exploited as a means for students to gain a deeper understanding of American culture, customs, attitudes, and idiomatic use of the language. The course is noncredit and no-fee, and is transcripted as pass or fail. ESL 1001 is recommended as a precursor but is not a prerequisite. *Prerequisite:* ESL Program approval required.

ESL 20XX (0). INTENSIVE ENGLISH PROGRAM. All 2000-level ESL courses are exclusive to the Intensive English Program. This multilevel, yearlong program is designed to prepare students and professionals for academic success at the university level. The course of study consists of English for academic purposes, TOEFL-related skills, and American culture. It is open to currently enrolled and newly incoming students, as well as to those not affiliated with SMU. On-campus housing and meals are available during the 6-week summer term. This is a noncredit, nontranscripted program, and separate tuition fees are charged. *Prerequisite:* ESL Program approval required.

ESL 3001 (0). ADVANCED GRAMMAR FOR WRITERS. This course helps students develop their grammar and writing skills within the context of academic readings. Problem areas of English grammar and style are explored through periodic assignments, research documentation methods, and a final research project. The course is free of charge, noncredit bearing, and transcripted as pass or fail. *Prerequisite:* ESL Program approval required.

ESL 3002 (0). ADVANCED ACADEMIC WRITING. Building on principles of grammar and style covered in ESL 3001, this course helps students further improve the writing skills needed for their particular academic careers, using academic texts as a basis for out-of-class writing assignments and a final research project. The course is free of charge, noncredit bearing, and transcripted as pass or fail. *Prerequisite:* ESL Program approval required.

ESL 4001 (0). ESL PRONUNCIATION SKILLS. Students improve their pronunciation by focusing on sentence stress, rhythm, intonation, and body language while learning to mimic American speech patterns. With the instructor's assistance and extensive individual feedback, students develop personal strategies and exercises to become more aware of their own weaknesses. The course is free of charge, noncredit bearing, and transcripted as pass or fail. *Prerequisite:* ESL Program approval required.

SMU-IN-PLANO

www.smu.edu/plano

In fall 1997, SMU opened a campus in Plano's Legacy Business Park with three well-defined goals: 1) to extend SMU's resources to meet the educational needs of residents in rapidly growing Collin County and beyond, 2) to make enrollment in graduate-level programs more convenient for working professionals, and 3) to collaborate with area businesses by offering programs to serve the training needs of their employees, as well as to provide corporate meeting space.

SMU-in-Plano serves more than 800 adult students each year (excluding enrollment in noncredit courses) through a variety of full-time, evening and weekend programs leading to master's degrees and/or professional certificates in business administration, counseling, dispute resolution, liberal studies, education and learning therapies, engineering, and video game technology (The Guildhall at SMU). During the summer, nearly 2,000 children participate in a variety of programs designed to enhance their academic skills. The campus also provides important outreach services to the surrounding Collin County communities; these services include the Mediation and Arbitration Center, the Diagnostic Center for Dyslexia and Related Disorders, and the Center for Family Counseling.

Conveniently located about one mile south of the intersection of state Highway 121 and the Dallas North Toll Road, SMU-in-Plano sits in the shadows of the international corporate headquarters of Hewlett Packard, Frito Lay, JCPenney, Pizza Hut and several others. Originally the training facility for EDS (now HP), the campus is set on 16 landscaped acres and consists of four buildings with nearly 200,000 square feet of classroom space. An additional nine acres adjacent to the facility gives SMU-in-Plano room to grow in the future.

More information is available online or through the SMU-in-Plano office: 5236 Tennyson Parkway, Building 4, Plano TX 75024; 972-473-3400.

OAK RIDGE ASSOCIATED UNIVERSITIES

Since 1953, students and faculty of Southern Methodist University have benefited from its membership in Oak Ridge Associated Universities. ORAU is a consortium of colleges and universities and a management and operating contractor for the U.S. Department of Energy 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 its members informed about opportunities for fellowship, scholarship and research appointments; and to organize research alliances among its members.

Through the Oak Ridge Institute for Science and Education (the U.S. Department of Energy facility that ORAU operates), undergraduates, graduates, postgraduates and 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, geological sciences,

pharmacology, ocean sciences, biomedical sciences, nuclear chemistry and mathematics.

ORAU's Office of Partnership Development seeks opportunities for partnerships and alliances among ORAU's members, private industry and major federal facilities. Activities include faculty development programs, such as the Ralph E. Powe Junior Faculty Enhancement Awards, the Visiting Industrial Scientist Program and various services to chief research officers.

For more information about ORAU and its programs, students should contact Dr. James E. Quick, ORAU councilor for SMU, 214-768-4345, or Monnie E. Champion, ORAU corporate secretary, at 423-576-3306; or visit the ORAU website at www.orau.org.

RIGHT TO KNOW

Southern Methodist University is pleased to provide information regarding academic programs, enrollment, financial aid, public safety, athletics and services for persons with disabilities. Students also may obtain paper copies of this information by contacting the appropriate office listed below. Disclosure of this information is pursuant to requirements of the Higher Education Act and the Campus Security Act. More information is available at www.smu.edu/srk.

1. Academic Programs: www.smu.edu/srk/academics

Provost Office, Perkins Administration Building, Room 219

214-768-3219

   a. Current degree programs and other educational and training programs.

   b. Instructional, laboratory and other physical facilities relating to the academic program.

   c. Faculty and other instructional personnel.

   d. Names of associations, agencies or governmental bodies that accredit, approve or license the institution and its programs and the procedures by which documents describing that activity may be reviewed.

2. Enrollment: www.smu.edu/srk/enrollment

Registrar, Blanton Student Services Building, Room 101

214-768-3417

   a. Graduation Rates: The completion or graduation rate of the institution's certificate- or degree-seeking, full-time undergraduate students and students who receive athletically related financial aid.

   b. Privacy of Student Education Records: The Family Educational Rights and Privacy Act governs SMU's maintenance and disclosure of a student's education records. FERPA provides students the right to inspect and review their education records and to seek amendment of those records that they believe to be inaccurate, misleading or otherwise in violation of their privacy rights. Further, FERPA prevents SMU from disclosing personally identifiable information about a student to outside third parties, except under specific circumstances outlined in SMU's Policy Manual.

   c. Withdrawal: Requirements and procedures for officially withdrawing from the institution.

3. Financial Aid: www.smu.edu/srk/finaid

Director of Financial Aid, Blanton Student Services Building, Room 212

214-768-3417

   a. Financial assistance available to students enrolled in the institution.

   b. Cost of attending the institution, including tuition and fees charged to full-time and part-time students; estimates of costs for necessary books and supplies; estimates of typical charges for room and board; estimates of transportation costs for students; and any additional cost of a program in which a student is enrolled or expresses a specific interest.

   c. Terms and conditions under which students receiving Federal Direct Loan or Federal Direct Perkins Loan assistance may obtain deferral of the repayment of the principal and interest of the loan for

      i. Service under the Peace Corps Act;

      ii. Service under the Domestic Volunteer Service Act of 1973; or

      iii. Comparable service as a volunteer for a tax-exempt organization of demonstrated effectiveness in the field of community service.

d. The requirements for return of Title IV grant or loan assistance.

e. Enrollment status of students participating in SMU study abroad programs, for the purpose of applying for federal financial aid.

4. Student Financials/Bursar: www.smu.edu/srk; www.smu.edu/bursar

University Bursar, Blanton Student Services Building, Room 212

214-768-3417

a. Tuition and fees.

b. Living on campus.

c. Optional and course fees.

d. Financial policies.

e. Administrative fees and deposits.

f. Payment options.

g. Any refund policy with which the institution is required to comply for the return of unearned tuition and fees or other refundable portions of costs paid to the institution.

5. DASS: www.smu.edu/alec/dass

Disability Accommodations and Success Strategies

Altshuler Learning Enhancement Center

214-768-1470

a. Description of the process for establishing eligibility for services and documentation guidelines.

b. Listings of the various on- and off-campus resources.

c. Discussions of transitioning to postsecondary education.

d. Tips for faculty on teaching and making accommodations.

6. Athletics: www.smu.edu/srk/athletics

Associate Athletic Director for Student-Athlete Services, 316 Loyd Center

214-768-1650

a. Athletic program participation rates and financial aid support.

b. Graduation or completion rates of student athletes.

c. Athletic program operating expenses and revenues.

d. Coaching staffs.

7. Campus Police: www.smu.edu/srk; www.smu.edu/pd

SMU Police Department, Patterson Hall

214-768-1582

Southern Methodist University's Annual Security Report includes statistics for the previous three years concerning reported crimes that occurred on campus, in certain off-campus buildings or property owned or controlled by SMU, and on public property within or immediately adjacent to/accessible from the campus. The report also includes institutional policies concerning campus security, such as policies concerning alcohol and drug use, crime prevention, the reporting of crimes, sexual assault, and other related matters.

The information listed above is available in a conveniently accessible website at www.smu.edu/srk.

ANTHROPOLOGY

Professor Karen Lupo, **Department Chair**

Professors: Eric G. Bing, Caroline Brettell, Robert Van Kemper, Karen Lupo, David Meltzer, Ben Wallace, Ronald Wetherington. **Associate Professors:** Michael Adler, Victoria Lockwood, Carolyn Smith-Morris, David Wilson. **Assistant Professors:** Sunday Eiselt, Brigitte Kovacevich, Nia Parson, Christopher Roos. **Professor of Practice:** Kacy Hollenback. **Emeritus Professors:** Anthony E. Marks, Ladislav Novak, Garth Sampson, Fred Wendorf.

MASTER OF ARTS IN MEDICAL ANTHROPOLOGY

The M.A. in medical anthropology program is a training program in applied anthropology for students seeking involvement in health care agencies, hospitals, clinics and other health delivery organizations. Candidates must complete 36 term hours of academic work. The following are required courses: ANTH 5336, 6343 (for which 5336 is prerequisite), 5344 and 6353. ANTH 7333 Data Analysis is strongly recommended. The additional hours must be in courses related to applied training in medical anthropology or other courses focusing on health-related anthropological issues.

DOCTOR OF PHILOSOPHY IN ANTHROPOLOGY

The Ph.D. program in anthropology offers specializations in archaeology and in cultural anthropology (with concentrations in medical anthropology and globalization and international development). The Ph.D. degree in anthropology carries the following requirements:

1. Students must complete a minimum of 54 hours of approved graduate coursework at SMU, including six hours of dissertation credit. Up to 24 hours may be waived for advanced courses taken elsewhere. In addition, students may test out of advanced courses based on prior graduate-level experiences. The following courses are required for the Ph.D. program in cultural anthropology: ANTH 5334, 5335, 5344, 6034, 6320, 7333, 7342, 7351. Additional hours will pertain to specializations in medical anthropology or globalization and international development. The following courses are required for the archaeology program: ANTH 5334, 5335, 6033, 6034, 6301, 6332, 6337, 6342, 7313, 7317.

2. The M.A. degree en route to the Ph.D. will be awarded to students who are accepted into the graduate program and who receive a "low pass" or higher on the general M.A. examination in their subfield given at the end of two years' coursework (36 hours). However, only students who achieve a "pass" or higher on this examination may advance into the Ph.D. program.

3. Students must satisfy all curricular requirements as specified by the department faculty. For details, see the department "Redbook" (also available on the Department of Anthropology website at www.smu.edu/anthro).

4. Students must demonstrate an ability to function proficiently in one or more languages selected from among the following: French, German, Russian, Spanish or substitute languages approved by the department.

5. Students must demonstrate a satisfactory knowledge of analytical methods (quantitative or qualitative, as appropriate).

6. Students must pass a Ph.D. qualifying examination, including an oral defense of a dissertation proposal in their subfield.

7. Students must write and make a successful defense of a dissertation. Degree candidates may concentrate in any subfield except physical anthropology.

THE COURSES (ANTH)

ANTH 5310 (3). HUMAN OSTEOLOGY: BIOLOGY OF THE HUMAN SKELETON. Analysis of the human musculoskeletal system in both forensic and ancient contexts. In this laboratory course, students will learn the measurement and assessment of sex, age, race and stature.

ANTH 5334 (3). HISTORY OF ANTHROPOLOGY, PART ONE. Analytical history of anthropology from the Classical period to the 20th century. Explains the content and development of theory, method, and interpretation. *Prerequisite:* 18 hours of anthropology for undergraduates.

ANTH 5335 (3). HISTORY OF ANTHROPOLOGY, PART TWO. Traces the theoretical developments in ethnology and archaeology from 1960 to the present, with intense readings and a focus on the potential utility of theoretical coherence in the discipline. *Prerequisite:* 18 hours of anthropology for undergraduates.

ANTH 5336 (3). HEALTH IN CROSS-CULTURAL PERSPECTIVE. Cross-cultural study of the cultural construction and social organization of medical systems in preindustrial and industrialized societies, including the political economy of health, ethnomedicine, international health, ethnopharmacology, and bioethics.

ANTH 5344 (3). RESEARCH METHODS IN ETHNOLOGY. Examination of methodologies and techniques appropriate for different types of ethnological research. *Prerequisites:* Advanced standing and ANTH 2301 (or permission of instructor for nonanthropology majors).

ANTH 5355 (3). SEMINAR IN THE SOUTHWEST. This course will focus on the development of archaeology in the American Southwest by placing it in historical context, discussing the social role of archaeology in general, 19th-century exploration and the impact of early archaeological finds, development of museums, tourism, national monuments, field schools, and the changing role of the Native Americans.

ANTH 5359/ENGL 5378 (3). LINGUISTICS: GENERAL. An introduction to modern linguistic science. Topics include phonology, morphology, syntax, semantics, dialects, writing systems, child language, language and the brain, and language in education.

ANTH 5381 (3), 5382 (3). FIELD METHODS IN ARCHAEOLOGY. Methods of excavation, recording, and interpretation used in archaeological research. Fort Burgwin Research Center. Summer only. Students may petition to have this course fulfill the Lab Science Requirement.

ANTH 5681 (6), 5981 (9). FIELD METHODS IN ARCHAEOLOGY. Participants are engaged in all aspects of archaeological field and laboratory research, including excavation, recording of finds, survey mapping of sites, laboratory analyses of archaeological materials, and interpretation of intact archaeological contexts. Fort Burgwin Research Center. Summer only.

ANTH 6033 (0). PROSEMINAR ON ETHICS IN ARCHAEOLOGY. Focuses on ethical issues in current archaeology, including collaboration with descendant communities, study of human remains, repatriation of cultural property, and research collaboration in international contexts.

ANTH 6034 (0). TEACHING SEMINAR. Noncredit teaching seminar for graduate students.

ANTH 6049 (0). GRADUATE FULL-TIME STATUS. For students not yet advanced to candidacy.

ANTH 6156 (1), 6256 (2). RESEARCH IN ANTHROPOLOGY. Independent study and research.

ANTH 6300 (3). WORLD ARCHAEOLOGY. An archaeological overview of the human trajectory, beginning with the origins of modern humans, and then looking at human interactions with specific environments, and sociocultural development over time.

ANTH 6301 (3). PRINCIPLES OF ARCHAEOLOGY. An advanced seminar course dealing with the fundamentals of modern archaeology.

ANTH 6302 (3). STATISTICS IN ANTHROPOLOGY. This is an introductory graduate-level course describing the specific use of quantitative and statistical methods in the subdisciplines of archaeology and cultural anthropology.

ANTH 6303 (3). POLITICAL ECONOMY OF HEALTH. Explores topics in health and healing from a political economy perspective. Addresses social and economic factors influencing culture change and health and healing practices within a society. Examines health inequities around the globe.

ANTH 6304 (3). MIGRATION, ETHNICITY AND NATIONALISM. Examines three interrelated topics: migration, ethnicity, and nationalism. Focuses on major theoretical positions and on specific ethno-graphic cases.

ANTH 6305 (3). APPLIED ANTHROPOLOGY. The application of anthropological theories and methods to problems in contemporary societies, including global business, community development, health care issues, agricultural/environmental programs, urban planning, tourism projects, and educational policy.

ANTH 6306/EDU 6317 (3). ANTHROPOLOGY AND EDUCATION. The anthropological approach to the study of schools and how an anthropological framework can provide insight into the nature of education and classroom interaction.

ANTH 6307 (3). GLOBAL AND PUBLIC HEALTH. An overview of issues in international health, with a focus on contributions of anthropology and anthropologists to international public health issues.

ANTH 6309 (3). HUMAN RIGHTS, INDIGENOUS PEOPLES, AND NATION STATES. An examination of human rights issues among contemporary indigenous peoples, especially the impact on their cultures and societies from governmental and nongovernmental organizations, large-scale development programs, and global tourism.

ANTH 6310 (3). THE PREHISTORY OF THE AMERICAN SOUTHWEST. Coverage of current theoretical and research topics in the prehistory of the American Southwest, including early human occupation, sedentariness, community organization, and regional abandonments.

ANTH 6311/EDU 6312 (3). APPLIED LINGUISTICS. The use of insights and techniques from linguistics in achieving practical goals, particularly in the field of education, with special emphasis on bilingual education and the teaching of reading.

ANTH 6314 (3). ARCHAEOLOGY OF THE AMERICAN SOUTHEAST. Twelve thousand years of prehistory from different perspectives, including cultural evolution, social and ideological subsystems, and cultural parallels to Mexico.

ANTH 6316 (3), 6317 (3). ADVANCED SEMINAR IN ETHNOLOGY I, II. Varying topics.

ANTH 6320 (3). REGIONAL ETHNOGRAPHY. Worldwide exploration of ethnography, exploring similarities and differences across time and space. Course prepares students to write their own regional papers in preparation for their qualifying exams. *Prerequisite:* Second- or third-year graduate status or permission of instructor.

ANTH 6323 (3). LINGUISTIC ANALYSIS. The techniques needed for linguistic fieldwork: phonological, morphological, and syntactic analysis. Prepares students to work with unwritten languages and in urban speech communities.

ANTH 6325 (3). ZOOARCHAEOLOGY. A lecture and laboratory course focused on the methods, techniques, and implications of the analysis of animal remains from archaeological sites.

ANTH 6327 (3). GENDERED LIVES AND GLOBAL CHANGE. Analyzes globalization and its impacts on gender relations and ideology. Examines the evolving relationship between capitalism and patriarchal social systems, focusing on theories of change in men and women's lives.

ANTH 6332 (3). SPECIAL PROBLEMS IN ANTHROPOLOGY. Varying topics.

ANTH 6333 (3). LAB METHODS IN ARCHAEOLOGY. Detailed examination of Old and New World techniques of artifact classification, with an emphasis upon lithic typology.

ANTH 6334 (3). ARCHAEOLOGY OF THE LOWER/MIDDLE PLEISTOCENE. Survey of human cultural remains within their contemporary environments, between about 2.6 million years ago and the last Ice Age onset about 70,000 years ago. Covers latest finds from Africa, Europe, and Asia.

ANTH 6335 (3). UPPER PLEISTOCENE PREHISTORY. Examination of cultural development in the Old World from the onset of Wurm to the end of the Pleistocene. Emphasis on adaptive strategies and systematics of such studies.

ANTH 6336 (3). POST-PLEISTOCENE ADAPTATIONS. Provides the background of major cultural change following the end of the last glacial period by examining archaeological and related literature from the environmental sciences.

ANTH 6337 (3). ORIGINS COMPLEX SOCIETY. Surveys the archaeological evidence for the initial rise of civilization. Places emphasis on the major facts of cultural history, the archaeologi-

cal problems peculiar to investigation of large-scale societies, and cross-cultural and evolutionary interpretations of the general phenomenon of preindustrial civilization.

ANTH 6338 (3). PALEOLITHIC ARCHAEOLOGY. Surveys the evidence for the origins and dispersal of stone tool-using hunter gatherers from Africa into Europe, Asia, and Australia up to the end of the last Ice Age.

ANTH 6339 (3). NEOLITHIC ARCHAEOLOGY. Surveys the evidence for the origins and dispersal of early farming technology and social organization from the Near East into mainly Europe, but also Africa and Asia, up to the introduction of metalworking.

ANTH 6342 (3). SCIENCE AND THE HUMAN PAST. Uses of biological and physical sciences in archaeology: site discovery, dating, prehistoric ecology, diet, and technology.

ANTH 6343 (3). BIOMEDICINE, CULTURE, AND POWER. Systems analysis of traditional, popular, and scientific medical practices. Examination of medical bureaucracies and the relationship of health care to other social institutions.

ANTH 6344 (3). GLOBAL POPULATION PROCESSES: ANTHROPOLOGICAL PERSPECTIVES. Focuses on an anthropological understanding of population processes in a global context. Addresses some of the major global population processes – nuptiality, fertility, mortality, and migration – and examines them within historical and cross-cultural frameworks.

ANTH 6346 (3). ENVIRONMENTAL ANTHROPOLOGY AND DEVELOPMENT. Analyzes the processes of globalization from the perspective of environmental anthropology and development.

ANTH 6347 (3). SEMINAR IN MESOAMERICAN ETHNOLOGY. Provides an understanding of contemporary Mesoamerica by examining the literature and field data from anthropological and interdisciplinary viewpoints.

ANTH 6351 (3), 6352 (3), 6353 (3), 6354 (3), 6355 (3). RESEARCH: ANTHROPOLOGY.

ANTH 6357 (3). STATISTICS IN ARCHEOLOGY. An introductory graduate-level course describing the specific use of quantitative and statistical methods in the subfield of archaeology.

ANTH 6363 (3). TRANSFORMING LOCAL COMMUNITIES IN A GLOBAL AGE. Examination of local communities in light of theories about local/global relations. Case studies consider how global issues transform local community practice in the United States and elsewhere.

ANTH 6367 (3). COMPARATIVE PEASANT SOCIETY. Examines economic and social institutions of contemporary peasant societies, with special focus on the changes they are undergoing in the 21st century.

ANTH 6368 (3). NORTH AMERICAN ARCHAEOLOGY. Prehistory from the peopling of the New World through initial contacts with European civilization; regional sequences and ecological changes.

ANTH 6369 (3). SOUTH AMERICAN ARCHAEOLOGY. Archaeology and related ethnological data of South America from Paleoindians at 13,000 B.P. through the Inca state, with a primary focus on the Central Andean sequence.

ANTH 6377 (3). THE HUMAN FOSSIL RECORD. An examination of morphology, classification, and evolutionary relationships in the human fossil record. Covers the Pliocene through the emergence of modern Homo sapiens. Comparisons using the departmental fossil collection.

ANTH 6384 (3). GLOBAL ISSUES AND DEVELOPMENT: AN OVERVIEW. An introduction to the major forces driving globalization and economic development today, analyzing how these forces impact the lives, cultures, and identities of peoples around the world (with an emphasis on the developing world). Following a review of theories of development and globalization, we investigate how global economic and political integration is shaping migration/transnationalism; ethnicity and ethnic conflicts; nationalism; global health and environmental issues; gender issues; evolving cultural identities; and other selected topics.

ANTH 6385 (3). COASTAL AND AQUATIC ARCHAEOLOGY. Seminar on the use of coastlines, oceans, rivers, marshes, lakes and islands throughout human history.

ANTH 6386 (3). THE ARCHAEOLOGY OF GENDER AND SEXUALITY. This course explores how and why archaeologists study gender and sexual identities of the past and how they detect the diversity in these institutions across cultures through time.

ANTH 6390 (3), 6391 (3). CURRENT ISSUES IN ANTHROPOLOGY. Seminar on selected topics.

ANTH 6399 (3). THESIS.

ANTH 7000 (0). RESEARCH.

ANTH 7312 (3). ARCHAEOLOGY OF MESOAMERICA. Seminar on archaeological evidence for prehistoric civilization of Mexico.

ANTH 7313 (3). ARCHAEOLOGICAL THEORY. Logical and rational structure of discourse in archaeology. Evaluation of the quality of arguments, propositions, and constructs based on archaeological information.

ANTH 7317 (3). ARCHAEOLOGICAL RESEARCH STRATEGIES. An examination of the logistics and strategies used in project development and fieldwork, through project completion. Emphasis is upon individual student problems.

ANTH 7318 (3). LATE PLEISTOCENE PREHISTORY OF NORTH AMERICA. Seminar on the late Pleistocene human occupation of North America from the time of initial colonization, with an emphasis on paleoclimates, paleoenvironments, and human adaptations.

ANTH 7321 (3). CERAMIC ANALYSIS FOR ARCH. Examination of procedures for analyzing ceramic artifacts, with special attention to problems of style, typology, dating, and provenience.

ANTH 7333 (3). DATA ANALYSIS. Explores various methods of data analysis using the students' data sets or those of a member of the faculty. Combines lecture and discussion with hands-on applications. *Prerequisites:* ANTH 5344, 6302 (or statistics equivalent) or permission of instructor.

ANTH 7341 (3). CURRENT ANTHROPOLOGICAL LITERATURE. Varied readings of current books and journal articles to explore dimensions of anthropological research and representation as well as how theory and data are integrated into well-formed written arguments.

ANTH 7342 (3). SEMINAR: SOCIAL ORGANIZATION. Intensive investigation of the statics and dynamics of both social organization and social structure in various populations across the globe.

ANTH 7351 (3). RESEARCH STRATEGIES IN ETHNOLOGY. Consideration of the theoretical and practical aspects of fieldwork: preparation for research, conduct in the field, and data analysis.

ANTH 8049 (0). GRADUATE FULL-TIME STATUS. For students who have passed doctoral qualifying examinations.

ANTH 8100 (1), 8200 (2), 8398 (3), 8399 (3), 8698 (6), 8699 (6). DISSERTATION RESEARCH. Dissertation research, Ph.D. candidates.

ANTH 8105 (1). RESEARCH FOR GRADUATE STUDENTS. For graduate students who have finished their coursework.

BIOLOGICAL SCIENCES

Professor Steven Vik, **Department Chair**

Professors: Christine Buchanan, Richard Jones, Paul Ludden, William Orr, Larry Ruben, John Ubelaker, Steven Vik, Pia Vogel. **Associate Professor:** Robert Harrod, John Wise. **Assistant Professor:** Johannes Bauer. **Senior Lecturer:** Eva Oberdörster. **Lecturer:** Teresa Strecker. **Emeritus Professors:** Venita Allison, John McCarthy, Franklin Sogandares-Bernal.

ADMISSION REQUIREMENTS

In addition to meeting the minimum requirements described by the Office of Research and Graduate Studies, an applicant's preparation should include six term hours of calculus or statistics, 16 term hours of chemistry (including eight term hours of organic chemistry) and at least four advanced courses in biology. Applicants are required to take the GRE graduate school admission test. Three letters of recommendation from individuals who know the candidate well and can speak to the candidate's ability for graduate study should be submitted before the candidate is admitted to the program.

GOOD STANDING

A student must maintain a *B* average (3.000 on a 4.000 scale) and receive no more than two grades at or below the grade of *C*. Failure to meet these requirements will result in either probationary status or in dismissal from graduate study. Enrollment in graduate seminar is required of students each term during their first two years in residence. Courses in biochemistry and molecular biology are also required of most beginning students.

Requirements with respect to proficiency in a second language, computer programming and statistical methodology or in other cognate fields will be determined for each candidate by a departmental advisory committee.

MASTER OF ARTS IN MOLECULAR AND CELLULAR BIOLOGY

The M.A. in molecular and cellular biology program is designed for students who seek additional training in the biological sciences as a prerequisite to further study in professional schools or for individuals seeking additional training for secondary education.

Candidates must complete 30 hours in biological science with at least 12 hours from 6000-level courses. A three-term-hour research project is required of all students. At least one year must be spent as a full-time student at SMU.

MASTER OF SCIENCE IN MOLECULAR AND CELLULAR BIOLOGY

The M.S. in molecular and cellular biology program is designed primarily for students who are research oriented and who wish to prepare for advanced work at the doctoral level. To become candidates for this degree, students must prepare, present and successfully defend a written research proposal.

In addition, candidates must complete 30 term hours, including 18 term hours at the 6000 level and BIOL 6398, 6399 (thesis), and conduct a research project, the results of which must be presented orally and defended before an appropriate examining committee of the faculty. At least one year must be spent as a full-time student at SMU.

DOCTOR OF PHILOSOPHY IN MOLECULAR AND CELLULAR BIOLOGY

Admission to graduate study leading to the degree of Doctor of Philosophy does not constitute formal admission to candidacy for the degree. Applicants must meet the requirements set forth in the Degree Requirements section. In addition, to *become a candidate* for the degree, a student must complete successfully all coursework recommended by the departmental advisory committee, must complete successfully a qualifying examination that includes both written and oral sections, and must defend before an appropriate faculty committee a monograph detailing the area of proposed research or a research proposal patterned after a grant proposal.

The candidate for the Ph.D. degree must enroll for the courses necessary to bring the total number of term hours of graduate credit to 60 (as many as 24 term hours may be waived for students with previous graduate work in the life sciences), carry out a research program under supervision of the faculty, prepare a dissertation, successfully defend it before an audience that includes the dissertation committee of the faculty and meet a residence requirement of two years as a full-time student at SMU.

COMBINED FIVE-YEAR BACHELOR OF SCIENCE/ MASTER OF SCIENCE DEGREE PROGRAM

This degree program is designed for undergraduate students with a strong interest in a research career. It is a five-year plan that results in both B.S. and M.S. degrees. Admission into the program is by petition and occurs during the spring term of the second year. A more complete description of the program is provided in the undergraduate catalog.

THE COURSES (BIOL)

Special Courses

Graduate Seminar	BIOL 6120–6129
Concepts in the Biological Sciences	BIOL 6114, 6214, 6314
Research in the Biological Sciences	BIOL 6170, 6270, 6370–6373, 7000
Thesis	BIOL 6398, 6399
Selected Topics in the Biological Sciences	BIOL 7315, 7316
Full-time Status	BIOL 8049
Dissertation	BIOL 8398, 8399, 8698, 8699, 8998, 8999

BIOL 5102 (1). STRUCTURAL BIOLOGY SEMINAR. Readings and discussions of the period 1933–1963 when structural molecular biology emerged. Readings include original research articles and historical reviews. *Prerequisite:* BIOL/CHEM 5310 or consent of instructor.

BIOL 5110/CHEM 5110 (1). BIOLOGICAL CHEMISTRY LABORATORY. One 3-hour laboratory each week. *Prerequisites:* BIOL 1401, 1402. Prerequisite or *Corequisite:* BIOL/CHEM 5310. If CHEM 5110 is counted toward a chemistry major or minor, it cannot be counted toward a biological sciences major or minor.

BIOL 5166/GEOL 5166 (1). VERTEBRATE ANATOMY LABORATORY. A laboratory course to accompany BIOL/GEOL 5366. Exercises include basic anatomy, dissections, and examinations of fossil skeletons. *Corequisite:* BIOL/GEOL 5366.

BIOL 5304 (3). MOLECULAR BIOLOGY: CONTROL AND EXPRESSION OF GENETIC INFORMATION. DNA structure and replication, control of transcription and translation, and techniques in molecular genetics and recombinant DNA technology. *Prerequisites:* CHEM 3372 and C- or better in BIOL 3304.

BIOL 5305 (3). GENOMICS AND BIOINFORMATICS. Impact of completely sequenced genomes on current experimental and computational approaches to biomedical research. Intro-

duction to the technology, biology, and software exploited by molecular biology, geneology, and medical diagnostic labs. *Prerequisites:* C- or better in BIOL 3304 and junior standing.

BIOL 5310/CHEM 5310 (3). BIOLOGICAL CHEMISTRY: MACROMOLECULAR STRUCTURE AND FUNCTION. Introduction to the structure and function of macromolecules of biological importance. Emphasis on nucleic acid and protein structure, enzyme kinetics, and carbohydrate and lipid chemistry. 3 hours of lecture each week. *Prerequisites:* BIOL 1401, 1402; CHEM 3371, 3372. The accompanying laboratory (BIOL 5110) is strongly recommended for biology majors. If CHEM 5310 is counted toward a chemistry major or minor, it cannot be counted toward a biological sciences major or minor.

BIOL 5311/CHEM 5311 (3). BIOLOGICAL CHEMISTRY: METABOLISM. Introduction to the pathways and regulatory events in the metabolism of carbohydrates, lipids, amino acids, and nucleotides. 3 hours of lecture each week. *Prerequisites:* CHEM 3371, 3372. If CHEM 5311 is counted toward a chemistry major or minor, it cannot be counted toward a biological sciences major or minor.

BIOL 5312/CHEM 5312 (3). PHYSICAL BIOCHEMISTRY. Physical chemistry of macromolecules and biological membranes, with an emphasis on the thermodynamics of solutions. *Prerequisites:* BIOL 1401, 1402; MATH 1338; CHEM 3372; CHEM/BIOL 5310. (CHEM 5381 or 5383 is recommended.) If CHEM 5312 is counted toward a chemistry major or minor, it cannot be counted toward a biological sciences major or minor.

BIOL 5325 (3). GENERAL AND MOLECULAR VIROLOGY. Emphasis on the molecular aspects of viral replication and pathogenesis, including the roles of viruses in emerging human infectious diseases, cancer, and bioterrorism. *Prerequisites:* C- or better in BIOL 3304 and junior standing.

BIOL 5358 (3). ECOLOGY OF PARASITISM. The biotic and abiotic factors influencing parasite communities. Emphasis on the free-living stages of parasites. 2 hours of lecture and one 3-hour laboratory each week. *Prerequisite:* BIOL 3354.

BIOL 5359 (3). HOST-PARASITE RELATIONSHIPS. Analysis of host-parasite relations from an evolutionary and ecological viewpoint. Lectures and laboratories conducted at Fort Burgwin in New Mexico. *Prerequisite:* BIOL 3354. (SMU-in-Taos)

BIOL 5366/GEOL 5366 (3). VERTEBRATE ANATOMY AND ORIGINS. An introduction to vertebrate anatomy with emphasis on structure and function. Additionally, the course examines processes that have affected the diversity of vertebrate organisms, including origination, biogeography, and adaptation. The accompanying laboratory is a corequisite for biology majors and strongly recommended for all other students. *Prerequisites:* BIOL 1401, 1402 or GEOL 1308. *Corequisite:* BIOL 5166.

BIOL 6049 (0). GRADUATE FULL-TIME STATUS.

BIOL 6111 (1), 6211 (2), 6311 (3). LITERATURE OF THE BIOLOGICAL SCIENCES.

BIOL 6114 (1). CONCEPTS IN BIOLOGICAL SCIENCES. Discussion of current literature and new concepts in varied areas of the biological sciences.

BIOL 6120–6129 (1). GRADUATE SEMINAR.

BIOL 6170 (1), 6270 (2). GRADUATE RESEARCH. Research in the biological sciences.

BIOL 6214 (2), 6314 (3). CONCEPTS IN THE BIOLOGICAL SCIENCES. Discussion of current literature and new concepts in varied areas of the biological sciences.

BIOL 6307 (3). CELL REGULATORY MECHANISM. Mechanisms of cell regulation and control. Three lecture/discussion hours each week.

BIOL 6310 (3). ADVANCED CELLULAR BIOLOGY. Ultrastructure, molecular architecture, and physiologic function of cells and their organelles. Three lecture/discussion hours each week.

BIOL 6312 (3). PROTEINS: STRUCTURE AND FUNCTION. Protein structure determination, predictions of secondary and tertiary structure, enzyme mechanisms and design, and current topics in protein research.

BIOL 6315 (3), 6316 (3). SELECTED TOPICS I, II.

BIOL 6321 (3). MOLECULAR BIOLOGY PROKARYOTE. Molecular biology and biochemistry of prokaryotic cells with emphasis on molecular genetics and regulatory mechanisms. Three lecture/discussion hours each week.

BIOL 6322 (3). MOLECULAR BIOLOGY EUKARYOTES. Structure and function of eukaryotic chromosomes as mediators of gene expression during growth, differentiation, and oncogenesis. Three lecture/discussion hours each week.

BIOL 6324 (3), 6323 (3). METHODS IN CELL BIOLOGY. Theory and application of molecular techniques in cell biology. Experiments with cell culture, antibody probes, protein purification, and nucleic acid techniques. Two lecture hours and at least three hours laboratory each week.

BIOL 6325 (3). CELLULAR AGING. Nature of age-associated cellular changes in animals. Three lecture/discussion hours each week. *Prerequisite:* Permission of instructor.

BIOL 6330 (3). DNA REPAIR AND MUTAGENESIS.

BIOL 6350 (3). ADVANCED TOPICS IN DEVELOPMENTAL GENETICS. Genetic aspects of cellular and organismal development. Three lecture/discussion hours each week. *Prerequisites:* BIOL 3304 and permission of instructor.

BIOL 6370–6373 (3), 7000 (0). RESEARCH IN BIOLOGY. Research in the biological sciences.

BIOL 6375 (3). SCIENTIFIC ANALYSIS AND WRITING. Development of skills necessary for the preparation of grant applications and of scientific manuscripts for publication. Three lecture/discussion/reading hours each week.

BIOL 6380 (3), 6381 (3). INTRODUCTION TO RESEARCH.

BIOL 6398 (3), 6399 (3). THESIS. Thesis in the biological sciences.

BIOL 7315 (3), 7316 (3). SELECTED TOPICS. Selected topics in the biological sciences.

BIOL 8049 (0). GRADUATE FULL-TIME STATUS.

BIOL 8398 (3), 8399 (3), 8698 (6), 8699 (6), 8998 (9), 8999 (9). DISSERTATION. Dissertation for the Ph.D. in the biological sciences.

CHEMISTRY

Professor Elfi Kraka, **Department Chair**

Professors: Edward Biehl, John Buynak, Dieter Crèmer, Elfi Kraka, Werner Horsthemke, Michael Lattman, Mark Schell, David Son, Patty Wisian-Neilson. **Assistant Professors:** Alexander Lippert, Peng Tao, Nicolay Tsarevsky, Brian Zoltowski. **Senior Lecturer:** Andrea Adams. **Lecturer:** Helen Babbili. **Emeritus Professor:** John Maguire.

ADMISSION REQUIREMENTS

In addition to meeting the requirements described by the Office of Research and Graduate Studies, an applicant must hold a bachelor's degree with a major in chemistry. Applicants are required to take the GRE general graduate school admission test and are strongly encouraged to take the chemistry subject exam. If English is not the applicant's native language, he or she must also take the TOEFL English language proficiency test and achieve a minimum score of 80 on the Internet-based test. Three letters of recommendation from individuals who have worked with the applicant must be submitted to the Department of Chemistry.

GOOD STANDING

A student must maintain a *B* average (3.000 on a 4.000 scale) and receive no more than two grades below the grade of *B-*. Failure to meet these requirements will result in either probation and/or dismissal from the graduate program.

MASTER OF SCIENCE IN CHEMISTRY

Candidates for the M.S. degree in chemistry must complete 30 term hours of graduate work acceptable to the department, complete and defend a thesis before a committee of faculty and a general audience from the department, and satisfy all general requirements of the graduate faculty.

DOCTOR OF PHILOSOPHY IN CHEMISTRY

1. The student must complete the primary core courses: CHEM 6110, 6111, 6115, 6116, 6118, 6220. The student must then complete secondary core courses, depending on the selected track.
   Organic/Medicinal/Bioorganic Track: CHEM 5393, 6113, 6119.
   Materials/Polymer Track: CHEM 5333, 6113, 6114.
   Theoretical/Computational Track: CHEM 6343, 6325.
   Additional courses will be selected based on the student's interest and research program and in consultation with the student's adviser and faculty committee. A secondary core course may be substituted with another course with approval of the Department of Chemistry graduate adviser, in consultation with the student's research adviser.
2. The student will complete at least two terms of teaching practicum (CHEM 7111, 7112) to enhance communication skills.
3. All students must register for CHEM 6120, 6121 Current Topics in Research for at least the first four terms in the program.
4. The student will take up to 12 cumulative exams until the required total score is obtained.
5. The student will present a departmental seminar (50 to 60 minutes) (CHEM 7121) on a topic that is generally in bioorganic, materials or computational/theoretical chemistry, and that is not related to his or her research, usually during the second year.

6. At the end of the second year, the student will write a paper and orally describe the progress of his or her research, including a plan for the future research program to be completed for the dissertation (CHEM 7233). This will be presented to the department and graded by a faculty committee that includes the student's adviser.

7. At the beginning of the student's third year, the student will write an original research proposal unrelated to the student's research program and will present this to the department and successfully defend this proposal before the faculty committee (CHEM 7334).

Upon successful completion of items 1–7, the student will be admitted to candidacy. The candidate must then:

8. Enroll in a sufficient number of courses to complete at least 48 hours of graduate credit.

9. Make a presentation at a professional meeting appropriate to the field of research (CHEM 7122).

10. Complete his or her research program under the supervision of the faculty.

11. Successfully write and orally defend before a faculty committee a dissertation (CHEM 8698, 8699) on his or her individual research program.

THE COURSES (CHEM)

CHEM 5108 (1). SPECIAL TOPICS IN CHEMISTRY. Special topics of current interest. Content varies from term to term.

CHEM 5110/BIOL 5110 (1). BIOLOGICAL CHEMISTRY LABORATORY. One three-hour laboratory period each week. *Corequisite:* CHEM 5310. If CHEM 5110 is counted toward a chemistry major or minor, it cannot be counted toward a biological sciences major or minor.

CHEM 5185/CHEM 5188 (1). LABORATORY METHODS IN PHYSICAL CHEMISTRY. Laboratory experiments with emphasis on thermodynamics, chemical kinetics, and physical biochemistry. One half-hour of lecture and five-hour laboratory period each week for five weeks. *Prerequisite:* CHEM 5381 or 5383.

CHEM 5188/CHEM 5185 (1). ADVANCED PHYSICAL CHEMISTRY LABORATORY. Laboratory experiments with emphasis on chemical kinetics and molecular spectroscopy. One half-hour of lecture and five-hour laboratory period each week for five weeks. *Prerequisite:* CHEM 5185. *Corequisite:* CHEM 5384 or permission of instructor.

CHEM 5192 (1). INORGANIC SYNTHESIS LABORATORY. This course introduces students to advanced techniques and methods used in the synthesis of inorganic compounds. *Corequisite or Prerequisite:* CHEM 5392.

CHEM 5306 (3). INTRODUCTION TO COMPUTATIONAL CHEMISTRY. Besides the normal lab experiments, modern chemists/biochemists perform experiments on the computer by calculating the outcome of chemical/biochemical reactions. The present course will provide an introduction into this new field in a hands-on fashion. Major quantum chemical packages will be used.

CHEM 5308 (3). SPECIAL TOPICS IN CHEMISTRY. Presentation of advanced special topics in chemistry that are at the forefront of current chemical interest. Content varies from term to term.

CHEM 5310/BIOL 5310 (3). BIOLOGICAL CHEMISTRY: MACROMOLECULAR STRUCTURE AND FUNCTION. Introduction to the structure and function of macromolecules of biological importance. Emphasis on nucleic acid and protein structure, enzyme kinetics, carbohydrate and lipid chemistry. Three lecture hours per week. *Prerequisites:* CHEM 3371 and 3372. If CHEM 5310 is counted toward a chemistry major or minor, it cannot be counted toward a biological sciences major or minor.

CHEM 5311/BIOL 5311 (3). BIOLOGICAL CHEMISTRY: METABOLISM. Introduction to the pathways and regulatory events in the metabolism of carbohydrates, lipids, amino acids, and nucleotides. Three lecture hours per week. *Prerequisites:* CHEM 3371 and 3372.

CHEM 5312/BIOL 5312 (3). PHYSICAL BIOCHEMISTRY. Physical chemistry of macromolecules and biological membranes, with an emphasis on the thermodynamics of solutions. *Prerequisites:* MATH 1338; CHEM 3372, 5310. *Recommended:* CHEM 5381 or CHEM 5383.

CHEM 5317 (3). INTRODUCTION TO MOLECULAR MODELING AND COMPUTER ASSISTED DRUG DESIGN. The course presents a thorough and in-depth overview of methods and techniques in computer assisted drug design (CADD). It includes topics such as drug discovery and drug design, molecular recognition and docking, ligand-receptor interactions, pharmacophore searching, virtual screening, de novo design, molecular graphics, chemometrics, etc.

CHEM 5321 (3). UNDERSTANDING CHEMISTRY. The course focuses on a general understanding of chemistry in terms of models and concepts that describe structure, stability, reactivity and other properties of molecules in a simple, yet very effective way.

CHEM 5322 (3). INTRODUCTION TO NANOTECHNOLOGY. Nanotechnology (NT) is expected to change our lives and society more than computer technology and electricity have done together. The course will provide an introduction to NT. Nano-materials and their applications will be discussed.

CHEM 5333 (3). INTRODUCTION TO POLYMER CHEMISTRY. This course provides basic information on the synthesis, physical properties, and solution properties of high molecular weight molecules. Plastics, manufacturing, and fabrication of polymers are discussed. *Prerequisites:* CHEM 3371 and 3372.

CHEM 5344 (3). PHYSICAL CHEMISTRY OF PROTEINS. Graduate-level course on the fundamental aspects of techniques used to interrogate the thermodynamics and kinetics of protein conformational changes, with emphasis on atomic resolution structural techniques. *Prerequisites:* CHEM 5383 and 5384, knowledge of basic biochemistry, and instructor approval.

CHEM 5381 (3). PHYSICAL CHEMISTRY. Introduction to chemical thermodynamics, kinetics, molecular structure, spectroscopy, and statistical mechanics. Designed for B.A. majors in chemistry. *Prerequisites:* CHEM 1304, 1114, PHYS 1106, 1304, MATH 1337.

CHEM 5383 (3). PHYSICAL CHEMISTRY I. Gas laws; kinetic molecular theory; introduction to thermodynamics, with applications to phase transitions and chemical equilibrium; chemical kinetics. *Prerequisites:* PHYS 1106, 1304, 1114; MATH 2339 or permission of instructor.

CHEM 5384 (3). PHYSICAL CHEMISTRY II. Elements of quantum mechanics and its description of many – electron atoms, bonding, and spectroscopy; intermolecular forces; structure of solids; and transport properties of fluids. *Prerequisite:* CHEM 5383.

CHEM 5390 (3). ENVIRONMENTAL CHEMISTRY. An examination of the chemistry of Earth's environment, and of environmental problems caused by anthropogenic activities. Topics include aquatic and soil chemistry, nuclear chemistry, alternative energy, CO_2 neutral, biomaterial and green technologies, atmospheric chemistry and global warming. *Prerequisites:* MATH 1338, PHYS 1303 and CHEM 1304, 1114. *Recommended:* PHYS 1304; and CHEM 5381, CHEM 5383, GEOL 6338.

CHEM 5392 (3). ADVANCED INORGANIC CHEMISTRY. Survey of the bonding, structure, and reactivity of inorganic compounds; coordination, organometallic, and main group element chemistry. Three hours of lecture each week. *Recommended:* CHEM 5384.

CHEM 5393 (3). ADVANCED ORGANIC CHEMISTRY. Three hours of lecture each week. *Prerequisite:* CHEM 3372.

CHEM 5396 (3). ADVANCED PHYSICAL CHEMISTRY. Three hours of lecture each week. *Prerequisite:* Permission of instructor.

CHEM 5397 (3). BIOTRANSFORMATIONS AND BIOCATALYSIS. This course will cover the history, application and current trends of biotransformations and biocatalysis with the emphasis on how biocatalysts are developed and used in pharmaceutical research. *Prerequisites:* CHEM 3371 and CHEM 3372.

CHEM 5398 (3). MEDICINAL CHEMISTRY. This course will highlight the close relationships of organic chemistry and biochemistry with the field of medicine. The course will rely on the

departmental computational laboratory to permit three-dimensional visualization of molecular interactions. Three hours of lecture each week. *Prerequisites:* CHEM 3371 and 3372.

CHEM 5486 (4). INSTRUMENTAL ANALYSIS. A course involving the theory, operation and application of instrumentation used in the modern chemical laboratory. Two hours of lecture and two three-hour laboratory periods each week. *Prerequisite:* CHEM 3351 or permission of instructor.

CHEM 6000 (0). RESEARCH. For students who hold fellowships, but are not enrolled in any credit-hour courses. No tuition.

CHEM 6049 (0). GRADUATE FULL-TIME STATUS. This course allows graduate students who have finished the required number of hours for the M.S. or Ph.D. degree to have access to library and computer facilities on campus. The student will be expected to be writing his/her research dissertation.

CHEM 6110 (1). CHEMICAL COMMUNICATIONS: LITERATURE, WRITING, AND PRESEN-TATIONS. Fundamentals of literature searching, scientific writing, oral and poster presentations, and research notebooks.

CHEM 6111 (1). PRACTICAL LABORATORY METHODS. Describes the theory behind and practice of laboratory techniques necessary to perform advanced synthetic chemical research.

CHEM 6112 (1). ADVANCED STEREOCHEMISTRY. Advanced study in molecular geometry and relationships in space between atoms and groups in a molecule.

CHEM 6113 (1). PRACTICAL ASPECTS OF SPECTROSCOPY. Basic theory and practical applications of spectroscopy for chemists.

CHEM 6114 (1). CHEMICAL KINETICS. Kinetics of gas-phase, surface, condensed-phase, polymer, photochemical, and enzyme reactions.

CHEM 6115 (1). THEORY OF THE CHEMICAL BONDS. Covers different descriptions of covalent bonding, including the ability to predict bonding structures in molecules and methods to test these predictions.

CHEM 6116 (1). INTRODUCTION TO BIOORGANIC AND MEDICINAL CHEMISTRY. Protein structures, enzymes and receptors as drug targets, enzyme inhibitors, design of agonists, and design of antagonists.

CHEM 6117 (1). CHEMICAL PERIODICITY. Reactivity and Structural Trends in Inorganic and Organometallic Compounds. Explores periodic or recurring trends of the chemical elements in terms of their properties and chemical behavior.

CHEM 6118 (1). OVERVIEW OF MATERIALS CHEMISTRY. Surveys the synthesis, characterization, and applications of ceramics and glasses, polymers, metals, nanomaterials, semiconductors and conductors, and biomaterials.

CHEM 6119 (1). SYNTHETIC STRATEGIES. Formation of the carbon skeleton, organometallic reagents and coupling reactions, protecting groups and chemical compatibility, convergent synthesis.

CHEM 6120 (1), 6121 (1). CURRENT TOPICS IN RESEARCH. Review of current research as presented by visiting lecturers.

CHEM 6130 (1). MECHANISM IN ORGANIC, ORGANOMETALLIC AND BIOORGANIC CHEMISTRY. Fundamental mechanistic concepts in bioorganic, materials, medicinal, organic, and organometallic chemistry; emphasizes mechanistic similarities of seemingly different types of reactions. *Prerequisite:* Passing grade on entrance exam covering CHEM 3371 and 3372 or equivalent.

CHEM 6220 (2). MODERN ASPECTS OF CHEMISTRY. Overview of current important topics in chemistry and the relationship to research programs in the department. *Prerequisite:* Official admission to graduate program.

CHEM 6308 (3). SPECIAL TOPICS. Presentation of advanced special topics in chemistry that are at the forefront of current chemical interest. Content varies from term to term.

CHEM 6312 (3). THEORY OF ORGANIC CHEMISTRY. Course involving advanced topics in organic chemist with emphasis of physical organic concepts, mechanisms, and modern synthetic methodologies. *Prerequisites:* CHEM 3371, 3372.

CHEM 6325 (3). INTRODUCTION TO AB INITIO CALCULATIONS: HARTREE-FOCK THEORY. Quantum chemical investigations of the ab initio type normally start with a Hartree-Fock calculation. Students interested in quantum or computational chemistry have to acquire basic knowledge in Hartree-Fock theory before starting with the more advanced electron correlation theories. This course provides an introduction into Hartree-Fock theory.

CHEM 6331 (3). THEORY OF ANALYTICAL CHEMISTRY. Course involving theory, operations, and applications of instrumentation used in the modern chemical laboratory. Two hours of lecture and four hours of laboratory periods per week.

CHEM 6333 (3). FUNDAMENTAL ASPECTS AND APPLICATIONS OF POLYMERIZATION TECHNIQUES. Provides detailed information about the fundamental aspects (kinetics, mechanism) and application of all important polymerization techniques used to prepare well-defined macromolecules, with special emphasis on controlled/living polymerizations.

CHEM 6341 (3). ADVANCED MODELS AND CONCEPTS IN CHEMISTRY. Advanced models and concepts will be presented to understand the structure, stability, and reactivity of molecules in organic, inorganic, and polymer chemistry.

CHEM 6342 (3). NANOTECHNOLOGY: FUNDAMENTALS AND APPLICATIONS. Nanotechnology (NT) is an interdisciplinary field including among other nanosciences, nanoengineering, and nanomedicine. the course will provide the fundamentals and present applications of nanotechnology in a variety of different disciplines.

CHEM 6343 (3). ADVANCED COMPUTATIONAL CHEMISTRY. The present course will provide an in-depth training on how to use the computer as a modern efficient tool to solve chemical problems. Major quantum chemical packages will be used. *Prerequisites:* The course is designed for all graduate students from chemistry, biochemistry, medicinal chemistry, biology, and engineering who want to obtain a thorough and in-depth overview over methods and techniques applied in computational chemistry. Since the course addresses a broad audience, it is designed as an interdisciplinary course taking care of the special needs of graduate students with different background. Permission of the instructor required.

CHEM 6344 (3). COMPUTER ASSISTED DRUG DESIGN: FUNDAMENTALS AND APPLICATION. The course discusses the fundamentals of computer assisted drug design (CADD), the latest and important developments in CADD methodologies, and their applications. Topics stretch from drug discovery over virtual screening, to de novo design and neutral networks, etc.

CHEM 6351 (3), 6352 (3). METHODS AND TECHNIQUES OF RESEARCH. The student is introduced to experimental methods that are sufficiently advanced that they can be employed at the research level in a variety of chemical fields. In learning these methods, the students will be required to master the operation of sophisticated equipment. This equipment is associated with refined experimental techniques that include infrared spectroscopy, nuclear magnetic resonance, and atomic spectroscopy.

CHEM 6397 (3). BIOTRANSFORMATION AND BIOCATALYSIS. This course will cover the history, application and current trends of biotransformations and biocatalysis with the emphasis on how biocatalysts are developed and used in pharmaceutical research.

CHEM 6398 (3), 6399 (3). THESIS. The student is introduced to experimental methods that are sufficiently advanced that they can be employed at the research level in a variety of chemical fields. In learning these methods, the students will be required to master the operation of sophisticated equipment. This equipment is associated with refined experimental techniques that include infrared spectroscopy, nuclear magnetic resonance, and atomic spectroscopy.

CHEM 7101 (1). INDEPENDENT STUDY. Readings in the chemical literature on current research topics related to the student's area of research.

CHEM 7108 (1). SPECIAL TOPICS. Presentation of contemporary topics in chemistry. Content varies from term to term.

CHEM 7111 (1). TEACHING PRACTICUM I. The student will develop communication skills and will gain experience in laboratory and classroom teaching as well as one-on-one instruction.

CHEM 7112 (1). TEACHING PRACTICUM II. The student will develop communication skills and will gain experience in laboratory and classroom teaching as well as one-on-one instruction. *Prerequisite:* CHEM 7111.

CHEM 7121 (1). DEPARTMENTAL PRESENTATION. The student will present a departmental seminar (50 to 60 minutes) on a topic, generally in bioorganic or material chemistry, that is not related to his/her research.

CHEM 7122 (1). PROFESSIONAL MEETING ORAL PRESENTATION. The student will develop his communication and presentation skills to include giving an oral presentation on her research project at an appropriate professional meeting. *Prerequisites:* CHEM 6110, 7121.

CHEM 7151 (1). RESEARCH. Laboratory research.

CHEM 7201 (2). ADVANCED INDEPENDENT STUDY. Readings in the chemical literature on current research topics related to the students research for 2 credit hours.

CHEM 7208 (2). SPECIAL TOPICS. Presentation of contemporary topics in chemistry. Content varies from term to term.

CHEM 7233 (2). RESEARCH SYNOPSIS AND OBJECTIVES. The student will present research results and will outline a plan for the dissertation research with a clear understanding of prior work and literature precedence for the proposed work. *Prerequisites:* CHEM 6110–6119, CHEM 7191 or higher, CHEM 7121.

CHEM 7251 (2). RESEARCH. Laboratory Research for 2 hours credit.

CHEM 7301 (3). ADVANCED INDEPENDENT STUDY. Readings in the chemical literature on current research topics related to the students research.

CHEM 7308 (3). SPECIAL TOPICS. Presentation of contemporary topics on chemistry. Content varies from term to term.

CHEM 7334 (3). PROPOSAL METHODOLOGY. Student will conceive and fully develop an original research idea and write a proposal on this work. The proposal topic must be unrelated to the student's dissertation research topic. The proposal will be presented to and defended before a committee of faculty. The student will be judged on the novelty of the idea, the development of a sound and feasible method. *Prerequisites:* CHEM 6110–6119, 7121, 7233.

CHEM 7351 (3). RESEARCH. Laboratory research.

CHEM 8049 (0). GRADUATE FULL-TIME STATUS. Graduate full-time status at the Ph.D. level.

CHEM 8698 (6), 8699 (6). DISSERTATION.

EARTH SCIENCES

Professor Robert Gregory, **Department Chair**

Professors: Robert Gregory, Bonnie Jacobs, Louis Jacobs, Jim Quick, Brian Stump, John Walther, Crayton Yapp. **Associate Professors:** Heather DeShon, Matthew Hornbach, Maria Beatrice Magnani, Neil Tabor. **Emeritus Professors:** David Blackwell, Lee McAlester.

GEOLOGY OR GEOPHYSICS ADMISSION REQUIREMENTS

The minimum requirements for admission to graduate work in the Earth sciences are those now in effect for admission to the graduate programs of SMU. The candidate is required to submit scores on a recent GRE graduate school admission test. International students applying from countries where English is not the native language are required to submit scores on the TOEFL English language proficiency examination.

MASTER OF SCIENCE IN GEOLOGY, GEOPHYSICS OR APPLIED GEOPHYSICS

Master of Science in Geology or Geophysics. To qualify for the M.S. degree in geology or geophysics, the student must have

1. Successfully completed a minimum of 30 hours of graduate study acceptable to the departmental faculty, including graduate core courses GEOL 5320, 6107, 6321 and thesis hours GEOL 6398, 6399.
2. Passed a general qualifying examination.
3. Written and successfully defended a thesis.

Master of Science in Applied Geophysics. This degree plan is specifically developed for students interested in a career in exploration in the petroleum industry. To qualify for the M.S. degree in applied geophysics, the student must have

1. Successfully completed a minimum of 33 hours of graduate study as specified in the curriculum or acceptable to the departmental faculty.
2. Passed a general qualifying examination.
3. Completed and successfully defended a project related to some facet of applied geophysics.

DOCTOR OF PHILOSOPHY GEOLOGY OR GEOPHYSICS

To qualify for the Ph.D. degree in geology or geophysics, the student must have

1. Satisfied all curricular requirements as specified by the departmental faculty, including graduate core courses GEOL 5320, 6107, 6321.
2. Successfully passed a general qualifying examination.
3. Completed a minimum of three years of graduate academic work, at least two of which are in full-time residence on the SMU campus or at a research facility approved by the departmental faculty and the dean of graduate studies.
4. Written and made a successful public defense of a dissertation. Students should see the Degree Requirements section of this catalog for general requirements for the Ph.D. degree.

THE COURSES (GEOL)

GEOL 5110 (1). INDEPENDENT STUDY IN GEOSCIENCE. Independent study of a selected topic in geoscience. Individual study under direction of a faculty member allowed for 5110 or 5210; group projects allowed for 5310.

GEOL 5166/BIOL 5166 (1). VERTEBRATE ANATOMY LABORATORY. A laboratory course to accompany BIOL/GEOL 5366. Exercises include basic anatomy, dissections, and examinations of fossil skeletons. *Corequisite:* GEOL 5366 (BIOL 5366).

GEOL 5199 (1), 5299 (2). SPECIAL TOPICS IN EARTH SCIENCES. Topics of special interest not covered by the regular curriculum, taught by visiting scientists and those with temporary appointments at SMU. Can be cotaught together with faculty of the department. *Prerequisite:* GEOL 3340 or permission of instructor.

GEOL 5210 (2), 5310 (3). INDEPENDENT STUDY IN GEOSCIENCE. Independent study of a selected topic in geoscience. Individual study under direction of a faculty member allowed for 5110 or 5210; group projects allowed for 5310.

GEOL 5320 (3). DYNAMIC EARTH I. Covers the physical and chemical structure of the Earth and its evolution through geologic time; dynamic processes in the mantle and crust; the development of the theory of plate tectonics as a unifying mechanism for large-scale geologic processes; and the implications of plate tectonics and contemporary applications to geological and geophysical problems. *Prerequisite:* Permission of instructor.

GEOL 5360 (3). ELECTRON MICROPROBE ANALYSIS. Design and operation of the instrument. Correction procedures and computer automation. Analytical techniques and mineral chemistry.

GEOL 5366/BIOL 5366 (3). VERTEBRATE ANATOMY AND ORIGINS. Introduces vertebrate anatomy, with emphasis on structure and function. Examines processes that have affected the diversity of vertebrate organisms, including origination, biogeography, and adaptation. *Prerequisites:* BIOL 1401, 1402 and GEOL 1308, or permission of instructor. The accompanying laboratory, BIOL 5166, is strongly recommended.

GEOL 5368 (3). PALEOECOLOGY. Interactions between the living world and the Earth's changing environments through geologic time. *Prerequisite:* GEOL 3369 or permission of instructor.

GEOL 5372 (3). PRINCIPLES OF SEDIMENTATION. Study of the origin and evolution of sedimentary rocks in terms of interpretation of marine and non-marine sedimentary record.

GEOL 5374 (3). PETROLEUM GEOLOGY. Application of geologic principles to the location and recovery of hydrocarbon resources in the crust of the earth. *Prerequisite:* Permission of the instructor.

GEOL 5380 (3). PRINCIPLES OF STRATIGRAPHY. Evolution and application of modern stratigraphic concepts, and the development of stratigraphic nomenclature. Emphasis on the integration of physical, biological and chemical parameters in interpretation of the rock record. *Prerequisites:* GEOL 3340 and CHEM 1304 or permission of instructor.

GEOL 5384 (3). HYDROGEOLOGY. An introduction to the chemical and physical behavior of natural waters and the role of fluids in geologic processes. The course will stress the application of thermodynamics, kinetics, and fluid mechanics to understand such geologic processes as ore formation, sediment diagenesis, isograd formation, acid rain, global warming and groundwater contamination. *Prerequisites:* MATH 1338 and CHEM 1304, or permission of instructor.

GEOL 5386 (3). GEOCHEMISTRY. A survey of geochemical processes within the Earth and at its surface, emphasizing mineral-water interactions and application of the principles of chemical equilibrium to the solution of geochemical problems. *Prerequisite:* GEOL 3452 or permission of instructor.

GEOL 5389 (3). THEORY OF DIGITAL DATA PROCESSING IN GEOPHYSICS. Covers linear transform theory, convolution, correlation, linear systems, Shannon sampling theorem, discrete Fourier transform, fast Fourier transform, Z-transform, inverse filtering, recursive filtering, optimum filtering, deconvolution, and power spectrum analysis. *Prerequisite:* MATH 2343 or permission of instructor.

GEOL 5391 (3). POTENTIAL FIELD METHODS IN GEOPHYSICAL EXPLORATION. Introduction to potential theory in geophysics. The emphasis is on gravity and magnetic techniques with a brief introduction to heat flow and electrical methods. Basic concepts and their application to hard and soft rock exploration are covered.

GEOL 5392 (3). INTRODUCTION TO SEISMOLOGY. Basic principles of seismology. *Prerequisites:* MATH 2343 and permission of instructor.

GEOL 5394 (3). GEOPHYSICAL PROBLEM-SOLVING. Covers approaches to problem-solving in geophysics, back-of-the-envelope approximations and dimensional analysis, analytical solutions and numerical techniques on the computer, inverse theory and error propagation, and use of models in the real world. Students complete a term project. *Prerequisites:* MATH 2343, 5353; knowledge of a programming language.

GEOL 5399 (3). SPECIAL TOPICS IN EARTH SCIENCES. Topics of special interest not covered by the regular curriculum, taught by visiting scientists and those with temporary appointments at SMU. Can be cotaught together with faculty of the department. *Prerequisite:* GEOL 3340 or permission of instructor.

GEOL 5459 (4). SOILS AND PALEOSOLS. This is a lecture, lab, and field-based course about modern and ancient (paleosol) soil description, classification, and genesis. The course emphasizes environmental controls on soil formation and distribution across Earth's landscapes. Recommended: CHEM 1303, 1304, 1113, 1114, 3351; CEE 4385. *Prerequisites:* One from GEOL 1301, 1305, 1307, 1308, 1313, 1315; and GEOL 3343, 3451, 3452, 3472.

GEOL 6049 (0). GRADUATE FULL-TIME STATUS. Full-time status for graduate students pursuing the master's degree.

GEOL 6107 (1). DEPARTMENTAL SEMINAR. Students attend and critically evaluate departmental lectures given by visiting scientists, visiting engineers, faculty, and fellow students. Required of all graduate students who have not yet passed their degree-qualifying exam.

GEOL 6110 (1), 6210 (2), 6310 (3). INDEPENDENT STUDY IN GEOSCIENCE. Independent study of a selected topic in geoscience. Individual study under direction of a faculty member allowed for 6110 or 6210; group projects allowed for 6310. *Prerequisite:* Permission of instructor.

GEOL 6209 (2). SPECIAL TOPICS IN GEOLOGICAL SCIENCES. Study of a narrowly defined topic in geological sciences.

GEOL 6302 (3). SEDIMENTOLOGY: CLASTIC ENVIRONMENTS. Description and classification of terrigenous clastic sediments and sedimentary structures. Principal emphasis on analysis of modern and ancient siliciclastic depositional systems.

GEOL 6303 (3). SEDIMENTOLOGY: CARBONATE DIAGENESIS. Postdepositional alteration of carbonate strata with particular emphasis on the prediction of porosity. Field, petrographic, and geochemical lines of evidence.

GEOL 6309 (3). SPECIAL TOPICS IN GEOLOGICAL SCIENCES. Study of a narrowly defined topic in geological sciences.

GEOL 6321 (3). DYNAMIC EARTH II. Description of modern methods of measuring geologic time and the establishment of isotopic, biostratigraphic, paleomagnetic, and geochemical stratigraphies. Examination of sedimentary, biological, and geochemical cycles (such as sea level fluctuations, climatic variations, evolutionary patterns, atmospheric-oceanic compositions, and continental positions) and their influence on the Earth's sedimentary record. Requires a selected list of prerequisite readings that is available from the departmental office.

GEOL 6338 (3). THERMODYNAMICS OF GEOLOGICAL PROCESSES. Introduction to theoretical aspects of thermodynamics as they are applied in the Earth sciences to igneous, metamorphic, and sedimentary processes. Emphasis on fundamental relationships in thermodynamics and mineral equilibria in aqueous solutions, solid rocks, silicate melts, and isotopic systems.

GEOL 6363 (3). ENVIRONMENTAL GEOLOGY SEMINAR. Timely geoscience-based environmental problems and scientific, environmental, political, economic, legal, and social aspects of potential solutions. Selected readings, seminars, guest speakers, and research projects.

GEOL 6371 (3). ISOTOPE GEOCHEMISTRY AND GEOCHRONOLOGY. Geochemistry of radiogenic and stable isotopes; evolution of Pb, Sr, and Nd isotope systems; application to problems

in magma genesis, geothermal studies, tectonophysics, and geochronology; and application of isotopes as natural tracers.

GEOL 6375 (3). THEORY OF HEAT FLOW AND DIFFUSION. Heat transfer theory applied to the study of the thermal field of the earth and terrestrial planets. Convection and conduction in geologic systems. Geochemistry of the heat-producing elements uranium, thorium, and potassium and their interrelationship with terrestrial heat flow.

GEOL 6376 (3). APPLICATION OF GEOPHYSICAL TECHNIQUES OF GEOTHERMAL EXPLORATION. A detailed study of geophysical techniques with applications to geothermal exploration. *Prerequisite:* GEOL 6375 or permission of instructor.

GEOL 6380 (3). GEOPHYSICAL INVERSE THEORY. Theoretical development and application of inversion theory to problems in geophysics. *Prerequisites:* MATH 5353 and permission of instructor.

GEOL 6394 (3). THEORETICAL SEISMOLOGY I. Continuum mechanics including viscoelastic materials, reciprocity, representation theorem, moment tensors, kinematic and dynamic source models, Green's functions, and matrix methods, including Haskell-Thompson. *Prerequisite:* GEOL 6394 or permission of instructor.

GEOL 6395 (3). MATHEMATICAL METHODS OF GEOPHYSICS AND THEORETICAL SEISMOLOGY II. Synthetic seismograms for layered materials, transform methods in the solution of the wave equation, Cagniard-de Hoop and the generalized ray solution, first motion approximation, WKBJ approximation, reflectivity, and full wave theory. *Prerequisite:* GEOL 6394 or permission of the instructor.

GEOL 6396 (3). APPLIED SEISMOLOGY. Theoretical tools necessary for processing and interpreting of seismic reflection surveys. Develops exploration sources and receivers. Processing techniques including sampling theory, demultiplexing, normal move-out corrections, stacking, deconvolution, and migration. Practical applications of techniques to observational data. *Prerequisites:* GEOL 5389, 5392.

GEOL 6398 (3), 6399 (3). THESIS. Research and writing of the thesis with guidance from the student's thesis director.

GEOL 7000 (0), 7100 (1). RESEARCH. Intensive research on a narrowly defined topic in geology.

GEOL 7155 (1), 7255 (2), 7355 (3), 7360 (3). SEMINAR IN GEOPHYSICS. Seminar on selected topics in geophysics; subject matter varies term to term.

GEOL 7158 (1), 7252 (2), 7258 (2), 7352 (3), 7358 (3). SEMINAR IN SEDIMENTOLOGY. Seminar on selected topics in sedimentology; subject matter varies term to term.

GEOL 7201 (2), 7202 (2), 7301 (3), 7302 (3). RESEARCH IN SEDIMENTOLOGY. Research project in a selected area of sedimentology.

GEOL 7203 (2), 7204 (2), 7303 (3), 7304 (3). RESEARCH IN STRATIGRAPHY. Research project in a selected area of stratigraphy.

GEOL 7205 (2), 7206 (2), 7305 (3), 7306 (3). RESEARCH IN PALEONTOLOGY. Research project in a selected area of paleontology.

GEOL 7209 (2), 7210 (2), 7309 (3), 7310 (3). RESEARCH IN MINERALOGY AND PETROLOGY. Research project in a selected area of mineralogy and petrology.

GEOL 7213 (2), 7214 (2), 7313 (3), 7314 (3). RESEARCH IN GEOPHYSICS. Research project in a selected area of geophysics.

GEOL 7215 (2), 7216 (2), 7315 (3), 7316 (3). RESEARCH IN GEOCHEMISTRY. Research project in a selected area of geochemistry.

GEOL 7250 (2), 7350 (3), 7370 (3). SEMINAR IN PALEONTOLOGY. Seminar on selected topics in paleontology; subject matter varies term to term.

GEOL 7251 (2), 7351 (3). SEMINAR IN STRATIGRAPHY. Seminar on selected topics in stratigraphy; subject matter varies term to term.

GEOL 7253 (2), 7353 (3). SEMINAR IN PETROLOGY. Seminar on selected topics in petrology; subject matter varies term to term.

GEOL 7254 (2), 7354 (3). SEMINAR IN GEOCHEMISTRY. Seminar on selected topics in geochemistry; subject matter varies term to term.

GEOL 7257 (2), 7357 (3), 7359 (3). SEMINAR IN STRUCTURAL GEOLOGY. Seminar on selected topics in structural geology; subject matter varies by term.

GEOL 7300 (3). RESEARCH. Intensive research on a narrowly defined topic in geology.

GEOL 7317 (3). RESEARCH IN GEOMORPHOLOGY. Research project in a selected area of geomorphology.

GEOL 7380 (3). RESEARCH PROJECT IN APPLIED GEOPHYSICS. Graduate level research in applied geophysics, including interaction with ongoing programs in the industrial community.

GEOL 8049 (0). GRADUATE FULL-TIME STATUS. Graduate full-time status, Ph.D. level.

GEOL 8100 (1). RESEARCH. Research and study of selected geological topics (varies term to term).

GEOL 8398 (3), 8399 (3), 8698 (6), 8699 (6), 8998 (9), 8999 (9). DISSERTATION RESEARCH. Research and writing of the dissertation with guidance from the student's dissertation director.

ECONOMICS

Professor Nathan Balke, **Department Chair**

Professors: Nathan Balke, Raveendra Batra, Rajat Deb, Tom Fomby, Kathy Hayes, Daniel Millimet, Santanu Roy, Daniel Slottje, Shlomo Weber. **Associate Professors:** Thomas Osang, Saltuk Ozerturk. **Assistant Professors:** Bo Chen, Anna Kormilitsina, James Lake, Isaac Mbiti, Danila Serra. **Senior Lecturers:** James Cooley, Helen Reynolds, Elizabeth Wheaton.

DEGREE OF MASTER OF ARTS

Admission Requirements

The minimum requirements for admission are as follows:

- Cumulative GPA of at least 3.000 (on a 4.000 scale).
- Twelve hours of undergraduate economics, including two intermediate theory courses, one in price theory (microeconomics) and one in macroeconomics.
- Introductory course in statistics.
- One term of calculus.
- Satisfactory GRE graduate school admission test scores if the undergraduate GPA is lower than 3.000.

Applicants for the M.A. Law and Economics Track must already have the J.D. degree or be students in the Dedman School of Law in addition to the admission requirements for the M.A. degree.

Master of Arts With Thesis. This degree is available only to students who are currently or were previously enrolled in the Ph.D. program in economics at SMU.

Degree Requirements

- **Required Courses.** ECO 6371 Introduction to Quantitative Economics, ECO 6384 Microeconomic Theory I and ECO 6394 Macroeconomic Theory I must be completed with a grade of *C* or better.
- **Credit Hours.** Every student must earn at least 30 term hours in an approved program of study.
- **Grade Point Average.** Every student must maintain a cumulative *B* (3.000) average in courses taken in the degree program.
- **Thesis and Master's Papers.** A student must submit either a master's thesis or two approved master's papers.
- **Qualifying Examination.** Upon completion of the coursework and the acceptance of the thesis or the papers, the student must pass an oral examination given by a faculty committee.
- **Residence.** A residence of at least nine months in the regular sessions is required.

Master of Arts in Conjunction With a Doctor of Philosophy. Students pursuing a Ph.D. program are qualified to receive the M.A. degree after having fulfilled the following requirements: 1) passing the written qualifying examination in microeconomic theory and macroeconomic theory and 2) completing 30 term hours of courses in their program.

Master of Arts in Economics: Applied Economics Track. The curriculum is customized to suit the needs of a graduate student pursuing a career as an economist in a business, financial institution or government agency, or a career as a senior manager who must analyze the external economic forces affecting a firm and factor them into corporate decisions. The program emphasizes the application of economic theory with quantitative skills and computer literacy as required by corporations and

financial institutions in their economic decision-making processes. A rigorous theoretical economic framework is established for the study of government policy and the growing openness of the U.S. economy to international competition and economic events. At the same time, mathematical rigor is not compromised. The necessary concepts are developed from the basics but at a more deliberate pace than in a Ph.D. program. Since many candidates for this degree plan prefer to pursue a degree while employed, many courses in the degree plan are scheduled for evening hours.

Every student must earn at least 36 term hours in an approved program of study, with at least half of the coursework being at the 6000 level. This plan does not require a master's thesis or master's papers. A comprehensive final exam is required.

All courses must be completed with a grade of C (2.000) or better and a B (3.000) average in all the courses taken in the program.

Students take three required core courses in economics that form the building blocks for further study and analysis in economics. Another three required courses provide applied training in econometrics and microeconomic analysis. Six additional courses are needed to complete the degree, two of which must be 6000-level courses. Some courses are offered in sequence, which means they are not offered every term.

Core courses

ECO 5350 Introductory Econometrics
ECO 6381 Economic Analysis I (microeconomics)
ECO 6382 Economic Analysis II (macroeconomics)

Required applied economics courses (three out of four)

ECO 5375 Business and Economic Forecasting
ECO 5385 Data Mining Techniques for Economists
ECO 6352 Applied Econometric Analysis
ECO 6383 New Approaches to Managerial Economics

Six of the following courses (two of which must be at the 6000 level)

ECO 5337 Urban Economics
ECO 5340 Decision-Making Under Uncertainty
ECO 5341 Strategic Behavior
ECO 5353 Law and Economics
ECO 5355 Political Economics
ECO 5357 Economics of Human Resources
ECO 5359 Microeconomic Development
ECO 5360 Macroeconomic Development
ECO 5361 Natural Resource and Energy Economics
ECO 5362 Economic Growth
ECO 5365 Public Finance
ECO 5370 Cost-Benefit Analysis
ECO 5380   Computing for Economics
ECO 5390 Mathematical Finance
ECO 6320 Applied Monetary Theory and Policy
ECO 6330 Exchange Rates and International Capital Markets
ECO 6331 International Trade
ECO 6333 Trade Policy and the World Trading System
ECO 6337 Emerging Markets
ECO 6339 Topics in International Economics

Master of Arts in Economics: International Economics and Policy Track. This curriculum is designed for students who wish to deepen their understanding of the changing global economic environment. Equal emphasis is placed on theory and practice in international economics. All of the entrance requirements for the applied economics track for the M.A. in economics hold for this degree plan. Students take three core courses in economic and quantitative analysis, and these serve as the building blocks for further study and analysis in economics. The three required international courses provide students with the necessary background in theory and practice of international trade, finance and policy. Students can pursue special interests in international economics through elective courses.

Every student must earn at least 36 credit hours in an approved program of study, with at least half of the coursework being at the 6000 level. This plan does not require a master's thesis or master's papers. A comprehensive final exam is required.

All courses must be completed with a grade of *C* (2.000) or better and a *B* (3.000) average over all the courses taken in the program.

Students take three required core courses in economics and another three required international economics courses. Six additional courses are needed to complete the degree. Students must have a total of six courses at the 6000 level.

Core courses

ECO 5350 Introductory Econometrics
ECO 6381 Economic Analysis I (microeconomics)
ECO 6382 Economic Analysis II (macroeconomics)

International economics courses

ECO 6331 International Trade
ECO 6330 Exchange Rates and International Capital Markets
ECO 6333 Trade Policy and the World Trading System

Three of the following economics courses

ECO 5359 Microeconomic Development
ECO 5360 Economic Development
ECO 5375 Business and Economic Forecasting
ECO 5380 Computing for Economics
ECO 5385 Data Mining Techniques for Economists
ECO 6339 Topics in International Economics
ECO 6337 Emerging Markets
ECO 6352 Applied Econometric Analysis

Electives

Nine hours (three courses) of free electives

Master of Arts in Economics: Law and Economics Track. The curriculum is customized to suit the need of lawyers for more knowledge of economics, particularly applied microeconomic analysis of problems commonly encountered by lawyers and judges, and includes econometric analysis often encountered by the courts from expert witnesses on both sides of a case.

Because many candidates for this degree plan prefer to pursue a degree while actively engaged in the practice of law, most courses in the degree plan are scheduled for evening hours.

Every student must earn at least 36 credit hours in an approved program of study, with at least half of the coursework being at the 6000 level. This plan does not require a master's thesis or master's papers. A final exam is required.

All courses must be completed with a grade of *C* (2.000) or better and an overall *B* (3.000) average for all courses taken in the degree program.

Students with J.D. degrees working toward the M.A. will follow this 36-hour non-thesis plan. Students currently in law school will be permitted to substitute nine hours of approved law school credit as electives. All students are required to take at least six hours at the 6000 level.

Required Courses

ECO 5341 Strategic Behavior
ECO 5350 Introductory Econometrics
ECO 5353 Law and Economics
ECO 6352 Applied Econometric Analysis
ECO 6381 Economic Analysis I
ECO 6383 New Approaches to Managerial Economics

Electives

ECO 5337 Urban Economics
ECO 5340 Decision-Making Under Uncertainty
ECO 5357 Economics of Human Resources
ECO 5359 Microeconomic Development
ECO 5360 Economic Development
ECO 5361 Natural Resource and Energy Economics
ECO 5362 Economic Growth
ECO 5365 Public Policy Toward Business
ECO 5370 Cost-Benefit Analysis
ECO 5375 Economic and Business Forecasting
ECO 5380 Computing for Economics
ECO 5385 Data Mining Techniques for Economists
ECO 5390 Mathematical Finance
ECO 6320 Applied Monetary Theory and Policy
ECO 6330 Exchange Rates and International Capital Markets
ECO 6382 Economic Analysis II
ECO 6390 Regional Economic Analysis

DOCTOR OF PHILOSOPHY IN ECONOMICS
Admission Requirements

The minimum requirements for admission are as follows:

1. Cumulative GPA of at least 3.000 (on a 4.000 scale).
2. Excellent scores on the aptitude parts (verbal and quantitative) of the GRE graduate school admission test.
3. A bachelor's degree in economics. The program is also open to students from other fields such as mathematics, statistics and engineering. However, all applicants must have taken at least 12 hours of economics, including two intermediate theory courses, one in price theory (microeconomics) and one in macroeconomics.

4. Mathematical proficiency equivalent to courses in multivariate calculus (i.e., three terms of university-level calculus), probability and statistics (two terms), differential equations and linear algebra.
5. TOEFL English language proficiency test scores, if required. TOEFL scores are required of all international students who do not hold a degree from a U.S. degree-granting institution. The minimum acceptable score is 213 on the computer-based test or 79–80 on the Internet-based test.

Degree Requirements

The major requirements for the Ph.D. degree consist of passing certain qualifying examinations and writing an acceptable dissertation. Other requirements include specific courses, credit hours, GPA and residence. All of these are briefly described below.

Qualifying Examinations. Every student must pass written qualifying examinations in microeconomic theory and macroeconomic theory. Students will normally take these exams following the end of the second term in the program.

Field Requirements. Two fields are required. Each field involves at least six hours of 7000-level coursework in a specified area, and each must be completed with at least a grade of *B* in each course. ECO 7304 Preprospectus Workshop or ECO 6375 Introduction to Applied Econometric Methods can be used, with the prior approval of the director of graduate studies, to count toward three hours of one six-hour field requirement.

Third-Year Requirement. By the end of their third year, all students must submit a completed Faculty Adviser Form to the director of graduate studies. By the end of their third year, all students must also complete a research paper approved by a faculty member.

Dissertation. The student must pass qualifying examinations before beginning work on the dissertation. The student must prepare a dissertation prospectus, to be presented before a faculty committee upon completion. After the prospectus is approved, and the dissertation is completed, the student must defend the dissertation at a final oral examination.

Course and Credit Hour Requirements and Time Limitations. Every Ph.D. student must earn a minimum of 48 credit hours in an approved program of study with an additional 12 credit hours of dissertation research. Any course taken as an elective must be at the 5000 level or above and must be approved by the director of graduate studies. Up to 24 credit hours of graduate coursework may be transferred from another institution upon approval by the department and the graduate dean. The field requirements must be completed within four years from the date the student enters the graduate program. The dissertation must be completed within eight years from the date the student enters the graduate program.

Good Standing. Students pursuing a Ph.D. degree are required to maintain good standing by being enrolled in at least one credit course per term. ECO 8100, which carries one credit hour, may be used for this purpose at the thesis stage. In some cases, ECO 8000 may be used for this purpose if approved by the chair. To remain in good standing, graduate students must maintain a cumulative GPA of 3.000. If in any term the student falls below this GPA, the student will be placed on probation for one term.

   Residence. Every Ph.D. candidate must be in residence at SMU for at least one academic year.

THE COURSES (ECO)

General	ECO 5301, 5337, 5340, 5341, 5350, 5353, 5355, 5357, 5359, 5360, 5361, 5362, 5365, 5370, 5375, 5380, 5385, 5390, 6352
Economic Theory	ECO 6371, 6381, 6382, 6384, 6385, 6386, 6387, 6390, 6394, 6395, 6396, 7302
Advanced Theory	ECO 7305, 7306
International Economics	ECO 6330, 6331, 6333, 6339, 7332, 7333
International and Development Economics	ECO 6337, 7334
Human Resources	ECO 7321, 7322
Econometrics	ECO 6372 6374, 6375, 7075, 7275, 7377, 7378
Monetary Economics	ECO 6320, 7361, 7362
Industrial Organization	ECO 7341, 7342
Public Finance	ECO 7351, 7352
Independent Studies and Workshops	ECO 6101, 6398, 7004, 7101, 7201, 7301, 7304, 8000, 8100, 8101, 8398, 8399, 8698, 8699, 8998, 8999

ECO 5101 (1), 5201 (2). TOPICS. *Prerequisites:* C- or better in ECO 3301, 3302, and one of the following: STAT 2301, 2331 or 4340.

ECO 5301 (3). TOPICS. *Prerequisite:* C- or better in ECO 3301, 3302 and one of the following: STAT 2301, 2331 or 4340, or graduate standing.

ECO 5320 (3). HEALTH ECONOMICS. An introduction to the economics of health and health care policies and how they have affected the structure, function, and cost-effectiveness of the health care industry, principally in the United States. *Prerequisites:* C- or better in ECO 3301.

ECO 5340 (3). DECISION-MAKING UNDER UNCERTAINTY. Provides a basis for the modeling of decision-making under conditions of incomplete information. *Prerequisite:* C- or better in ECO 3301, 3302 and one of the following: STAT 2301, 2331 or 2340

ECO 5341 (3). STRATEGIC BEHAVIOR. Introduces the basic concepts and tools of game theory, with applications to various areas of economics. The various topics are unified by the techniques employed for determining the outcome in particular situations. *Prerequisites:* Graduate standing or C- or better in ECO 3301 and STAT 2301, 2331, or 4340.

ECO 5342 (3). EXPERIMENTAL AND BEHAVIORAL ECONOMICS. Students study the field of behavioral economics in which the underlying assumptions of economics models are tested using experimental techniques. Guided by behavioral regularities, new models of behavior are introduced. *Prerequisites:* C- or better in ECO 3301. Recommended: ECO 5341, 5350.

ECO 5350/STAT 5350 (3). INTRODUCTORY ECONOMETRICS. The basic concepts of econometrics and, in particular, regression analysis, with topics geared to first-time regression users. *Prerequisites:* Graduate standing or C- or better in the following: MATH 1309 or 1337; ECO 3301; and ITOM 2305 or STAT 2301, 2331, or 4340.

ECO 5353 (3). LAW AND ECONOMICS. Examines economic theories that explain the development of common law and constitutional law and the economic implications of contracts, antitrust laws, and liability rules. *Prerequisites:* Graduate standing or C- or better in the following: ECO 3301 and STAT 2301, 2331, or 4340.

ECO 5357 (3). ECONOMICS OF HUMAN RESOURCES. Examines several topics of interest to modern labor economists. The course is equally devoted to theoretical modeling and the interpretation of empirical evidence, and to the analysis of policies such as education subsidies, unemployment insurance, the minimum wage, and immigration restrictions. *Prerequisites:* Graduate standing or C- or better in the following: ECO 3301 and STAT 2301, 2331, or 4340. ECO 4351 is recommended.

ECO 5359 (3). ECONOMIC DEVELOPMENT: MICROECONOMIC PERSPECTIVES. A microeconomic examination of various economic issues faced by developing countries. Topics include intrahousehold resource allocation, rural and urban labor markets, and credit and insurance markets. *Prerequisites:* Graduate standing or C- or better in the following: ECO 3301 and STAT 2301, 2331, or 4340.

ECO 5360 (3). ECONOMIC DEVELOPMENT: MACROECONOMIC PERSPECTIVES. A macroeconomic examination of the economic issues faced by developing countries. Topics include population growth, national savings, capital accumulation, human capital formation, government institutions, and international integration. *Prerequisites:* Graduate standing or C- or better in the following: ECO 3302 and STAT 2301, 2331, or 4340.

ECO 5361 (3). NATURAL RESOURCES AND ENERGY ECONOMICS. Students gain an understanding of the economics of energy and natural resource use and policy. *Prerequisites:* Graduate standing or C- or better in the following: ECO 3301, 3302 and STAT 2301, 2331, or 4340.

ECO 5362 (3). ECONOMIC GROWTH. Examines the facts and theories of economic growth, the economics of technological changes, and the role of governments and markets in promoting or impeding economic development. Prerequisite(s): Graduate standing or C- or better in the following: ECO 3301, 3302 and one from STAT 2301, 2331, or 4340.

ECO 5365 (3). PUBLIC FINANCE. Covers the theories of the public sector and the problems of market failures, externalities, and preference revelation. Specific government expenditure policies are analyzed. *Prerequisites:* Graduate standing or C- or better in the following: ECO 3301 and STAT 2301, 2331, or 4340. Recommended: ECO 3302.

ECO 5370 (3). COST-BENEFIT ANALYSIS. Introduces the tools for evaluating alternative methods of government intervention and develops a framework for evaluating costs and benefits of economic projects from the government's point of view. *Prerequisites:* Graduate standing or C- or better in the following: ECO 3301 and STAT 2301, 2331, or 4340.

ECO 5375/STAT 5375 (3). ECONOMIC AND BUSINESS FORECASTING. Presentation of methods used by economists to forecast economic and business trends and ways of evaluating the usefulness of these methods. Prerequisite(s): C- or better in the following: STAT 2301, 2331; or STAT 4340; or ITOM 2305.

ECO 5380 (3). COMPUTING FOR ECONOMICS. The primary objective is to teach programming skills. Programs to be reviewed could include SAS, R, STAT, SPSS, MATLAB, SQL, and Cognos. *Prerequisites:* Graduate standing or C- or better in the following: ECO 3301, 3302, and 5350; MATH 1309 or 1337; and ITOM 2305 or STAT 2301, 2331, or 4340.

ECO 5385/STAT 5380 (3). PREDICTIVE ANALYTICS FOR ECONOMISTS. A study of datamining techniques used by economists in the fields of applied economics, marketing, finance, and statistics. These techniques include classification methods, affinity analysis, and data reduction and exploration methods. *Prerequisites:* Graduate standing or C- or better in the following: ECO 5350, and ITOM 2305 or STAT 2301, 2331, or 4340.

ECO 5390 (3). MATHEMATICAL FINANCE: THEORY AND APPLICATIONS. A study of selected topics in finance (such as capital asset pricing, options and their valuation, analytics of credit derivatives) that combines theory with actual applications in the financial profession. *Prerequisite:* C- or better in ECO 5350, ECO 4378 or FINA 4326, ECO 4368 or FINA 4325, and one of the following: STAT 2301, 2331 or 4340.

ECO 6049 (0). GRADUATE FULL-TIME STATUS. Full-time status for M.A. students.

ECO 6101 (1). INTERNSHIP FOR MA STUDENTS. Eligible students will analyze economics problems appropriate to the interning firm or organization. This course can only be taken twice. *Prerequisite:* 3.0 GPA in economics classes and approval of faculty sponsor and Director of Graduate Studies.

ECO 6301 (3). INTERNSHIP FOR MASTER'S STUDENTS. With approval from a faculty sponsor and the director of graduate studies, allows eligible students to analyze economic problems appropriate to the interning firm or organization. Requires, in addition, at the end of the term, for the student to write a short report about his or her experience under the supervision of the faculty sponsor and the director of graduate studies. Can be taken only twice. *Prerequisite:* 3.000 GPA in economics classes.

ECO 6320 (3). APPLIED MONETARY THEORY AND POLICY. Covers operation of the banking sector, demand for money and control of its supply, and economic policymaking by the Federal Reserve and its importance for business decision-making at senior levels.

ECO 6330 (3). INTERNATIONAL ECONOMIC AND FINANCIAL ENVIRONMENT. Topics include foreign exchange markets operations, balance of payments adjustments, the international equilibrium system, and international aspects of economic policymaking. Employs mathematical modeling as appropriate and requires some research using methods of quantitative analysis. A student cannot receive credit for both ECO 6330 and 7332.

ECO 6331 (3). INTERNATIONAL TRADE. Surveys the major theories of world trade; analyzes the empirical evidence regarding these theories; and develops a framework for the analysis of trade policy instruments such as tariffs, quotas, and voluntary export restraints.

ECO 6333 (3). TRADE POLICY AND THE WORLD TRADING SYSTEM. Surveys the major institutions of world trade. Analyzes the political economy of trade policy in major trading countries in conjunction with the rules of world trade as defined by the agreements of the WTO and the agenda of the World Bank and the IMF.

ECO 6337 (3). EMERGING MARKETS. Applies economic analysis to the particular problems facing newly industrialized countries and countries in transition from centrally planned to market economies. Evaluates the role of the government as well as political and legal institutions for the economic success or failure of emerging markets.

ECO 6339 (3). TOPICS IN INTERNATIONAL ECONOMICS. Examines selected topics in international economics. Applies concepts and tools developed in the core international trade, finance, and policy courses to topics that are of current special interest and typically not covered in detail in the core courses.

ECO 6352 (3). APPLIED ECONOMETRIC ANALYSIS. This course is an extension of ECO 5350. It deals with statistical techniques that go beyond multiple regression analysis such as unit root testing, VAR modeling, innovation accounting, ARCH and GARCH analysis, logit and probit models, and count data, among other topics. The emphasis in this course is on extensive computer analysis or current economic topics using advanced econometric techniques. *Prerequisite:* ECO 5350 or permission of instructor.

ECO 6371 (3). INTRODUCTION TO QUANTITATIVE ECONOMICS. Prepares first-year Ph.D. students for the study of economic theory and econometrics. Covers topics in mathematics and probability that are widely applied in economic theory and econometrics.

ECO 6372 (3). ECONOMETRICS I. Theory and applications of statistical inference. Topics include probability and sampling, distribution theory, estimation, hypothesis testing and simple regression analysis. *Prerequisite:* ECO 6371 or equivalent.

ECO 6374 (3). ECONOMETRICS II. Econometric theory and methods with emphasis on regression analysis, maximum likelihood, quasi-maximum likelihood, GMM and instrumental variables, and specification testing. *Prerequisite:* ECO 6372.

ECO 6375 (3). ECONOMETRICS III. This course is intended to provide students with an introduction to advanced econometric techniques. Topics include limited dependent variables, panel data models, time series models, and resampling methods. *Prerequisite:* ECO 6374.

ECO 6381 (3). ECONOMIC ANALYSIS I. Analysis of basic models of the firm under purely competitive markets and monopolistic competition and simple consumer behavior models. The exposition employs basic mathematical tools such as calculus.

ECO 6382 (3). ECONOMIC ANALYSIS II. Analysis of basic national income models and various modifications of these models.

ECO 6383 (3). NEW APPROACHES TO MANAGERIAL ECONOMICS. Presents recent developments in information theory, multiproduct analysis, and principal-agent theory in order to show how these developments can be usefully applied in management decision-making.

ECO 6384 (3). MICROECONOMIC THEORY I. Basic theories of the firm under competitive and monopolistic conditions, and basic theory of consumer behavior.

ECO 6385 (3). MICROECONOMIC THEORY II. Extensions of topics covered in ECO 6384, including monopolistic competition, intertemporal optimization, behavior under uncertainty, and welfare economics. *Prerequisite:* ECO 6384.

ECO 6386 (3). MICROECONOMIC THEORY III. The course uses game theory to introduce students to the strategic aspects of some of the economic models developed in Microeconomic Theory I (ECO 6384) and Microeconomic Theory II (ECO 6385). Game theory also is used to formulate and solve new problems and analyze new economic models. *Prerequisite:* ECO 6385.

ECO 6387 (3). MICROECONOMIC THEORY IV. A variety of advanced topics in micro-economic theory that are not covered in the first three microeconomic theory courses – for example, stochastic methods, general equilibrium theory, welfare economics, and/or dynamic models. *Prerequisite:* ECO 6386.

ECO 6390 (3). REGIONAL ECONOMICS. An introduction to the theories of regional econom-ics and to the principal methods of regional analysis, including economic base, shift-share, input-output, econometric, and time series approaches.

ECO 6394 (3). MACROECONOMIC THEORY I. Basic theories concerning the determination of national income, employment, consumption, investment, and the general price level.

ECO 6395 (3). MACROECONOMIC THEORY II. The course provides theoretical and empirical underpinnings for macroeconomic models of the economy, with an emphasis on economic policy. *Prerequisite:* ECO 6394.

ECO 6396 (3). MACROECONOMIC THEORY III. This course will cover recent developments in the related areas of business cycle theory, monetary theory, asset pricing, and open economy macroeconomics. *Prerequisite:* ECO 6395.

ECO 6398 (3). RESEARCH AND/OR THESIS. By arrangement with the director of graduate studies. Eligible students undertake a research paper under the supervision of the faculty spon-sor and give an oral presentation of the paper. Note: Can be taken only once.

ECO 7004 (0). WORKSHOP FOR PREPROSPECTUS. This course analyzes research strategies of seminar speakers, faculty members, and students. Each student must present a paper directly related to his or her own prospectus.

ECO 7301 (3). READINGS IN ECONOMICS. Selected topics to complement the material in the Ph.D. program.

ECO 7302 (3). TOPICS IN ECONOMIC THEORY. Selected topics to complement the material in the Micro and Macro sequence.

ECO 7305 (3). MATHEMATICAL ECONOMICS. Applications of mathematical tools to various economic problems.

ECO 7306 (3). ADVANCED ECONOMIC THEORY. A variety of advanced topics in theory not covered in the core theory sequence.

ECO 7321 (3). LABOR ECONOMICS. Theories and empirical testing of hypotheses concerning the behavior of labor markets.

ECO 7322 (3). DEVELOPMENT OF HUMAN CAPITAL. Theories concerned with the invest-ment in human capital and its impact on economic growth.

ECO 7332 (3). INTERNATIONAL MACROECONOMIC THEORY AND POLICY. Concepts of balance of payments equilibrium; responses to disequilibrium; national economic policies affecting international payments; and past, present, and proposed international financial insti-tutions.

ECO 7333 (3). INTERNATIONAL TRADE. Determinants of regional specialization, gains from trade, theoretical analysis of factor movements, and of policies affecting the interspatial move-ment of goods and persons.

ECO 7334 (3). DEVELOPMENT ECONOMICS. Application of economic theory to developing economies, including population and household economies, agriculture, industry, international trade and factor movements, and investment project evaluation.

ECO 7341 (3). MARKET STRUCTURE. The study of the relationships between various market structures and their impacts on economic performance.

ECO 7342 (3). IMPERFECT MARKETS. The study of models of imperfect markets, antitrust laws and other trade regulations, and their effects on economic performance.

ECO 7351 (3). PUBLIC FINANCE. Theory and policy of taxation and public expenditures.

ECO 7352 (3). LOCAL PUBLIC FINANCE. Fiscal problems of states and metropolitan areas.

ECO 7361 (3). MONETARY ECONOMICS. Various theories on the role of money in economic systems, and the impact of the money market on economic aggregates and the price level.

ECO 7362 (3). MONETARY THEORY AND POLICY. Monetary institutions and the impact of monetary policies on the different segments of the economy.

ECO 7376 (3). MACROECONOMETRICS. Advanced topics in time series econometrics and finance.

ECO 7377 (3). MICROECONOMETRICS. Advanced topics in cross-section and panel data econometrics.

ECO 7378 (3). TOPICS IN ECONOMETRICS. Further current topics in theoretical and applied econometrics and finance. Topics will vary and reflect current student and faculty demand and instructors' interests.

ECO 8000 (0). RESEARCH. By arrangement with the director of graduate studies. *Prerequisite:* Department consent required.

ECO 8049 (0). GRADUATE FULL-TIME STATUS. Full-time status for Ph.D. students.

ECO 8100 (1). RESEARCH. By arrangement with the director of graduate studies. *Prerequisite:* Department consent required.

ECO 8101 (1). INTERNSHIP FOR PH.D. STUDENTS. By arrangement with the director of graduate studies. Eligible students analyze economic problems appropriate to the interning firm or organization. This course can be taken only twice. *Prerequisites:* 3.000 GPA in economics classes, 3rd-year or above Ph.D. student (earned 48 credit hours in the program), and approval of faculty sponsor and director of graduate studies.

ECO 8105 (1). RESEARCH. By arrangement with the director of graduate studies. *Prerequisite:* Department consent required.

ECO 8398 (3). DISSERTATION RESEARCH. Ph.D. candidates.

ENGLISH

DOCTOR OF PHILOSOPHY IN ENGLISH

Admission Requirements

Applicants must have either an undergraduate major in English or a related field or intensive study in the liberal arts with a solid background in literature in English, normally with a GPA of at least 3.500 for applicants to the Ph.D. program. They must also submit scores for the GRE general graduate school admission test. In addition, a statement of purpose for graduate study and three letters of recommendation are required, along with a writing sample in which an argument on a literary topic is sustained for about 15 pages. Proficiency in a second language is strongly recommended prior to matriculation in the program.

Degree Requirements

The Ph.D. in English requires 60 hours of credit, including classes, directed readings and dissertation hours. Core courses required of all students are English 6310 Advanced Literary Studies, English 6311 Survey of Literary Criticism and English 6312 Teaching Practicum. Students will also be required to complete workshops in teaching before the fall of their second year, in preparation for teaching undergraduate courses during that year and subsequent years of graduate study. In addition, students must take a minimum of six 7000-level seminars and will be expected to include in their program of study courses covering a wide range of fields. With permission, students may develop interdisciplinary approaches by taking up to two courses outside the English department.

Proficiency in a second language relevant to the student's course of study is required and should be demonstrated prior to the term in which written exams are scheduled. For certain dissertation topics, a second language may be required. Further requirements include written exams in the fall of the fourth year of study, a dissertation prospectus and an oral defense of the prospectus during the spring term of the fourth year. The M.A. degree will be awarded after completion of the written exams. (**Note:** For students entering with the M.A., 12 hours (one year of coursework) may with permission be waived and the schedule above adjusted accordingly.)

Students who remain in good standing – with a GPA of at least 3.000, demonstrated ability to do work of appropriate quality in seminars, continuous progress in the program and the recommendation of an advisory committee – will receive fellowship support for six years. They will teach two courses a year for four years beginning in the second year of study, with either their fifth or sixth year serving as a dissertation fellowship year with no course requirements or teaching responsibili-

ties. Exceptional students may be offered a one-year postdoctoral fellowship in the English Department after fulfilling all requirements for the Ph.D.

Students who leave the Ph.D. program after completing 30 hours and who have demonstrated proficiency in a second language will be allowed to take an exam in order to receive the M.A. degree. Any student who has demonstrated a second language proficiency and achieves a GPA of 3.000 in 24 hours of coursework during the first year of study but does not receive the positive recommendation of the advisory committee to continue on to Ph.D. candidacy will be awarded a terminal M.A. degree.

THE COURSES (ENGL)

ENGL 6049 (0). GRADUATE FULL-TIME STATUS. A noncredit, independent course for students continuing work on an M.A. thesis.

ENGL 6301 (3), 6302 (3). DIRECTED STUDIES. Directed readings in an area of the student's choice, to be approved by the director of graduate studies and the instructor.

ENGL 6310 (3). ADVANCED LITERARY STUDIES. Readings and practice in research methods and materials, bibliography and textual editing, and the history and practices of the profession. Required of all doctoral candidates.

ENGL 6311 (3). SURVEY OF LITERARY CRITICISM. Readings in criticism and theory from Aristotle through contemporary approaches. Required of all doctoral candidates. Advanced literary studies.

ENGL 6312 (3). TEACHING PRACTICUM. Course in pedagogy for English teachers at the university level. *Prerequisites:* Graduate Standing and appointment to a graduate fellowship in the English Department.

ENGL 6313 (3). RHETORICAL THEORY. Selected major figures and movements from 1920 to the present in the context of the history of rhetoric, of recent philosophy, and of literary theory.

ENGL 6320 (3). MEDIEVAL LITERATURE. Studies in medieval writers and literary-cultural history through c. 1500.

ENGL 6321 (3), ENGL 6322 (3). READINGS: MEDIEVAL LITERATURE. *Prerequisites:* To be approved by the director of graduate studies and the instructor.

ENGL 6330 (3). EARLY MODERN BRITISH LITERATURE. Studies in major British writers and literary cultural history from c. 1500–1775.

ENGL 6335 (3). EARLY MODERN AMERICAN LITERATURE. Studies in major American writers and literary-cultural history from the Discovery to c. 1750.

ENGL 6340 (3). BRITISH LITERATURE IN THE AGE OF REVOLUTIONS. Studies in major British writers and literary-cultural history from c. 1775–1900.

ENGL 6345 (3). AMERICAN LITERATURE IN THE AGE OF REVOLUTIONS. Studies in major American writers and literary-cultural history from c. 1750–1900.

ENGL 6350 (3). MODERN AND CONTEMPORARY BRITISH LITERATURE. Studies in major British writers and literary-cultural history after 1900.

ENGL 6360 (3). MODERN AND CONTEMPORARY AMERICAN LITERATURE. Studies in major American writers and literary cultural history after 1900.

ENGL 6370 (3). AFRICAN-AMERICAN LITERATURE. Studies in African American literary-cultural history from Colonial to Contemporary.

ENGL 6373 (3). HISPANIC-AMERICAN LITERATURE. Studies in Hispanic-American literature and cultural history from Colonial to Contemporary.

ENGL 6375 (3). SEX, GENDER, AND LITERATURE. Studies of the constructions of sexuality and gender in literature and culture, informed by historical study and current theoretical work in such fields as feminism, gender studies, and queer theory.

ENGL 6380 (3). HISTORY OF PRINT CULTURE. A literary historical survey of major developments, issues, formations, and institutions in British and/or American print culture.

ENGL 7311 (3). SEMINAR IN LITERARY THEORY. Advanced study of a topic in literary theory.

ENGL 7340 (3). SEMINAR IN BRITISH LITERATURE. Advanced study of a topic in British literature.

ENGL 7350 (3). SEMINAR IN AMERICAN LITERATURE. Advanced study of a topic in American literature.

ENGL 7370 (3). SEMINAR IN MINORITY LITERATURE. Advanced study of a topic in minority literature.

ENGL 7372 (3). SEMINAR IN TRANSATLANTIC LITERATURE. Advanced study of a topic in transatlantic literature.

ENGL 7374 (3). PROBLEMS IN LITERARY HISTORY. Advanced study of problems in literary history.

ENGL 7376 (3). SEMINAR: SPECIAL TOPICS. Advanced study of a literary topic that crosses traditional national boundaries.

ENGL 7398 (3), 7399 (3). DIRECTED READINGS. Directed readings in an area of the student's choice, to be approved by the director of graduate studies and the instructor.

ENGL 8049 (0). GRADUATE FULL-TIME STATUS. Graduate full-time status at the Ph.D. level.

ENGL 8105 (1). RESEARCH.

ENGL 8398 (3), 8399 (3). DISSERTATION. Research and writing of the dissertation.

HISTORY

MASTER OF ARTS IN HISTORY
Admission Requirements

Candidates must have a minimum of 12 term hours of advanced-level undergraduate work in history and make acceptable scores on the GRE general graduate school admission test. If English is not the applicant's native language, he or she must also take the TOEFL English language proficiency test and score 550 or higher. Students must submit a statement of purpose, an example of their written work and official transcripts. Three letters of recommendation are also required. Prospective students must submit their applications and all supporting documents by February 1. Students may begin the program only in the fall term.

The History Department normally requires a minimum 3.000 GPA overall and a 3.000 average in history for admittance to the M.A. program. Provisional admission is possible in exceptional cases.

Candidates must present evidence of competence in a language other than English, normally through two years of undergraduate study.

Degree Requirements

The master's degree is offered on two tracks: U.S. history and global history. Students in the U.S. history track will inaugurate their study in the context of global/comparative history and historiography, and they will develop their knowledge of the U.S. in graduate coursework and develop their specific interests in either two research papers or a thesis. Students in the global history track will begin their studies with an introduction to historiography and global and comparative history, followed by graduate coursework on the histories of various areas of the world, with specific topics developed in either two research papers or a thesis. Students may develop their interests by working with faculty knowledgeable in Classical-era history, medieval history, early modern and modern Europe, Russia, the Islamic world, sub-Saharan Africa, the Atlantic world, Latin America, East Asia and South Asia, as well as the various regions, periods and themes of the United States.

Each student will be assigned a major adviser. The major adviser and the History Department's director of graduate studies will work with each student to plan a specific course of study, which may include up to six credits in fields or departments outside the major field of study.

Students are required to earn 30 term hours of credit at the 5000 or 6000 level. A 6000-level course can include participation in an undergraduate major history course at the 3000 level, together with additional requirements that the instructor assigns. The required 30 credit hours are distributed below:

1. **HIST 6300** Historiography (three credits).
2. **HIST 6315** Global and Comparative History (three credits)
   or another departmental graduate course (three credits) specifically including comparative methods and theories.
3. Six courses (18 credits) at the 5000 or 6000 level in the History Department. Up to two courses in other departments, programs or schools (such as the Meadows School of the Arts or the Simmons School of Education and Human Development) may substitute as approved by the adviser and director of graduate studies. With approval, students following the U.S. history or global history tracks must take one course (but no more than two courses) in the alternate track.
4. **HIST 6398/6399** Thesis (six credits)
   or two additional graduate courses (six credits) can substitute for HIST 6398/6399 for those students in the **nonthesis** option.

Thesis Option. This option requires research and writing (i.e., students following this option have appropriate language skills, and they usually are en route to a Ph.D. degree). The student's adviser and two other professors form the three-person thesis and oral defense committee. A unanimous positive vote of the committee is necessary for the student to pass the oral examination. The thesis will demonstrate ability to define and analyze a historical problem, mastery of the pertinent historiography, and understanding of the methodological issues posed by the problem. It must also make significant use of primary source material.

Nonthesis Option. Two additional graduate courses (six credits) can substitute for HIST 6398/6399 for those students in the nonthesis option, and two research papers written in any course at the 5000 or 6000 level in the History Department can substitute for the thesis. Toward the end of their coursework, nonthesis students also take an oral examination over coursework, texts and other materials chosen for thematic coherence by their adviser and two other professors.

DOCTOR OF PHILOSOPHY IN HISTORY

Offered in conjunction with the William P. Clements Center for Southwest Studies

The History Department will award fellowships to all students accepted into the Ph.D. program. Funding is guaranteed for a period of five years for those whose work remains excellent. Fellowships include tuition, fees, health insurance and an $18,500 stipend for the academic year. In addition, the Clements Department of History has resources available for travel to professional conferences and to research archives.

Admission Requirements

All applicants for the Doctor of Philosophy in American history must have a bachelor's degree from an accredited college or university (students from abroad must hold the equivalent degree), with a minimum grade point average of 3.000, and have completed at least 12 advanced hours in history. Applicants must submit GRE graduate school admission test scores. If English is not the applicant's native language, he or she must also take the TOEFL English language proficiency test and score 550 or higher. Students must submit a statement of purpose, an example of their written work and official transcripts. Three letters of recommendation are also required. In addition, applicants should possess a foundation in Spanish sufficient to enable

them to pass an examination in translation from Spanish to English in September of the first year of study. Prospective students must submit their applications and all supporting documents by February 1.

Degree Requirements

Historiography. (three credits) In the first term, students will take HIST 6300, a historiography course that introduces them to the professional study of history. Readings vary from year to year, but cover a broad range of methodologies, perspectives and topics. The course also addresses historical writing, research techniques and historical sources.

American (U.S.) History. (24 credits) The major field in American history offers broad preparation. During the first two years, students take a sequence of four courses based upon intensive readings in American history (12 credits) from the era of Indian-European contact to the present, in order to acquire a mastery of the historiography of the field. The colloquia emphasize new problems, interpretations and debates vital to the study of American history. In addition, students take four other courses (12 credits) that may vary in both content and method; these take the form of graduate courses, graduate/senior-level reading seminars and/or individual directed readings. According to individual interests and requirements, one or two of these courses may be taken in another department.

The American Southwest, the U.S. West, Mexico, Hispanic America, the Borderlands, Mexican Americans and Native Americans. (12 credits) Students will develop a specialized field in history by taking a minimum of 12 credits of coursework in any combination of the above areas. For example, students who have completed a research seminar and colloquium on Mexico might take six additional credits in southwestern history (including Mexican-American and Native-American history); whereas students who have completed a seminar and colloquium in the Southwest might take six credits in Mexico/Hispanic America. Students may also wish to enrich their historical understandings by taking courses in other disciplines, such as anthropology, literature or religious studies. The courses should be chosen in consultation with the adviser. The program offers unusual opportunities for students to broaden and deepen their knowledge in their field. Resources include the Clements Center for Southwest Studies, with its symposia, research fellows and distinguished visitors; SMU's DeGolyer Library, a repository for a remarkable collection of books and manuscripts on Mexico and the Southwest; and the Meadows Museum of Art, which houses perhaps the world's finest collections of early modern Spanish art outside of Spain.

Global and Comparative History. (12 credits) The third field, in global and comparative history (12 credits), places the American experience in larger contexts by introducing students to the theoretical and conceptual frameworks that have guided advanced research in recent decades. The field also provides broad interdisciplinary perspectives on particular topics of global significance. Students begin this field of study by taking a colloquium (three credits) that explores influential methodologies and theoretical perspectives in global theory and comparative history, including the Annales school, world-system and dependency analysis, cross-cultural approaches, ecological history, postcolonial, and comparative methods. These are followed by three courses (nine credits) that treat individual topics and areas in global context.

Topics may include urbanization, migration, industrialization, revolution, slavery and gender roles.

Ph.D. Research Paper Requirement. Students will write two substantial research papers during the first two years of study. The goal is to produce significant work based on primary sources and of a quality comparable to an article in a scholarly journal.

Qualifying Examination. An oral examination on three fields of concentration will be taken in the spring term of the third year of study.

Teaching Practicum. (noncredit) A study of methods and content in the teaching of history is coupled with classroom teaching experience.

Dissertation. (three credits) Upon completion of the dissertation, a formal defense is conducted before an examination committee of four faculty members.

Teacher Preparation. Learning to be an effective instructor is a vital part of the Ph.D. program. The centerpiece of teacher preparation, to occur in the fourth year, is a mentoring program tailored to the interests and needs of each student. Students will work closely with a professor in the planning and teaching of an individual course. They will also meet with the professor to discuss topics related to teaching and participate in the teaching assistant seminar offered by SMU's Commission on Teaching and Learning and the Office of Research and Graduate Studies. Finally, students themselves will teach a course at SMU or a cooperating institution.

THE COURSES (HIST)

HIST 5305 (3). SEMINAR IN HISPANIC-AMERICAN BORDERLANDS. Study of the historiography of the social interactions among varied peoples along the native, colonial, and national borders of Hispanic America, particularly those borders shaping the United States.

HIST 5309 (3). SEMINAR IN NORTH AMERICAN BORDERLANDS. Study of the historiography of the social interactions among varied peoples along the native, imperial, and national borders of the North American continent, particularly those shaping the United States.

HIST 5310 (3). SEMINAR ON THE AMERICAN WEST. Introduction to the historiography of the American West and its contested meanings.

HIST 5312 (3). SEMINAR ON NATIVE-AMERICAN HISTORY. Introduction to the historiography of Native Americans in United States history.

HIST 5330 (3), 5331 (3). SEMINAR IN MEXICAN-AMERICAN HISTORY. An examination of the growing historiography on Mexican-Americans that focuses on the relationship between their ethnic identity and the Southwest. (Also listed under Latin-American History.)

HIST 5338 (3). 20TH-CENTURY ENGLAND. A study of the decline and fall of 20th-century England.

HIST 5340 (3), 5341 (3). SEMINAR IN AMERICAN HISTORY. Intensive examination of major topics in American history.

HIST 5344 (3). AMERICAN CULTURAL HISTORY. Considers the histories of cultural institutions, objects, ideas and practices. Explores an array of representative cultural conflicts and obsessions that have marked American history.

HIST 5345 (3). INDUSTRIALISM AND REFORM IN U.S., 1877–1919. An investigation of life in Gilded Age and Progressive-period America including industrialization, urbanization and social conflict.

HIST 5364 (3). THE CITY OF GOD IN ITS MILIEU. An examination of St. Augustine's masterpiece, along with several of its models and analogues from the Greco-Roman and Hebrew traditions.

HIST 5367 (3). RUSSIA FROM THE KIEVAN ERA TO 1881. Surveys the development of state and society from the beginnings of history in East Slavic territory through the era of the Great Reforms.

HIST 5370 (3). SEMINAR IN FRENCH HISTORY. An examination of key historians and of the several modes of historiographical writing that shape our vision of pre-modern France.

HIST 5371 (3). THE FRENCH REVOLUTION AND NAPOLEON, 1789–1815. The nature and causes of revolution, the French Revolution, and the career of Napoleon Bonaparte.

HIST 5374 (3). RECENT EUROPEAN HISTORY: 1918 TO THE PRESENT. Considers two attempts to revive Europe from the effects of disastrous world wars, as well as the sources of new vigor it has found in the past 30 years.

HIST 5375 (3). EUROPE IN THE AGE OF LOUIS XIV. The Scientific Revolution, the culture of the Baroque, and development of the European state system under the impact of the Thirty Years' War and the wars of Louis XIV.

HIST 5376 (3). EUROPE AGE OF ENLIGHTENMENT, 1715–1789. A study of society and culture in 18th-century Europe, Enlightenment philosophies, rococo art, the classical age of music, Enlightened Despotism, and the coming of the French Revolution.

HIST 5377 (3). HISTORY OF THE US AND THE COLD WAR.

HIST 5382 (3). SEMINAR IN LATIN-AMERICAN HISTORY. Intensive examination of major topics in Latin-American history.

HIST 5387 (3). SEMINAR IN AFRICAN HISTORY. Intensive examination of special topics in African history.

HIST 5390 (3). SEMINAR IN RUSSIAN HISTORY. This advanced seminar covers selected topics in late Imperial and Soviet history. *Prerequisites:* HIST 3340 or 3341, or permission of instructor.

HIST 5391 (3). ATHENIAN DEMOCRACY. This seminar examines the development of democratic government in Athens and study the functioning of that government in peace and in war.

HIST 5392 (3). SEMINAR IN EUROPEAN HISTORY. Intensive examination of major topics in European history. *Prerequisite:* Junior standing or permission of instructor.

HIST 5395 (3). A HISTORY OF IRAN. This seminar aims to introduce students to the history, cultures, and peoples of Iran and familiarize them with this complex and increasingly important country.

HIST 5397 (3). SEMINAR IN ASIAN HISTORY. Intensive examination of major topics in Asian history.

HIST 6000 (0). RESEARCH. Investigation in primary historical sources.

HIST 6049 (0). GRADUATE FULL-TIME STATUS. After student has completed all coursework toward degree. This course may be taken for full-time status while doing research and preparation of master's thesis. Approval of graduate director required.

HIST 6300 (3). HISTORIOGRAPHY. Required of all candidates, this course is designed to familiarize graduate students with the tools of historical research, the discipline's methodology, and the problems of historical writing.

HIST 6301 (3). COLLOQUIUM: EARLY AMERICA. A readings course covering the major problems in American history between 1500 and 1812.

HIST 6302 (3). COLLOQUIUM: AMERICAN HISTORY 1812–77. A readings course covering the major problems in American history from 1814–1877.

HIST 6303 (3). COLLOQUIUM: LATE 19TH/EARLY 20TH-CENTURY AMERICA. A reading course covering the major problems in American history between 1877 and 1932.

HIST 6304 (3). MODERN AMERICA 1929–PRESENT. A reading course that covers major issues in modern American history from the onset of the Great Depression roughly to the present day.

HIST 6305 (3). COLLOQUIUM: HISPANIC SOUTHWEST. This readings seminar introduces graduate students to ways that scholars have interpreted the Southwest's Hispanic past under Spain and Mexico, and the ongoing Hispanic presence in the region after 1848.

HIST 6308 (3). SEMINAR IN AMERICAN HISTORY. An examination of major topics in American history.

HIST 6309 (3). SEMINAR IN NORTH AMERICAN BORDERLANDS. Study of the historiography of the social interactions among varied peoples along the native, imperial, and national borders of the North American continent, particularly those shaping the United States.

HIST 6310 (3). SEMINAR ON THE AMERICAN WEST. Introduction to the historiography of the American West and its contested meanings.

HIST 6312 (3). SEMINAR ON NATIVE AMERICAN HISTORY. Introduction to the historiography of Native Americans in United States history.

HIST 6315 (3). GLOBAL/COMPARATIVE HISTORY. A colloquium exploring various techniques of research and analysis used by contemporary scholars to investigate major historical problems from a global or comparative perspective.

HIST 6316 (3). COMPARISONS OF WORLD-HISTORICAL BORDERLANDS. A comparative study of borderlands in distinct regions.

HIST 6317 (3). FRONTIERS OF SPANISH HISTORY, 218 BC–AD 1492. Multicultural interaction across several kinds of frontier in pre-modern Spanish history, from the Second Punic War to the unifying reign of the Catholic Kings.

HIST 6321 (3). SEMINAR: GLOBAL/COMPARATIVE HISTORY. An examination of major topics in global/comparative history.

HIST 6322 (3), 6323 (3). READINGS IN HISTORY. Directed readings on specific problems or themes formulated by the student with faculty guidance.

HIST 6325 (3). READINGS: NEW SPAIN AND MEXICO. A readings seminar designed to address main themes and historiographical issues in the history of Mexico since the 16th century. *Prerequisite:* Reading knowledge of Spanish.

HIST 6326 (3). MEXICAN-AMERICAN HISTORIOGRAPHY. An examination of the historiography on Mexican Americans, focusing on the relationship between their ethnic identity and the Southwest.

HIST 6327 (3). RESEARCH ON THE SOUTHWEST AS A REGION.

HIST 6332 (3). PROBLEMS IN US FOREIGN RELATIONS. Major problems in American foreign relations from the revolutionary era to the present.

HIST 6343 (3), 6344 (3). PROBLEMS IN MODERN GERMAN HISTORY. Selected issues in the history of the German-speaking peoples from the Reformation to World War II.

HIST 6347 (3), 6348 (3). PROBLEMS IN EUROPEAN HISTORY. Directed readings.

HIST 6349 (3), 6350 (3). PROBLEMS IN MEDIEVAL HISTORY. Directed readings and analyses of selected medieval documents and secondary bibliography.

HIST 6352 (3). PROBLEMS IN MEDIEVAL SPANISH HISTORY. Directed readings and analyses of selected medieval Spanish documents and secondary bibliography.

HIST 6353 (3), 6354 (3). PROBLEMS IN SPAIN-PORTUGAL HISTORY. Social, cultural, and political themes characteristic of the Iberian peninsula from Roman times to the present.

HIST 6355 (3). PROBLEMS IN LATIN-AMERICAN HISTORY. Selected topics in Latin-American history from the age of exploration and discovery to the mid-20th century.

HIST 6356 (3). PROBLEMS IN LATIN-AMERICAN HISTORY. Selected topics in Latin-American history from the age of exploration and discovery to the present.

HIST 6357 (3). PROBLEMS IN MEXICAN HISTORY. Major themes in the evolution of Mexican society and the place of Mexico in the history of the Americas.

HIST 6363 (3). THE AMERICAN CIVIL WAR AND RECONSTRUCTION. The nature, causes, and impact of the American Civil War, with emphasis upon current historiographical issues.

HIST 6370 (3), 6371 (3). COLLOQUIUM: EUROPEAN HISTORY. A readings course covering the major problems in European history. Contact the department for more information.

HIST 6372 (3). THE APOTHEOSIS OF CAESAR AND THE FALL OF THE ROMAN REPUBLIC. This research seminar investigates the fall of the Roman Republic and the rise of the Empire as a direct consequence of the life and death of Julius Caesar

HIST 6385 (3), 6386 (3). PROBLEMS IN BRITISH HISTORY. Selected issues in British history.

HIST 6387 (3). TOPICS IN AFRICAN HISTORY. Intensive examination of special topics in African history.

HIST 6391 (3). TOPICS IN SOUTH ASIAN HISTORY. Intensive examination of special topics in South Asian history.

HIST 6392 (3). TOPICS IN CHINESE HISTORY. Intensive examination of special topics in Chinese history.

HIST 6393 (3) TOPICS IN MIDDLE EASTERN HISTORY. Intensive examination of special topics in Middle Eastern history.

HIST 6398 (3), 6399 (3). THESIS. Research and writing of the M.A. thesis with guidance from the student's thesis director.

HIST 7000 (0). TEACHER PREPARATION. A non-credit course for the teaching component of the doctoral program in which the student will work closely with a professor in the planning and teaching of an individual course.

HIST 7398 (3), 7399 (3). RESEARCH.

HIST 8049 (0). GRADUATE FULL-TIME STATUS. Graduate full-time status at the Ph.D. level.

HIST 8398 (3), 8399 (3). DISSERTATION. Dissertation for the Ph.D. in history.

MATHEMATICS

Professor Douglas Reinelt, **Department Chair**

Professors: Alejandro Aceves, Vladimir Ajaev, Richard Haberman, Thomas Hagstrom, Peter Moore, Douglas Reinelt, Johannes Tausch. **Associate Professors:** Thomas Carr, Sheng Xu, Yunkai Zhou. **Assistant Professors:** Andrea Barreiro, Weihua Geng, Scott Norris, Daniel Reynolds, Benno Rumpf, Brandilyn Stigler. **Senior Lecturers:** Adriana Aceves, Judy Newell. **Emeritus Professors:** Robert Davis, Ian Gladwell, Mogens Melander, Montie Monzingo, George Reddien, Lawrence Shampine, Richard Williams.

The Department of Mathematics offers M.S. and Ph.D. degrees in computational and applied mathematics.

ADMISSION REQUIREMENTS

Minimum requirements for admission to the graduate programs in mathematics are 18 hours in college-level mathematics courses beyond first- and second-year calculus (including differential equations, linear algebra and statistics). Undergraduate courses in numerical methods, partial differential equations, physics and computer science are particularly helpful, as would be familiarity with programming, specifically MATLAB. There is no second language requirement.

Both the M.S. and Ph.D. degree programs require GRE graduate school admission test scores (general exam only). Three letters of recommendation are required.

Financial aid is available in the form of teaching assistantships, which include the waiver of tuition and fees.

DEGREE OF MASTER OF SCIENCE

A total of 33 term hours of graduate course credit beyond the bachelor's degree (usually 11 graduate courses) are required for the master's degree, including at least 18 hours at the 6000 level (at least 12 of these hours to be taken in the Department of Mathematics). Candidates must complete two courses in computational mathematics (MATH 5315, 6316) and two courses in differential equations and their applications (MATH 5334, 6324). Of the remaining courses, a maximum of three approved courses can be taken from outside the department. An oral examination is required for graduation.

DEGREE OF DOCTOR OF PHILOSOPHY

To qualify for the Ph.D. degree, the student must fulfill the following requirements:

1. Satisfy all curricular requirements as specified by the departmental faculty.
2. Pass comprehensive written and oral examinations.
3. Complete a minimum of three years of graduate academic work, including at least one year in full-time residence on the SMU campus or at a research facility approved by the departmental faculty and the dean of the graduate program.
4. Write and make a successful defense of a dissertation.

Course requirements for the Ph.D. are flexible but must include the equivalent of 51 term hours of graduate course credit beyond the bachelor's degree (excluding dissertation work) and at least six credit hours of dissertation. The Ph.D. qualifying examination consists of a written examination based on individualized concentration courses in computational and applied mathematics and presentation of a paper (usually based on a reading course with a faculty member).

THE COURSES (MATH)

MATH 5315 (3). INTRODUCTION TO NUMERICAL ANALYSIS. Numerical solution of linear and nonlinear equations, interpolation and approximation of functions, numerical integration, floating-point arithmetic, and the numerical solution of initial value problems in ordinary differential equations. Student use of the computer is emphasized. *Prerequisites:* C- or higher in MATH 3315/CSE 3365 and MATH 2343; a programming course (e.g., FORTRAN or MATLAB).

MATH 5316 (3). INTRODUCTION TO MATRIX COMPUTATION. The efficient solution of dense and sparse linear systems, least squares problems, and eigenvalue problems. Elementary and orthogonal matrix transformations provide a unified treatment. Programming is in MATLAB with a focus on algorithms. *Prerequisites:* C- or better in MATH 3315 (CSE 3365), 3353.

MATH 5331 (3). FUNCTIONS OF A COMPLEX VARIABLE. Complex numbers, analytic functions, mapping by elementary functions, and complex integration. Cauchy-Goursat theorem and Cauchy integral formulas. Taylor and Laurent series, residues, and evaluation of improper integrals. Applications of conformal mapping and analytic functions. *Prerequisite:* C- or higher in MATH 3337.

MATH 5332 (3). WAVELET TRANSFORMS. A mathematical introduction to sampling; data compression; multiresolution analysis; Fourier analysis; and wavelet theory, including biorthogonal wavelets and spline wavelets. *Prerequisites:* C- or higher in MATH 3315 (CSE 3365), 3337, 3353.

MATH 5334 (3). INTRODUCTION TO PARTIAL DIFFERENTIAL EQUATIONS. Elementary partial differential equations of applied mathematics: heat, wave, and Laplace's equations. Topics include physical derivations, separation of variables, Fourier series, Sturm-Liouville eigenvalue problems, and Bessel functions. *Prerequisite:* C- or higher in MATH 3337.

MATH 5353 (3). LINEAR ALGEBRA. Spectral theory of Hermitian matrices, Jordan normal form, Perron-Frobenius theory, and convexity. Applications include image compression, Internet page ranking methods, optimization, and linear programming. *Prerequisite:* C- or better in MATH 3353.

MATH 6110 (1). MATHEMATICS RESEARCH. Independent research project in the fields of computational and applied mathematics, under the direction of a faculty member.

MATH 6210 (2). MATHEMATICS RESEARCH. Independent research project in the fields of computational and applied mathematics, under the direction of a faculty member.

MATH 6310 (3). MATHEMATICS RESEARCH. Independent research project in the fields of computational and applied mathematics, under the direction of a faculty member.

MATH 6311 (3). PERTURBATION METHODS. Solving differential equations with a small parameter by asymptotic techniques: weakly nonlinear oscillators, perturbed eigenvalue problems, boundary layers, method of multiple scales, WKBJ method. *Prerequisite:* MATH 2343 (MATH 5334 also recommended).

MATH 6312 (3). ADVANCED ASYMPTOTIC AND PERTURBATION METHODS. Topics include strongly nonlinear and slowly varying oscillators, multiple scales and matched asymptotic expansions applied to partial differential equations, asymptotic evaluation of integrals and transforms, stationary phase, steepest descents, and applications. *Prerequisites:* MATH 5334, 6311.

MATH 6313 (3). ASYMPTOTIC EXPANSIONS AND INTEGRALS. Fourier and Laplace transforms. Asymptotic expansions with applications to integrals. Topics include integration by parts, Watson's lemma, Laplace's method, stationary phase, steepest descents, uniform expansions. Applications and examples from physical problems. *Prerequisite:* MATH 5331.

MATH 6315 (3). NUMERICAL SOLUTION OF PARTIAL DIFFERENTIAL EQUATIONS. Finite difference methods for elliptic, parabolic, and hyperbolic problems in partial differential equations. Stability, consistency, and convergence results are given. Attention is given to computer implementations. *Prerequisites:* MATH 5315/CSE 5365/CSE 7365 and MATH 5334.

MATH 6316 (3). NUMERICAL LINEAR ALGEBRA. The efficient solution of dense and sparse linear systems, least squares problems and eigenvalue problems. Elementary and orthogonal matrix transformations provide a unified treatment. In addition to algorithm development, the

course will emphasize the theory underlying the methods. *Prerequisites:* MATH 5315 or CSE 7365 or consent of instructor.

MATH 6319 (3). FINITE ELEMENT ANALYSIS. Finite element method for elliptic problems, theory, practice and applications, finite element spaces, curved elements and numerical integration, minimization algorithms and iterative methods. *Prerequisite:* MATH 5315 or CSE 7365, and MATH 6316 or CSE 7366.

MATH 6320 (3). ITERATIVE METHODS. Matrix and vector norms, conditioning, iterative methods for the solution of larger linear systems and eigenvalue problems. Krylov subspace methods. Other topics to be chosen by the instructor. *Prerequisites:* MATH 5316 and some programming experience.

MATH 6321 (3). NUMERICAL SOLUTION OF ORDINARY DIFFERENTIAL EQUATIONS. Numerical methods for initial value problems and boundary value problems for ordinary differential equations. Emphasizes practical solution of problems using MATLAB. *Prerequisites:* MATH 2343, MATH 5315.

MATH 6324 (3). INTRODUCTION TO DYNAMICAL SYSTEMS. Nonlinear ordinary differential equations: equilibrium, stability, phase-plane methods, limit-cycles, and oscillations. Linear systems, diagonalization. Periodic coefficients (Floquet theory), Pioncare map. Difference equations (maps), period doubling, bifurcations, chaos. *Prerequisites:* MATH 2343 and 3353.

MATH 6325 (3). DYNAMICAL SYSTEMS AND CHAOS. Nonlinear differential equations. Stability and bifurcation theory of ODEs and maps. Forced oscillators. Subharmonic resonances. Melnikov criterion for chaos. Lorenz system. Center manifolds and normal forms. Silnikov's example. *Prerequisite:* MATH 5325.

MATH 6333 (3). PARTIAL DIFFERENTIAL EQUATIONS. Method of eigenfunction expansion for nonhomogeneous problems. Green's functions for the heat, wave, and Laplace equations. Dirac delta functions, Fourier and Laplace transform methods, method of characteristics. *Prerequisite:* MATH 5334.

MATH 6336 (3). FLUID DYNAMICS. Preliminaries, concepts from vector calculus. The transport theorem, the Navier-Stokes and other governing equations. Dynamical similarity and Reynolds number. Vorticity theorems. Ideal and potential flow. The influence of viscosity and the boundary layer approximation. *Prerequisite:* MATH 3337.

MATH 6337 (3). REAL AND FUNCTIONAL ANALYSIS. Topics include continuous functions, metric and normed spaces, Banach spaces, Hilbert spaces, distributions and the Fourier transform, measure theory and function spaces, differential calculus, and variational methods. *Prerequisite:* MATH 4338 or approval of instructor.

MATH 6341 (3). LINEAR-NONLINEAR WAVES. The mathematical theory of linear and nonlinear waves. Applications from water waves, traffic flow, gas dynamics, and various other fields. Topics include nonlinear hyperbolic waves (characteristics, breaking waves, shock fitting, Burger's equation) and linear dispersive waves (method of stationary phase, group velocity, wave patterns). *Prerequisite:* MATH 5334.

MATH 6342 (3). SOLITONS AND THE INVERSE TRANSFORM. Nonlinear dispersive waves. The use of the direct and inverse scattering of the Schrodinger eigenvalue problem to obtain solitons and multiply-interacting solitons for the Korteweg-de Vries equation. Also the Zakharov-Shabat eigenvalue problem for the nonlinear Schrodinger (envelope solitons) and sine-Gordon (kinks) equations. *Prerequisite:* MATH 6341.

MATH 6346 (3). ADVANCED FLUID DYNAMICS. Topics include surface waves in shallow and deep water, sound waves, Stokes flow equations and lubrication-type models, spreading of droplets, and coating flows. Other topics are chosen from dynamics of bubbles, film drainage, electroosmotic flow, electrowetting on dielectric, turbulence, and fluid mechanics of swimming and flying. *Prerequisite:* MATH 6336/ME 5336/ME 7336.

MATH 6347 (3). VORTEX DYNAMICS. Vorticity transport equation. Rectilinear vorticies as Hamiltonian system. Elliptical vortices-moment model. Vortex rings. Swirling flows. Vortices near boundaries. Pairing. Reconnection. *Prerequisites:* MATH 5331, MATH 6324, and MATH 5315 or CSE 7365. (MATH 6336 useful but not essential)

MATH 6348 (3). TURBULENCE IN FLUIDS. A mathematical introduction to turbulence – the last great problem of classical physics according to Feynman. Kolmogorov's 1941 theory,

closures theories, shell models, similarity theories. *Prerequisites:* MATH 6324, MATH 5315 or CSE 7365, MATH 5331, MATH 5332 (or MATH 5334). (MATH 6336 useful, not necessary)

MATH 6350 (3). MATHEMATICAL MODELS IN BIOLOGY. The mathematical analysis and modeling of biological systems, including biomedicine, epidemiology and ecology. *Prerequisite:* Consent of instructor.

MATH 6360 (3). COMPUTATIONAL ELECTROMAGNETICS. Numerical methods for electromagnetics, with emphasis on practical applications. Numerical discretizations covered include the method of moments, finite differences, finite elements, boundary elements, and fast multipole methods. *Prerequisites:* EE 7330 or MATH 5334 and proficiency in one computer language (e.g. FORTRAN) or permission of the instructor.

MATH 6361 (3). FUNDAMENTALS OF MULTIPHASE FLOWS IN POROUS MEDIA. Flow and transport equations for single-phase, two-phase, black oil, compositional, and thermal flows in porous media. Introduction to conservation equations of mass and energy and Darcy's law. *Prerequisite:* MATH 5334

MATH 6362 (3). NUMERICAL RESERVOIR SIMULATION. Numerical simulation of flow and transport problems for single-phase, two-phase, black oil, compositional, and thermal flows in porous media. Introduction of finite difference and finite element methods and linear solvers to reservoir simulation. requisites: MATH 5315 or CSE 7365, MATH 6316 or CSE 7366, and MATH 5334.

MATH 6370 (3). PARALLEL SCIENTIFIC COMPUTING. An introduction to parallel computing in the context of scientific computation. *Prerequisites:* MATH 5315 or CSE 7365 and MATH 6316 or CSE 7366.

MATH 6371 (3). NUMERICAL BIFURCATION THEORY. A survey of basic nonlinear phenomena is given, including simple bifurcations, Hopf and Turing bifurcations, and bifurcation of periodic orbits in differential equations. *Prerequisites:* MATH 6337 or instructor approval.

MATH 6391 (3). TOPICS IN APPLIED MATHEMATICS. Selected topics in the application of mathematical analysis to such fields as differential, integral, and functional equations; mechanics; hydrodynamics; mathematical biology; and economics. *Prerequisite:* Permission of instructor.

MATH 6395 (3). TOPICS IN COMPUTATIONAL MATHEMATICS. Selected topics of current interest. For example: numerical bifurcation theory, iterative methods for linear systems, domain decomposition and multigrid methods, numerical multidimensional integration, and numerical methods for multibody problems. *Prerequisite:* Permission of instructor.

MEDIEVAL STUDIES

Associate Professor Bonnie Wheeler, **Director**

MASTER OF ARTS IN MEDIEVAL STUDIES

The M.A. in medieval studies is an interdisciplinary cultural studies degree program based in Dedman College and designed to encourage students to acquire not only strong disciplinary training but also broadly based sensitivity to medieval cultures, contexts and intellectual currents. It draws upon courses in the Western Middle Ages as well as upon Byzantine and Islamic subjects offered by other departments in Dedman College, the Meadows School of the Arts and the Perkins School of Theology. It may be taken as a terminal degree. It is also intended to serve students interested in pursuing a Ph.D. degree in a medieval field, since it will enable such students to gain a broad interdisciplinary acquaintance with the Middle Ages before narrowing their work to a specialized field at the doctoral level.

Admission Requirements. Prospective students will apply through the Office of Research and Graduate Studies and must meet the requirements outlined by that office.

Degree Requirements. Students must earn 30 term hours, with the following requirements:

1. Twenty-four hours to be taken in graduate-level courses and seminars, to be distributed in at least three broad subject areas in medieval studies: a) history, b) literature, and c) music and visual arts. No more than 12 hours and no less than three hours may be applied in each area. Students are encouraged to take courses in philosophy, religious studies and church history when available.
2. Three hours in nonmedieval courses may be taken in the student's major disciplinary area of concentration with approval of the director of medieval studies.
3. Competence, demonstrated by examination, in intermediate Latin and one other world or medieval language.
4. A thesis carrying six hours of credit linking materials and methods of more than one discipline, to be guided by a committee of the director of Medieval Studies and professors from the two major subject areas covered by the thesis.

Curriculum. Competence in intermediate Latin and one other world or medieval language must be demonstrated by examination. The Dallas Medieval Consortium makes it possible for SMU students to enroll in regularly offered advanced Latin courses at the University of Dallas. A model program for a student interested particularly in historical discourse might include HIST 5364, 5370, 6385 and 5378. In addition, the student might take ENGL 6324, ARHS 6327, 6329 and HX 8321. A student primarily interested in literary discourse might take ENGL 6320, 6321, 6322; HIST 5364, 5352; ARHS 6322, 6324; and HX 8321. A student primarily interested in the visual arts might put together a very coherent program using ARHS 6322, 6324, 6325, 6320 in combination with HIST 6350, 5364; ENGL 6320; and HX 8308. Regularly offered courses include the following:

THE COURSES

Dedman College Courses

ENGL 6320 Medieval Literature (medieval literary-cultural history through 1500)
ENGL 6321, 6322 Readings in Medieval Literature
FREN 5320 Literary Periods (when applicable)
FREN 5370 Seminar in French Literature (when applicable)

HIST 5364 City of God: Utopias in Christian Tradition
HIST 5370 Seminar in French History: History of France I (Paleolithic–1461)
HIST 5378 Medieval Renaissances
HIST 6349, 6350 Problems in Medieval History
HIST 6352 Problems in Medieval Spanish History
HIST 6385 Problems in British History (when applicable)
MDVL 5301, 5302, 5398, 5399 Independent Studies
MDVL 6398, 6399 Thesis
SPAN 5310 Spanish Literature Before 1700

Meadows School of the Arts Courses

ARHS 5320 Seminar in Medieval Art (topic TBA)
ARHS 5322 Seminar in Convivencia
ARHS 6320 Medieval Art and Architecture
ARHS 6324 Art and Cultures of Medieval Spain
ARHS 6322 Islamic Art and Architecture
ARHS 6323 Romanesque Art and Architecture
ARHS 6324 Art and Cultures of Medieval Spain
ARHS 6325 The Gothic Cathedral
ARHS 6328 Byzantine Art and Architecture
ARHS 6399 The Jewish-Christian Dialogue in Art and Text
MUHI 6309 Seminar in Medieval and Renaissance Musical Styles
MUHI 6331 History of Theory From the Greeks to the 15th Century
MUHI 6362 Analysis of Pretonal Music
MUHI 6392 Directed Studies in Music History: The Middle Ages

Perkins School of Theology Courses

HX 7342 Passion-ate Spirituality
HX 8308 Varieties of Medieval Theology
HX 8321 History of Christian Doctrine
HX 8357 Monotheistic Mysticism
HX 8359 Art and Devotion in Medieval Spain
HX 8387 Readings in Spanish Mysticism

Medieval Studies Courses (MDVL)

MDVL 5301 (3), 5302 (3), 5398 (3), 5399 (3). INDEPENDENT STUDIES. Research and writing in medieval fields on special topics at the forefront of current intellectual interest.

MDVL 6049 (0). GRADUATE FULL-TIME STATUS. A noncredit, independent course for students continuing work on an M.A. thesis.

MDVL 6308 (3). TOWNS, TRADE, AND REVOLUTION IN THE MEDIEVAL WEST. This course investigates the medieval city from its origins through 1500. Within a chronological framework, we will explore urban populations and institutions, commerce, universities, guilds, and the Black Death.

MDVL 6318 (3). BYZANTINE HISTORY 285–1453. This course traces the outlines of Byzantine History from 285–1453. Topics include the changing structure of the family, gender roles, ruler and ruled, and town and country.

MDVL 6398 (3), 6399 (3). THESIS. Research and writing the M.A. thesis with guidance from the student's thesis director.

PHYSICS

Professor Fred Olness, **Department Chair**

Professors: Fred Olness, Ryszard Stroynowski, Jingbo Ye. **Associate Professors:** Thomas Coan, Kent Hornbostel, Robert Kehoe, Pavel Nadolsky, Roberto Vega. **Assistant Professors:** Jodi Cooley-Sekula, Stephen Sekula. **Senior Lecturers:** Simon Dalley, Randall Scalise. **Emeritus Professors:** Jeff Chalk, George Crawford, Vigdor Teplitz.

MASTER OF SCIENCE IN PHYSICS

Students enrolled in the M.S. in physics program in physics must complete either 33 term hours of approved graduate coursework or 30 term hours of courses, including a research thesis. Every student's degree plan must contain at least 18 term hours of graduate-level work in physics, including a prescribed sequence of three courses. Students also must pass an examination on the coursework and, if applicable, defend their thesis.

DOCTOR OF PHILOSOPHY IN PHYSICS

Candidates for the Ph.D. degree must satisfactorily complete eight specified core courses, four elective graduate courses in physics, a minimum of 12 credit hours of research and a dissertation. Students also must pass a comprehensive doctoral examination, conducted by the dissertation committee, near the end of the second year of the program. Upon passing this examination and with completion of the required coursework, the student formally is classified as a Ph.D. candidate.

THE COURSES (PHYS)

PHYS 5161 (1). SELECTED TOPICS IN PHYSICS FOR HIGH SCHOOL TEACHERS.

PHYS 5337 (3). INTRODUCTION TO SOLID STATE PHYSICS. Crystal lattices and the reciprocal lattice, the free-electron model of metals, crystal binding, lattice vibrations phonons, thermal properties of solids, and energy bands in solids.

PHYS 5380 (3). CONCEPTS OF EXPERIMENTAL PARTICLE PHYSICS. Principles of elementary particle physics and the experiments by which one learns the laws obeyed by these particles, with reading of scientific papers. *Prerequisite:* PHYS 3305 or equivalent. PHYS 5382 is recommended.

PHYS 5382 (3). INTRODUCTION TO QUANTUM MECHANICS. A study of the development of quantum theory, including blackbody radiation, the Bohr atom, and the photoelectric effect. Also, wave mechanics and matrix mechanics approaches, and a brief introduction to the Dirac formalism. Solutions to the Schrodinger equation for a variety of one-dimensional problems and for the hydrogen atom are discussed. *Prerequisites:* PHYS 3305, MATH 3353.

PHYS 5383 (3). ADVANCED QUANTUM MECHANICS. Applications and approximation methods in quantum mechanics. Applications to laser physics, solid-state physics, molecular physics and scattering are included. *Prerequisite:* PHYS 5382.

PHYS 5384 (3). QUANTUM PHYSICS II. Quantum statistics; band theory of solids; superconductivity, magnetism, and critical phenomena; nuclear physics; physics of elementary particles. *Prerequisite:* PHYS 5383 or permission of instructor

PHYS 5393 (3). ELECTROMAGNETIC WAVES AND OPTICS. Theory and applications of electromagnetic wave radiation, propagation, and scattering. Geometrical and physical optics. Guided waves. Lasers. Coherent optics, interferometry, and holography. *Prerequisite:* PHYS 4392, equivalent, or consent of instructor.

PHYS 5395 (3). INTRODUCTION TO ELEMENTARY PARTICLES. Modern theories of elementary particles, including relativistic kinematics, Feynman diagrams, quantum electrodynamics, quarks, weak interactions, and gauge theories. *Prerequisite:* PHYS 5383.

PHYS 5398 (3). APPLICATIONS OF QUANTUM MECHANICS. The principles of quantum theory are used in a study of radiative transition in atoms and molecules, quantum statistics, band theory of solids, semiconductor theory, and laser physics. *Prerequisite:* PHYS 5382 or equivalent.

PHYS 6049 (0). GRADUATE FULL-TIME STATUS.

PHYS 6321 (3). CLASSICAL MECHANICS. Topics in classical mechanics including the mechanics of a system of particles, the two-body central-force problem, Lagrange's and Hamilton's formulations, special theory of relativity, Hamilton-Jacobi theory, continuous systems and fields.

PHYS 6335 (3), 6336 (3). QUANTUM MECHANICS. Fundamental principles of quantum theory with applications to one-dimensional problems, the free particle, and the hydrogen atom; the spinning electron. Perturbation theory with applications to atomic spectra; systems of identical particles; scattering theory; Dirac theory of the electron. *Prerequisites:* PHYS 5382 or equivalent, MATH 3333.

PHYS 6338 (3). CONDENSED MATTER PHYSICS. Plasmons, polaritons, and polarons. Optical properties of solids. Superconductivity. Atomic and collective magnetism. Atomic and collective electrical phenomena. *Prerequisite:* PHYS 5337 or permission of instructor.

PHYS 6341 (3). NUCLEAR PHYSICS. General properties of the nucleus; the two-nucleon problem; radioactivity; beta decay; interaction of charged particles and radiation with matter; detection methods; nuclear models; nuclear reactions; neutron physics. *Prerequisite:* PHYS 6335 or permission of instructor.

PHYS 6351 (3). STATISTICAL MECHANICS. Derivation of classical and quantum statistical distribution functions; partition functions; the laws of thermodynamics; ensemble theory; applications to gases and solids. *Prerequisite:* PHYS 3374 or permission of instructor.

PHYS 6361 (3). SELECTED TOPICS. Selected topics in physics (varies per term).

PHYS 6398 (3), 6399 (3). THESIS. Research and writing of the thesis with guidance from the student's thesis director.

PHYS 7170 (1). CURRENT TOPICS IN PHYSICS. Seminar on current topics in physics.

PHYS 7305 (3). METHODS THEORETICAL PHYS. Mathematical methods; theory of analytic functions, evaluation of integrals, linear vector spaces, special functions, integral equations, tensor analysis, calculus of variations, group theory. *Prerequisites:* Working knowledge of complex variable, Fourier transforms, and partial differential equations.

PHYS 7311 (3), 7312 (3). ELECTROMAGNETIC THEORY. Boundary-value problems in electrostatics; dielectrics; magnetic media; Maxwell's equations; electromagnetic waves; refraction and reflection; wave guides and cavities. Electromagnetic radiation; diffraction and interference; plasma physics; special relativity; dynamics of charged particles; multipole expansion. *Prerequisite:* PHYS 5393 or permission of instructor.

PHYS 7314 (3). QUANTUM FIELD THEORY I. Classical fields; symmetry transformations and conservation laws; the quantum theory of radiation; relativistic quantum mechanics of spin-1/2 particles, second quantization and the theory of interaction fields. Covariant perturbation theory; collision phenomena in quantum electrodynamics; renormalization. *Prerequisite:* PHYS 6336.

PHYS 7315 (3). QUANTUM FIELD THEORY II. Path integral formulation; renormalization group; symmetry structure; formal aspects; nonabelian gauge theories. *Prerequisite:* PHYS 7314 or permission of instructor.

PHYS 7321 (3). ATOMIC PHYSICS. The central-field model of atomic structure, the Hartree methods; angular momentum and the vector model of the atom; antisymmetry and the determinantal method: theory of multiplets; magnetics properties of atoms. *Prerequisites:* PHYS 6336 or working knowledge of quantum mechanics and permission of instructor.

PHYS 7330 (3). PHYSICS OF QUANTUM ELECTRONICS. Interactions of electromagnetic radiation with atomic systems; absorption and dispersion, line-broadening mechanisms, amplification. Quantum theory of light scattering: Rayleigh, Raman, and Brillouin scattering. Theory of lasers. Coherent pulse propagation. Nonlinear optical processes. *Prerequisites:* PHYS 6336, or working knowledge of quantum mechanics, and permission of instructor.

PHYS 7341 (3). THEORETICAL NUCLEAR PHYSICS. Properties of nuclear forces; many-body theory of nuclear models; analysis of scattering experiments. Interaction between nucleons and radiation; pion physics; weak interactions. *Prerequisites:* PHYS 6336 and 6341.

PHYS 7350 (3). GENERAL RELATIVITY. Einstein theory; black holes; gravitational waves; cosmology. *Prerequisite:* PHYS 6321 or permission of instructor.

PHYS 7360 (3). ELEMENTARY PARTICLES I. Physics of the standard model; quarks and leptons; internal symmetries, grand unified theories. *Prerequisite:* Permission of instructor.

PHYS 7361 (3). ELEMENTARY PARTICLES II. Continues PHYS 7360 with emphasis on current topics. *Prerequisite:* PHYS 7360 or permission of instructor.

PHYS 8049 (0). GRADUATE FULL-TIME STATUS.

PHYS 8100 (1), 8200 (2), 8300 (3), 8400 (4), 8500 (5), 8600 (6), 8700 (7), 8800 (8), 8900 (9). RESEARCH. Research and study of selected physics topics (varies term to term).

PHYS 8361 (3), 8362 (3). SPECIAL TOPICS IN PHYSICS. Special topics in physics (varies per term).

PHYS 8398 (3), 8399 (3). DISSERTATION. Research and writing of the dissertation.

PSYCHOLOGY

Professor Ernest Jouriles, **Department Chair**

Professors: Alan Brown, George Holden, Ernest Jouriles, Renee McDonald, Thomas Ritz. **Associate Professors:** Robert Hampson, Alicia Meuret, David Rosenfield, Lorelei Simpson, Jasper Smits. **Assistant Professors:** Austin Baldwin, Michael Chmielewski, Chrystyna Kouros, Andrea Meltzer, Amy Pinkham. **Research Assistant Professor:** Mark Powers. **Senior Lecturers:** Michael Crow, Susan Hornstein, Chris Logan. **Lecturer:** James Calvert.

DOCTOR OF PHILOSOPHY IN CLINICAL PSYCHOLOGY

The Ph.D. program in clinical psychology is a 70-hour program designed to prepare a student for a professional career in research, teaching and/or the clinical applications of empirically supported psychological methods. The major requirements for the Ph.D. degree consist of departmental research requirements, coursework, practica and a formal clinical internship.

Research Requirements and Qualifications for Candidacy. Students are expected to conduct research throughout their enrollment in the clinical psychology doctoral program. To facilitate their involvement and training in research, the program will include several research benchmarks that students must complete prior to graduation. Research benchmarks must be completed in accordance with the Dedman College graduate catalog.

The research benchmarks are as follows:

1. **First-Year Research**

   It is expected that first year students will work on a research project with their faculty adviser. This research experience should provide students with exposure to a research area and help shape the skills necessary to develop hypotheses, analyze data and communicate the results. Faculty advisers will be responsible for determining whether their students are performing satisfactorily with respect to their research.

2. **Thesis (First Research Benchmark)**

   Toward the end of the summer of their second year in the program (July 31), students will be expected to complete an empirical research project that will constitute their thesis. Students must complete an oral defense of a thesis proposal (prior to initiating thesis research) to a thesis committee consisting of three faculty members (with at least two of these committee members being tenured or tenure-track faculty from SMU's Department of Psychology) The thesis proposal is expected to occur during the summer of the student's first year in the program, or the fall of the second year.

   The final thesis will be in the form of a manuscript (authored by the student) written in a way that is suitable for submission to a professional journal. Students must complete an oral defense of the completed manuscript to their thesis committee.

   It is expected that the student's thesis research will eventually be submitted for publication. It is expected that the publication of this research will be done in conjunction with the faculty adviser.

3. **Presentation of Research at a Professional Conference or Publication of Research in a Professional Journal (Second Research Benchmark)**

   Toward the end of the summer of their second year in the program (July 31), students will be expected to have presented research, as first author, at a professional conference (poster or paper presentation) or to have their research accepted for publication, in press, or published (as any author) in a professional journal. This needs to be research completed while they were a student in the clinical psychology Ph.D. program at SMU. It is expected that the presentation and/or publication of this research will be done in conjunction with the faculty adviser.

4. **Review Article (Third Research Benchmark)**

   To demonstrate in-depth knowledge of their research area and to demonstrate their capability to interpret and synthesize theories and data in this area, students will write a review article in the tradition of a *Psychological Bulletin* article. The final version of this review article will be completed by middle of their third year (January 15). Students are encouraged to consult articles by Bem (1995), *Psychological Bulletin,* 118, 172–177 ("Writing a Review Article for *Psychological Bulletin*"), and Maxwell and Cole (1995), *Psychological Bulletin,* 118, 193–198 on "Tips for Writing (and Reading) Methodological Articles."

   Students must form a committee to approve the review article. The committee must consist of at least two faculty members (with one being the student's faculty adviser).

   Students should submit an outline (no more than 10 pages) to the committee detailing the purpose and content of the review. Following the approval of the outline by the committee, the writing of the review article must be completed without any editing. Students and faculty may discuss the nature of the review article, but editing by faculty or any other person than the student at any level of detail is not allowed. The initial submission is due to the committee on November 15 of the student's third year, followed by a 15-day review period by the committee. The student will receive a written review from each committee member. The student then has 45 days to complete the revisions (again, with no editing), such that the final product is due by January 15. A committee decision determines whether the final product is a passing one.

   If it is deemed appropriate, the review article may serve as the basis for the introduction to the student's dissertation.

5. **Dissertation (Fourth Research Benchmark)**

   The dissertation is an original empirical research project with the potential to contribute to the knowledge base in the area of clinical psychology. Before a student can officially begin the dissertation, the student must be advanced to candidacy (described below). Students must formally propose the project to the dissertation committee. The dissertation committee shall consist of 1) the faculty adviser, who will serve as chair, 2) at least two other tenured or tenure-track faculty from the Department of Psychology, 3) and at least one external reviewer who is either a faculty member outside of the Department of Psychology, or with the approval of the department chair and the graduate dean, a scholar not associated with SMU. For all candidates, the faculty adviser must

be a tenured or tenure-track faculty member. Successful completion of the dissertation will be determined by an oral defense before the student's dissertation committee.

It is expected that all students will propose their dissertation by September 30 of the year they intend to apply for internship.

Qualifying Examination. The comprehensive or qualifying exam will include three performance-based components to determine whether students have mastered their area of research interest. Students are required by University regulations to complete their qualifying exam by the end of their third year in the program. These components are comprised of research benchmarks 1, 2 and 3. An extension of one year may be granted by the dean in exceptional circumstances upon submission of a petition that is endorsed by the department.

Candidacy Requirements. Candidacy requirements consist of completion of the first three research benchmarks. Students must also complete the core clinical courses to qualify for advancement to candidacy (PSYC 6324 Clinical Research Issues and Methods, PSYC 6314 Seminar in Adult Psychopathology, PSYC 6351 Theories and Methods of Psychotherapy, PSYC 6353 Integrative Psychological Assessment, and PSYC 6360 Ethics in Psychology). Advancement to candidacy is necessary for students to initiate dissertation research and to apply for an internship. Students are required to complete their candidacy requirements by the end of their third year (August 31) in the program. An extension of one year may be granted by the dean upon submission of a petition endorsed by the department.

Required Courses. The following courses (51 hours) are required:

PSYC 6091–6098 Integrated Practicum Seminar
PSYC 6305, 6307 Quantitative Methods I, II
PSYC 6310 History and Systems in Psychology
PSYC 6311 Seminar in Social Psychology
PSYC 6312 Seminar in Developmental Psychology
PSYC 6314 Seminar in Adult Psychopathology
PSYC 6316 Seminar in Cognitive Psychology
PSYC 6317 Seminar in Physiological Psychology
PSYC 6324 Clinical Research Issues and Methods
PSYC 6351 Theories and Methods of Psychotherapy
PSYC 6353 Integrative Psychological Assessment
PSYC 6355 Methods of Psychotherapy/Assessment (summer lab)
PSYC 6357 Seminar in Interviewing Skills
PSYC 6358 Multicultural Diversity
PSYC 6360 Ethics in Psychology
PSYC 6398 Thesis
PSYC 7091–7098 Clinical Practicum
PSYC 8396 Dissertation
PSYC 8091, 8092 Internship I, II

Elective Coursework. Elective courses (19 hours) can be taken from Psychology Department courses at the 6000 level or above. Courses from other departments or schools can be taken with approval of the director of graduate studies.

Clinical Practica. Students will participate in practicum training beginning in their second year. Purposes of clinical practica are to

- Offer students training, supervision and/or experience in the use of empirically supported methods of intervention and assessment.
- Expose students to nonacademic sites in which psychological research is conducted.
- Offer students training, supervision and/or experience in working with a variety of clients/patients.

Grade Point Average. To be in good standing in the Ph.D. program, each student is expected to obtain a grade of *B* or better in each course. A course with a grade of *C* must be retaken. Two or more courses with a grade of *C* may result in dismissal.

Periodic Performance Reviews. Each student's performance will be reviewed each year, assessing performance in research, clinical skills and assigned duties.

THE COURSES (PSYC)

PSYC 6091–6098 (0). INTEGRATED PRACTICUM SEMINAR. Integrated practicum seminar where students participate in an off-campus practicum but also meet biweekly with faculty to review cases, learn supervision techniques, and review procedures for assessment and treatment. Instructor consent and Ph.D. practicum enrollment required.

PSYC 6305 (3). QUANTITATIVE METHODS I. Theoretical bases of quantitative methods used in experimental research designs. Topics will include rules of probability, random variables and their distributions, statistical inference, tests of hypotheses and confidence intervals for population means, and analysis of variance. *Prerequisite:* Permission of instructor.

PSYC 6307 (3). QUANTITATIVE METHODS II. Theoretical bases of quantitative methods used in quasi- and non-experimental research designs. Topics will include correlation, regression, multiple regression, partial and multiple correlation, and nonparametric approaches. *Prerequisite:* Permission of instructor.

PSYC 6309 (3). SEMINAR IN HEALTH PSYCHOLOGY. Current theories and research in health psychology.

PSYC 6311 (3). SEMINAR IN SOCIAL PSYCHOLOGY. Current theories and research on the social influences of behavior.

PSYC 6312 (3). SEMINAR IN DEVELOPMENTAL PSYCHOLOGY. Current theories and research in developmental psychology

PSYC 6314 (3). SEMINAR IN ADULT PSYCHOPATHOLOGY. The presentation and discussion of selected topics involving research in psychopathology.

PSYC 6316 (3). SEMINAR IN COGNITIVE PSYCHOLOGY I. An in-depth examination of selected topics in the general areas of human learning, memory, thinking, and related experiences.

PSYC 6317 (3). SEMINAR IN PHYSIOLOGICAL PSYCHOLOGY. This course will provide comprehensive exposure to a selected area or problem in physiological psychology. Areas receiving such treatment might include limbic system-behavior relationships; biological bases of motivation; biological bases of learning and memory.

PSYC 6318 (3). SEMINAR IN SENSATION AND PERCEPTION. Study physical stimuli, physiological receptors, and psychological processes involved in extracting information from the physical world.

PSYC 6322 (3). CONTEMPORARY ISSUES IN SCIENTIFIC PSYCHOLOGY ISSUES II. Examination of current issues and areas of scientific psychological research, including developmental psychology, cognition, biopsychology, social and personality.

PSYC 6324 (3). RESEARCH METHODS. Seminar addressing issues of research design and implementation in clinical psychology. Topics include validity and reliability of clinical assessment, experimental and quasi-experimental designs, causal inference, interpretation of data and research ethics.

PSYC 6330 (3). SEMINAR IN PSYCHOPHARMACOLOGY. Introduces psychotropic drugs and their uses, with a focus on the relationship between psychology and psychiatry in practice.

PSYC 6331 (3). PSYCHOTHERAPY PRACTICUM I. Combined didactic/lecture and laboratory practicum experience for second-year graduate students. Emphasis is placed on assessment of and brief psychotherapy for medical patients in the Baylor Hospital Trauma Unit.

PSYC 6332 (3). PSYCHOTHERAPY PRACTICUM II. Continuation into the second term of a combined didactic/lecture and laboratory practicum experience for second-year graduate students. Emphasis is placed on assessment of and brief psychotherapy for medical patients in the Baylor Hospital Trauma Unit.

PSYC 6334 (3). SEMINAR IN DEVELOPMENTAL PSYCHOPATHOLOGY. Advanced seminar examining theories and data on psychopathology in childhood and adolescence.

PSYC 6340 (3). PSYCHOBIOLOGY OF EMOTION. This course will provide students an empirically-based foundation in the psychobiology processes involved in human emotion, including anger, fear, anxiety, and depression. These will serve as important foundations underlying interventions for clinically elevated levels of these emotions.

PSYC 6351 (3). THEORIES AND METHODS OF PSYCHOTHERAPY. Discussion of research concerning the efficacy and effectiveness of individual psychotherapy; discussion about and training in the major theoretical methods of individual psychotherapy; ethics of individual psychotherapy. Open to psychology graduate students only.

PSYC 6353 (3). INTEGRATIVE PSYCHOLOGICAL ASSESSMENT. Application of psychological methods to the study of the individual; rationale of test construction and interpretation; problems in the prediction of human behavior; and theory and practice in psychological assessment techniques to measure personality, intelligence, and behavior. The focus throughout is on the integration of diverse sources of data to better inform psychodiagnostic decision-making. Open to psychology graduate students only.

PSYC 6354 (3). ASSESSMENT PRACTICUM. Assessment Practicum is the on-campus practicum course for Ph.D. students to learn to administer and interpret cognitive, achievement, personality, and behavioral psychological tests, conduct feedback sessions, and generate appropriate reports. Instructor consent and Ph.D. student status required.

PSYC 6355 (3). METHODS OF PSYCHOTHERAPY AND ASSESSMENT. Emphasizes fundamental clinical skills of interviewing and diagnostic assessment.

PSYC 6356 (3). THEORIES AND METHODS OF COUPLE AND FAMILY THERAPY. Introduction to theories of marriage, family, and divorce counseling, research on these approaches, and attention to types of interaction between spouses and between family members. *Prerequisite:* Admission to psychology graduate program and completion of PSYC 6351, or permission of instructor.

PSYC 6357 (3). SEMINAR IN INTERVIEWING SKILLS. This is a three-hour credit course designed for Ph.D. and M.A. students in psychology. Students will be taught interviewing techniques, basic supportive counseling skills, and effective communication and planning of clinical therapy sessions. This course will employ didactic and experiential methods of instruction.

PSYC 6360 (3). ETHICS IN PSYCHOLOGY. Reviews the current ethical code of conduct followed by professional psychologists. Ethical principles will be discussed in terms of their legal, social, and philosophical relevance.

PSYC 6361 (3). ASSESSMENT PRACTICUM II. Second term of an on-campus practicum course for Ph.D. students to learn to administer and interpret a variety of psychological tests, conduct feedback sessions, and generate reports based upon these assessments.

PSYC 6362 (3). ADVANCED SPECIAL TOPICS. An advanced seminar on selected topics in various sub-areas of psychological research.

PSYC 6371 (3), 6372 (3). RESEARCH ON PSYCHOLOGY. Supervised individual empirical research on selected problems. A research proposal must be submitted to and approved by the instructor before admission.

PSYC 6398 (3). THESIS. Academic credit for design, data collection, analysis, and writing of student master's thesis.

PSYC 7091–7098 (0). PRACTICUM IN PSYCHOLOGY. Students will conduct psychological assessments and interventions in a field placement under the direct supervision of an approved supervisor.

PSYC 7171 (1), 7172 (1). RESEARCH. Academic credit for data collection, analysis, and writing of student research project.

PSYC 7271 (2), 7272 (2). RESEARCH. Academic credit for data collection, analysis, and writing of student research project.

PSYC 7361 (3), 7362 (3). ADVANCED SPECIAL TOPICS. An advanced seminar on selected topics in various sub-areas of psychological research.

PSYC 7371 (3), 7372 (3). RESEARCH. Academic credit for data collection, analysis, and writing of student research project.

PSYC 8049 (0). GRADUATE FULL-TIME STATUS. Continuing graduate students who are finished with coursework but completing their thesis/dissertation research.

PSYC 8091 (0). CLINICAL INTERNSHIP I. Credit for the first term that the student has been matched with a formal internship training site. This is a full-time, supervised clinical position.

PSYC 8092 (0). CLINICAL INTERNSHIP II. Credit for the second term that the student continues at a formal internship training site. This is a full-time, supervised clinical position.

PSYC 8096 (0), 8396 (3), 8397 (3). DISSERTATION. Academic credit for design, data collection, analysis, and writing of student doctoral dissertation.

PSYC 8105 (1). RESEARCH.

PSYC 8391 (3), 8392 (3). DIRECTED STUDIES. Advanced study on selected topics in various sub-areas of psychological research.

RELIGIOUS STUDIES

Professor Carl Johan Elverskog, **Department Chair**

Professors: William Barnard, Mark Chancey, Charles Curran, Carl Johan Elverskog, Serge Frolov, Robin Lovin. **Associate Professors:** Richard Cogley, Jill DeTemple, Kate Carté Engel, John Lamoreaux, Steven Lindquist.

Programs and Fields of Study. The Graduate Program in Religious Studies comprises programs of study leading to the M.A. and Ph.D. degrees. The primary goal of both degree programs is to prepare persons for academic leadership in the field and hence for professional careers as teacher-scholars in colleges, universities and schools of theology. The M.A. degree program also aims to accommodate the qualified nonprofessional student interested in advanced work in religious studies within the context of the liberal arts and sciences. Students specialize in one of the following six fields of study:

Hebrew Bible/Old Testament
New Testament
The Christian tradition
Systematic theology
Religious ethics (Christian ethics)
Religion and culture

Language Requirement. All students are expected to demonstrate a reading competence in at least one approved language other than English upon matriculation, by passing an examination in that language in the August examination period preceding the first term of study. Ph.D. students will be expected to pass an examination in a second approved language by the beginning of the second year. (For students in the two biblical fields, the examination in the second language is to be taken no later than May of the first year.) The approved languages in which examinations may be taken in both degree programs are French, Spanish, German, Greek, Hebrew and Latin. Another pertinent language may be substituted with the approval of the steering committee. It is strongly recommended that Ph.D. students enter the program with a solid reading knowledge of the two (or more) languages in which they expect to be examined, since there is little time or opportunity for basic language acquisition during graduate study.

MASTER OF ARTS IN RELIGIOUS STUDIES

Admission Requirements

The deadline for completed applications is December 31. The requirements for admission to the M.A. degree program are, specifically

1. The B.A. degree or its equivalent from an accredited institution.
2. A cumulative grade point average of 3.000 or above on a 4.000 scale.
3. A satisfactory score on the GRE general graduate school admission test, ordinarily including a combined score of 1200 or greater on the verbal and quantitative sections.
4. Sufficient previous study in religion or related areas to be able to satisfy the requirements of the degree program.
5. When English is not the applicant's native language, a satisfactory TOEFL English language proficiency test score also is required: paper-based version, 550 or better (preferably 600 or above); computer-based version, 213 or better (preferably 250 or above); or Internet-based version, 79–80 or better (preferably 100 or above).

Degree Requirements

1. Satisfactory completion of 30 credit hours of approved coursework, including the four courses of the core seminar in religious studies: RELI 6301 The Philosophical Study of Religion; RELI 6302 Approaches to Asian Religion; RELI 6303 History, Theory and Method in Religious Studies; and RELI 6304 Contemporary Approaches to the Study of Religion.
2. Demonstrating, by examination, a reading competence in an approved language, other than English, relevant to the field of study.
3. Satisfactory completion of a master's thesis.

  Concentration. The student is encouraged to develop an area of concentration in his or her 18 hours of undesignated coursework. A maximum of six credit hours may be taken in independent study courses. Concentrations in areas of scholarship represented primarily in the Department of Religious Studies in Dedman College are especially welcome. Students whose main interests are in areas represented in the typical theological curriculum are advised to consider the Master of Theological Studies degree in Perkins School of Theology as an alternative to the M.A. degree in the Graduate Program in Religious Studies.

DOCTOR OF PHILOSOPHY IN RELIGIOUS STUDIES
Admission Requirements

The deadline for completed applications is December 31. The requirements for admission to the Ph.D. degree program are, specifically

1. The B.A. degree or its equivalent from an accredited institution.
2. A cumulative grade point average of 3.000 or above on a 4.000 scale.
3. A satisfactory score on the GRE general graduate school admission test, ordinarily including a combined score of 1200 or greater on the verbal and quantitative sections.
4. Sufficient previous study in religion or related areas to be able to satisfy the requirements of the degree program.
5. When English is not the applicant's native language, a satisfactory TOEFL English language proficiency test score also is required: paper-based version, 550 or better (preferably 600 or above); computer-based version, 213 or better (preferably 250 or above); or Internet-based version, 79–80 or better (preferably 100 or above).

Degree Requirements

1. Satisfactory completion of 48 credit hours of approved coursework, including the four courses of the core seminar in religious studies: RELI 6301 The Philosophical Study of Religion; RELI 6302 Approaches to Asian Religion; RELI 6303 History, Theory and Method in Religious Studies; and RELI 6304 Contemporary Approaches to the Study of Religion.
2. Demonstrating, by examination, a reading competence in two approved languages, other than English, relevant to the field of study. (For students in the two fields of biblical studies, four languages are required. Examinations must be passed in both Hebrew and Greek as well as in two additional languages.)
3. Passing four comprehensive field examinations on the subjects designated for examination in the student's field, each consisting of a six-hour written examination based on the bibliography agreed upon with the examiner.

4. Securing the steering committee's approval of a dissertation proposal endorsed by the student's adviser, two other members of the Graduate Program in Religious Studies faculty and one reader from outside the Graduate Program in Religious Studies faculty.
5. Satisfactorily meeting the practice teaching requirement.
6. Satisfactorily completing the doctoral dissertation.
7. Passing an oral examination covering the student's entire course of study as well as the dissertation.

THE COURSES

Perkins School of Theology Courses

Course descriptions can be found in the Perkins School of Theology catalog.

BB 8345 Scripture and Christian Ethics
GR 7301 Greek Exegesis
HB 7302 Hebrew Exegesis
HR 8331 Women in World Religions
HR 8341 The Christian-Buddhist Dialogue
HR 8357 Monotheistic Mysticism
HR 8360 Eastern Spiritualities and Christian Mysticism
HX 7312 Early Christian Art
HX 7314 The Reformation
HX 7316 History of American Christianity
HX 7322 Christianity in the Hispanic Tradition
HX 7324 Christianity in Latin America
HX 7335 Wesley and the 18th Century
HX 8308 Varieties of Medieval Theology
HX 8321, 8322 History of Christian Doctrine
HX 8325 The Ecumenical Movement
HX 8331 Augustine's City of God
HX 8342 Studies in Luther
HX 8354 African-American Christianity in the United States
HX 8358 A History of Hispanic Protestantism
HX 8360 Studies in Wesley
HX 8367 Studies in World Methodism
HX 8387 Readings in Spanish Mysticism
MT 8305 Historical Studies in Christian Ethics
MT 8345 African-American Liberation Theology
MT 8352 Contemporary Moral Issues
MT 8354 Studies in Theological Ethics
MT 8383 Process Theology and Social Ethics
MT 8385 Martin and Malcolm and Theological Ethics
MT 8362 Ethics, Theology and Metaphysics of Morals
MT 8375 The Poor in John Wesley's Ethics
MT 8377 Studies in Reinhold Niebuhr
NT 8336 The Book of Revelation Through History and Cultures
NT 8365 Evil, Suffering and Death in the New Testament
NT 8379 Issues in Pauline Theology
OT 8325 The Message of the Prophets

OT 8345 Contemporary Approaches to the Hebrew Bible
OT 8351 Major Motifs of Biblical Theology
ST 8311 Contemporary Theology
ST 8318 The Person and Work of Jesus Christ
ST 8325 The Authority of the Bible for Theology
ST 8327 North American Hispanic Theology
ST 8345 Theologies of Hope and Liberation
ST 8359 God and Creation
TC 8308 Contemporary Issues in Philosophy of Religion
TC 8316 Christian Ethics, War and Peace
TC 8318 Christian Ethics and Social Justice
TC 8325 Bioethics
TC 8340 The Christian, the Church and the Public Good
WX 8322 Christianity in Asia
WX 8328 Theological Issues in World Christianity

Religious Studies Courses (RELI)

Independent and Directed Studies	
Philosophy of Religion	RELI 7300–7309
Philosophical Theology	RELI 7310–7319
Religion and Culture	RELI 7320–7334
History of Christianity	RELI 7335–7349
Systematic Theology	RELI 7350–7364
Religious Ethics	RELI 7365–7379
Old Testament	RELI 7380–7389
New Testament	RELI 7390–7399

RELI 6049 (0). GRADUATE FULL-TIME STATUS.

RELI 6301 (3). THE PHILOSOPHICAL STUDY OF RELIGION. The work of this seminar will focus on aims, methods, and problems in the philosophical study of religion.

RELI 6302 (3). APPROACHES TO ASIAN RELIGIONS. This seminar is a historical and theoretical inquiry into Asian religions. These traditions will be investigated through three broadly defined methods of theoretical approaches: textual studies, anthropology, and social/intellectual history.

RELI 6303 (3). HISTORY, THEORY, AND METHOD IN RELIGIOUS STUDIES. This course will introduce several of the principal approaches to the study of religion in the post-Enlightenment West, focusing on canonical thinkers from various disciplines, especially anthropology, sociology, and psychology.

RELI 6304 (3). CONTEMPORARY APPROACHES. This seminar provides an orientation to the critical study of religion in its contemporary context, with specific attention to emerging issues and modes of inquiry.

RELI 6398 (3), 6399 (3). THESIS. Thesis research.

RELI 7300–7309 (3). PHILOSOPHY OF RELIGION I–X. Special topics in philosophy of religion.

RELI 7310–7319 (3). PHILOSOPHICAL THEOLOGY I–X. Special topics in philosophical theology.

RELI 7320–7334 (3). RELIGION AND CULTURE I–XV. Special topics in religion and culture.

RELI 7335–7349 (3). HISTORY OF CHRISTIANITY I–XV. Special topics in the history of Christianity.

RELI 7350–7364 (3). SYSTEMATIC THEOLOGY I–XV. Special topics in systematic theology.

RELI 7365–7379 (3). RELIGIOUS ETHICS I–X. Special topics in religious ethics.

RELI 7380–7389 (3). OLD TESTAMENT I–X. Special topics on the Old Testament.

RELI 7390–7399 (3). NEW TESTAMENT I–X. Special topics on the New Testament.

RELI 8049 (0). GRADUATE FULL-TIME STATUS. Indicates student has full-time status.

RELI 8100, 8105 (1). RESEARCH. Dissertation research.

RELI 8300 (3), 8301 (3). STUDIES IN THE HISTORY OF DOCTRINE. A cumulative examination of the basic doctrines and theologies that have shaped the Christian tradition. In the fall term the course will survey the formation of the patristic, Byzantine, and medieval Western theological traditions. In the spring term it will cover the late medieval and Reformation periods as well as selected developments of the Enlightenment era through Schleiermacher.

RELI 8320 (3), 8321 (3). ADVANCED SYSTEMATIC THEOLOGY. An advanced investigation of selected problems in systematic theology. Topic to be announced when course is offered.

RELI 8340 (3), 8341 (3). PENTATEUCH. Intensive study of selected texts and issues in the Pentateuch of the Old Testament. The specific texts or topics will be chosen in consultation with the students enrolled. A knowledge of biblical Hebrew is presupposed.

RELI 8342 (3). THE PROPHETS. Intensive study of selected texts and issues in the prophetic literature of the Old Testament. The specific texts or topics will be chosen in consultation with the students enrolled. A knowledge of biblical Hebrew is presupposed.

RELI 8350 (3), 8351 (3). SEMINAR ON THE NEW TESTAMENT. A topical study of one or more literary, historical, or theological issues pertinent to the interpretation of the New Testament. A knowledge of Hellenistic Greek is presupposed. The specific topic(s) will be determined in consultation with the students enrolled.

RELI 8352 (3), 8353 (3). NEW TESTAMENT GOSPELS. Intensive study of selected texts and issues in the New Testament Gospels. The specific texts or topics will be chosen in consultation with the students enrolled. A knowledge of New Testament Greek is presupposed.

RELI 8354 (3), 8355 (3). PAULINE EPISTLES. Intensive study of selected texts and issues in the Pauline Epistles. The specific texts or topics will be chosen in consultation with the students enrolled. A knowledge of New Testament Greek is presupposed.

RELI 8356 (3), 8357 (3). ADVANCED STUDY OF NEW TESTAMENT WRITINGS. Intensive study of selected texts and issues in such writings as the Catholic Epistles, Hebrews, and the Apocalypse. The specific texts or topics will be chosen in consultation with the students enrolled. A knowledge of New Testament Greek is presupposed.

STATISTICAL SCIENCE

Professor Wayne Woodward, **Department Chair**

Professors: Ronald Butler, Richard Gunst, Lynne Stokes, Wayne Woodward. **Associate Professors:** Jing Cao, Ian Harris, Monnie McGee, Hon Keung Ng, Sherry Wang. **Assistant Professor:** Cornelis Potgieter. **Senior Lecturers:** Alan Elliot, Stephen Robertson. **Emeritus Professors:** Narayan Bhat, Henry Gray, Chandrakant Kapadia, Campbell Read, William Schucany.

The Department of Statistical Science offers two graduate degree programs: the Ph.D. in statistical science and the M.S. in applied statistics and data analytics. The courses in the Ph.D. curriculum provide students with the strong theoretical foundation in mathematical statistics, probability and stochastic processes along with applied courses covering the intricacies of statistical practice needed for students pursuing a well-rounded, research-oriented Ph.D. degree. The M.S. in applied statistics and data analytics degree program is designed to provide training that is ideally suited to produce graduates who are proficient in statistical methods while at the same time are trained in topics such as data base management, data mining and the use of SAS and other statistical software that are necessary tools of today's data analysts.

DEGREE OF MASTER OF SCIENCE

Admission Requirements

Applicants to the M.S. in applied statistics and data analytics degree program must hold a bachelor's degree, must have taken a course in statistics and must have taken calculus courses through multivariate calculus. Applicants must have taken the GRE graduate school admission test and have excellent English communication skills. International students applying from countries where English is not the native language are required to provide scores on the TOEFL English language proficiency test.

Degree Requirements

Master of Science in Applied Statistics and Data Analytics. To qualify for the M.S. in applied statistics and data analytics, the student must successfully complete at least 36 hours of study acceptable to the departmental faculty (at least 18 of which are 6000-level courses or above). The following are required: STAT 5304, 5371, 5372, 5373, 5374, 6304, 6308 and 6366. The student must complete two consulting projects under the supervision of departmental faculty members. For at least one of these projects, written and oral presentations of the findings are required. A 4+1 option is available for obtaining the M.S. in applied statistics and data analytics degree in one year beyond the B.S. degree. Additional information is available at www.smu.edu/Dedman/Academics/Departments/Statistics/AppliedMSProgram.

Master of Science in Statistical Science. Students in the Ph.D. program can qualify for the M.S. in statistical science, which is different from the M.S. in applied statistics and data analysis. To obtain the M.S. in statistical science, the student must successfully complete at least 36 hours of study acceptable to the departmental faculty, including STAT 6304, 6327, 6328, 6336, 6337, 6345 and 6366. students must pass the comprehensive (basic) exams at an appropriate level.

DEGREE OF DOCTOR OF PHILOSOPHY

Admission Requirements

Applicants to the Ph.D. program in statistical science must hold a bachelor's degree and must have taken mathematics courses through advanced calculus and linear algebra. Applicants must have taken the GRE graduate school admission test and have excellent English communication skills. International students applying from countries where English is not the native language are required to provide scores on the TOEFL English language proficiency test.

Degree Requirements

To qualify for the Ph.D. degree in statistical science, the student must

1. Satisfy all curricular requirements as specified by the University (at least 48 hours, no more than 12 of which can be in dissertation research) and by the departmental faculty.
2. Complete the following courses: STAT 6304, 6327, 6328, 6336, 6337, 6345, 6366, 6371 and 7327.
3. Pass the comprehensive (basic) exams, typically at the end of the first year.
4. Pass the Ph.D. qualifying exam, which is given to assess the student's readiness for research.
5. Complete a minimum of three years of graduate academic work, at least one of which is in full-time residence on the campus of SMU or at a research facility approved by the departmental faculty and the dean of research and graduate studies.
6. Write and make a successful defense of the dissertation.

A student will advance to candidacy after he or she passes comprehensive and qualifying exams, prepares a written prospectus and gives an oral presentation in a research area on which the dissertation will be based, and receives approval of the prospectus from his or her dissertation committee.

THE COURSES (STAT)

STAT 5304 (3). INTRODUCTION TO STATISTICAL COMPUTING. Introduces statistical computing, with an emphasis on SAS programming. Students learn how to read, write, and import data; prepare data for analysis; use SAS procedures; and create graphs. *Prerequisites:* STAT 1301, 2301, 2331 or equivalents.

STAT 5340/EMIS 7370 (3). PROBABILITY AND STATISTICS FOR SCIENTISTS AND ENGINEERS. Introduction to fundamentals of probability and distribution theory, statistical techniques used by engineers and physical scientists. Examples of tests of significance, operating characteristic curve, tests of hypothesis about one and two parameters, estimation, analysis of variance, and the choice of a particular experimental procedure and sample size. *Prerequisites:* MATH 1337, 1338, and 2339, or equivalent.

STAT 5344/EMIS 5364/EMIS 7364 (3). STATISTICAL QUALITY CONTROL. Statistics and simple probability are introduced in terms of problems that arise in manufacturing; their application to control of manufacturing processes. Acceptance sampling in terms of standard sampling plans: MIL-STD 105, MIL-STD 414, Dodge-Romig plans, continuous sampling plans, etc. *Prerequisite:* STAT 4340, STAT 5340, CSE 4340, or CSE 5370.

STAT 5350/ECO 5350 (3). INTRODUCTORY ECONOMETRICS. The basic concepts of econometrics and, in particular, regression analysis, with topics geared to first-time regression users. *Prerequisites:* Graduate standing or C- or better in the following: MATH 1309 or 1337; ECO 3301; and ITOM 2305 or STAT 2301, 2331, or 4340.

STAT 5370 (3). SURVEY SAMPLING. Covers principles of planning and conducting surveys: simple random sampling; stratified and systematic subsampling; means, variances, and confidence limits; finite population correction; sampling from binomial populations; and margin of error and sample-size determination. *Prerequisites:* STAT 2301 (or 2331), 5304.

STAT 5371 (3). EXPERIMENTAL STATISTICS I. Noncalculus development of fundamental statistical techniques, including hypothesis testing for population means and proportions, analysis of variance, factorial designs, and linear regression. Covers obtaining sample sizes during the planning stages of research studies and emphasizes interpretation of results from analysis with SAS statistical software. *Corequisite:* STAT 5304.

STAT 5372 (3). EXPERIMENTAL STATISTICS II. Extension of techniques in STAT 5371 to multivariate data. Multiple linear regression, multivariate analysis of variance, canonical regression, and principal components analysis. Emphasizes interpretation of results from analysis with SAS. *Prerequisite:* STAT 5371.

STAT 5373 (3). MATHEMATICAL STATISTICS I. Introduction to mathematical statistics. Topics include probability, probability distributions, mathematical expectation, discrete and continuous random variables and their distributions, sampling distributions, moment generating function, functions of random variables, and confidence intervals. *Prerequisite:* MATH 2339.

STAT 5374 (3). MATHEMATICAL STATISTICS II. Second course in mathematical statistics. Topics include order statistics, limiting distributions, central limit theorem, point estimation, testing statistical hypotheses, Bayesian procedures, and nonparametric methods. *Prerequisite:* STAT 5373.

STAT 5375/ECO 5375 (3). ECONOMIC AND BUSINESS FORECASTING. This course presents methods used by economists to forecast economic and business trends. Statistical procedures for evaluating the usefulness of these methods are also discussed. Illustrative examples include forecasting GNP, interest rates, and unemployment. *Prerequisites:* C- or better in ECO 3301 and one of the following: STAT 2301, 2331, or 4340; or ITOM 2305 or equivalent; or graduate standing.

STAT 5377/EMIS 5377/EMIS 7377 (3). STATISTICAL DESIGN AND ANALYSIS OF EXPERIMENTS. Introduction to statistical principles in the design and analysis of industrial experiments. Completely randomized, randomized complete and incomplete block, Latin square, and Plackett-Burman screening designs. Complete and fractional factorial experiments. Descriptive and inferential statistics. Analysis of variance models. Mean comparisons. *Prerequisite:* STAT 4340 or 5371, or permission of instructor.

STAT 5380/ECO 5385 (3). DATA MINING TECHNIQUES FOR ECONOMISTS. A study of data mining techniques used by economists in the fields of applied economics, marketing, finance, and statistics. These techniques include classification methods (logistic models, classification trees, neural networks), affinity analysis (association rules), and data reduction and exploration methods (principal components and k-means clustering). *Prerequisites:* C- or better in ECO 5350 and one of the following: STAT 2301, 2331, or 4340; or ITOM 2305 or equivalent; or graduate standing.

STAT 6049 (0). GRADUATE FULL-TIME STATUS. Enrollment in this course certifies that the student is a full-time graduate student in good academic standing.

STAT 6304 (3). COMPUTATIONAL STATISTICS. This course introduces students to the fundamentals of statistical computing widely used by both theoretical and applied statisticians in both academics and industry. Subject matter is divided into two areas, simulation experiments and statistical software, and includes generating random deviates from various distributions, analysis of statistical algorithms, an introduction to UNIX, an introduction to S-Plus for data analysis and graphics, interfacing S-Plus to code written in C and/or FORTRAN, and managing and manipulating very large data sets. *Prerequisite:* STAT 6327 or concurrent enrollment in this course.

STAT 6308 (3). SAS II AND DATABASES. This second term course in SAS covers topics in data management and statistical analysis techniques including data cleaning and verification; reading, writing, and manipulating data using DDE and SQL techniques; programming macros; combining, interleaving, stacking, and transposing data sets; customizing output using ODS; and advanced data analysis techniques. *Prerequisite:* STAT 5304 or permission of instructor.

STAT 6327 (3). MATHEMATICAL STATISTICS. Theory of probability distributions. Random variables and functions of random variables. Multivariate and conditional distributions. Sampling distributions; order statistics. Expected value, transformations, approximations. *Prerequisite:* Advanced calculus or permission of instructor.

STAT 6328 (3). MATHEMATICAL STATISTICS. Sufficiency and completeness. Unbiased, maximum likelihood and Bayes point estimators, minimizing risk. Confidence sets. Most powerful, uniformly MP and likelihood ratio tests. Large-sample approximations; contingency table analysis. *Prerequisite:* STAT 6327.

STAT 6336 (3). STATISTICAL ANALYSIS. Emphasis on application of statistical principles in the design of experiments. Complete and fractional factorials, blocking, nesting, replication, randomization. Analysis of data from one and two samples assuming normal distributions and independent errors. Discussion of paired sample analyses and of nonparametric location tests.

STAT 6337 (3). STATISTICAL ANALYSIS. Analysis of data from classical multifactor experimental designs with fixed and random effects. Multiple comparisons and contrasts of main effects and interactions. Introduction to regression analysis. *Prerequisite:* STAT 6336.

STAT 6342 (3). ADVANCED STATISTICAL QUALITY CONTROL. Investigate statistical methods and management principles useful for understanding and improving measurable performance in human endeavors. Develop a statistical thinking foundation through the evaluation of case studies and class labs. *Prerequisite:* STAT 4340/CSE 4340, or STAT 5340/CSE 5370, or STAT 5371; *or Corequisite:* STAT 6327 or 6336.

STAT 6345 (3). LINEAR REGRESSION. The classical tools of linear regression based upon least squares estimation and inference through the assumption of normally distributed errors. Topics in model formulation, data transformations, variable selection, and regression diagnostics for influential observations. Collinear predictors and biased estimation. Survey of alternatives to least squares. *Prerequisite:* STAT 6320 and 6337.

STAT 6346 (3). ADVANCED REGRESSION ANALYSIS. Nonlinear least squares estimation. Theory and applications of generalized linear models. Estimation, asymptotic distribution theory, and tests for model parameters. Techniques for detecting influential observations, collinearities, measurement error modeling. *Prerequisite:* STAT 6345 or permission of instructor.

STAT 6350 (3). ANALYSIS OF LIFETIME DATA. Statistically based methods for the analysis of life testing and failure data from complete and censored samples. Includes topics such as statistical lifetime distributions, types of censoring, probability and other graphical techniques, nonparametric/parametric estimation, and lifetime data regression. *Prerequisites:* STAT 6304, 6328, 6337, or equivalent.

STAT 6355 (3). APPLIED MULTIVARIATE ANALYSIS. Statistical methods of analysis of multivariate data, tests and estimation of multivariate normal parameters; Hotelling's T2, discriminant analysis, canonical correlation, principal components, and factor analysis. Applications are emphasized. *Prerequisite:* STAT 6337.

STAT 6358 (3). TOPICS IN BIOSTATISTICS. Introduction to various statistical methods that are widely used in the biosciences, especially biomedical research. Subject matter includes survival analysis, contingency tables, logistic regression, analysis of longitudinal data, design of clinical experiments, epidemiology, and statistical genetics; topics may vary with instructor. *Prerequisite:* STAT 6328 or permission of instructor.

STAT 6360 (3). STATISTICAL METHODS IN EPIDEMIOLOGY. Introduces epidemiologic principles and statistical methods used in biomedical research. Topics involve the design, analysis, and interpretation of biomedical study results. *Prerequisites:* STAT 5372, 5374, and 5304 or consent of instructor.

STAT 6363 (3). TIME SERIES ANALYSIS. Statistical methods of analyzing time series. Autocorrelation function and spectrum. Autoregressive and moving average processes. More general models, forecasting, stochastic model building. *Prerequisite:* Permission of instructor.

STAT 6366 (3). STATISTICAL CONSULTING. Instruction in nonstatistical issues arising in a consulting experience, including interpersonal interaction, session management, scheduling, data management, and oral and written communication. Examines technical methods useful for common consulting questions and provides consulting experience with a client from the community.

STAT 6367 (3). STATISTICAL CONSULTING. The practice and art of statistical consulting in a collaborative environment.

STAT 6370 (3). STOCHASTIC MODELS. Model building with stochastic processes in applied sciences. Phenomena with uncertain outcomes are formulated as stochastic models and their properties are analyzed. Some specific problems discussed come from areas such as population growth, queuing, reliability, time series, and social and behavioral processes. Statistical properties of the models are emphasized. *Prerequisites:* STAT 5340/CSE 5370 and graduate standing.

STAT 6371 (3). PROBABILITY THEORY. An introduction to measure theoretic probability. Random variables, expectation, conditional expectation, characteristic functions. *Prerequisite:* STAT 6327 or permission of instructor.

STAT 6375 (3). SEQUENTIAL ANALYSIS. Statistical inference when sample size is not predetermined. Stopping rules, sequential probability ratio tests, composite hypotheses, Bayes rules, sequential estimation. *Prerequisite:* STAT 6328.

STAT 6376 (3). STOCHASTIC PROCESS. Random walk, Markov processes, Poisson processes, waiting times, spectral density functions, applications to random noise problems. *Prerequisite:* STAT 6327.

STAT 6377 (3). MULTIVARIATE CATEGORICAL DATA. Structural models for counting data: the general log-linear model for contingency tables is introduced along with likelihood-ratio tests, hierarchical models, and partitioning of likelihood-ratio statistics. *Prerequisites:* STAT 6328 and 6337, or permission of instructor.

STAT 6378 (3). MULTIVARIATE ANALYSIS. Theory and inference in the multivariate normal distribution. Regression, correlation, Wishart distribution, Hotelling's T2, MANOVA and discriminant analysis. *Prerequisite:* STAT 6320, and 6328 or 6381.

STAT 6379 (3). INTRODUCTION TO MARKOV PROCESSES. Branching processes, recurrent events, random walk, finite Markov chains, simplest time-dependent stochastic processes. *Prerequisite:* STAT 6327 or 6370/CSE 6370.

STAT 6380 (3). MATHEMATICAL THEORY OF SAMPLING. Theoretical basis for estimation from simple random stratified, cluster, and two-stage designs. Also, ratio and regression estimators and nonsampling errors, including nonresponse. *Prerequisite:* STAT 6328.

STAT 6381 (3). THEORY OF LINEAR MODELS I. Theory of the general linear model; estimatibility and testability. Theory of analysis of fixed, random and mixed models. *Prerequisites:* STAT 6328, 6337, and 6320.

STAT 6382 (3). THEORY LINEAR MODELS II. Variance component models, mixed models, intra-block analysis, incomplete block designs and factorials, fractional replicates. *Prerequisite:* STAT 6381.

STAT 6385 (3). SURVEY OF NONPARAMETRIC STATISTICS. Topics include robust and distribution-free techniques; order statistics, EDF statistics, quantiles, asymptotic distributions and tolerance intervals; linear rank statistics for one, two, and several sample problems involving location and scale; runs; multiple comparison; rank correlation; and asymptotic relative efficiency. *Prerequisite:* STAT 6328.

STAT 6386 (3). NONPARAMETRIC STATISTICS. Continuation of topics covered in STAT 6385, including linear rank statistics and asymptotic relative efficiency. Additional topics include U-statistics, robustness, M-estimation, minimum distance estimation, adaptive procedures, density estimation, aligned ranks, jackknifing, and bootstrapping. *Prerequisite:* STAT 6385.

STAT 6388 (3). LARGE SAMPLE THEORY. Limit theorems useful in mathematical statistics. The foundation of asymptotic theory in statistics including modes of convergence, laws of large numbers and the central limit theorem. Systematic coverage of useful representations of certain basic statistics and large sample optimality of maximum likelihood procedures. *Prerequisites:* STAT 6328 and 6371.

STAT 6390 (3). BAYESIAN STATISTICS. The decision theory and Bayesian approaches to statistics. Includes decision rules, admissibility, complete classes, Bayes and minimax rule, likelihood principle, empirical Bayes rules, and personal probability. *Prerequisite:* STAT 6328.

STAT 6391 (3). BAYESIAN HIERARCHICAL MODELING. This course focuses on how to account for spatial, temporal, and other complex correlation structures and on how to incorpo-

rate prior information into a statistical analysis using modern computer software packages (i.e., WinBUGS and R). *Prerequisite:* STAT 6390.

STAT 6395 (3). SELECTED TOPICS IN STATISTICS. Discussion of statistical theory and methodology on specialized topics of interest.

STAT 6398 (3), 6399 (3). THESIS. Research on statistical theory and methodology.

STAT 7011 (0), 7013 (0). SUPERVISED INTERNSHIP. Supervised experience in statistical consulting carried out as an internship in approved work settings outside the Center for Statistical Consulting.

STAT 7100 (1). SEMINAR. Oral presentations of statistical literature.

STAT 7110 (1), 7111 (1), 7112 (1). SEMINAR IN STATISTICAL LITERATURE. Reports from papers in statistical journals, bibliographical problems, etc.

STAT 7300 (3). SEMINAR. Oral presentations of statistical literature.

STAT 7327 (3). ADVANCED STATISTICAL INFERENCE. General statistical inference; estimation (point and interval estimates, Bayes and minimax, etc.); tests of hypotheses (invariant, unbiased, most stringent, etc.). *Prerequisite:* STAT 6371.

STAT 7328 (3). ADVANCED STATISTICAL INFERENCE. Additional topics in statistical inference. *Prerequisite:* STAT 7327.

STAT 7362 (3). TOPICS IN STATISTICS. Lectures and readings on state-of-the-art statistical issues using emerging statistical theory and methods.

STAT 7363 (3). TIME SERIES ANALYSIS II. For advanced graduate students who intend to do research in spectral analysis or who have a major interest in time series. *Prerequisites:* STAT 6363, 6376 or permission of instructor.

STAT 8049 (0). GRADUATE FULL-TIME STATUS. Enrollment in this course certifies that the student is a full-time graduate student in good academic standing.

STAT 8105 (1). RESEARCH.

STAT 8196–8199 (1), 8396–8399 (3), 8697–8699 (6). DISSERTATION. Doctoral research on statistical theory and methodology.

STAT 8313 (3). RESEARCH ON STATISTICAL INFERENCE. Research on statistical theory and methodology.

WOMEN'S AND GENDER STUDIES

Associate Professor Beth Newman, **Director**

GRADUATE CERTIFICATE IN WOMEN'S AND GENDER STUDIES

The graduate certificate offered by the Women's and Gender Studies Program is designed to integrate knowledge about women, gender and sexuality into the chosen field of study of SMU graduate students. Offered through the Women's and Gender Studies Program and jointly based in the Dedman College Graduate Program and the Perkins School of Theology, the certificate provides an additional credential for interested students who are seeking employment in fields where familiarity with scholarship on women, gender and/or sexuality may be an asset, or who are looking to enhance their graduate studies. The courses represent several disciplines, including anthropology, art history, history, literary studies, media studies and theology.

Admission Requirements

The student must be pursuing an advanced degree in an SMU graduate program, and must enroll for the program through Dedman College (for Dedman and Meadows students) and/or Perkins School of Theology (for theology students). An additional application fee is not required. Formal enrollment must include a proposed program plan for completion of the certificate developed with an adviser from the Office of the Women's and Gender Studies Program or a Perkins adviser.

Academic Requirements

Academic requirements include 15 credit hours, as follows:

1. **The advanced feminist theory course (WGST 6300/TC 8375).** The course includes "classic" literature from feminist, womanist and *mujerista* perspectives and addresses current theoretical issues across several disciplines. It is team-taught by faculty associated with Dedman College and the Perkins School of Theology.

2. **Four additional courses relevant to the intent of the certificate.** They may be chosen from the list of courses preapproved by the Women's and Gender Studies Program (see list below). Students are permitted to take six hours of upper-level Dedman or Meadows undergraduate women's and gender studies courses under the following circumstances:

   - The students arrange a separate syllabus and assignments in conjunction with the professor of record.
   - The syllabus and assignments must be approved by the Graduate Certificate Committee of the Women's and Gender Studies Program.
   - The students register for such courses using the appropriate graduate-level number (WGST 5310 for 3000-level courses and 6310 for 4000-level courses). WGST 5310 can be taken only once.

     Note: Students are encouraged to petition the director of the Women's and Gender Studies Program for credit in their own departments for graduate courses, including independent studies courses, in which they engage in study appropriate to the intent of the certificate. Appropriate courses taken during matriculation at SMU, but prior to enrollment in the certificate program, may count toward program hours.

Students must also complete a major research project or a supervised internship in a setting that addresses issues relevant to the intent of the program. This project should be included in the program plan (Admission Requirements section). For Ph.D. students, the project normally involves an article-length research paper written for coursework; however, if relevant it could include a performance, internship, exhibit or other project approved by the appropriate adviser. Supervised internship settings for Perkins Master of Divinity students will require a learning goal for women's studies, and it shall be done in consultation with the Perkins Internship Office.

THE COURSES
Dedman College and Meadows School of the Arts Courses

Note: Courses at the 4000 level or below must be taken with the numbers WGST 5310 and 6310, and in accordance with the academic requirements stated above.

ANTH 3310 Gender and Sex Roles
ANTH 3328 Gender Violence: What Does Culture Have to Do With It?
ANTH 3336 Gender and Globalization
ANTH 4351 Gender Embodiment
ANTH 6386 The Archaeology of Gender
ARHS 4371 Modern Mythmaking
ARHS 6389 Women in the Visual Arts
CCJN 4360 Women and Minorities in Mass Media
ECO 4351 Labor Economics
ECO 5357 Economics of Human Resources
ENGL 3344 Victorian Gender
ENGL 3364 Women and the Southwest
ENGL 3367 Ethical Implications of Children's Literature
ENGL 3371 Joan of Arc: Her Story in History, Literature, and Film
ENGL 3373 Masculinities: Images and Perspectives
ENGL 3379 Contexts of Disability
ENGL 6375 Sex, Gender, and Literature
FILM 3310 Screen Artists (when relevant)
FILM 3360 Gender and Representation in World Cinema
FILM 3395, 3398 Topics in Cinema/Television (when relevant)
FILM 4350 Gender Issues in Communication
HIST 3312 Women in American History
HIST 3317 Women in Latin-American Society
HIST 3329 Women in Early Modern Europe
HIST 3330 Women in Modern European History
HIST 3348 American Families: Changing Experiences and Expectations
HIST 3355 Class and Gender in Ancient Society
HIST 3357 Joan of Arc: Her Story in History, Literature, and Film
HIST 3394 The Emergence of Modern Womanhood in the U.S., 1890–1930
HIST 3398 Women in Chinese History
HIST 4304 At the Crossroads: Gender and Sexuality in the Southwest
MDVL 3352 Gender in the Middle Ages
PHIL 3305 Philosophy and Gender
PLSC 3370 Women and Politics
PLSC 4339 Women and the Law

PSYC 3350 Psychology of Women
RELI 3375 Expressions of the Feminine Divine
RELI 3376 Constructions of Gender, Sexuality, and Family in South Asian Religions
SOCI 3351 Marriage and Family
SOCI 3371 Sociology of Gender
SOCI 4373 Race, Gender, and Inequality
THEA 4383 Gender and Performance
WGST 3310 Gender and Human Rights
WGST 3328 Gender Violence: What Does Culture Have to Do With It?
WGST 3370 Women in the Southwest
WGST 3381 Modern Myth-Making
WGST 5310, 6310 Special Topics in Women's and Gender Studies I and II
WGST 6300 Advanced Feminist Theory
WL 3312 Women in Modern China
WL 3359 Masculinities: Images and Perspectives
WL 3363 (WGST 3347) Figuring the Feminine

Perkins School of Theology Courses

CE 8338 Emancipatory Educational Ministry With Adolescent Girls
HR 8337 Sex and Gender in Greek and Latin Patristic Thought
HX 8328 Women in the History of Christianity
PC 8333 Pastoral Care and Counseling of Women
PC 8335 Sexual and Domestic Violence: Theological and Pastoral Concerns
PC 8345 Justice Issues in Pastoral Care
ST 8345 Theologies of Hope and Liberation
ST 8375 Feminist, Womanist and Mujerista Theologies

Women's and Gender Studies (WGST)

WGST 5310 (3). SPECIAL TOPICS IN WOMEN'S AND GENDER STUDIES I. Study of a theme, issue, or topic relevant to the study of women, gender, and/or sexuality. The syllabus and assignments must be approved by a committee consisting of the professor of record, the director of Women's and Gender Studies, and one additional member of the affiliated faculty for Women's and Gender Studies (that is, a faculty member who teaches courses in the WGST program). *Prerequisite:* Enrollment in the Certificate Program in Women's and Gender Studies.

WGST 6109 (1), 6209 (2). INDEPENDENT STUDIES. Directed readings with instruction-based faculty guidance. Approval of director is required.

WGST 6300 (3). ADVANCED FEMINIST THEORY. This course explores feminist theories that seek to explain women's subordination historically and cross-culturally, examines gender as a principle of social organization, and addresses the linkages among gender, ethnicity and class from the vantage of multiple disciplines.

WGST 6309 (3). INDEPENDENT STUDIES. Directed readings with discussion-based faculty guidance. Approval of director is required.

WGST 6310 (3). SPECIAL TOPICS IN WOMEN'S AND GENDER STUDIES II. Study of a theme, issue, or topic relevant to the study of women, gender, and/or sexuality. The syllabus and assignments must be approved by a committee consisting of the professor of record, the director of Women's and Gender Studies, and one additional member of the affiliated faculty for Women's and Gender Studies (that is, a faculty member who teaches courses in the WGST program). *Prerequisite:* Enrollment in the Certificate Program in Women's and Gender Studies.

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D. Fred Wendorf, *Professor Emeritus and Henderson-Morrison Chair in Anthropology,* Ph.D., Harvard

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Richard Kelso Williams, *Professor Emeritus of Mathematics,* Ph.D., Vanderbilt

André Winandy, *Professor Emeritus of French,* Ph.D., Pittsburgh

Samuel A. Zimmerman, *Professor Emeritus of Spanish,* Ph.D., Florida