TEXAS TECH UNIVERSITY PROPOSAL TO THE TEXAS HIGHER EDUCATION COORDINATING BOARD FOR THE CORE CURRICULUM REVISIONS TO BE IMPLEMENTED IN FALL 2014

Component I

Texas Tech University Core Course Selection Process

The Texas Tech University course selection process was managed by the Core Curriculum Committee, which is comprised of 68 faculty members from units with courses in the core curriculum or a TTU graduation requirement. There are also 6 ex-officio members who represent administrative offices that manage different aspects of the core curriculum (Student Affairs, Official Publications, Institutional Research, Planning and Assessment and University Advising). The committee is chaired by an associate vice provost and tenured rofessor in the Department of Geosciences (Geography). The Vice-Chair is an associate dean in the College of Arts and Sciences and a tenured professor in the Department of Communication Studies. The Core Curriculum Committee has 10 subcommittees, one for each FCA (with associated CAOs in mathematics/logic and oral communication) and the multicultural and foreign language university requirements. The steering committee membership is comprised by the subcommittee chairs. The subcommittees are responsible for reviewing course submittals for the core curriculum, reviewing assessment plans and results, and other activities related to their FCA, The Steering Committee approves recommendations from the subcommittees for additions or deletions from the core as well as changes to student learning outcomes and related items. Core Curriculum Committee Stering Committee recommendations go to the Academic Council (associate academic deans) for approval and implementation unless, as in the case of the core curriculum changes mandated by the Coordinating Board, higher level approval is required. A list of 2012-13 Core Curriculum Committee membership is in Appendix A of this document.

The existing Texas Tech University core curriculum consists of 350 courses, of which nearly half are junior or senior (3000/4000) level courses. The Core Curriculum Committee members felt that some areas of the core were too large to allow for effective assessment of student attainment of core objectives and that the upper-level classes often were either general content courses that should be taught at an introductory level or too specialized to be in the core curriculum. The new core curriculum objectives mandated by the Coordinating Board in October 2011 provided an opportunity to conclude a reform process, begun in 2008, that was intended to bring more focus to the core curriculum. Thus, the committee decided to terminate the existing core curriculum as of the end of summer session II, 2014 and to require that all courses proposed for the new core to be implemented in fall 2014 would have to be submitted for review by the Core Curriculum Committee to ensure (1) that they address the new Coordinating Board core curriculum objectives, (2) that their content and level of instruction were appropriate for a core curriculum, (3) that the subject matter was suitable for the component area for which they were proposed, and (4) that an assessment plan was included for each required core objective.

The committee felt that the two existing component area options, oral communication and mathematics and logic, should be retained. There is also a strong feeling that students cannot adequately understand the processes by which science operates without a meaningful laboratory experience. Science faculty members were strongly opposed to incorporating a lab into a 3 SCH science course. We elected to create a general education graduation requirement for 2 SCH of science laboratory. This does not increase hours to graduation because science labs are required in the current 44 SCH Texas Tech University core curriculum (8 SCH of laboratory science). Non-STEM transfer students who have not taken science laboratories will be able to enroll for a 2-SCH on-line science "laboratory" class that focuses on the processes of science and how science and society interact. Transfer students who intend to enroll in a STEM discipline and who have not taken science labs will enroll for the appropriate lab when they enter the university.

The committee formulated guidelines for core curriculum courses and established a 2 phase review process for core course approval. Phase 1 required academic units wishing to submit a course for the core curriculum to complete a form that included course information and a detailed explanation of how their course would address the required Coordinating Board core curriculum objectives as well as Texas Tech University student learning outcomes. The Phase 1 form also called for submitting units to verify that the course being submitted had been

approved by faculty at the departmental and college levels. Instructions for completing the form are in Appendix B and Appendix C is the form. Phase 2 required units to submit a complete syllabus for each course proposed for the core. Phase 1 course approval forms were reviewed by the Core Curriculum Steering Committee, which is comprised of the 8 area committee chairs (see appendix A). Phase 2 syllabi were reviewed by the appropriate area committee and also by the Core Curriculum Committee Chairperson. At each phase syllabi could be accepted for the core as submitted, returned for revision, or rejected.

Guidelines for core curriculum courses were posted on a website along with the course application form and other relevant information (http://newcore.ttu.edu). This website is still active and may be accessed to view the documents prepared to guide academic units in developing course proposals. Review committees were instructed to ensure that all approved syllabi complied with the guidelines. Course approvals or syllabi that were returned for revision were accompanied by detailed instructions on the deficiencies and required remedies. Most rejected courses were judged not to be appropriate for the core curriculum, but there was an appeal process via which rejected courses could be resubmitted if accompanied by a suitable justification. Few rejected courses were resubmitted.

This process ensured that each course submitted for the core curriculum addressed all of the required Core Curriculum Objectives for the Component Area and included plans for assessment. An additional issue that will be addressed as the new core is implemented is training of faculty to teach and assess Core Curriculum Objectives they have not previously been called upon to address such as critical thinking, teamwork, social responsibility, and individual responsibility. We have begun offering orientation sessions through our Teaching, Learning, and Professional Development Center and will continue to provide training in this area and also in assessment methods on a continuing basis. We will establish continuous training programs at the academic unit level to orient graduate student instructors in appropriate teaching and assessment strategies for the required core objectives.

The final list of 145 courses approved by the Core Curriculum Committee was submitted to the Academic Council (comprised of the academic associate deans of the teaching colleges and library), which approved the course list on May 21, 2013; the Provost Council (deans and vice presidents),which approved the list on July 16, 2013; and the Texas Tech University Board of Regents (Meeting of August 8-9, 2014). See the attached Board agenda item, appendix D. The complete course list is included as part of the response to Component III of this report.

APPENDIX A

CORE CURRICULUM COMMITTEE
2012-2013

Steering Committee
Gary Elbow, Office of the Provost, Chair (2013)
David Roach, Associate Dean, College of Arts & Sciences, Vice-Chair (2013)
Mary Frances Agnello, Multicultural (2013)
Joaquin Borrego, Multicultural (2015)
Robert Henry, Creative Arts (2014)
Susan Lang, Communication (2013)
Jeff Lee, Life and Physical Science (2015)
Randy McBee, American History (2015)
Dennis Patterson, Government/Political Science (2015)
Kent Pearce, Mathematics (2014)
Anthony Qualin, Foreign Languages (2013)
Anna Christina Ribeiro, Language, Philosophy, and Culture (2014)
Juliann Scholl, Social and Behavioral Sciences (2015)
Ex-officio
Tess Barlow (Institutional Research and Information Management)
Jennifer Hughes (Office of Planning and Assessment)
Patrick Hughes (Undergraduate Education)
Marcus Tanner (Undergraduate Education)
Sue Jones (Official Publications)
DaNay Phelps (University Advising)

Core Area Committees
Communications
Kathleen Gillis, Writing Center, MS 3091 (2014)
Mark Gring, Communication Studies, MS 3083 (2015)
Jon Hufford, Library, MS 0002 (2014)
Thomas G. Kimball, Applied Professional Studies, 1210 (2013)
Susan Lang, English, MS 3091 (2015)
Roger Saathoff, Mass Communications, MS 3082 (2013)

Mathematics
Kent Pearce, Mathematics and Statistics, Chairperson, MS 1042 (2014)
Nelson Rushton, Computer Science, MS 3102 (2015)
Emmett Elam, Agricultural and Applied Economics, MS 2132 (2015)
Christopher Hom, Philosophy, MS 3092 (2014)
Pam Tipton, Education, MS 1171 (2013)

Life and Physical Sciences
Jeff Lee, Geosciences, Chairperson, MS 1053 (2015)
Calvin Barnes, Geosciences, MS 1053 (2013)
Dominick Casadonte, Chemistry and Biochemistry, MS 1061 (2013)
Lauren Gollahon, Biological Sciences, MS 3131 (2014)
David Lamp, Physics, MS 1051 (2014)
Mark McGinley, Honors College/Biological Sciences, MS 1017 (2012)
Paul Pare, Chemistry and Biochemistry, MS 1061 (2012)
Leslie Thompson, Animal and Food Sciences, MS 2141 (2012)

Richard Zartman, Plant and Soil Science, MS 2122 (2013)

Language, Philosophy, and culture
Anna Christina Ribeiro, Philosophy, Chairperson MS 3092 (2014)
Michael Borshuk, English, MS 3091 (2015)
Jeffrey Mosher, History, MS 2013 (2014)
John Poch, English, MS 3091 (2014)
Jorge Zamora, CMLL, MS 2081 (2014)

Creative Arts
Robert Henry, Music, Chairperson, 5060 (2014)
Todd Chambers, Mass Communication, MS 3082 (2015)
Dorothy Chansky, Theatre and Dance, MS 2061 (2014)*
Kevin Chua, Art, MS 2018 (2015)
Ali Duffy, Theatre and Dance, MS 2061 (2013)**
Alan Shinn, Music, MS 2033 (2015)
Chris Taylor, Architecture, MS 2091 (2013)
Susan Tomlinson, Honors, MS 1017 (2013)
*On leave, 2012-13
**Replacement for Chansky 2012-13

Multicultural
Mary Frances Agnello, Education, Co Chairperson, MS 1071 (2013)
Joseph Aranha, Architecture and International Education (Study Abroad), MS 2091 (2015)
Joaquin Borrego, Psychology, Co Chairperson,MS 2051 (2015)
Constance Cortez, Art, MS 2081 (2015)
Aretha Marbley, Education MS 1071 (2013)
Juan Munoz, Education, MS 1071 (2015)
Luis I. Ramirez, Sociology, Anthropology & Social Work, MS 1012 (2014)
Jon Ulmer, Agricultural Education and Communication, MS 2131 (2015)
Jobe Martinez, Cross Cultural Academic Advancement Center, MS 5065 (2015)

Social and Behavioral Sciences

Individual or Group Behavior
Juliann Scholl, Communication Studies, Chairperson, MS3083 (2015)
Narissra Carter, Communication Studies, MS 3083 (2014)
Fanni L Coward, Education, MS 1071 (2014)
Catherine Epkins, Psychology, MS 2051 (2015)
Bill Gustafson, Human Sciences, MS 1210 (2015)
Laura Lowe, Sociology, Anthropology and Social Work, MS 1012 (2013)
Eleanor Von Ende, Economics, MS 1014 (2015)

U.S. History
Randy D. McBee, History, Chairperson, MS 1013 (2015)
Sean Cunningham, History, MS 1013 (2015)
Miguel Levario, MS 1013 (2015)
Barbara Hahn, History, MS 1013 (2015)
Gretchen Adams, History, MS 1013 (2015)
Richard Verrone, History, MS 1015 (2015)

U.S. and Texas Government

Dennis Patterson, Chairperson, Political Science, MS 1015, (ex officio)
John Barkdull , Director Of Undergraduate Studies, Political Science, MS 1015 (2015)
Toby Rider, Political Science, MS 1015 (2015)
Hoon Lee, Political Science, MS 1015 (2015)
Gregg Murray, Political Science, MS 1015 (2015)

Foreign Languages
Anthony Qualin, CMLL, Chairperson, MS 2081 (2013)
George Cole, CMLL, MS 2081 (2013)
Eva Midobuche, Education, MS 1071 (2014)
Joseph Price, CMLL, MS 2081 (2014)
Lorum Stratton, CMLL, MS 2081 (2015)

Updated 5/30/12 (Members with terms expiring in 2013 will be replaced on August 31, 2013)

APPENDIX B

ON-LINE COURSE APPLICATION FORM INSTRUCTIONS

The on-line Core Curriculum Course Application Form is quite intuitive and easy to use. The first sections, which call for information about the course, will fill in automatically for an existing course. For new courses the individual completing the application will have to enter the information on proposed course number, title, description, and number of hours. Drop-down menus are provided for new courses to select a college. As indicated in the instructions, any course proposed for the Core Curriculum should have received prior approval at the department and college level. The form has an airline reservation style calendar on which to enter course approval dates.

The last part of the course information section of the application is a drop-down menu from which to select the core area. Oral communication courses should be included under Communications and mathematics and logic courses under Mathematics.

The next step is to fill in the boxes for Component Area Objectives (THECB), Student Learning Outcomes, and the College-Level Outcome for the relevant Core Curriculum area. The best strategy for completing this part of the form is to have the text available as a word document that can be copied and pasted into the form. Information on how the objective/outcome is to be addressed in the course and how it will be assessed is required. (See the sample application on the Core Curriculum Website (http://www.depts.ttu.edu/provost/newcore/contents/sample_application.pdf) for an example of how this might be done.) All objectives and outcomes must be addressed in the application.

When the objectives and outcomes are complete, review the form and make any necessary corrections. When the form is complete and correct, click on the submit button to complete the process.

Please note that a course syllabus is not required at this stage in the approval process. A special subcommittee of the Core Curriculum Committee will review the applications during the summer to identify problems before the proposals go to the Component Area Committee in September. Any issues that are identified will be communicated to the submitting department along with comments on how to correct them. A syllabus will be required when the courses are sent to the Component Area Committees in September.

APPENDIX C

TEXAS TECH UNIVERSITY COURSE APPLICATION FORM

Approval procedure: Please fill out the form below and address how each TTU and Coordinating Board learning objective or outcome will be covered in the course and how student learning will be assessed.

All Core Curriculum course requests should have received prior approval at the department and college levels prior to submission to the Core Curriculum Committee (CCC). Please insure that the appropriate individuals/committees have approved and signed your submission before submitting the form below to the CCC.

COURSE TYPE	○ Existing Course ◉ New Course
NEW SUBJECT *	*Please enter new subject* only characters allowed
NEW COURSE NUMBER *	*Please enter new Course Number Enter a valid number*
DEPARTMENT *	Select ****** Please select Department*
COLLEGE *	Select ****** Please Enter College*
COURSE TITLE *	****** Please Enter Course Title*
COURSE CATALOG DESCRIPTION * **(25 words or less)**	****** Please Enter New Course Description*
NUMBER OF SECTIONS TO BE OFFERED *	*Enter a valid number Please Enter Number of Sections*

ESTIMATED ENROLLMENT PER YEAR *	*Enter a valid number Please Enter Number of Sections*

PLEASE SELECT THE COURSE LEVEL

- (•) This is a freshman or sophomore level course.
- ( ) This is NOT a freshman or sophomore level course and if approved for the core curriculum this course will be renumbered at the freshman or sophomore level.
- ( ) This is NOT a freshman or sophomore level course and if approved for the core curriculum this course will be renumbered at the junior level.

Name and e-mail address of individual to whom responses and questions about this course maybe addressed.

REQUESTOR NAME: *	*Please enter the name of contact person*
EMAIL ADDRESS *	*Please enter the emailid of contact person*
DEPARTMENT APPROVAL DATE *	< July 2013 > Sun Mon Tue Wed Thu Fri Sat 30 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25 26 27 28 29 30 31 1 2 3 4 5 6 7 8 9 10 *Please select a date from calender*
COLLEGE APPROVAL DATE *	< July 2013 > Sun Mon Tue Wed Thu Fri Sat 30 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25 26 27 28 29 30 31 1 2 3 4 5 6 7 8 9 10 *Please select a date from calender*
CORE AREA *	SOCIAL AND BEHAVIORAL SCIENCE

In the space below please indicate how each THECB (Texas Higher Education Coordinating Board) and TTU student learning objective will be addressed, what strategies will be used to introduce each objective and how student learning of each objective will be assessed.

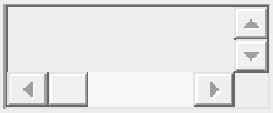
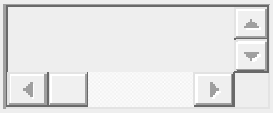
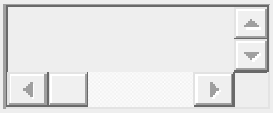
Please note: All Coordinating Board Learning Objectives designated for your Core Curriculum Component Area must be addressed.

SOCIAL AND BEHAVIORAL SCIENCE - COORDINATING BOARD / STUDENT LEARNING / COLLEGE LEVEL OBJECTIVES

Courses in this category focus on the application of scientific methods in the understanding of what makes us human.

The following Core Objectives must be addressed in each course approved to fulfill this category requirement: ******

CATEGORY	REQUIREMENT	RESPONSE(Limited to 4000 characters)
Coordinating Board Objective 1	Critical Thinking Skills: to include creative thinking, innovation, inquiry, and analysis, evaluation and synthesis of information	****** *Please enter your response for the question*
Coordinating Board Objective 2	Communication Skills: to include effective development, interpretation and expression of ideas through written, oral and visual communication	****** *Please enter your response for the question*
Coordinating Board Objective 3	Empirical and Quantitative Skills: to include	****** *Please enter your*

	the manipulation and analysis of numerical data or observable facts resulting in informed conclusions	*response for the question*
Coordinating Board Objective 4	Social Responsibility: to include intercultural competence, knowledge of civic responsibility, and the ability to engage effectively in regional, national, and global communities	 ****** Please enter your response for the question*
TTU Student Learning Objective 1	Identify and critique alternative explanations for claims about social issues and human behavior.	 ****** Please enter your response for the question*
TTU Student Learning Objective 2	Demonstrate knowledge of the appropriate and ethical methods, technologies, and data that social and behavioral scientists use to investigate the human condition.	 ****** Please enter your response for the question*
College Level Competency Objective 1	College-Level Competency: Students graduating from Texas Tech University should be able to: demonstrate the	 ****** Please enter your response for the question*

	ability to assess critically claims about social issues, and human behavior, in human experiences.	

SUBMIT APPLICATION

- Texas Tech University, Institutional Research, Box 42017, Lubbock, TX 79409 - 2017
- Location: Administration Bldg,2nd floor, Room 218C
- 806.742.2166
- IRIM Webmaster

APPENDIX D

TTU: Approve a Revised Core Curriculum to Comply with Texas Higher Education Coordinating Board Fall 2014 Requirements

Presenter: Dr. Lawrence Schovanec Presentation
Time: 3 minutes

Board approval required by: TTU Operating Policy 36.04 and Chapter 5, subchapter C, THECB Laws and Rules.

Recommendation

The chancellor concurs with the recommendation of the Texas Tech University president that the Board of Regents approve the request to replace the existing undergraduate core curriculum with the attached course list. The changes are called for to address new core curriculum requirements that were enacted by the Texas Higher Education Coordinating Board at its meeting of October 28, 2011.

Background Information

The new Core Curriculum Objectives approved by the Coordinating Board in 2011 require substantial changes in the content of core curriculum courses. Therefore, the Core Curriculum Committee elected to completely revise the Texas Tech University core curriculum. Departments and colleges were informed that a new core curriculum would be implemented in fall semester 2014, in accord with Coordinating Board requirements, and that all courses would need to address the new Core Curriculum Objectives. The attached list has also been approved by the Academic Council (5-21-13) and the Provost Council (6-17-13)

Course approval was a two-stage process. In the first stage, academic units wishing to propose courses for the new core completed an on-line core course application that required them to explain how proposed courses would address the new requirements. In the second phase, programs were required to submit course syllabi that included specific information on course outcomes and assessments. The first phase applications were reviewed by the Core Curriculum Steering Committee (10 faculty members) and returned for revision as needed. In the second phase course syllabi were reviewed by the relevant core curriculum component area committee, each of which was comprised of between 5 and 9 faculty members who represent departments with courses in the specific component area. Again, syllabi that did not meet the requirements were returned for revision.

The result of this process is a list of 154 courses (including 8 science laboratory classes) and a much more focused core curriculum that the 289 courses that are currently in the core curriculum. In addition, where the existing core curriculum has many junior-level courses, the revised core is comprised only of freshman and sophomore courses, which are non-specialized and more suitable for the generalized approach favored for a core curriculum.

Attachments:

Core Curriculum Course List with Catalog Description

Coordinating Board Foundational Component Areas and Core Curriculum Objectives

rriculum would be implemented in fall semester 2014, in accord with Coordinating Board requirements, and that all courses would need to address the new Core Curriculum Objectives. The attached list has also been approved by the Academic Council (5-21-13) and the Provost Council (6-17-13)

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The result of this process is a list of 154 courses (including 8 science laboratory classes) and a much more focused core curriculum that the 289 courses that are currently in the core curriculum. In addition, where the existing core curriculum has many junior-level courses, the revised core is comprised only of freshman and sophomore courses, which are non-specialized and more suitable for the generalized approach favored for a core curriculum.

The proposed new core will remain unchanged for the 2014-15 academic year, after which the Coordinating Board will allow the university to submit changes on a one-time-per-year basis.

Attachments:

Core Curriculum Course List with Catalog Descriptions

Coordinating Board Foundational Component Areas and Core Curriculum Objectives

Component II

Texas Tech University process for assessing student attainment of Core Objectives

A. Describe the institution's process to determine the appropriate level of attainment of each Core Objective.

In 2008 Texas Tech University created a Core Curriculum Committee comprised of approximately 70 faculty members who had taught core curriculum courses. This committee was charged with developing learning objectives and college-level competencies for each Foundational Core Area of the Texas Tech University core curriculum and assessing student attainment of those objectives. In regard to assessment, the Core Curriculum Committee developed the Online Senior Assessment, a set of questions administered annually to students who have completed a minimum of 90 SCH to determine their performance level in Mathematics, science, humanities, Social and Behavioral Sciences and the university multicultural requirement. Minimum acceptable performance criteria were established by the committee members based on their familiarity with subject matter knowledge, core skills, and Texas Higher Education Coordinating Board Exemplary Educational Objectives.

The Core Curriculum Committee is organized into subcommittees, one for each FCA, one for the university multicultural course graduation requirement, and one for foreign languages. Membership on these committees ranges from 5 to 9 . (See http://www.depts.Texas Tech University.edu/provost/councilscmtes/ccc/ for core curriculum membership and related information on this committee.) Each of the committees has a chairperson and the subcommittee chairs comprise the Core Curriculum Steering Committee. Committee members are appointed by an associate vice provost who also serves as the chair of the steering committee (non-voting). There is also a non-voting vice-chair.

The Core Curriculum Committee, through its subcommittees is responsible for: (1) approving course additions and deletions from the core, (2) developing and/or approving assessments of student attainment of the core curriculum student learning objectives, and (3) approving levels of student performance that represent "mastery" of the core student learning objectives. The Core Curriculum Committee is assisted in these efforts by the Office of Planning and Assessment, which helps to set performance targets for standardized assessments, administers assessments at the university level, and accumulates data from course-level assessments in core curriculum courses. The Office of Planning and Assessment, in cooperation with the Teaching , Learning, and Professional Development Center, also facilitates training of faculty, development of new assessment plans, helps faculty develop rubrics for assessment and is leading development of a portfolio program that will facilitate assessment of new core objectives.

When the Texas Core Curriculum changes were approved by the Coordinating Board the Core Curriculum Committee was charged with implementing the revisions at Texas Tech University. The CCC solicited and reviewed course proposals for the new core and also developed assessment strategies in cooperation with the Office of Planning and Assessment, as noted above. (See http://www.depts.Texas Tech University.edu/provost/councilscmtes/ccc/ for course review procedures and related documents on the Core Curriculum Committee website.)

Appropriate levels of attainment for existing assessments are based on benchmarks approved by the appropriate core curriculum subcommittee and applied by the Office of Planning and Assessment. For

new Core Objectives, the appropriate levels are, of necessity, largely arbitrary because we do not have sufficient information on student mastery to be able to assign reliable values.

The statements above apply to assessments of students as they approach completion of their undergraduate education and most frequently are based on random sampling from across the university, including many majors as well as students who may or may not have completed their core curriculum courses at Texas Tech University. Course level assessment is required, but the method of assessment and selection of appropriate levels of attainment are the responsibility of individual instructors and/or the academic unit in which the course is offered. Core curriculum course requests were required to present a plan for course-level assessment of all required core objectives and Texas Tech University core curriculum student learning outcomes. These were reviewed by the appropriate core curriculum area subcommittee and by the core curriculum steering committee. Unsatisfactory plans were returned to the submitting unit for revision.

B. Describe the institution's plan for assessment of each Core Objective. Include the following components of the institution's assessment plan:

Assessment methods – explain the methodology (institutional portfolios, embedded assessment, etc.), describe the measures (must include at least one direct measure), outline the frequency and timeline of assessment

Texas Tech University will use a combination of the following assessment methods in determining the extent to which students have attained the university and Texas Higher Education Coordinating Board Core Objectives:

Communication

- Collegiate Assessment of Academic Proficiency (CAAP) Writing Skills test (administered every third year), direct measure
- Collegiate Learning Assessment (CLA) (administered every other year), direct measure
- Student portfolios (annually, based on random sample), direct measure
- Course-level embedded assessment of written and oral communication (every long semester), direct measure

Critical Thinking

- Collegiate Assessment of Academic Proficiency (CAAP) Various modules (writing, mathematics, science), (administered every year in 3-year rotation), direct measure
- Collegiate Learning Assessment (CLA) (every other year). direct measure
- California Critical Thinking Skills Test (administered every third year), direct measure
- Student portfolios (annually, based on random sample), direct measure
- Online Senior Assessment (administered annually), direct measure
- Course-level embedded assessment (every long semester), direct measure

Empirical and Quantitative Skill

- Collegiate Assessment of Academic Proficiency (CAAP) Mathematics Test (administered very third year), direct measure
- Collegiate Assessment of Academic Proficiency (CAAP) Science Test (administered every third year), direct measure
- California Critical Thinking Skills Test (CCTST) (administered every third year), direct measure
- Collegiate Learning Assessment (CLA) (administered every other year), direct measure
- Online Senior Assessment (administered annually), direct measure

- Course-level embedded assessment (every long semester), direct measure

Teamwork

- Student portfolios (annually, based on random sample), direct/indirect measure, depending on portfolio content
- Online Senior Assessment (annually), direct measure
- Course-level embedded assessment (every long semester), direct measure
- Course-level instructor observation (every long semester), direct measure

Personal Responsibility

- Defining Issues Test (DIT) (every third year), direct measure
- National Assessment of Student Engagement (NSSE) (administered every other year), indirect measure
- Student portfolios (annually, based on random sample), direct measure based on student reflection on participation in relevant activities
- Online Senior Assessment (annually), direct measure
- Course-level direct assessment (every long semester), direct measure

Social Responsibility

- Student portfolios (annually, based on random sample), direct measure based on student reflection on courses taken, activities related to intercultural competence and engagement with diverse communities (study abroad, appropriate service-learning, involvement in cross-cultural co-curricular activities, etc.)
- Online Senor Assessment (annually), direct measure
- National Assessment of Student Engagement (NSSE) (administered every other year), indirect measure
- Course-level direct assessment (every long semester), direct measure

Criteria/Targets – explain the criteria and targets for the level of attainment of each Core Objective, include references to externally informed benchmarks

Communication

Course-level direct assessment (every long semester)

For ENGL 1301 and 1302 assessment is conducted by the Department of English. Courses are delivered via blended face-to-face and on-line methods and all written student work is archived. Samples are taken for assessment purposes. The criteria target is set by the department at 70% of students will attain a grade of 70% (C-) or better on the final summative essay of the semester.

Oral Communication courses employ varying assessment strategies depending on department and course. Benchmarks are indicated on the syllabi submitted for review with this proposal (http://appserv.itts.ttu.edu/CCC/Review.aspx) .

Nationally normed direct assessments (Collegiate Learning Assessment [CLA], Collegiate Assessment of Academic Proficiency [CAAP], rotated every second or third year)

Texas Tech University has adopted “at or above national scores (mean or median)” as the minimum acceptable level of performance on these assessments. The expectation also is that performance of Texas Tech University students will show consistent improvement over time relative to the national norms. These criteria were selected by the Office of Planning and Assessment in collaboration with the Core Curriculum Committee.

Student portfolios (direct assessment, continuous)
Texas Tech University is developing a student portfolio program that will provide another basis for assessment of the Communication core objective. We are in the process of selecting a platform for the portfolios and will pilot the project next fall in three academic units (selected programs in Engineering, Agriculture, and Geosciences). A committee comprised of faculty and staff has been created to develop rubrics and provisional performance benchmarks for student attainment of the objectives. Assuming a rubric scale of 1-4 (following the AAC&U Value Rubrics model [See http://www.aacu.org/value/rubrics/index_p.cfm?CFID=51217356&CFTOKEN=26531428 to download the rubrics]) we have established 2.5 as the provisional benchmark. This criterion is consistent with AAC&U practice and also with several other Texas institutions are planning for their core curriculum assessment.

Critical Thinking

Course-level direct assessment using rubrics (every semester)
All core curriculum courses were required to address critical thinking in their application process and also in the syllabi that were submitted for approval. The two most common approaches to assessing critical thinking are embedded test questions and rubrics that will be used to evaluate written assignments such as term papers and essays. Criteria are being established by the faculty in units with courses in the core.

Nationally normed direct assessments (CAAP, CLA, California Critical Thinking Skills Test [CCTST] rotated every second or third year)
Texas Tech University has adopted "at or above national scores (mean or median)" as the minimum acceptable level of performance on these assessments. The expectation also is that performance of Texas Tech University students will show consistent improvement over time relative to the national norms. These criteria were established by the Office of Planning and Assessment in collaboration with the Core Curriculum Committee.

Online Senior Assessment (direct; every spring semester)
The current version of the Online Senior Assessment focuses on Texas Tech University student learning outcomes and college-level competencies along with Coordinating Board EEOs (See http://www.depts.ttu.edu/provost/councilscmtes/ccc/corecurriculum.php). Some of the questions used in the current OSA require critical thinking and they will be identified for this purpose. In addition, we will add 3 or 4 questions directed specifically toward assessing student critical thinking ability. These questions and the criteria for attainment will be developed by an interdisciplinary group of faculty who teach courses in the core curriculum.

Student portfolios (direct assessment, continuous)
Texas Tech University is developing a student portfolio program that will provide another basis for assessment of the Core Objectives, including critical thinking. We are in the process of selecting a platform for the portfolios and will pilot the project next fall in three academic units (selected programs in Engineering, Agriculture, and Geosciences). A committee comprised of faculty and staff has been created to develop rubrics for evaluating student attainment of the Core Objectives. The rubrics and benchmarks are pending, but it is likely that a provisional score of 2.5 on a 1-4 scale will be selected by the committee. This criterion is consistent with AAC&U practice and also with several other Texas institutions are planning for their core curriculum assessment.

Empirical and Quantitative Skill

Course-level direct embedded assessment (every long semester)
Course level assessments are intended to evaluate student ability to interpret quantitative data and concepts as presented in charts, graphs, formulas, written problems, and other forms of expression. Mathematics and the Life and Physical Sciences have been assessing for this core objective regularly. Social and Behavioral Sciences will be incorporating these objectives into their assessments in the new core. Criteria for acceptable attainment of the objectives will be established by the individual departments and/or course instructors or coordinators.

Nationally normed direct assessments (CAAP, CLA rotated every second or third year)
Texas Tech University has administered CLA on an alternate year basis since 2008. We will continue to administer this nationally normed assessment in the future. The mathematics and science modules of CAAP were administered in 2010-11 and 2011-12 and the science module is being administered again in 2013-14. Core Curriculum Committee faculty and OPA staff set at or above national means as acceptable performance for Texas Tech University students on both the CLA and CAAP. These criteria will remain for the new core. They will be reassessed as the new core becomes established.

Online Senior Assessment (direct, every spring semester)
The Mathematics and Life and Physical Sciences sections of the Online Senior Assessment contain questions that test for student empirical and quantitative skill. Questions that assess for this skill will be added to the Social and Behavioral Sciences sections of this instrument with specific reference to student ability to interpret graphs, tables, and diagrams. Faculty from the Social and Behavioral Sciences Core Curriculum Subcommittee will develop the questions and set the criteria for acceptable performance.

Teamwork

Course-level direct assessment using rubrics (every long semester)
Texas Tech University core curriculum faculty in Life and Physical Sciences, Creative Arts, and Communication are not trained to teach or assess student performance on teamwork. Therefore, we are offering training programs through the Teaching, Learning, and Professional Development Center. In addition we are developing a short video that will illustrate desirable and undesirable teamwork behaviors for use in training faculty and teaching assistants to teach and evaluate teamwork skills. Along with the video, a faculty teamwork committee has been formed to create a set of rubrics for use in assessing teamwork skills. Standards for acceptable teamwork performance will be established by the teamwork committee as the training materials are developed and tested.

Student portfolios (direct and indirect assessment, continuous)
As the student portfolio project is adopted across the campus students will be encouraged to include self-assessment of teamwork experiences in their portfolios, both as part of their coursework and through co-curricular activities. These experiences will be evaluated as part of the portfolio review process (based on a random sample of student portfolios conducted by a group of faculty trained to assess portfolios and provided with appropriate rubrics to guide their evaluation). Performance criteria for teamwork in student portfolios will be established as the rubrics are completed and tested by the teamwork committee.

Online Senior Assessment (direct, every spring semester)

A set of 3-5 questions on teamwork skills will be developed by the faculty teamwork committee and added to the Online Senior Assessment. These questions will not test directly for teamwork skill, but they will allow us to determine the general level of student knowledge of teamwork practices. Acceptable levels of response will be set by the committee as its members write the teamwork assessment questions.

Personal Responsibility

"Strive for Honor:" A Campus Conversation on Ethics (Texas Tech University Quality Enhancement Plan, 2005-2009)

Texas Tech University selected ethics as its Quality Enhancement Plan for the 2005 reaffirmation with SACSCOC. This plan has been embedded across the campus through a wide variety of curricular and co-curricular activities. Therefore "the ability to connect choices, actions and consequences to ethical decision-making" is well established at the university. The QEP and its related activities were developed and implemented by university faculty and student affairs staff over a period of over 5 years. Assessment of the QEP reveals that student awareness of the need to consider values and ethics in decision-making has increased as a result of the plan. The QEP is embedded in co-curricular activities and it provides a solid base for increasing emphasis on personal ethics in the core curriculum. The "Strive for Honor" program is administered through the Texas Tech University Ethics Center, which is governed by an advisory board comprised of 22 members, of whom 13 hold faculty appointments.

Course-Level direct Assessment Using Rubrics (every long semester)

At the course level, for courses in Communication, Language, Philosophy and Culture, and Government/Political Science, departmental faculty members will establish benchmarks for student performance on the rubrics or other assessments they have elected to use. These assessments are indicated on the syllabi for courses proposed for the Texas Tech University core curriculum in the Core Objectives noted above.

Defining Issues Test (direct; rotated every second or third year)

Texas Tech University administered the Defining Issues Test (DIT-2) in 2009 and 2011. This test evaluates moral decision-making by asking students to respond to five modules that present ethical dilemmas. We will continue to use the DIT as one indicator of the impact of curricular and co-curricular activities on students' ethical reasoning. The DIT has been used to measure change in student ethical reasoning as a result of having completed a course that contains ethical content. We will continue to use the DIT in this way with a sample of core curriculum courses. We will be looking for improvement in student ethical reasoning, but the benchmark for improvement remains to be determined. The Office of Planning and Assessment will be working with the appropriate core curriculum area committees (Communication; Language, Philosophy, and Culture; American History; and Government/ Political Science) to identify an appropriate benchmark for improvement.

National Survey of Student Engagement (NSSE) (indirect assessment every other year)

The NSSE was first administered at Texas Tech University in 2001 and it has been administered every other year since 2005. Certain questions in the NSSE help to reveal student attitudes toward personal responsibility and can also document the level of experience students have through class work and co-curricular participation that include activities related to "development of ability to connect choices, actions and consequences to ethical decision-making." Texas Tech University has not established minimum acceptable performance levels for the NSSE, but the goal is to meet or exceed national mean scores.

Online Senior Assessment (direct; every spring semester)
Questions will be added to the Online Senior Assessment that evaluate ethical reasoning and decision-making. These questions will be developed by faculty who serve on the core curriculum area subcommittees that require personal responsibility (Communication; Language, Philosophy, and Culture; American History; and Government/ Political Science). Minimum acceptable performance standards will be set by the same group.

Student portfolios (direct assessment, continuous)

As the student portfolio program progresses they will be reviewed for evidence that students have engaged in activities leading to higher levels of maturity in moral judgment. Rubrics for evaluation of ethical reasoning and decision-making in student portfolios will be developed by the same faculty group that develops the Online Senior Assessment questions.

Social Responsibility

Course-level direct assessment using rubrics (every long semester)
The multicultural requirement student learning outcomes are in the process of revision to bring them into alignment with the social responsibility Core Objectives. The new learning outcomes should be approved by mid-October, after which the Multicultural Committee members will develop multicultural assessment rubrics (adapted from the AAC&U VALUE Rubrics on Intercultural Knowledge and Competence) and recommended benchmarks that course instructors may use as written or adapt if they wish. As with core curriculum courses, those that satisfy the multicultural requirement are assessed every time they are offered. Course-level assessment and identification of performance indicators of acceptable performance is the responsibility of the course instructor and/or the department in which the course is offered and faculty will not be required to use the rubrics developed by the multicultural committee.

The new multicultural student learning outcomes address intercultural competence and ability to engage effectively in regional, national, and global communities. They do not address civic responsibility. This requirement (along with the intercultural competence Core Objectives) will be addressed in the appropriate FCAs: Language, Philosophy, and Culture, Creative Arts, American History, Government/Political Science, and Social and Behavioral Sciences. The individual course instructors or departments in which a course is offered are responsible for assessing student performance and assigning benchmarks for student attainment of the required Core Objectives.

Online Senior Assessment (direct; every spring semester)
The existing OSA questions for the multicultural requirement will be rewritten by the Multicultural Subcommittee of the Core Curriculum Committee to match the new student learning outcomes. In addition, faculty from the subcommittees on Language, Philosophy, and Culture, Creative Arts, American History, Government/Political Science, and Social and Behavioral Sciences will develop questions to test for knowledge of civic responsibility. These committees will also establish performance criteria for these Core Objectives.

NSSE (indirect assessment every other year)
Texas Tech University has a long history of NSSE assessment that will continue into the future on an alternate year basis. This assessment is not direct, but it does provide insight into the amount of exposure students have to diverse populations and the extent to which they interact with people with

different background than theirs. It also addresses experience with and attitudes toward civic responsibility. The benchmark for the NSSE is at or above the national averages for comparable institutions in our region. This benchmark is established by the Office of Planning and Assessment.

Student portfolios (direct assessment, continuous)

At the university level we plan to address civic responsibility through review of student portfolios. The university offers a number engaged learning opportunities that involve civic responsibility. These include service-learning, undergraduate research in social sciences, human sciences, education, and certain areas of business, among others. Co-curricular activities also should be recorded in student portfolios. A rubric will be developed that will allow us to evaluate the extent to which students are engaged in activities related to civic responsibility and target levels of engagement will be identified.

Analysis – explain how the results of the assessment will be evaluated

Individual colleges and departments use the results of course-level assessment to determine the effectiveness of courses. At present they use embedded assessment to evaluate the extent to which students attain the Texas Tech University and CB learning outcomes. Under the new core we will continue assessing for the university core curriculum student learning outcomes and add the new Core Objectives. The results of assessment are reported to the Office of Planning and Assessment and stored in TracDat, a platform designed to maintain and manipulate assessment data. The results are evaluated by the individual reporting units and used for their internal course improvement purposes.

The Office of Planning and Assessment reports the results of the Online Senior Assessment each year it is administered (this assessment was not administered in 2010-11). These results are evaluated by OPA staff, the chair of the Core Curriculum Committee, and the appropriate core area committee (responsible for the various Core Objectives). Results are reported back to departments that offer courses in the relevant core areas for their information. Departments with courses that are identified as performing below benchmark levels will be informed and asked to submit an improvement plan to the Core Curriculum Committee for review by the appropriate core area subcommittee.

The Online Senior Assessment contains assessments for the following FCAs: Mathematics, Life and Physical Sciences (Natural Sciences), Language, Philosophy, and Culture (Humanities), Social and Behavioral Sciences (Individual or Group Behavior, American History, Government/Political Science), and the university multicultural requirement. Communication is assessed at the course level and Creative Arts (Visual and Performing Arts) has a separate assessment that is administered each long semester to 25% of the core courses (every other year/once every 4th long semester).

OSA results are tabulated by the Office of Planning and Assessment, which releases a report that compares results longitudinally as well as by whether students completed the core area at Texas Tech University or elsewhere. These reports are published digitally on the OPA website (http://www.depts.Texas Tech University.edu/opa/assessment/osa_landing.php). These assessments are evaluated by the Core Curriculum Committee and the Office of Planning and Assessment and departments/ programs notified if there are problematic assessment results and asked to develop a plan to improve student performance. The OSA will be substantially modified during the 2013-14 academic year to accommodate the new Core Objectives.

Results of nationally-normed assessments are also evaluated by the Office of Planning and Assessment and Core Curriculum Committee, which formulate plans to respond if results or trends do not meet the benchmarks. We will continue to utilize nationally-normed instruments for written communication, critical thinking, and empirical and quantitative skill and to use that information to rate our performance against national norms. We will also use the DIT as part of our assessment for personal responsibility and social responsibility. Results will help us to orient our programs to achieve our goal of continuous improvement in student performance.

Teamwork assessment will have to be based on course-level assessment as well as assessment in certain colleges that stress teamwork as part of their curriculum (Rawls College of Business, Whitaker College of Engineering, College of Media and Communication, certain departments in the colleges of Arts & Sciences and Visual and Performing Arts). The Teamwork Committee, which has been formed to work on training of faculty to assess student teamwork performance will work with colleges, departments, and individual faculty to refine and improve teamwork performance and assessment. The Office of Planning and Assessment and the Teaching, Learning, and Professional Development Center will also continue to be involved in training and assessment.

Actions and Follow-up – explain the process for improving student learning based on the assessment results.

Beginning in spring 2013, all core curriculum course instructors were asked to submit a "Closing the Loop" report to the Office of the Provost in which they indicated any changes to their core curriculum courses that were made as a result of assessment. Responses were received from faculty members for 120 courses. These responses document the ways in which faculty members are using course-level assessment results to improve student learning in their core courses.

We have also used results from the Online Senior Assessment to improve teaching in different core areas. For example, the Department of Mathematics faculty evaluated the way they have been teaching and assessing core mathematics courses in response to low scores on the OSA. Humanities and Social and Behavioral Sciences also have been analyzing low results on certain OSA questions to see if they reflect a deficiency in student learning or issues with the questions. Either way, the analysis creates a climate in which faculty openly question the way in which core courses are taught and how (and whether) certain content is covered.

It is harder to bring results of nationally-normed assessment instruments to bear on instruction in individual courses because results tend to be global rather than course-level. Looking at the issue from a longer-term perspective, because the university is dedicated to continuous improvement in student learning, if student scores on nationally normed assessments do not improve consistently, this will be seen as a cause for concern. Also, if one assumes that most colleges and universities seek continuous improvement, a lack of improvement at any one institution should lead a drop in that institution's relative position in the national rankings, even if the scores remain the same. Therefore, national assessment results do drive institutions such as Texas Tech University to look for ways to improve student performance at the course level, even if specific information on instruction cannot be factored out.

What this means in operational terms is that responses to course-level assessment are generally handled at the course or department level and reported to the Office of Planning and Assessment, which records all such responses in TracDat, a database that is designed to allow tracking of individual

responses to assessment. In addition, we will continue to send out requests to departments to provide information on how they "closed the loop" by responding to the results of core course assessment. Courses that consistently perform below benchmark levels will be identified and the department and the Core Curriculum Committee and the Office of Planning and Assessment will collaborate to develop a plan to improve student performance.

At the university level, the Office of Planning and Assessment and the Core Curriculum Committee consistently monitor the results of nationally normed assessment instruments such as CLA, CAAP, and CCTST, which we triangulate with each other and also with our Online Senior Assessment and course-level assessment. To these we will be adding portfolio review over the next few years. The combined results should give us a good picture of how well students are performing on the Core Objectives and provide information that will guide our efforts to identify problem courses or academic units and work with them improve.

Component III

Proposed Texas Tech University, 2014 New Core Course Composition.

The proposed core curriculum for Texas Tech University to be implemented in fall 2014 consists of 145 courses. These courses have all been carefully screened to ensure that they address the required core objectives. Course syllabi have been loaded onto a dedicated website with public access (http://appserv.itts.ttu.edu/CCC/Review.aspx). Course syllabi may be accessed by entering the course prefix and number or by title. Table 1 contains a complete list of proposed core curriculum courses organized by component area. The table also indicates the course prefix, number, title, TCCNS number if one has been assigned, and the course catalog description. The student credit hour value of the course is indicated by the second digit in the course number (for example, ENGL 1301 is a 3 SCH course, MATH 1451 is a 4 SCH course).

Texas Tech University has opted to retain its current Component Area Options, oral communication and mathematics and logic. Certain mathematics courses exceed the 3 SCH core curriculum limit. These courses include calculus I and II, along with college algebra with review and introductory mathematical analysis with review. In the case of the calculus courses the mathematics faculty, after careful review, determined that student success in the calculus courses would be greatly improved if they were expanded to 4 SCH. This change went into effect in fall semester of 2012 and affected mainly STEM areas, which have accommodated the increase in hours. The Department of Mathematics and Statistics offers two courses each in College Algebra and Introductory Mathematical Analysis. The 3 SCH courses are for students who meet the prerequisite requirements and feel confident enough in their mathematics background to succeed. The 4 SCH courses include concepts from high school mathematics courses along with the college-level content for students who may need a review.

The Life and Physical Sciences Foundational Component Area is restricted to 6 SCH. There is a strong feeling among the members of the Core Curriculum Committee that laboratory experience is a necessary part of learning about science. Therefore, we will be establishing an 2 SCH science laboratory graduation requirement. For transfer students who may not have had science labs we are creating a 2 SCH interdisciplinary on-line science lab course. Because Texs Tech University currently has a 44 SCH core the science lab graduation requirement for all undergraduate students does not add to the total number of hours required for graduation. Lab syllabi are included with all science course syllabi submitted for Coordinating Board approval because many science courses incorporate core objectives into the laboratory section. This is especially the case with teamwork.

Individual courses were approved at the department and college levels before they were submitted for the core curriculum. The proposed course list has been approved by the Core Curriculum Committee, the Academic Council (Associate Academic Deans) on May 21, 2013, by the Provost Council (Deans and Vice Presidents) on July 16, 2013,, and by the Texas Tech University System Board of Regents at its August 8-9, 2014 board meeting.

Table 1

Courses proposed by Texas Tech University for the 2014 Core*

FOUNDATIONAL COMPONENT AREA: WRITTEN COMMUNICATION

ENGL 1301 Essentials of College Rhetoric [TCCNS ENGL 1301]

Focuses on the writing process and requires students to write extensively in a variety of modes and styles. Substantial writing required. Partially fulfills core curriculum requirement in written Communication.

ENGL 1302, Advanced College Rhetoric [TCCNS ENGL 1302]

Prerequisite: Successful completion of ENGL 1301. Focuses on writing from sources, research methods, and documentation. Substantial writing required. Partially fulfills core curriculum requirement in written Communication.

FOUNDATIONAL COMPONENT AREA: MATHEMATICS

MATH 1300, Contemporary Mathematics

Prerequisites: Code 3 or higher on MPE or a score of at least 610 on the SATM or a score of at least 26 on the ACTM or a grade of A or B in MATH 0302 or a grade of A or B in TSI 0302 or a grade of C or better in a college level mathematics course. Quantitative literacy and problem solving with applications to finance, population dynamics, politics, and business. Partially fulfills core curriculum Mathematics requirement.

MATH 1320, College Algebra [TCCNS MATH 1314]

Prerequisites: Code 3 or higher on MPE or a score of at least 610 on the SATM or a score of at least 26 on the ACTM or a grade of A or B in MATH 0302 or a grade of A or B in TSI 0302 or a grade of C or better in a college level mathematics course. Inequalities, determinants, theory of equations, binomial theorem, progressions, mathematical induction. Partially fulfills core curriculum Mathematics requirement.

MATH 1321, Trigonometry [TCCNS 1316]

Prerequisite: a grade of C or better in MATH 1320 or MATH 1420 or a test score of at least 610 on the SATM or 26 on the ACTM or 4 on Math Placement code. Trigonometric functions, radians, logarithms, solutions of triangles, identities, trigonometric equations, complex numbers, De Moivre's Theorem. Partially fulfills core curriculum Mathematics requirement.

MATH 1330, Introduction to Mathematical Analysis I [TCCNS MATH 1324]

Prerequisites: Code 3 or higher on MPE or a score of at least 610 on the SATM or a score of at least 26 on the ACTM or a grade of A or B in MATH 0302 or a grade of A or B in TSI 0302 or a grade of C or better in a college level mathematics course. Pre-calculus topics of interest to students of business and the social sciences. These include mathematics of finance, probability and statistics, and Markov processes. Cannot receive credit for both MATH 1330 and 1430. Partially fulfills core curriculum Mathematics requirement.

MATH 1331, Introduction to Mathematical Analysis II [TCCNS MATH 1325]

Prerequisite: a grade of C or better in MATH 1330 or MATH 1430 or a test score of at least 610 on SATM or 26 on ACTM or 4 on Math Placement code. Contains an introduction to regression analysis and topics from differential and integral calculus that are of interest to students of business and the social sciences. Partially fulfills core curriculum Mathematics requirement.

MATH 1350, Analytic Geometry [TCCNS MATH 1348]

MATH 1321 or Code 6 or higher on MPE or a score of at least 660 on the SATM or a score of at least 29 on the ACTM. Fundamental concepts of analytical geometry. Partially fulfills core curriculum Mathematics requirement.

MATH 1420, College Algebra with Review [TCCNS MATH 1414]

Prerequisites: Code 2 or higher on MPE or a score of at least 610 on the SATM or a score of at least 26 on the ACTM or a grade of A or B in MATH 0301 or a grade of A or B in TSI 0202 or a grade of D or better in a college level mathematics course. Review of topics from high school algebra, inequalities, functions and graphs, linear systems, sequences, mathematics induction. Partially fulfills core curriculum Mathematics requirement. Only one of MATH 1300, 1320, or 1420 can be used to fulfill core curriculum Mathematics requirement.

MATH 1430, Introductory Mathematical Analysis with Review

Prerequisites: Code 3 or higher on MPE or a score of at least 610 on the SATM or a score of at least 26 on the ACTM or a grade of A or B in MATH 0302 or a grade of A or B in TSI 0302 or a grade of C or better in a college level mathematics course. Pre-calculus topics of interest to students of business and the social sciences. These include mathematics of finance, probability and statistics, and Markov processes. Cannot receive credit for both MATH 1330 and 1430. Partially fulfills core curriculum Mathematics requirement.

MATH 1451, Calculus I with Applications [TCCNS MATH 2413]

Prerequisite: MATH 1350 or 1550 with a grade of C or better, or MATH 1321 with a grade of C and Code 5 on MPE, or MATH 1321 with a grade of B or better, or Code 7 on MPE, or a score of at least 660 on the SATM, or a score of at least 29 on the ACTM, or a score of at least 3 on AP AB Calculus and Code 5 on MPE. Differentiation of algebraic and transcendental functions, differentials, indefinite integrals, definite integrals. Applications and problem-solving are strongly emphasized. Partially fulfills core curriculum Mathematics requirement. A student will receive credit for either (not both) MATH 1351 or 1451.

MATH 1452, Calculus II with Applications [TCCNS MATH 2414]

Prerequisite: MATH 1351 or MATH 1451 or departmental consent. Methods of integration, parametric equations, polar coordinates, hyperbolic functions, infinite series. Applications and problem-solving are strongly emphasized. Partially fulfills core curriculum Mathematics requirement. A student will receive credit for either (not both) MATH 1352 or 1452.

MATH 1550, Precalculus

Prerequisite: Code 3 or higher on MPE or a score of at least 610 on the SATM or a score of at least 26 on the ACTM or a grade of A in MATH 0302 or a grade of A in TSI 0302 or a grade of C or better in a college level mathematics course. Topics from college algebra, trigonometry, and analytical geometry that are necessary prerequisites for Calculus I. Partially fulfills core curriculum Mathematics requirement.

MATH 2300, Statistical Methods [TCCNS MATH 1342]

Prerequisite: Code 4 or higher on MPE or a score of at least 610 on the SATM or a score of at least 26 on the ACTM or a grade of C or better in a college level mathematics course. Methods of analyzing data, statistical concepts and models, estimation, tests of significance, introduction to analysis of variance, linear regression, and correlation. Partially fulfills core curriculum Mathematics requirement.

MATH 2345, Introduction to Statistics with Application to Business

Prerequisite: Code 4 or higher on MPE or a score of at least 610 on the SATM or a score of at least 26 on the ACTM or MATH 1330 or 1430 with a grade of C or better. Statistics and probability for business. Data collection, description, interpretation, prediction, inference, and computer software. Partially fulfills core curriculum Mathematics requirement

MATH 2370, Elementary Analysis I [TCCNS MATH 1350]

Prerequisite: MATH 1320 and major of Early Childhood or Multidisciplinary Studies or consent of department. Analytic geometry and the real number system with applications. Not for engineering, science, or mathematics majors. Partially fulfills core curriculum Mathematics requirement.

MATH 2371, Elementary Analysis II

Prerequisite: MATH 1320 and major of Early Childhood or Multidisciplinary Studies or consent of department. Elementary differential and integral calculus with application. Not for engineering, science, or mathematics majors. Partially fulfills core curriculum Mathematics requirement.

FOUNDATIONAL COMPONENT AREA: LIFE AND PHYSICAL SCIENCES**

ANSC 1401, General Animal Science [TCCNS AGRI 1419]

The application of basic scientific principles to the efficient production of domestic animals. Students must enroll in lecture and lab concurrently. Fulfills core curriculum Life and Physical Science requirement.

ANTH 2300 Physical Anthropology (with ANTH 2100 lab) [TCCNS ANTH 2301, ANTH 2100, ANTH 2401]

Co-requisite: ANTH 2100. Topics include human genetics, health, diet, and issues of human and nonhuman primate evolution. Partially fulfills core curriculum Life and Physical Sciences requirement.

ASTR 1400, Solar System Astronomy [TCCNS ASTR 1304 + PHYS 1104, ASTR 1404, PHYS1304 + PHYS 1104, PHYS 1404]

Covers the sun, planets, moons, asteroids, comets, gravitation, and formation. Partially fulfills core curriculum Life and Physical Sciences requirement.

ASTR 1401, Stellar Astronomy [TCCNS ASTR 1303 + PHYS 1103, ASTR 1403, PHYS1303 + PHYS 1103, PHYS 1403]

Covers stars, star formation, galaxies, and cosmology models. Partially fulfills core curriculum Life and Physical Sciences requirement.

ATMO 1300, Introduction to Atmospheric Science (with ATMO 1100 lab) [TCCNS GEOL 1347 + GEOL 1147, GEOL 1447]

An investigation of atmospheric properties and physical processes that determine current weather events and long-term climate conditions. Partially fulfills core curriculum requirement in Life and Physical Sciences.

BIOL 1305, Ecology and Environmental Problems (with BIOL 1113 lab) [TCCNS ENVR 1301 + ENVR 1101, ENVR 1401

An introduction to ecological principles and the analysis of environmental problems. Not for major credit. BIOL 1401, 1402, 1305, and 1306 may be taken in any sequence or simultaneously. Partially fulfills the core curriculum requirement in Life and Physical Sciences

BIOL 1401, Biology of Plants [TCCNS BIOL 1311 + BIOL 1111, BIOL 1411]

An introductory coverage of plant-environment interactions and plant structure and function as they relate to our understanding of the plant world. Expressly designed for students not majoring in a biological science. Partially fulfills the core curriculum requirement in Life and Physical Sciences

BIOL 1402, Biology of Animals [TCCNS BIOL 1313 + BIOL 1113. BIOL 1413]

An introductory coverage of animal-environment interactions and animal structure, function, and behavior as they relate to our understanding of the animal world. Expressly designed for students not majoring in a biological science. BIOL 1401 and 1402 may be taken in any sequence or simultaneously. Partially fulfills the core curriculum requirement in Life and Physical Sciences.

CHEM 1305, Chemical Basics (with CHEM 1105 lab) TCCNS CHEM 1305 + CHEM 1105, CHEM 1405]

A survey of basic chemical concepts, properties, and reactions. Partially fulfills the core curriculum requirement in Life and Physical Sciences.

CHEM 1306, Chemistry That Matters (with CHEM 1106 lab) TCCNS CHEM 1307 + CHEM 1107, CHEM 1307]

Description of polymers, drugs, agricultural chemicals, food/nutrition, fuels, and genetic engineering for non-science majors. Partially fulfills the core curriculum requirement in Life and Physical Sciences.

CHEM 1307, Principles of Chemistry I (with CHEM 1107 lab) [TCCNS CHEM 1311 + CHEM 1111, CHEM 1411]

Prerequisite: CHEM 1301 or a score of 50 or better on the chemistry Placement Exam. A study of fundamental concepts of chemistry including nomenclature, states of matter, the periodic table and periodic trends, chemical reactions, atomic structure, chemical bonding, molecular structure, and the properties of gasses, liquids, solutions and solids. This course is recommended for students who plan careers in the physical and biological sciences as well as medicine and engineering. Partially fulfills the core curriculum requirement in Life and Physical Sciences.

CHEM 1308, Principles of Chemistry II (with CHEM 1108 lab) [TCCNS CHEM 1312 + CHEM 1112, CHEM 1412], CHEM 1414]

Prerequisite CHEM 1307. A continuation of CHEM 1307, which covers solution chemistry, chemical kinetics, acid/base and ionic equilibria, thermodynamics, electrochemistry, nuclear chemistry, and coordination chemistry. This course serves as a prerequisite to all advanced chemistry courses. Partially fulfills core curriculum requirement in Life and Natural Sciences

GEOG 1401, Physical Geography [TCCNS GEOG 1301]

Study of the atmospheric and terrestrial systems that shape our natural environment, especially the global patterns of climate, landforms, and vegetation. Partially fulfills core curriculum requirement in Life and Physical Sciences.

GEOL 1303, Physical Geology (with GEOL 1101 lab) [TCCNS GEOL 1303 + GEOL 1103, GEOL 1403]

Introduction to earth structure and composition, minerals and rocks, surface processes, orogeny, and the principle of plate tectonics. Partially fulfills the core curriculum requirement in Life and Physical Sciences.

HONS 2405, Honors Integrated Science I

Prerequisite: Enrollment in the Honors College or approval of the Honors Dean. An integrated science course introducing students, in an interdisciplinary way, to physics and chemistry. Partially fulfills the core curriculum requirement in Life and Physical Sciences.

HONS 2406, Honors Integrated Science II

Prerequisite: Enrollment in the Honors College or approval of the Honors Dean. An integrated science course introducing students, in an interdisciplinary way, to biology and geosciences. Partially fulfills the core curriculum requirement in Life and Physical Sciences.

NRM 1401, Introduction to Natural Resources Management

Observe, describe, and understand phenomena in the natural world. Examines the roles of natural and social science in understanding interactions among humans and natural resources. Partially satisfies the core curriculum requirement in Life and Physical Sciences.

NS 1410, Science of Nutrition

Study of the nutrients found in foods and utilization of those nutrients by the body. Designed to convey the basic principles of nutritional science. No nutrition or nutritional sciences and dietetics majors. Partially fulfills core curriculum requirement in Life and Physical Sciences.

PHYS 1401, Physics for Non-Science Majors [TCCNS PHYS 1310 + PHYS 1110, PHYS 1405]

Covers the basic laws and vocabulary of science using a minimum of mathematics. Partially fulfills core curriculum requirement in Life and Physical Sciences.

PHYS 1403, General Physics I [TCCNS PHYS1301 + PHYS 1101, PHYS 1401]

Non-calculus introductory physics covering mechanics, heat, and sound, thus providing background for study in science-related areas. Partially fulfills the core curriculum requirement in Life and Physical Sciences.

PHYS 1404, General Physics II [TCCNS PHYS 1302 + PHYS 1102, PHYS 1402]

Non-calculus introductory physics covering electricity, magnetism, light, and modern physics, thus providing background for study in science-related areas. Partially fulfills core Life and Physical Sciences requirement.

PHYS 1406, Physics of Sound and Music

Designed to acquaint the student with the principles of physics used in the production of sound and music. A minimum of mathematics will be used. Some of the physical principles are exemplified in laboratory sessions. Partially satisfies the core curriculum requirement in Life and Physical Sciences.

PHYS 1408, Principles of Physics I [TCCNS PHYS 2325 + PHYS 2125, PHYS 2425]

Prerequisite: MATH 1351 or 2323. Calculus-based introductory physics covering mechanics, kinematics, energy, momentum, and thermodynamics. Partially fulfills the core curriculum Life and Physical Sciences requirement.

PHYS 2401, Principles of Physics II [TCCNS PHYS 2326 + PHYS 2126, PPHYS 2426]

Prerequisite: PHYS 1408 and MATH 1352. Calculus-based introductory physics covering electric and magnetic fields, electromagnetic waves, and optics. Partially fulfills core curriculum requirement in Life and Physical Sciences.

PSS 1411, Principles of Horticulture [TCCNS AGRI 1415, HORT 1401]]

Principles and practices of growth and development, structure, nomenclature, use of horticultural plants and how they are affected by the environment. Partially fulfills core curriculum requirement in Life and Physical Sciences.

PSS 2401, Introductory Entomology [TCCNS AGRI 1413]

An introduction to the arthropods with major emphasis on the insects. Insect structure, function, identification, and relationships to man, plants, and animals with be discussed. Partially fulfills core curriculum requirement in Life and Physical Sciences.

ZOOL 2403, Human Anatomy and Physiology I [TCCNS BIOL 2301 + BIOL 2101, BIOL 2401]

Three hours of chemistry recommended. Human gross and microscopic anatomy for allied health majors. Not for major credit. Partially fulfills core curriculum requirement in Life and Physical Sciences.

FOUNDATIONAL COMPONENT AREA: CREATIVE ARTS

ANSC 2310, The Horse in World Art

A comprehensive study of the depiction of the horse in fine arts, reflecting cultures, values, traditions, and heritage of civilization throughout history. Fulfills core curriculum requirement in Creative Arts.

ARCH 2315, History of World Architecture II [TCCNS ARCH 1302]

Survey of the development of world architecture from the Renaissance through the 19th century. Fulfills core curriculum requirement in Creative Arts.

ART 1309, Art Appreciation[TCCNS ARTS 1301, ARTS 1313, ARTS 1413]

Survey of the visual arts of western and nonwestern cultures with emphasis on understanding art through form, content, and cultural context. Non-majors and art minors only. Fulfills core curriculum requirement in Creative Arts

ARTH 1301, Art History Survey I [TCCNS ARTS 1303]

A survey of painting, sculpture, architecture, and the minor arts from prehistoric times to the 14th century. AP waiver possible. Fulfills core curriculum requirement in Creative Arts

ARTH 2302, Art History Survey II {TCCNS ARTS 1304]

A survey of painting, sculpture, architecture, and the minor arts from the 14th through 19th centuries. Fulfills core curriculum requirement in Creative Arts

DAN 3313 (2313), Dance History*

History and philosophy of dance and the relationship of dance to allied arts. Fulfills core curriculum requirement in Creative Arts.

DAN 4301 (2301), World Dance Forms*

A study of dances from different cultures, their histories, and their influences on contemporary American dance and culture. Fulfills core curriculum requirement in Creative Arts.

HONS 1304, Honors First Year Seminar in Fine Arts

Prerequisite: Enrollment in the Honors College or approval of the Honors dean. An introductory course for first-year Honors students emphasizing the development of critical thinking and oral and written communications skills through the framework of a creative arts discipline. Topics vary. Fulfills core curriculum requirement in Creative Arts.

HONS 2314, Honors Seminar in International Cinema

Analysis of foreign and ethnic cinema as an expression of human values and creativity viewed through the lens of a distinctive culture or cultures. May be repeated as the topic varies with permission of the Honors dean. Fulfills core curriculum requirement in Creative arts.

ITAL 3315 (2315), Italian Filmmakers*

An analysis of the development and main themes of major Italian film-makers such as Fellini, Antonioni, Wertmuller, Avati, and Moretti. Taught in English. Fulfills core curriculum requirement in Creative Arts.

MCOM 2301, Visual Storytelling

This course is designed to immerse students in visual storytelling and to learn how to critically examine aesthetic, ethical, and intercultural issues related to the creative art of telling stories using a visual format. Fulfills the core curriculum requirement in Creative Arts.

MUHL 1308, Music in Western Civilization [TCCNS MUSI 1306, MUSI 1307, MUSI 1308]

Introductory course for non-music majors in the history of music and its role in western civilization from the Middle Ages through the 20th century and beyond. Fulfills core curriculum requirement in Creative Arts.

MUHL 3304 (2304), History of Jazz*

Historical and analytical survey of jazz from its beginning through “Rock” its form, style, literature, and influence on 20th century music. Fulfills core curriculum requirement in Creative Arts.

MUHL 2308, Musics of Latin America

Traditions, styles, and history of Latin American musics: Cuba, Puerto Rico, Mexico, Panama, Guatemala, Argentina, Brazil, Peru, Venezuela. Fulfills core curriculum requirement in Creative Arts.

MUHL 3310 (2310), History of Rock and Roll*

Focuses on hearing, understanding, and contextualizing Anglo-American rock and roll, a popular idiom rooted in the music of African Americans and rural whites. Fulfills core curriculum requirement in Creative Arts.

MUSI 1300, Creating the Critical Listener

Drawing on classical, folk, popular, and world music traditions, this course cultivates a set of analytical tools that enables one to listen, read, speak, and write accurately, critically, and insightfully about music from a variety of global traditions. Fulfills core curriculum requirement in Creative Arts.

MUSI 2301, Essential Elements of Music [TCCNS MUSI 1304]

Basic elements of music with appropriate techniques and principles of singing, playing, moving to, and listening to music. For students preparing to teach young children. Not for music majors. Fulfills core curriculum requirement in Creative Arts.

MUTH 1300, Songwriting

A beginning course for non-music majors. A practical approach to music theory through songwriting. Includes aural training, notation, textual setting, melodic writing, and chord assignment. Fulfills core curriculum requirement in Creative Arts.

THA 2301, Introduction to Acting

Fundamental principles of acting for non-majors, with emphasis on establishing a working vocabulary and basic acting process. Fulfills core curriculum requirement in Creative Arts.

THA 2303, Theatre Appreciation [TCCNS DRAM 1310]

Explores the fundamental principles of acting. Emphasis on establishing a process and working vocabulary necessary for the profession. Enrollment in noncredit lab is required. Fulfills core curriculum requirement in Creative Arts.

THA 2304, Introduction to Cinema [TCCNS COMM 2366, DRAM 2366, DRAM 2367]

A study of the cinematic art form. Fulfills core curriculum requirement in Creative Arts.

FOUNDATIONAL COMPONENT AREA: LANGUAGE, PHILOSOPHY, AND CULTURE

ANTH 2306, Anthropology at the Movies

Examines how anthropology, archaeology, and physical anthropology are portrayed in mainstream movies as a springboard for discussing important topics about culture and science. Fulfills core curriculum requirement in Language, Philosophy, and Culture

ARCH 2311, History of World Architecture I [TCCNS ARCH 1301]

Survey of the development of world architecture from pre-history to the Middle Ages. Fulfills core curriculum requirement in Language, Philosophy, and Culture.

CLAS 2304, The Ancient World: Prophets, Warriors, Poets

Survey of literature, religion, warfare of Ancient Greece, Rome and Near East, focusing on cultural and intellectual origins of Western civilization. Satisfies the core curriculum requirement in Language, Philosophy, and Culture.

CLAS 3302 (2302), Classical Mythology*

Classical myths: stories of gods, demigods, and heroes; their significance in the ancient and modern worlds. Selected readings in translation with lectures and discussions in English. Fulfills core curriculum requirement in Language, Philosophy, and Culture.

CLAS 3303 (2303), Sports and Public Spectacles in the Ancient World *

Survey of Greek and Roman athletics, the Roman Triumph, gladiatorial combat, and other spectacles in the Ancient World. Fulfills multicultural requirement. Fulfills core curriculum requirement in Language, Philosophy, and Culture.

CMLL 2305 Introduction to Language and Culture

Explores such topics as how culture is expressed in languages, how people learn languages, and how people benefit from learning languages. Satisfies the core curriculum requirement in Language, Philosophy, and Culture.

COMS 3311 (2311), Rhetoric in Western Thought*

Explores theories of rhetoric ranging from ancient Greece to present day. Students examine different conceptions of how rhetoric negotiates public character, social truths, and power. Required for all majors. Fulfills core curriculum requirement in Language, Philosophy, and Culture

COMS 3318 (2318), Persuasion and Social Movements*

Studies the role of persuasion in social movements, both historical and contemporary. Analyzes the various persuasive strategies employed as social movements evolve. Fulfills core curriculum requirement in Language, Philosophy, and Culture

ENGL 2305, Introduction to Poetry
Prerequisites: ENGL 1301, 1302. Critical study of and writing about a variety of poems. Fulfills core curriculum requirement in Language, Philosophy, and Culture

ENGL 2306, Introduction to Drama
Prerequisites: ENGL 1301, 1302.Critical study of and writing about a variety of plays. Fulfills core curriculum requirement in Language, Philosophy, and Culture

ENGL 2307, Introduction to Fiction
Prerequisites: ENGL 1301, 1302**.** Critical study of and writing about a variety of short stories and novels. Fulfills core curriculum requirement in Language, Philosophy, and Culture

ENGL 2308, Introduction to Nonfiction
Prerequisites: ENGL 1301, 1302. Critical study of and writing about a variety of historical, biographical, and scientific writings. Fulfills core curriculum requirement in Language, Philosophy, and Culture

ENGL 2351, Introduction to Creative Writing [TCCNS ENGL 2307, ENGL 2308]
Prerequisites: ENGL 1301 and 1302. Fundamentals of creative writing with much practice in writing poetry and short fiction. Fulfills core curriculum requirement in Language, Philosophy, and Culture

ENGL 2388, Introduction to Film Studies
Prerequisites: ENGL 1301 and 1302. Introduction to the history, aesthetics, and criticism of avant-garde, documentary, and narrative film. Fulfills core curriculum requirement in Language, Philosophy, and Culture

ENGL 2391, Introduction to Critical Writing
Prerequisites: ENGL 1301, 1302. Extensive practice in writing critical essays about literature. Fulfills core curriculum requirement in Language, Philosophy, and Culture

ENGR 2392, Engineering Ethics and Its Impact on Society
Prerequisite: Development of ethical reasoning and enhancing critical thinking skills using theory and case studies with applications to engineering practice, including international issues. Available in classroom and by online distance learning. Fulfills core curriculum requirement in Language, Philosophy, and Culture

EVHM 2302, Literature of Place
An introduction to the literature of place through a series of writing and reading workshops. Satisfies the core curriculum requirement in Language, Philosophy, and Culture

FREN 3390 (2390), French Culture*
A multimedia approach to topics related to French culture. Taught in English. Credit does not apply to major or minor. May not be repeated. Fulfills core curriculum requirement in Language, Philosophy, and Culture.

GERM 3312 (2312), Literature of the Holocaust*
Prerequisite: Sophomore standing. Examination of the Holocaust as represented in literature, film, and art. Conducted in English. Fulfills core curriculum requirement in Language, Philosophy, and Culture.

GERM 3313 (2313), Northern Myths and Legends*
Introduction to Germanic myths, epics, sagas, legends, and fairy tales. Selected readings in translation with lectures and discussions in English. Fulfills core curriculum requirement in Language, Philosophy, and Culture.

HIST 1300, Western Civilization I [TCCNS HIST 2311]
Western civilization from its dawn to the 17th century. Culture and the arts stressed alongside politics. Fulfills core curriculum requirement in Language, Philosophy, and Culture

HIST 1301, Western Civilization II [TCCNS HIST 2312]
The revolutionary transformations of European civilization in the 17th, 18th, and 19th centuries; world dominion and the world wars; intellectual and cultural developments. Fulfills core curriculum requirement in Language, Philosophy, and Culture

HIST 2322, World History to 1500 [TCCNS HIST 2321]
Introduction to basic narrative and major themes in world history from origins to 1500. Fulfills core curriculum requirement in Language, Philosophy, and Culture.

HIST 2323, World History since 1500 [TCCNS HIST 2322]
Introduction to basic narrative and major themes in world history since 1500. Fulfills core curriculum requirement in Language, Philosophy, and Culture

HONS 1301 Honors First-Year Seminar in Humanities

Prerequisite: Enrollment in the Honors College or approval of the Honors dean. An introductory course for first-year Honors students emphasizing the development of critical thinking and oral and written communications skills through the framework of a humanities discipline. Topics vary. Fulfills core curriculum requirement in Language, Philosophy, and Culture.

HONS 2311, Seminar in International Affairs

Humanistic approach to study of international concerns such as migration, trade, environment, population change, economic development, religion, and diplomacy with special reference to cultural values. Fulfills core curriculum requirement in Language, Philosophy, and Culture. May be repeated as the topic varies with permission of the Honors dean.

HUM 2301, The Western Intellectual Tradition I [TCCNS HUMA 1301]

An exploration of Western intellectual development in literature, philosophy, and the arts from the Greek and Roman Eras to the Renaissance. Fulfills core curriculum requirement in Language, Philosophy, and Culture.

HUM 2302, The Western Intellectural Tradition II [HUMA 1302]

The exploration of Western intellectual development in literature, philosophy, and the arts from the Renaissance to the present. Fulfills core curriculum requirement in Language, Philosophy, and Culture.

LARC 3302 (2302), Development of Landscape Architecture*

History of landscape architecture. Design as expression of culture and society's relationship to nature. Geographical, historical, and cultural context of major movements in landscape architecture. Fulfills core curriculum requirement in Language, Philosophy, and Culture.

MCOM 3330 (2330), Media Literacy

Critiques and analyzes media, the audience, the mediated environment, media industry, digital media, and media professions, particularly advertising, electronic media, public relations, and journalism. Fulfills core curriculum requirement in Language, Philosophy, and Culture.

PHIL 2300, Beginning Philosophy [TCCNS PHIL 1301]

An introduction to philosophical thinkers, ideas, and methods. Fulfills core curriculum requirement in Language, Philosophy, and Culture.

PHIL 2320, Introduction to Ethics TCCNS PHIL 2306]

Discussion of moral problems and theories of morality. Includes the application of philosophical techniques to issues of contemporary moral concern. Fulfills core curriculum requirement in Language, Philosophy, and Culture.

PHIL 2350, World Religions and Philosophy [TCCNS PHIL 1304]

Philosophical study of the doctrines and practices of the major world religions, including Hinduism, Buddhism, Christianity, Judaism, and Islam. Fulfills core curriculum requirement in Language, Philosophy, and Culture.

RUSN 3304 (2304), Russian Culture*

An examination of the important historical, political, and cultural events and trends that have been instrumental in forming Russian cultural identity. Fulfills core curriculum requirement in Language, Philosophy, and Culture.

SLAV 3301 (2301), The Vampire in East European and Western Culture*

An investigation of the myth of the vampire from its inception in early East European culture to its popularization in the West. Fulfills core curriculum requirement in Language, Philosophy, and Culture.

VPA 3301 (2301), Critical Issues in Arts and Culture*

Analysis of music, visual arts, theatre and dance as fundamental to contemporary society and relationship of arts to broader social context. Fulfills core curriculum requirement in Language, Philosophy, and Culture.

WS 2300, Introduction to Women's Studies

Basic survey of concepts and theories related to the study of women and to the analysis of gender roles. Fulfills core curriculum requirement in Language, Philosophy, and Culture.

FOUNDATIONAL COMPONENT AREA: SOCIAL AND BEHAVIORAL SCIENCES

AAEC 2305, Fundamentals of Agricultural and Applied Economics [TCCNS AGRI 2317]

Fundamental economic principles and their application to problems and issues in the food, fiber, and natural resource sectors of the economy. Fulfills core curriculum requirement in Social and Behavioral Sciences.

ADRS 2310, Understanding Alcohol, Drugs, and Addictive Behaviors

Designed to provide students with an introduction to addiction, including the nature of addiction, its history, biology, inter/intra personal, and social aspects. Fulfills core curriculum requirement in Social and Behavioral Sciences .

ANTH 2301, Introduction to Archaeology [TCCN ANTH 2302]

Introduces archaeology and what it has told us about our past, from the earliest beginnings to the birth of civilization. Fulfills core curriculum requirement in Social and Behavioral Sciences.

ANTH 2302, Cultural Anthropology [TCCNS ANTH 2346]

The rich complexity of peoples and cultures in the world as studied by anthropologists. Discussion of basic concepts such as ethnography, ethnocentrism, kinship systems, gender, and culture exchange. Fulfills core curriculum requirement in Social and Behavioral Sciences.

ARCH 1311, Design, Environment, and Society [TCCNS ARCH 1311]

Introduction to architecture as an integral component of a complex world. Examination of societal and environmental contexts and appropriate design responses. Fulfills core curriculum requirement in Social and Behavioral Sciences.

CLAS 3304 (2305), Ancient Technology*

Examination of the science and engineering of the ancient Egyptians, Greeks, and Romans through archeological remains and literary sources. Fulfills core curriculum requirement in Social and Behavioral Sciences.

CLAS 3335 (2335), Archaeologies of the Classical World*

Introduction to the materials, methods, practices, and theories of archaeologies related to the classical world. Addresses questions of how archaeology helps (re)construct Greco-Roman societies and why the classical world matters today. Fulfills core curriculum requirement in Social and Behavioral Sciences.

COMS 1301, Interpresonal Communication [TCCNS SPCH 1318]

A study of the human communication process in one-to-one encounters. Required for all majors. Fulfills core curriculum requirement in Social and Behavioral Sciences

COMS 3331 (2331), Nonverbal Communication*

Studies the origin, function, and control of nonverbal, symbolic elements inherent in communication. Fulfills core curriculum requirement in Social and Behavioral Sciences

COMS 3355 (2355), Communication in Organizations*

Surveys theories, research, and applications of communication in all forms of organizations with emphasis on leadership, diversity, culture, technology applications, and other communication issues facing traditional and modern organizations. Fulfills core curriculum requirement in Social and Behavioral Sciences

ECO 2301, Principles of Economics I [TCCNS ECON 2302]

Emphasis on theories of the firm, value and price determination, and functional distribution, with the application of these theories to the problems of particular firms, industries, and markets. Fulfills core curriculum rrequirement in Social and Behavioral Sciences.

ECO 2302, Principles of Economics II [TCCNS ECON 2301]

An introduction to modern economic society and theories of production and exchange. Emphasis upon monetary and fiscal policy and macroeconomics. Fulfills core curriculum requirement in Social and Behavioral Sciences.

ECO 2305, Principles of Economics

An abridged course for students not majoring in economics or business. Covers the most significant portions of ECO 2301 and 2302, with emphasis upon monetary and fiscal policy. Credit will not be given for both ECO 2305 and 2302. Fulfills core curriculum requirement in Social and Behavioral Sciences.

EDCI 2301, The Educative Effect

This course considers costs and benefits of American education. Students are exposed to issues in education at a deeper level by tutoring in public schools.

EPSY 2301, I-generation. Living and Learning on the Internet

Many people spend a majority of their life on the Internet. This class examines how the Internet transforms our social behaviors and how we learn.

GEOG 2300, Introduction to Human Geography [TCCNS GEOG 1302]

Survey of human geography, including factors affecting location of different aspects of culture, economy, and politics. Fulfills multicultural requirement. Fulfills core curriculum requirement in Social and Behavioral Sciences.

GEOG 2351, Regional Geography of the World [TCCNS GEOG 1303]
An introduction to the geography of world regions for students who have had no previous geography courses. Fulfills corecurriculum requirement in Social and Behavioral Sciences.

HDFS 2303, Life Span Human Development [TCCNS PSYC 2311, PSYC 2314]
Introduction to the theories, processes, and enhancement of development for infants, young children, adolescents, and adults. Fulfills core curriculum requirement in Social and Behavioral Sciences.

HDFS 2322, Partnering: The Development of Intimate Relationships
Intimate relationship development from adolescence through adulthood with an emphasis on relationship processes, diversity in types of partnering, and developmental/contextual variations in relationships. Fulfills core curriculum requirement in Social and Behavioral Sciences.

HONS 1303, Honors First-Year Seminar in Social Sciences
Enrollment in the Honors College or approval of the Honors dean. An introductory course for first-year Honors students emphasizing the development of critical thinking and oral and written communications skills through the framework of a social and behavioral science discipline. Topics vary. Fulfills core Social and Behavioral Sciences requirement.

IE 2311, Engineering Economic Analysis
Evaluation of economics of engineering proposals for cost and profitability. Fulfills core curriculum requirement in Social and Behavioral Sciences.

MCOM 1300, Introduction to Mass Communications [TCCNS MCOM 1307]
A broad survey of communications in modern life with particular emphasis on print media, broadcasting, advertising, and public relations. Fulfills core curriculum requirement in Social and Behavioral Sciences.

NRM 1300, Environmental Science as a Social Pursuit
Application of scientific methods to global and environmental issues. Explores the impact of culture and science on core natural resources such as food and clean air. Fulfills core curriculum requirement in Social and Behavioral Sciences.

NS 4380 (2380), Cultural Aspects of Food
Prerequisite: Junior or senior standing. A study of the historical, social, psychological, economic, religious, and aesthetic significance of food customs in various cultures. Fulfills core curriculum requirement in Social and Behavioral Sciences.

PFP 1305, Life, Love, and Money
Examines the interconnected behaviors among various human relationships and money to improve decision-making abilities in the areas of money, relationships, time, and values. Fulfills core curriculum requirement in Social and Behavioral Sciences.

PSY 1300, General Psychology [TCCNS PSYC 2301]
Introduction to fundamental concepts in psychology. Emphasis on the physiological, social, emotional, and environmental determinants of behavior. Fulfills core curriculum requirement in Social and Behavioral Sciences.

SOC 1301, Introduction to Sociology [[TCCNS SOCI 1301]
Human group behavior, influence on the individual, and relationships of individuals to each other as members of groups. Fulfills core curriculum requirement in Social and Behavioral Sciences.

SOC 1320, Current Social Problems [TCCNS SOCI 1306]
Problems in basic social institutions as marriage and the family, community, economy, government, education, health and welfare, recreation, etc. Fulfills core curriculum requirement in Social and Behavioral Sciences.

SOC 3324 (2324), Race and Ethnicity*
Sociological and global analysis of racial and ethnic groups. Analysis of diversity and multiculturalism from a global perspective. Fulfills core curriculum requirement in Social and Behavioral Sciences.

SW 1300, The Why and How of Social Services
Interaction of conditions and ideas that contribute to design and delivery of social services and their impact on diverse populations. Fulfills core curriculum requirement in Social and Behavioral Sciences .

FOUNDATIONAL COMPONENT AREA: GOVERNMENT/POLITICAL SCIENCE

POLS 1301, American Government Organization [TCCNS GOVT 2305]

Constitutions and organization of the governments of the United States, the states in general, and Texas in particular. Partially fulfills core curriculum requirement in United States and Texas Government.

POLS 2302, American Public Policy [TCCNS GOVT 2306]

Completion of POLS 1301 not required but strongly recommended before enrolling in POLS 2302. The policy-making process in the governments of the United States, the states in general, and Texas in particular. Partially fulfills core curriculum requirement in United States and Texas Government.

FOUNDATIONAL COMPONENT AREA: AMERICAN HISTORY

HIST 2300, United States History to 1877 [TCCNS HIST 1301]

This course and HIST 2301 satisfy the legislative history requirement. Most sections combine political, military, constitutional, and social history. Special sections emphasize technology, agriculture, business, and family life. Partially fulfills core curriculum requirement in United States History

HIST 2301, United States History since 1877 [TCCNS HIST 1302]

Continuation of HIST 2300. Partially fulfills core curriculum requirement in United States History

HIST 2310, History of Texas [TCCNS HIST 2301]

A survey of Texas history beginning with the Native American occupation and tracing the major social, political, and economic developments of the state into the modern era. Partially fulfills core curriculum requirement in United States History

COMPONENT AREA OPTION: ORAL COMMUNICATION

CFAS 2300, Communication, Civility, and Ethics

This undergraduate course is designed to provide students with a basic understanding of proper communication, civility, and ethics within professional and personal settings. Students will have the opportunity to develop their skills of communication, understanding of civility, teamwork, proper self-expression and behavior, respect in relationships/social support systems, and organizational ethics. Fulfills the core curriculum requirement in Oral Communication.

COMS 2300, Public Speaking [TCCNS SPCH 1315]

Equips students with the skills necessary for successful public speaking. Students will learn to prepare and deliver effective presentations, adapt to various audiences, and adjust to different speaking contexts. Emphasizes the application of public speaking theory. Fulfills core curriculum requirement in Oral Communication.

COMS 3358 (2358), Business and Professional Communication*

Basic business and organizational communication principles applied to the communication needs of the professional. Practice in the construction and delivery of the various types of business and workplace presentations and participation in interviews and group discussions. Fulfills core curriculum requirement in Oral Communication.

ENGR 2331, Professional Communication for Engineers

Prerequisite: ENGL 1302. Rhetorical theory and conventions applied to communication strategies for engineering practice in the global workplace, addressing collaboration, ethical situations, community service, and electronic communication. Fulfills the core curriculum requirement in Oral Communication.

MCOM 2310, Professional Communication

This course emphasizes professional communication in business and organizations affecting social understanding and change, including writing and delivering speeches, responding to requests for proposals, creating multimedia presentations, and developing other oral and written communication skills useful in the professional environment. Fulfills core curriculum requirement in Oral Communication.

COMPONENT AREA OPTION: MATHEMATICS AND LOGIC

AAEC 3401 (2401), Agricultural Statistics*

Principles and procedures involved in the analysis of agricultural data including indices of central tendency and dispersion; probability; sampling; significance tests; analysis of variance; and simple linear correlation. Partially fulfills core curriculum Mathematics requirement (in conjunction with a mathematics course).

MATH 1300, Contemporary Mathematics

Prerequisites: Code 3 or higher on MPE or a score of at least 610 on the SATM or a score of at least 26 on the ACTM or a grade of A or B in MATH 0302 or a grade of A or B in TSI 0302 or a grade of C or better in a college level mathematics course. Quantitative literacy and problem solving with applications to finance, population dynamics, politics, and business. Partially fulfills core curriculum Mathematics requirement.

MATH 1320, College Algebra [TCCNS MATH 1314]

Prerequisites: Code 3 or higher on MPE or a score of at least 610 on the SATM or a score of at least 26 on the ACTM or a grade of A or B in MATH 0302 or a grade of A or B in TSI 0302 or a grade of C or better in a college level mathematics course. Inequalities, determinants, theory of equations, binomial theorem, progressions, mathematical induction. Partially fulfills core curriculum Mathematics requirement.

MATH 1321, Trigonometry [TCCNS MATH 1316]

Prerequisite: a grade of C or better in MATH 1320 or MATH 1420 or a test score of at least 610 on the SATM or 26 on the ACTM or 4 on Math Placement code. Trigonometric functions, radians, logarithms, solutions of triangles, identities, trigonometric equations, complex numbers, De Moivre's Theorem. Partially fulfills core curriculum Mathematics requirement.

MATH 1330, Introduction to Mathematical Analysis I [TCCNS MATH 1324]

Prerequisites: Code 3 or higher on MPE or a score of at least 610 on the SATM or a score of at least 26 on the ACTM or a grade of A or B in MATH 0302 or a grade of A or B in TSI 0302 or a grade of C or better in a college level mathematics course. Pre-calculus topics of interest to students of business and the social sciences. These include mathematics of finance, probability and statistics, and Markov processes. Cannot receive credit for both MATH 1330 and 1430. Partially fulfills core curriculum Mathematics requirement.

MATH 1331, Introduction to Mathematical Analysis II [TCCNS MATH 1325]

Prerequisite: a grade of C or better in MATH 1330 or MATH 1430 or a test score of at least 610 on SATM or 26 on ACTM or 4 on Math Placement code. Contains an introduction to regression analysis and topics from differential and integral calculus that are of interest to students of business and the social sciences. Partially fulfills core curriculum Mathematics requirement.

MATH 1350, Analytical Geometry [TCCNS MATH 1348]

MATH 1321 or Code 6 or higher on MPE or a score of at least 660 on the SATM or a score of at least 29 on the ACTM. Fundamental concepts of analytical geometry. Partially fulfills core curriculum Mathematics requirement.

MATH 1420, College Algebra with Review [TCCNS MATH 1414]

Prerequisites: Code 2 or higher on MPE or a score of at least 610 on the SATM or a score of at least 26 on the ACTM or a grade of A or B in MATH 0301 or a grade of A or B in TSI 0202 or a grade of D or better in a college level mathematics course. Review of topics from high school algebra, inequalities, functions and graphs, linear systems, sequences, mathematics induction. Partially fulfills core curriculum Mathematics requirement. Only one of MATH 1300, 1320, or 1420 can be used to fulfill core curriculum Mathematics requirement.

MATH 1430, Introductory Mathematical Analysis with Review

Prerequisites: Code 3 or higher on MPE or a score of at least 610 on the SATM or a score of at least 26 on the ACTM or a grade of A or B in MATH 0302 or a grade of A or B in TSI 0302 or a grade of C or better in a college level mathematics course. Pre-calculus topics of interest to students of business and the social sciences. These include mathematics of finance, probability and statistics, and Markov processes. Cannot receive credit for both MATH 1330 and 1430. Partially fulfills core curriculum Mathematics requirement.

MATH 1451, Calculus I with Applications [TCCNS MATH 2413]

Prerequisite: MATH 1350 or 1550 with a grade of C or better, or MATH 1321 with a grade of C and Code 5 on MPE, or MATH 1321 with a grade of B or better, or Code 7 on MPE, or a score of at least 660 on the SATM, or a score of at least 29 on the ACTM, or a score of at least 3 on AP AB Calculus and Code 5 on MPE. Differentiation of algebraic and transcendental functions, differentials, indefinite integrals, definite integrals. Applications and problem-solving are strongly emphasized. Partially fulfills core curriculum Mathematics requirement. A student will receive credit for either (not both) MATH 1351 or 1451.

MATH 1452, Calculus II with Applications [TCCNS MATH 2414]

Prerequisite: MATH 1351 or MATH 1451 or departmental consent. Methods of integration, parametric equations, polar coordinates, hyperbolic functions, infinite series. Applications and problem-solving are strongly emphasized. Partially fulfills core curriculum Mathematics requirement. A student will receive credit for either (not both) MATH 1352 or 1452.

MATH 1550, Precalculus
Prerequisite: Code 3 or higher on MPE or a score of at least 610 on the SATM or a score of at least 26 on the ACTM or a grade of A in MATH 0302 or a grade of A in TSI 0302 or a grade of C or better in a college level mathematics course. Topics from college algebra, trigonometry, and analytical geometry that are necessary prerequisites for Calculus I. Partially fulfills core curriculum Mathematics requirement.

MATH 2300, Statistical Methods [TCCNS MATH 1342]
Prerequisite: Code 4 or higher on MPE or a score of at least 610 on the SATM or a score of at least 26 on the ACTM or a grade of C or better in a college level mathematics course. Methods of analyzing data, statistical concepts and models, estimation, tests of significance, introduction to analysis of variance, linear regression, and correlation. Partially fulfills core curriculum Mathematics requirement.

MATH 2345, Introduction to Statistics with Application to Business
Prerequisite: Code 4 or higher on MPE or a score of at least 610 on the SATM or a score of at least 26 on the ACTM or MATH 1330 or 1430 with a grade of C or better. Statistics and probability for business. Data collection, description, interpretation, prediction, inference, and computer software. Partially fulfills core curriculum Mathematics requirement

MATH 2370, Elementary Analysis I [TCCNS MATH 1350]
Prerequisite: MATH 1320 and major of Early Childhood or Multidisciplinary Studies or consent of department. Analytic geometry and the real number system with applications. Not for engineering, science, or mathematics majors. Partially fulfills core curriculum Mathematics requirement.

MATH 2371, Elementary Analysis II
Prerequisite: MATH 1320 and major of Early Childhood or Multidisciplinary Studies or consent of department. Elementary differential and integral calculus with application. Not for engineering, science, or mathematics majors. Partially fulfills core curriculum Mathematics requirement.

PHIL 2310, Logic [TCCNS PHIL 2303]
Development of formal methods for evaluating deductive reasoning. Additional topics may include uses of language, definition, non-deductive inference. Partially fulfills core curriculum Mathematics requirement (in conjunction with a mathematics course).

PSY 3400 (2400), Statistical Methods*
Prerequisite: PSY 1300 or EPSY 3330. Introduction to descriptive and inferential statistics. Emphasis is placed on application to psychological research problems and an introduction to computer functions. Partially fulfills core curriculum Mathematics requirement (in conjunction with a mathematics course).

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*Numbers in parentheses are lower level numbers that have ben assigned to courses currently taught at the 3000/4000 level. The new numbers become effective as of fall semester 2014. Until then the courses retain their upper-level number. Course syllabi on our website can be accessed using either number. The second digit in the course number indicates the number of student credit hours are awarded forsuccessful completion.

**The Life and Physical Sciences Foundational Component Area is restricted to 6 SCH. There is a strong feeling among the members of the Core Curriculum Committee that a laboratory experience is a necessary part of learning about science. Therefore, we will be establishing an 8 SCH lab science graduation requirement. For transfer students who may not have had science labs we are creating an interdisciplinary on-line lab course. Because Texs Tech University currently has a 44 SCH core the science lab graduation requirement for all undergraduate students does not add to the total number of hours required for graduation. Lab syllabi are included with all science course syllabi because many science courses incorporate core objectives into the laboratory section. This is expecially the case with teamwork.