Course Descriptions

SCIE 1201  Step 1: Inquiry Approaches to Teaching
Step 1 allows students to explore teaching as a career. Following an introduction to the theory and practice behind excellent inquiry-based science and mathematics instruction, students work in pairs to observe two and teach three lessons in elementary classrooms to obtain firsthand experience in planning and implementation. **Prerequisite:** None

SCIE 1202  Step 2: Inquiry-Based Lesson Design
In Step 2, students continue developing the lesson planning skills learned in Step 1 as they become familiar with exemplary middle school science and mathematics curricula. After observing a lesson being taught in a local school district classroom, students work in pairs to plan and teach three inquiry-based lessons to middle school students. **Prerequisite:** SCIE 1201

SCIE 1334  Step 1 & 2 Combo  *Restricted to juniors and seniors; may be taken in lieu of SCIE 1201 and 1202*
Step 1 & 2 Combo allows students to explore teaching as a career, providing an introduction to the theory and practice behind excellent inquiry-based science and mathematics instruction. Students work in pairs to observe one and teach two lessons in elementary school classrooms, and observe one and teach two lessons in middle school classrooms. **Prerequisite:** None

EDUC 4331  Knowing & Learning
Psychological foundations of learning; problem solving in mathematics and science education utilizing technology; principles of expertise and novice understanding of subject matter; implications of high-stakes testing; and foundations of formative and summative assessment. **Prerequisite:** SCIE 1201 or SCIE 1334 (or concurrent)

EDUC 4332  Classroom Interactions
Principles of delivering effective instruction in various formats (lecture, lab activity, collaborative settings); examination of gender, class, race, and culture in mathematics and science education; overview of policy related to mathematics and science education. Includes approximately 6 hours of field experience at the high school level. **Prerequisite:** SCIE 1202 or SCIE 1334; EDUC 4331 (or concurrent)

PHIL 2314  Perspectives on Science & Mathematics
Topics and episodes in the history of science and mathematics from a philosophical point of view. Students are brought to understand that science has a fascinating history, is underpinned by deep philosophical presuppositions, and depends upon special social and cultural factors for its continued growth and revision. **Prerequisite:** None

XXXX 4343  Research Methods  *Cross-listed as: BIOL 4343, CHEM 4343, GEOL 4343, PHYS 4343*
Presented students with the tools scientists use to solve scientific problems, enabling them to develop new knowledge and insights. These tools include: design of experiments to answer scientific questions; use of statistics to interpret experimental results and deal with sampling errors; mathematical modeling of scientific phenomena; finding and reading articles in the current scientific literature; applying scientific arguments in matters of social importance; writing scientific papers; reviewing scientific papers; oral presentation of scientific work; use of probes and computers to gather and analyze data; ethical treatment of human subjects; laboratory safety. Primarily a laboratory course; topics are developed in connection with four independent inquiries students design and carry out. Written inquiries are evaluated as examples of scientific writing. **Prerequisite:** SCIE 1201 or SCIE 1334 (or concurrent); junior or senior standing

EDUC 4333  Multiple Teaching Practices
Multiple research-based teaching practices including foundations of project-based, case-based, and problem-based learning environments; principles of project-based curriculum development in mathematics and science education; classroom management and organization of inquiry-based, problem-based/project-based learning classrooms. Includes approximately 23 hours of field experience at the high school level. This course is taken the semester before student teaching and marks the point of admission to teacher candidacy. **Prerequisite:** EDUC 4332; cumulative or last 60 GPA of 2.75

Last updated by Erin Gonzales 06/06/2019
MATH 2330  Functions & Modeling  Taken only by 7-12 Mathematics and 7-12 Physics/Mathematics students
Students engage in explorations and lab activities designed to strengthen and expand their knowledge of the topics found in secondary mathematics. Students collect data and explore a variety of situations that can be modeled using linear, exponential, polynomial, and trigonometric functions. Activities are designed to take a deeper look at topics exposed to previously; illuminate the connections between secondary and college mathematics; illustrate good, as opposed to typically poor and sometimes counterproductive, uses of technology in teaching; illuminate the connections between various areas of mathematics; and engage in serious (i.e., non-routine) problem solving, problem-based learning, and applications of mathematics. While there is some discussion of how the content relates to secondary mathematics instruction, the course primarily emphasizes mathematics content knowledge and content connections, as well as applications of the mathematics topics covered. Prerequisite: SCIE 1201 or SCIE 1334 (or concurrent); MATH 2425

SCIE 4607/4107  Student Teaching with Seminar
Student teaching is a closely supervised full-time field experience in a cooperating high school that requires students to carry out the duties of a secondary teacher. Weekly on-campus seminar discussions include student teaching experiences, contemporary critical issues in education, and preparation for the state certification exams. Student teaching takes place in the graduating semester; all degree coursework must be completed beforehand. Prerequisite: EDUC 4333; cumulative or last 60 GPA of 2.75

Academic & Field Experience Information
- Any student in any major is welcome to take Step 1 and Step 2 in order to explore teaching as a potential career. No GPA or other academic criteria are required, and there is no obligation to continue. These courses are meant to be exploratory.
- Program GPA requirements:
  - Cumulative: Admission to teacher candidacy in the final year of the program requires a cumulative GPA of 2.75, calculated from grades earned at all schools the student has attended. This GPA must be maintained throughout the final year to remain eligible for TExES testing, student teaching, and certification. A “last 60 hours” GPA may be used as an alternative.
  - UTeach: A grade of C or better is required in each UTeach course. Courses may be taken a second time if necessary; student teaching may only be attempted once.
  - UTA & Major: The College of Science requires a UTA GPA of 2.25 and a major GPA of 2.25.
- SCIE 1201, SCIE 1202, SCIE 1334, EDUC 4332, and EDUC 4333 require field hours in local schools that take place outside of the course meeting time. The scheduling of these hours is somewhat flexible; each visit to the school is arranged between the student and his/her mentor teacher at the school, with direction from the course instructor.
- Student teaching is a full-time, semester-long experience in which students take on the role of teacher at a local high school.
- Students must pass a criminal background check prior to beginning a field placement.

Program Completion Plan
The chart below shows the recommended order in which to complete the UTeach coursework, depending on graduation timeframe. There is some flexibility; consult the UTeach advisor to create an individualized plan. Note: Math students must add MATH 2330. UTeach courses are offered every fall and spring, with the exception of MATH 2330 (fall-only). There are no courses in the summer.

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<th>Graduation</th>
<th>Term 1</th>
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<td>EDUC 4331</td>
<td>EDUC 4332</td>
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