

## **Section 9—Methods for Instruction: Integrated Science (DI) Elementary Minor and Major; Secondary Minor and Major**

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EDU 441 Methods and Materials of Instruction for Science in Elementary and Middle Schools (2 semester hours.) The course prepares candidates to teach elementary students in both classroom and laboratory through a series of readings, demonstrations, lectures, discussions, computer based activities, collaborative activities involving hands on work, K-12 observations and teaching, and peer review of lesson/unit presentations.

EDU 459 Instructional Technology, EDU 600 Computer Uses in Education, EDU 443 Teaching Reading in the Elementary and Middle Schools, SED 460 Education and Mainstreaming of Exceptional Persons, and SED 560 Exceptional Persons are required courses for all Education students. In these courses candidates are encouraged to develop projects, units, lesson plans, as well as written and oral presentations, using subject specific content. For example, Integrated Science elementary minors and/or majors develop a specific teaching unit in the EDU 459 that demonstrates their understanding of the science disciplines and how technology would enhance the children's learning. They also work to ensure that science content and instructional strategies were appropriately included in the final interdisciplinary project developed and presented by a team composed of candidates from other disciplines (English, Mathematics, Social Studies etc). Candidates in 443 develop a specific reading lesson for Science thus demonstrating their ability to teach reading using any subject area. The same would be true for preparing an adaptive lesson for a special needs student in SED 460 and 560.

EDU 469 Curriculum and Methods of Teaching in Secondary Schools I (2 semester hours). Candidates develop a basic understanding of curriculum/unit/lesson planning through a series of on line and print readings, lectures, classroom discussions and activities, guest presenters, and presentation of lessons and other activities such as writing a letter to parents of students and designing appropriate assessment tools for science instruction. Integrated Science candidates design their work around instruction and work for secondary age students.

EDU 475 Curriculum and Methods of Teaching in Secondary Schools II: Science (3 semester hours). Candidates are engaged in the design, implementation, and evaluation of Science units and lessons and the selection and use of teaching strategies to match desired instructional outcomes. Candidates are regularly engaged in individual and collaborative activities that require their active

participation in discussions, presentations of lessons, and building a series of folders with readings and lesson/unit plans for teaching science to secondary students. Their final project is the presentation of their designed science course to the parents, colleagues, or other community groups. The class members react as the designated audience, a simulation or role play.

Secondary candidates are also required to take EDU 478 or 578 Reading in the Content areas as well as the technology (EDU 459 or 600) and a special education course (SED 460 or 560). As candidates learn how to teach reading in the subject areas and review textbooks and other literature for appropriate secondary reading levels, Integrated Science minors and majors are expected to include their subject area skills and unique reading requirements to complete written and oral reports and to create unit and lesson plans for secondary science courses. The same is true for the projects in the technology courses and for adapting secondary standards for special needs students placed in a general education science course.

Elementary and Secondary Education candidates must complete the appropriate Student Teaching course (EDU 489 Student Teaching in the Elementary and Middle Schools or EDU 490 Student Teaching in the Secondary Schools—8 semester hours in K-8 or 7-12 grades) in an elementary or secondary school assignment with a cooperating teacher who teaches sciences at the level of the candidates' certification.