ISE—Integrated Science Education

Center for Integrative Studies in General Science
College of Natural Science

120 Seminar in Integrated Science for Elementary Schools
Spring. 1(1-1) Interdepartmental with Teacher Education. Administered by Integrated Science Education. P: (BS 161 or BS 162 or BS 161H or BS 182H or LB 144 or LB 145) or (CEM 141 or PHY 231 or PSL 250 or GLG 201 or GEO 203) R: Open to students in the College of Education or in the Education major or in the Special Education major or approval of college. SA: SME 120
Exploration of major connecting themes in life sciences, earth science, and physical science as evidenced in the K-8 science curriculum and college science courses.

301 Science for Elementary Schools
Fall, Spring. 3(2-2) RB: Completion of an ISB and ISB laboratory or ISP and ISP laboratory course. Completion of the majority of complementary studies coursework in science and math. R: Open to students in the elementary teacher certification program (admitted). SA: SME 301, SME 301
Topics in earth science, life science, and physical science explored through discussion, demonstrations, readings, presentations, and field trips.

320 Integrated Science for Elementary Schools
Spring. 3(2-2) Interdepartmental with Teacher Education. Administered by Integrated Science Education. P: ISE 120 and (BS 161 or BS 162 or BS 161H or BS 182H or LB 144 or LB 145 or PSL 250 or ZOL 355) and (PHY 231 or PHY 231C or CEM 141 or LB 171) and (GLG 201 or GEO 203 or AST 207) R: Open to students in the Integrated Science Elementary Teaching Major. SA: SME 320 Not open to students with credit in ISE 301.
Analysis of the concepts integrating science across life sciences, earth sciences, and physical sciences. Applications to the K-8 science curriculum.

401 Science Laboratories for Secondary Schools (W)
Fall. 4(2-6) P: Completion of Tier I writing requirement. R: Open to seniors in the Chemistry major or in the Earth Science major or in the Biological Science major or in the Physical Science major. SA: NSC 401, SME 401 Laboratory equipment, supplies, demonstrations, exercises, and safety. Care of live organisms. Disposal of biological and chemical wastes.

420 Integrated Science Research
Fall, Spring. 3(2-2) Interdepartmental with Teacher Education. Administered by Integrated Science Education. R: Open to seniors in the General Science Secondary Teaching Major and open to seniors in the Integrated Science Elementary Teaching Major. SA: SME 420
Research design and data analysis of individual research projects relevant to the K-12 science curriculum, integrating topics in life, earth, and physical science.

490 Special Problems
Fall, Spring, Summer. 1 to 4 credits. A student may earn a maximum of 6 credits in all enrollments for this course. R: Approval of department. SA: SME 490
Faculty directed individualized study of an interdisciplinary problem.

600 Special Problems for K-8 Teachers
Fall, Spring, Summer. 1 to 5 credits. A student may earn a maximum of 10 credits in all enrollments for this course. R: Elementary teacher certification, 3 years teaching experience. R: Approval of college. SA: NSC 600, SME 600
Supervised study of problems or issues in biological sciences, physical sciences, earth sciences or mathematical sciences.

800 Problems in Science or Mathematics for Teachers
Fall, Spring, Summer. 1 to 5 credits. A student may earn a maximum of 15 credits in all enrollments for this course. R: Secondary certification in biological sciences, physical sciences or chemistry; secondary certification in Mathematics or Mathematics Education. R: Approval of college. SA: NSC 800, SME 800
Supervised study of problems or issues in biological science, or physical sciences, or mathematical sciences.

820 College Student Cognition in Science
Spring. 3(3-0) RB: At least 3 undergraduate courses in science SA: SME 820
Introduction to research methodologies and findings relevant to college student cognition in science disciplines. Material from education, psychology, cognitive sciences, and the science disciplines will be used to reveal college student cognitive processes as they relate to science fields.

866 Integrated Science for Secondary Teachers
Summer. 3(2-1) RB: Secondary certification in chemistry or physics or earth science or physical science, 1 year of teaching. R: Open to graduate students in the Physical Science-Interdepartmental major. Approval of college. SA: SME 866
Development of class activities that integrate across the sciences: physics, chemistry, earth science, and biology.

870 Teaching College Science
Spring. 2 credits. RB: One year of graduate study in a biological or physical science. R: Approval of college. SA: NSC 870, SME 870