

buildings, places of religious importance, and landscapes are all “cultural resources.” Examines the development of historic preservation ideas, the laws structuring “historic resources.” Also examines the development of historic preservation ideas, the laws structuring historic preservation, and how this structure affects archaeological work in the United States. Practical aspects include an examination of local preservation initiatives, the mechanics of National Register nominations, and public presentation and outreach. *3 Cr.*

**ANT 590 Topics in Anthropology (A).** As an advanced course, addresses current topics, issues, controversies, etc. of anthropological significance. Specific topics vary from semester to semester

and may address issues in physical anthropology, archaeology, cultural anthropology or applied/developmental anthropology. Descriptions of specific topics courses offered in any particular semester may be obtained through the department. May be taken more than once for credit if topics differ. *3 Cr.*

**ANT 599 Independent Study in Anthropology (A).** Established in consultation between student and instructor. *1-6 Cr. By Arrangement.*

**ANT 699 Independent Study in Anthropology (A).** Established in consultation between student and instructor. *1-6 Cr. By Arrangement.*

## BOARD OF STUDY FOR THE TEACHING OF SCIENCE AND MATHEMATICS

(585) 395-5585

*Coordinator and Instructor, Chemistry:* Dawn M. Lee, MS, Rochester Institute of Technology; *Members: Distinguished Service Professor, Education and Human Development:* Betsy C. Balzano, PhD, Florida State University; *Assistant Professor Emeritus, Education and Human Development:* Walter F. Brautigam, PhD, Cornell University; *Associate Professor Emeritus, Chemistry:* Kenneth D. Schlecht, PhD, University of Iowa.

The Board of Study was created in natural and mathematical sciences to work for the improvement of science and mathematics teaching. Its intent is to supplement departmental efforts and to carry out functions and programs not within the interest of a single department or appropriately administered through one department.

Graduate-level subject-matter courses emphasizing the fundamental principles of the sciences and mathematics are scheduled by the Board of Study. Advisement services and courses specifically designed for teachers at the elementary and secondary school levels are available on a regular basis. Acceptability of natural science courses toward a graduate degree is determined in consultation with the student’s major advisor.

### NATURAL SCIENCE COURSES

**NAS 501 Computational Methods for Teachers I (A).** *Prerequisite:* Instructor’s permission. Enables teachers and teacher candidates in mathematical, physical, life and earth sciences to learn computational tools, advanced graphing calculators, laptop computers, CD- and Web-based tools. Involves computational science as a process in solving real-world problems in sciences. Introduces students to technology tools (such as graphing calculators), math modeling tools (such as Excel, STELLA, and Geometer’s Sketchpad), agent-based modeling tools (such as AGENT SHEETS), science modeling tools (such as Interactive Physics). Includes a section on New York state K-12 standards in math, science and technology. *3 Cr.*

**NAS 525 Peer-Led Workshops for College Chemistry CHM 205/206 (A).** Provides training in peer leading workshop chemistry session averaging 1 hour per week before leading small groups of CHM 205/206 students in solving of problems for 2 hours per week. Training includes pedagogical aspects, group dynamics and chemistry content. Includes how to develop workshop modules. Instructor’s permission required. *1 Cr.*

**NAS 586 Laboratory Science Safety (A).** Covers safe lab teaching practices for science teachers with no prior safety instruction. Emphasizes hazard potential in biology, chemistry, earth science/geology, and physics, especially when working with chemicals. Includes three hours of lecture/lab per week. *3 Cr.*

**NAS 599 Independent Study in Natural Science (A).** Arranged in consultation with the instructor-sponsor prior to registration. *1-6 Cr. By Arrangement.*

**NAS 601 Computational Methods for Teachers II (A).** *Prerequisite: NAS 401 or NAS 501.* Teaches advanced computational tools and programming to secondary school teachers and teacher candidates. Science teachers will learn about computational approach as a scientific inquiry method in physical, life, environmental and social sciences. Mathematics and technology teachers will learn about applications of mathematical and computer skills in a variety of subject areas, aligned with the PreK-12 curriculum and textbooks in New York state. Covers training in advanced software tools for teaching and research. Offers further training in tools from NAS 501. Allows teachers and teacher candidates to develop lesson plans using computational tools and pedagogy learned in this course. *3 Cr.*

**NAS 611 Science for Elementary Teachers (A).** Designed for elementary teachers with little formal science background. Investigates selected major concepts through the lab approach using simple, easily obtainable materials that can be used by teachers in the classroom. *3 Cr.*

**NAS 663 Field Natural History (A).** Studies the principles of ecology and conservation in actual field locations. Uses taxonomic principles and field recognition of common species to develop an understanding of natural relationships. Requires students to develop individual projects related to their interests. *3 Cr.*

**NAS 673 Physics for Teachers I (A).** Covers selected topics in kinematics, mechanics and thermodynamics. Gives considerable attention to student participation in planning and performing experiments and demonstrations. Entails 80 hours of workshop. *4 Cr.*

**NAS 678 Astronomy for Teachers (A).** Studies the solar system, interrelationships of its members, and its place in the cosmos; of the sun as a star; and of theories of the origin and evolution of stars, systems, and of the universe. Stresses the evaluation of evidence; and through lab, field and planetarium work, emphasizes familiarity with the sky. Requires a project. *4 Cr.*

**NAS 683 Physics for Teachers II (A).** Covers selected topics in optics and electromagnetism. Gives considerable attention to student participation in planning and performing experiments and demonstrations. Entails 80 hours of workshop. *4 Cr.*

**NAS 693 Physics for Teachers III (A).** Covers selected topics in modern physics. Gives considerable attention to student participation in planning and performing experiments and demonstrations. Entails 80 hours of workshop. *4 Cr.*

**NAS 695 Chemical Lecture Demonstrations (A).** Helps teachers use, develop and practice chemistry lecture demonstrations. Requires participants to obtain detailed instructions, practice several demonstrations, and present them to their classmates. *1 Cr.*

**NAS 698 Research for Teachers (A).** Enables students to participate in research projects in the natural sciences. May consist of construction of electronic and/or mechanical devices, computations, data collection and analysis, and interpretation of results. *1-6 Cr. By Arrangement.*

**NAS 701 Computational Methods for Teachers III (B).** *Prerequisites: NAS 601.* A continuation of the NAS 501, NAS 601 course sequence. Provides more in-depth training on the use of CMST teaching tools and their effective implementation. Provides experience in the presentation of CMST lesson plans to teachers of varying levels of ability. Requires close interaction with other CMST participants and faculty. *3 Cr.*