961. Selected Topics in Biochemistry
Fall, Winter, Spring, Summer. 1 to 3 credits. May reenroll for a maximum of 6 credits. Approval of department. Topics will be selected from the areas of biophysics, bioinstrumentation, complex carbohydrates, mechanisms of enzyme action, natural products, carbohydrate metabolism, mass spectrometry and biochemistry of isoprenoid compounds.

978. Seminar in Biochemistry
Fall, Winter, Spring, 0 or 1(1-0). Presentation and discussion of reports by graduate students on biochemical topics of current interest.

999. Doctoral Dissertation Research
Fall, Winter, Spring, Summer. Variable credit. Approval of department.

BIOLGICAL SCIENCE  B S

College of Natural Science

The content of courses 400, 405, 420, 440, 450 and 451, as well as the research and problems courses 499, 800 and 999, may vary from term to term. Brochures giving detailed information about individual courses are available in the Science and Math Teaching Center and the Office of the Assistant Dean for Lifelong Education. These courses are primarily designed for in-service teachers and interested adults and are offered in off-campus locations.

202. Introductory Biology for Non-Science Majors
Fall, Winter, Spring. 4(3-1) 12 credits in general education natural science courses. Concepts, procedures, and perspectives appropriate to developing a basic literacy in biology with emphasis on fundamental biological principles and their relation to world society. Appropriate preparation for pre-service elementary teachers.

400. Biological Science for Teachers
Fall, Winter, Spring, Summer. 3 to 4 credits. May reenroll for a maximum of 12 credits. Teacher certification with science major or minor. A course for in-service teachers, topics will be selected from actual classroom problems of the participants. Streets will be placed on field, laboratory and inquiry teaching.

405. Topics in Biological Science
Fall, Winter, Spring. 1 to 3 credits. May reenroll for a maximum of 6 credits if different topic is taken. Approval of department. Presentation of single topics from the biological sciences by senior faculty and guest lecturers. Topics are selected to facilitate development of strong biological science programs in schools.

408. Freshwater Ecology
Summer. 6 credits. B S 212 or approval of department. Given at W. K. Kellogg Biological Station. Interdepartmental with the departments of Zoology, Botany and Plant Pathology. The ecology of freshwater ecosystems, their biotic structure, and the functional interrelationships of environmental variables regulating population dynamics, productivity and community structure. Extensive field investigations.

410. Terrestrial Ecology
Summer. 6 credits. B S 212 or approval of department. Given at W. K. Kellogg Biological Station. Interdepartmental with the departments of Botany and Plant Pathology, and Zoology. Extensive field investigations of several types of terrestrial communities. Interrelationships of plants, animals, and environment. Factors determining distribution and abundance.

420. Seminar in Recent Advances in Biological Science
Fall, Winter, Spring, Summer. 1 to 3 credits. May reenroll for a maximum of 6 credits if different topic is taken. Approval of department. A series of lectures by senior faculty on topics on the history, development, the most recent advances and the possible future and limits of the Biological Sciences.

421. Seminar in Recent Advances in Biological Science
Fall, Winter, Spring, Summer. 1 to 3 credits. A course in biology or approval of department. Given at W. K. Kellogg Biological Station. Ecology of forest, field and prairie ecosystems. Emphasis on natural history and field identification of Michigan's common land plants and animals. Biological collection techniques and reference materials.

422. Terrestrial Field Biology for Teachers
Summer. 3 credits. A course in biology or approval of department. Given at W. K. Kellogg Biological Station. Investigation of Michigan's aquatic and wetland ecosystems with special emphasis on field identification of key plant and animal species. Ecological concepts, reference materials, and biological collection techniques.

440. Man and Environment Workshop for Teachers
Summer. 3 credits. Approval of department. Given at W. K. Kellogg Biological Station. Discussions and practical work sessions concerning the development of ideas and activities for environmental studies in and outside the classroom. Designed for intermediate and secondary in-service teachers.

460. Ornithology for Teachers
Summer. 3 credits. A course in biology or approval of department. Not open to Zoology majors. Given at W. K. Kellogg Biological Station. Interdepartmental with and administered by the Department of Zoology. Distribution, breeding cycles, migration, food and feeding habits, voice and other important areas of avian biology. Emphasis on field identification and natural history.

500. Problems in Biological Science
Fall, Winter, Spring. Variable credit. B.S. degree in biological science.

505. Outdoor Environmental Studies
(F451) Summer. 1 to 3 credits. May reenroll for a maximum of 9 credits if different topics are taken. B S 422 or B S 425 or ZOL 490 or approval of department. Given at W. K. Kellogg Biological Station. Emphasis on environmental understanding. Development of educational materials through team research and testing. Interaction with elementary and middle school children in two-week outdoor oriented workshop.

599. Master's Thesis Research
Fall, Winter, Spring. Variable credit. Approval of department.

BIOMECHANICS  BIM

College of Osteopathic Medicine

560. Acupuncture and Other Peripheral Stimulation Therapy
Winter. 1 to 3 credits. Approval of department. Clinical application of traditional Chinese acupuncture and related peripheral stimulation therapies.

561. Clinical Craniosacral Manipulative Therapy
Spring. 1 to 3 credits. Approval of department. Basic concepts of the craniosacral system, clinical applications.