892. Master of Fine Arts Seminar
Fall, Spring. 3 to 6 credits. A student may earn a maximum of 12 credits in all enrollments for this course. R: Open only to Master of Fine Arts students in Studio Art. Approval of department. Contempory intellectual issues related to practice in the visual arts. Group critiques of individual scholarly and applied research.

898. Master of Fine Arts Research
Fall, Spring. 1 to 8 credits. A student may earn a maximum of 16 credits in all enrollments for this course. R: 12 graduate credits in student's studio art discipline. R: Open only to Master of Fine Arts students in Studio Art. Individual research project in the student's studio art discipline directed by major professor.

Surgery

839. Intaglio Printing
Fall, Spring. 2 to 6 credits. A student may earn a maximum of 40 credits in all enrollments for this course. R: Open only to Master of Fine Arts students in Studio Art. Approval of department. Theory and practice of intaglio printing as a means to create expressive imagery.

840. Ceramics
Fall, Spring. 2 to 8 credits. A student may earn a maximum of 40 credits in all enrollments for this course. R: Open only to Master of Fine Arts students in Studio Art. Approval of department. Advanced study in ceramics to foster independent development.

841. Sculpture
Fall, Spring. 2 to 8 credits. A student may earn a maximum of 40 credits in all enrollments for this course. R: Open only to Master of Fine Arts students in Studio Art. Approval of department. Advanced study in a variety of three-dimensional media to foster individual development.

842. Seminar in Art Education
Fall of even-numbered years. 3(3-0). R: Approval of department. Contemporary thought in art education. Current problems examined within an interdisciplinary framework.

843. Special Topics in Art Education
Fall, Spring, Summer. 1 to 3 credits. A student may earn a maximum of 3 credits in all enrollments for this course. R: Approval of department. Special topics supplementing regular course offerings proposed by faculty on a group study basis for graduate students.

844. Master of Fine Arts Seminar
Fall. 3(3-0). A student may earn a maximum of 12 credits in all enrollments for this course. R: Open only to Master of Fine Arts students in Studio Art. Approval of department. Contemporary intellectual issues related to practice in the visual arts. Group critiques of individual scholarly and applied research.

846. Graphice Design
Fall, Spring, 2 to 8 credits. A student may earn a maximum of 40 credits in all enrollments for this course. R: Open only to graduate students in Studio Art. Approval of department. Planning and conceptualizing ideas for visual communication problems that are to be expressed in words and or pictures. Design of research that will expose a mastery of visual aesthetics and concepts in information design.

852. Seminar in Art Education
Fall of even-numbered years. 3(3-0). R: Approval of department. Contemporary thought in art education. Current problems examined within an interdisciplinary framework.

853. Special Topics in Art Education
Fall, Spring, Summer. 1 to 3 credits. A student may earn a maximum of 3 credits in all enrollments for this course. R: Approval of department. Special topics supplementing regular course offerings proposed by faculty on a group study basis for graduate students.

854. Master of Fine Arts Seminar
Fall. 3(3-0). A student may earn a maximum of 12 credits in all enrollments for this course. R: Open only to Master of Fine Arts students in Studio Art. Approval of department. Contemporary intellectual issues related to practice in the visual arts. Group critiques of individual scholarly and applied research.

858. Master of Fine Arts Research
Fall, Spring. 1 to 8 credits. A student may earn a maximum of 16 credits in all enrollments for this course. R: 12 graduate credits in student's studio art discipline. R: Open only to Master of Fine Arts students in Studio Art. Individual research project in the student's studio art discipline directed by major professor.

Surgical Department of Surgery

College of Human Medicine

869. Basic Surgery Clerkship
Fall, Spring, Summer. 6 to 12 credits. A student may earn a maximum of 12 credits in all enrollments for this course. P: SUR 608. R: Open only to graduate-professional students in College of Human Medicine. The surgical patient, surgical diagnosis, pre-operative evaluation and post-operative care.

870. Otolaryngology Clerkship
Fall, Spring, Summer. 6 credits. A student may earn a maximum of 18 credits in all enrollments for this course. P: SUR 608. R: Open only to graduate-professional students in College of Human Medicine. Common oto-laryngologic disorders, emergencies. Diagnosis and treatment. Primary physician's judgments about management.

871. Plastic Surgery Clerkship
Fall, Spring, Summer. 6 credits. A student may earn a maximum of 18 credits in all enrollments for this course. P: SUR 608. R: Open only to graduate-professional students in College of Human Medicine. Principles of wound healing and tissue repair. Indications and applications of plastic surgery procedures.

872. Urology Clerkship
Fall, Spring, Summer. 6 credits. A student may earn a maximum of 18 credits in all enrollments for this course. P: SUR 608. R: Open only to graduate-professional students in College of Human Medicine. Demonstration of clinical manifestations of genito-urinary disease, investigative methods and techniques of diagnosis and management. Urologic emergencies and performance of basic urologic skills.

873. Orthopedic Surgery Clerkship
Fall, Spring, Summer. 6 credits. A student may earn a maximum of 18 credits in all enrollments for this course. P: SUR 608. R: Open only to graduate-professional students in College of Human Medicine. Diagnosis and management skills in common orthopedic problems. Orthopedic emergencies.

874. Neurosurgery Clerkship
Fall, Spring, Summer. 6 credits. A student may earn a maximum of 18 credits in all enrollments for this course. P: SUR 608. R: Open only to graduate-professional students in College of Human Medicine. Problems related to common emergent and elective neurosurgery involving the brain, spine, and peripheral nerves. Neurological examinations, diagnostic methods.

875. Ophthalmology Clerkship
Fall, Spring, Summer. 6 credits. A student may earn a maximum of 18 credits in all enrollments for this course. P: SUR 608. R: Open only to graduate-professional students in College of Human Medicine. Medical and surgical treatment of eye diseases. Clinical experiences include private office practice, surgical observations, pre-and post-operative care.

876. Thoracic Surgery Clerkship
Fall, Spring, Summer. 6 credits. A student may earn a maximum of 18 credits in all enrollments for this course. P: SUR 608. R: Open only to graduate-professional students in College of Human Medicine. Problem solving in thoracic medicine and surgery. Pulmonary physiology. Diagnostic tests and tests, and indications for surgical procedures.

877. Anesthesia Clerkship
Fall, Spring, Summer. 6 credits. A student may earn a maximum of 18 credits in all enrollments for this course. P: SUR 608. R: Open only to graduate-professional students in College of Human Medicine. Common anesthetic agents. Performing anesthetic procedures under faculty supervision.

878. Sub-specialty Surgery Clerkship
Fall, Spring, Summer. 6 credits. A student may earn a maximum of 18 credits in all enrollments for this course. P: SUR 608. R: Open only to graduate-professional students in College of Human Medicine. Surgical domains not covered otherwise or in which students desire further exposure.

879. Advanced Surgery Clerkship
Fall, Spring, Summer. 6 credits. P: SUR 608, MED 608. R: Open only to graduate-professional students in College of Human Medicine. Advanced experience in critical care, trauma, and nutrition. Students must successfully complete several technical bedside procedures with more responsibility for patient care than in SUR 608.

880. Surgical Nutritional Care Clerkship
Fall, Spring, Summer. 6 credits. A student may earn a maximum of 18 credits in all enrollments for this course. P: SUR 608. R: Open only to graduate-professional students in College of Human Medicine. Clinical experience with nutrition team dealing with surgical and medical patients requiring therapeutic nutrition as a result of metabolic derangement and nutritional deficiencies.

881. Core Competencies III
Spring, Summer. 2 credits. A student may earn a maximum of 6 credits in all enrollments for this course. Interdepartmental with Human Medicine, Medicine, Pediatrics and Human Development, Family Practice, and Obstetrics, Gynecology, and Reproductive Biology Administered by Human Medicine. Clinical experience with nutrition team dealing with surgical and medical patients requiring therapeutic nutrition as a result of metabolic derangement and nutritional deficiencies.

882. Shock and Metabolism
Fall. 4(4-0). R: Open only to M.S. students in Surgery. Results of prolonged reduction in tissue perfusion on tissue metabolism, structure, and function at the systemic, cellular and subcellular levels. Pharmacologic interventions useful in volume resuscitation.

883. Clinical Surgical Anatomy

884. Enteral and Parenteral Nutrition
Fall, Summer. 3(3-0). R: Open only to M.S. students in Surgery. Identification of individuals requiring nutritional support. Nutritional requirements in diseases. Delivery of total parenteral and enteral nutrition. Special problems.
301. **Learners and Learning in Context (W)**

*P: TE 150, TE 250 or CEP 249. R: Not open to freshmen and sophomores. Open only to Education majors and to students in Education specialization. Completion of Tier I writing requirement.*

Roles of social context and sociocultural background in learning. Natural and socially constructed differences among learners. Relationship among subject-specific knowledge, teaching and learning that subject, and the institutional and communal context. Multiple literacies.

**Systems Science**

### Department of Electrical Engineering

**410. Systems Methodology**

*Spring (3-3)*

*P: CE 370. R: Open only to Engineering Arts seniors. Completion of Tier I writing requirement.*

Systems analysis and design. Needs analysis, system identification, graphical models. Team project required.

### Teacher Education

**Department of Teacher Education**

**College of Education**

**150. Reflections on Learning**

*Fall, Spring, Summer. 3(3-0) Interdepartmental with Counseling, Educational Psychology and Special Education.*

Students' experiences as learners in comparison to psychological, sociological, and anthropological theories and assumptions about learning and teaching in and out of school.

**340. Diverse Learners in Multicultural Perspective**

*Fall, Spring, Summer. 3(2-2) Interdepartmental with Counseling, Educational Psychology and Special Education, Administered by Counseling, Educational Psychology and Special Education.*

*R: Not open to students with credit in TE 250. Communicative, linguistic, physical, sensory, behavioral, affective, and cognitive differences in learning in multicultural classrooms. Factors that mediate access to knowledge.*

**250. Human Diversity, Power, and Opportunity in Social Institutions**

*Fall, Spring, Summer. 3(3-0)*

Comparative study of schools and other social institutions. Social construction and maintenance of diversity and inequality. Political, social and economic consequences for individuals and groups.