890. Independent Study
Fall, Spring, Summer. 1 to 3 credits. A student may earn a maximum of 22 credits in all enrollments for this course.
R: Approval of department. Individual or group work related to biomechanics and/or neuromuscular system.

899. Master's Thesis Research
Fall, Spring, Summer. 1 to 25 credits. A student may earn a maximum of 25 credits in all enrollments for this course.

930. Current Issues in Biomechanical Aspects of Physical Activity
Spring. 3(3-0) A student may earn a maximum of 9 credits in all enrollments for this course. Interdepartmental with Physical Education and Exercise Science. Administered by Physical Education and Exercise Science.
P: PES 330.
Selected issues of biomechanical analyses of sport and physical activity.

OSTEOPATHIC MEDICINE - OST
College of Osteopathic Medicine

501. Clinical Skills I
Fall. 3(1-4)
R: Graduate-professional students in College of Osteopathic Medicine.
Introduction to osteopathic physical examination.

502. Clinical Skills II
Spring. 3(1-4)
P: OST 501. R: Graduate-professional students in College of Osteopathic Medicine.
Continuation of OST 501.

504. Doctor/Patient Relationship I
Fall. 1 credit.
R: Graduate-professional students in College of Osteopathic Medicine.
Basic of interpersonal communication related to physician interaction with patients.

505. Doctor/Patient Relationship II
Spring. 1 credit.
P: OST 504. R: Graduate-professional students in College of Osteopathic Medicine.
Skills of interviewing patients for the purposes of gathering information, giving information, and patient motivation.

511. Systems Biology: Neuromusculoskeletal I
Summer. 7(6-4)
P: ANT 551, ANT 552, OST 501, OST 502, PSL 501. R: Open only to graduate-professional students in College of Osteopathic Medicine. Approval of college.
A multidisciplinary approach to the peripheral neuromusculoskeletal system. Integration of basic science and clinical information with osteopathic manual medicine.

512. Systems Biology: Neuromusculoskeletal II
Fall. 8(4-4)
P: OST 511. R: Open only to graduate-professional students in College of Osteopathic Medicine. Approval of college.
A multidisciplinary approach to the neuromusculoskeletal system. Emphasis on the central nervous system. Integration of basic science and clinical information with osteopathic manual medicine.

513. Systems Biology: Neuromusculoskeletal III
Spring. 5(3-4)
P: OST 512. R: Open only to graduate-professional students in College of Osteopathic Medicine. Approval of college.
A multidisciplinary approach to the neuromusculoskeletal system. Emphasis on ophthalmology, rheumatology, orthopedics. Integration of basic science and clinical information with osteopathic manual medicine.

516. Systems Biology: Behavior I
Fall. 3(3-0)
P: OST 511, PHTM 563. R: Open only to graduate-professional students in College of Osteopathic Medicine.
A multidisciplinary approach to behavior. Focus on normal human development, behavioral and cultural medicine, and medical ethics.

517. Systems Biology: Behavior II
Spring. 3(2-0)
P: OST 516. R: Open only to graduate-professional students in College of Osteopathic Medicine.
A multidisciplinary approach to behavior. Focus on psychopathology, chronic illness and disability, health policy and terminal care.

518. Systems Biology: Behavior III
Summer. 2(2-0)
P: OST 517. R: Open only to graduate-professional students in College of Osteopathic Medicine.
A multidisciplinary approach to behavior. Focus on substance abuse and child abuse.

519. Ethics, Policy and Jurisprudence
Spring. 2(2-0)
P: Open only to graduate and graduate-professional students in the colleges of Osteopathic Medicine, Human Medicine and Nursing or approval of department.
Key issues in ethics, policy and law encountered in the practice of medicine.

521. Systems Biology: Hematopoietic
Fall. 2(2-0)
P: ANT 551, ANT 552, BCH 521, MIC 522, PHTM 563, PHL 542. R: Open only to graduate-professional students in College of Osteopathic Medicine. Approval of college.
A multidisciplinary approach to the hematopoietic system. Emphasis on hematopoiesis, clotting, and hemato­pathies. Integration of clinical and basic science information.

522. Systems Biology: Gastrointestinal
Fall. 6(6-0)
P: ANT 551, ANT 562, BCH 521, MIC 522, PHTM 563, PSL 501, PHTM 542. R: Open only to graduate-professional students in College of Osteopathic Medicine. Approval of college.
A multidisciplinary approach to the gastrointestinal system emphasizing normal structure and function, and pathologies. Integration of basic science and clinical information.

523. Systems Biology: Genitourinary
Summer. 5(5-0)
P: ANT 551, ANT 562, MIC 522, PHTM 563, PSL 501, PHTM 542. R: Open only to graduate-professional students in College of Osteopathic Medicine. Approval of college.
A multidisciplinary approach to the urinary system. Emphasis on normal structure and function, and pathologies of the urinary and male reproductive systems. Integration of basic science and clinical information.

524. Systems Biology: Cardiovascular
Spring. 7(6-2)
P: ANT 551, ANT 553, BCH 551, MIC 522, PHTM 563, PSL 511, PHTM 542. R: Open only to graduate-professional students in College of Osteopathic Medicine. Approval of college.
A multidisciplinary approach to the cardiovascular system emphasizing normal structure and function, and pathologies. Integration of basic science and clinical information.

525. Systems Biology: Respiratory
Spring. 5(4-2)
P: ANT 551, BCH 521, MIC 522, PHTM 563, PSL 501. R: Open only to graduate-professional students in College of Osteopathic Medicine. Approval of college.
A multidisciplinary approach to the respiratory system emphasizing normal structure and function, and pathologies. Integration of basic science and clinical information.

526. Systems Biology: Female Reproductive
Summer. 2(2-0)
P: ANT 551, ANT 562, BCH 521, MIC 522, PHTM 563, PSL 501. R: Open only to graduate-professional students in College of Osteopathic Medicine. Approval of college.
A multidisciplinary approach to the female reproductive system emphasizing normal structure and function, and pathologies. Integration of basic science and clinical information in obstetrics and gynecology.

527. Systems Biology: Growth and Development
Summer. 3(3-0)
P: ANT 551, ANT 562, BCH 521, MIC 522, PHTM 563, PSL 501. C: OST 549 concurrently. R: Open only to graduate-professional students in College of Osteopathic Medicine.
A multidisciplinary approach to growth and development. Emphasis on normal structure and function, and pathologies. Integration of basic science and clinical information.

528. Systems Biology: Endocrinology
Fall. 2(2-0)
P: PSL 501; ANT 553; BCH 551. R: Open only to graduate-professional students in College of Osteopathic Medicine. Approval of college.
A multidisciplinary approach to endocrinology. Emphasis on normal endocrine function and the principles of diagnosis and treatment of endocrine disorders. Integration of basic science and clinical information.

535. Principles of Gerontology for Medical Practice
Spring. 3(3-0)
R: Open only to graduate professional students in the Colleges of Osteopathic Medicine or approval of department.
Lectures, readings, tapes, small group seminars, and home visits related to normal aging and epidemiology. Major chronic diseases and other issues of geriatric care.
SA: CMS 522

541. Integrative Clinical Correlations I
Fall. 1 credit.
R: Graduate professional students in College of Osteopathic Medicine.
Application of basic science information, problem-solving, and clinical skills in an integrated clinical case format. Case presentations by students and faculty.
560. Directed Studies
Fall, Spring, Summer. 1 to 30 credits. A student may earn a maximum of 48 credits in all enrollments for this course.
R: Open only to graduate-professional students in the College of Osteopathic Medicine upon completion of Units I and II.
Individual or group work on special problems in medicine.

561. Obstetrics and Gynecology Clerkship
Fall, Spring, Summer. 1 to 9 credits. A student may earn a maximum of 9 credits in all enrollments for this course.
R: Open only to graduate-professional students in the College of Osteopathic Medicine upon completion of Units I and II.
Obstetric patient evaluation and management: motor skills, aptitudes, evaluation of postpartum patient and management of gynecologic problems.

563. Surgery Clerkship
Fall, Spring, Summer. 1 to 12 credits. A student may earn a maximum of 12 credits in all enrollments for this course.
R: Open only to graduate-professional students in the College of Osteopathic Medicine upon completion of Units I and II.
Surgical diagnosis, management, and treatment. Structure developed to achieve proficiency in motor skills, aptitudes, comprehension of concepts and principles, patient evaluation, diagnosis, management, and therapy.

564. Anesthesiology Clerkship
Fall, Spring, Summer. 1 to 4 credits. A student may earn a maximum of 3 credits in all enrollments for this course.
R: Open only to graduate-professional students in the College of Osteopathic Medicine upon completion of Units I and II.
Motor skills, concepts and principles, patient evaluation, management, and therapy.

OSTEOPATHIC SURGICAL SPECIALTIES

512. Biostatistics and Epidemiology
Summer. 2(0–2)
R: Open only to graduate and graduate-professional students in the College of Osteopathic Medicine, Human Medicine, and Nursing or approval of department.
Medical literature to illustrate statistical reasoning and research design. Emphasis on analysis rather than computation. Prospective or retrospective studies. Sensitivity, specificity, and predictive values. Epidemiologic terminology.
SA: CMS 512

551. Issues in Minority Health
Fall, Spring, Summer. 3(0–3)
R: Open only to graduate and graduate-professional students in the College of Osteopathic Medicine, Human Medicine, and Nursing or approval of college.
Preliminary of health services in minority populations.
SA: CMS 515

OSTEOPATHIC SURGICAL SPECIALTIES

562. Orthopedic Clerkship
Fall, Spring, Summer. 1 to 20 credits. A student may earn a maximum of 20 credits in all enrollments for this course.
R: Open only to graduate-professional students in the College of Osteopathic Medicine upon completion of Units I and II.
Program developed to achieve proficiency in motor skills, aptitudes, comprehension of concepts and principles, patient evaluation, diagnosis, management, and therapy.

568. Otorhinolaryngology Clerkship
Fall, Spring, Summer. 1 to 20 credits. A student may earn a maximum of 20 credits in all enrollments for this course.
R: Open only to graduate-professional students in the College of Osteopathic Medicine upon completion of Units I and II.
Develop proficiency in motor skills, aptitudes, comprehension of concepts and principles, patient evaluation, diagnosis, management, and therapy.

PACKAGING

550. Special Problems
Fall, Spring, Summer. 1 to 24 credits. A student may earn a maximum of 60 credits in all enrollments for this course.
R: Open only to graduate professional students in the College of Osteopathic Medicine. Approval of college.
Individual study directed by a faculty member on an experimental, theoretical, or applied problem.

556. Orthopedic Clerkship
Fall, Spring, Summer. 1 to 20 credits. A student may earn a maximum of 20 credits in all enrollments for this course.
R: Open only to graduate-professional students in the College of Osteopathic Medicine upon completion of Units I and II.
Program developed to achieve proficiency in motor skills, aptitudes, comprehension of concepts and principles, patient evaluation, diagnosis, management, and therapy.

Packaging — Descriptions of Courses

221. Packaging with Glass and Metal
Fall, Spring. 3(3-0)
P: PKG 101 or concurrently, CEM 141, PHY 231.
Physical and chemical properties of glass and metals and their applications to packaging.
SA: PKG 326, PKG 225

322. Packaging with Paper and Paperboard
Fall, Spring. 4(3-2)
P: PKG 101, CEM 145. PKG 221 or concurrently, SIT 200 or SIT 201 or SIT 315. R: Open only to sophomores or juniors or seniors or graduate students in the School of Packaging. Physical and chemical properties, manufacture, conversion, and use of wood, paper, paperboard, and related components in packaging. Design, use, and evaluation of packages.
SA: PKG 325

323. Packaging with Plastics
Fall, Spring. 4(3-2)
P: PKG 101, CEM 145, PHY 232, MTH 124. PKG 221 or concurrently, SIT 200 or SIT 201 or SIT 315. R: Open only to sophomores or juniors or seniors or graduate students in the School of Packaging. Physical and chemical properties of plastics and their relationship to selection, design, manufacture, performance, and evaluation of packages.
SA: PKG 320

330. Package Printing
Fall. 3(3-0)
P: PKG 221. R: Open only to sophomores or juniors or seniors or graduate students in the School of Packaging.
Methods of printing packages including copy preparation, design, electronic imaging, aesthetics, camera use, and effects of package materials. Production of printed packages including quality control, economics, and environmental considerations.

370. Packaging and the Environment
Spring. 3(3-0)
P: CEM 141, completion of Tier I writing requirement. R: Not open to freshmen and sophomores.
Effects of packaging on environmental quality. Solid waste, air quality, water quality, laws, economics and energy. Resource use and conservation.

410. Distribution Packaging Dynamics
Fall. 3(3-0)
P: PKG 320, PKG 323. R: Open only to sophomores or juniors or seniors or graduate students in the School of Packaging.
Identification and measurement of hazards in physical distribution. Methods of protection against climate, shock, vibration, and compression.
SA: PKG 310

415. Packaging Decision Systems
Fall, Spring. 3(2-2)
P: MTH 116, CPS 101 or CPS 131. R: Open only to sophomores or juniors or seniors or graduate students in the School of Packaging.
Application of computer to analyze and solve problems in the management, specification, production, and testing of packaging systems.

452. Packaging Processes
Fall, Spring. 4(3-2)
P: PKG 322, PKG 323. R: Open only to sophomores or juniors or seniors or graduate students in the School of Packaging.