

HEALTH SCIENCES (HSC) 522**305 Felmley Hall, Phone: (309) 438-8329****Fax: (309) 438-2450****Web address: HealthSciences.IllinoisState.edu****Email: HSCInfo@IllinoisState.edu****Chairperson:** Jeffrey Clark.**Tenured/Tenure-track Faculty:***Professors:* Barham, Broadbear, G. Byrns, Clark, G. Jin.*Associate Professors:* Fuller, Grieshaber, Lyde.*Assistant Professors:* M. Byrns, Lanier, Mautino, Peterson, Van Draska, Webster, Yang.**General Department Information****HONORS IN HEALTH SCIENCES**

The Department offers honors study to qualified students who will pursue an individualized course of study. To qualify, students must be declared majors in the Department, have completed 30 hours of credit, have and maintain a minimum cumulative 3.50 GPA; and have and maintain a 3.50 GPA in the major. To graduate with Departmental Honors, students must be a member of the University Honors Program and complete 12 credit hours of honors work in Health Sciences courses selected from at least two of the following options: Honors Undergraduate Research, Honors Independent Study, in-course Honors, or Honors Undergraduate Teaching Assistant. Students interested in the Honors Program must contact the departmental advisor to complete an orientation and planning meeting. Further details about the University Honors program are available at: Honors.IllinoisState.edu.

MINOR IN PUBLIC HEALTH

The Minor in Public Health is designed to prepare students in core competencies needed by professionals working on population-based health issues. Public health professionals work to improve the quality and length of life in diverse communities by preventing health problems before they occur. They do this through supporting healthy environments, promoting the adoption of healthy lifestyles, preventing injuries, and preserving and protecting important resources that support human health. Public health is an interdisciplinary field built upon knowledge in environmental health, health behavior/promotion, epidemiology, medicine and other areas of study. This minor provides students with a foundation in key public health courses and, in combination with various majors, can create opportunities for employment in public health settings and graduate study in a Master of Public Health program or other health disciplines.

New and Internal Transfer Requirements:

Admission to this academic program is limited and is based on space availability and the competitiveness of the applicant pool. Factors that may be considered include, but are not limited to: courses completed, cumulative GPA,

hours completed, personal interview or written statement, and samples of work completed. For additional information on minimum requirements for admission and the application and selection process, visit IllinoisState.edu/Majors or contact the undergraduate advisor for the intended program.

Standards for Progress in the Minor:

Students must maintain a minimum cumulative GPA of 2.50 to progress in the minor.

- 21 hours required.
- Required core courses (15 hours): HSC 156, 170, 204A01 or 204A02, 258A01 or 258A02, 296.
- Choose 2 courses (6 hours) from the following: HSC 208, 248, 378, 390, 394.
- Required and elective courses must be completed with a grade of C or better.
- No more than 9 hours taken in the minor may count toward a major program of study within the Department of Health Sciences.
- **NOTE:** Other courses approved by the director of the minor may be counted toward the minor.

Environmental Health Program**Website:** HealthSciences.IllinoisState.edu/environmental

Degree Offered: B.S.

Environmental Health specialists identify and resolve problems that occur when humans interact with their environment. Some of these environmental problems include indoor and outdoor air pollution, water pollution, food contamination, hazardous wastes, insect-borne diseases, occupational hazards, and chemical or biological terrorism. Environmental Health specialists identify, implement, and evaluate the best methods of controlling or preventing these problems. Employment opportunities include private consulting firms; industry; non-profit organizations; and local, state, or federal agencies.

New Freshmen, New and Internal Transfer Admission Requirements:

Admission to this academic program is limited and is based on space availability and the competitiveness of the applicant pool. Factors that may be considered include, but are not limited to: courses completed, cumulative GPA, hours completed, personal interview or written statement, and samples of work completed. For additional information on minimum requirements for admission and the application and selection process, visit IllinoisState.edu/Majors or contact the undergraduate advisor for the intended major.

Internal transfer students must have a minimum cumulative GPA of 2.00 and should schedule an appointment with the departmental academic advisor for information.

Standards for Progress in the Major:

Students must maintain a cumulative GPA of 2.00 or higher and earn grades of C or better in all Health Sciences courses to be retained in the major.

Accreditation:

The Environmental Health program is accredited by the National Environmental Health Science and Protection Accreditation Council, www.ehacoffice.org.

MAJOR IN ENVIRONMENTAL HEALTH

- 81 total hours required.
42 hours in Health Sciences required.
- Required courses (18 hours): HSC 145, 156, 204*, 249, 258, 355.
- Professional Practice (9 hours): HSC 398A01.
- Group 1 elective courses (15 hours): HSC 248, 252, 254, 257, 271, 322, 350, 359, 362, 378. NOTE: No more than two of the following courses can be counted towards the Environmental Health major: HSC 271, 362, 378.
- Group 2 (additional) elective courses (3 hours): CHE 215, 242, 280; ECO 255; GEO 102, 276, 336; HIS 240; HSC 381, 383.
- Required courses outside of Health Sciences (16 hours, excluding required General Education courses): CHE 141, 220; KNR 182, 184; MAT 119.
- Required General Education courses (20 hours): BSC 160; CHE 140; HSC 156; MAT 118 or 145; PHY 105 or 108.
*NOTE: General Education courses MQM 100, ECO 138, GEO 138, POL 138, or PSY 138 may be substituted for HSC 204.

MINOR IN ENVIRONMENTAL HEALTH

- 30 total hours required.
- 15 hours in Health Sciences required.
- Required courses (9 hours): HSC 145, 156, 249 or 258A01.
- Elective courses (6 hours): HSC 248, 249 (if not used to satisfy other requirements), 252, 254, 257, 258A01 (if not used to satisfy other requirements), 322, 350.
- Required courses outside of Health Sciences: (a minimum of 15 hours): CHE 140, 141; MAT 118 or 145.
NOTE: The prerequisites for HSC 249 are CHE 220 and KNR 182; the prerequisites for HSC 258A01 are BSC 160 or 260.
NOTE: CHE 140, MAT 118, 145; and HSC 156 are General Education courses.

Health Promotion and Education Program

Website: HealthSciences.IllinoisState.edu/education

Degrees Offered: B.S., B.S. in Ed.

Health Promotion Specialists and Health Educators work with people in schools and community settings. They promote positive health behaviors by giving presentations, planning and implementing programs, preparing instructional materials, assessing community and individual health needs, teaching and training, coordinating community/school efforts, health coaching, advocating for healthy policies, leading coalitions, and acting as a resource person. Every Health Promotion and

Education major completes a core of 12 hours and either a sequence in School Health Education or Community Health Promotion.

New Freshmen, New and Internal Transfer Admission Requirements:

New freshmen and transfer students desiring admission to the Health Promotion and Education (HPE) program must meet the admission requirements established by the University. Those students wishing to be admitted into the School Health Education sequence of HPE must apply for and be admitted into the University Professional Studies program. (See the University-Wide Teacher Education section in this *Undergraduate Catalog*.) Students currently enrolled at the University who wish to change their major to HPE must have a minimum cumulative GPA of 2.50, though this minimum GPA does not guarantee admission. Transfer students and internal transfer students should schedule an appointment with the departmental academic advisor for information.

Standards for Progress in the Major:

School Health Education Sequence: All students should have a projected program plan completed in consultation with the departmental academic advisor. A minimum cumulative and major GPA of 2.50 is required for admission to Student Teaching as well as for retention in the HPE major. Admission to Professional Studies is contingent upon recommendation of the HPE faculty and the School Health Education Coordinator following completion of the Clinical Experience in HSC 391.

Community Health Promotion Sequence: All students should have a projected program plan completed in consultation with the departmental academic advisor. A minimum cumulative and major GPA of 2.50 and grades of C or better in all 60 credit hours required by the major are required for retention in the Community Health Promotion program as well as for enrollment in Professional Practice, HSC 398A02.

Minor in Community Health Education: Minors in Community Health Education should have a projected program plan completed in consultation with the departmental academic advisor. A minimum cumulative minor GPA of 2.50 is required for retention in the program.

CLINICAL EXPERIENCES IN TEACHER EDUCATION

A variety of clinical (pre-student teaching) experiences, as well as student teaching, are included in the teacher candidates professional preparation. Observations, small and large group instruction, tutoring, field experiences, and student teaching are included in the Clinical Experiences Program. The experiences offered prior to student teaching are integral parts of specific college courses. Clinical experiences are provided in off-campus professional development schools, local schools, campus laboratory schools, agencies and other approved non-school settings. The Cecilia J. Lauby Teacher Education Center monitors and documents all clinical experiences. Teacher candidates will show verification of having

completed clinical experiences commensurate with attaining local, state, and national standards. Teacher candidates must provide their own transportation to clinical experience sites.

Candidates are required to provide documentation of meeting all State of Illinois, district, and university requirements in regard to criminal background checks BEFORE beginning any clinical experiences. Criminal background checks must remain current as of the last day of the clinical experience. Candidates should consult with clinical course faculty and the Cecilia J. Lauby Teacher Education Center well in advance of clinical experiences to determine specific requirements needed each semester.

The approximate number of clinical hours associated with each course offering can be found with the appropriate course description in this Undergraduate Catalog. The following legend relates to the type and kind of activity related to a specific course.

Clinical Experiences Legend

- Observation (including field trips)
- Tutoring one-on-one contact
- Non-instructional assisting
- Small group instruction
- Whole class instruction
- Work with clinic client(s)
- Graduate practicum
- Professional meeting

Accreditation:

The School Health and Promotion Education curriculum is accredited by the Council for Accreditation of Education Preparation. The Community Health Promotion curriculum has been approved through combined review of two professional organizations.

MAJOR IN HEALTH PROMOTION AND EDUCATION

- 59 total hours (School Health Education) or 60 total hours (Community Health Promotion) required.
- Required core courses (12 hours) including: HSC 292, 293, 294, 296.
- HPE majors must also complete either the School Health Education Sequence or the Community Health Promotion Sequence.

School Health Education Sequence:

This sequence is part of the program leading to a 6-12 secondary endorsement.

- Required courses (18 hours): HSC 190, 290A02, 387, 390, 391; SOC 123.
- Elective (3 hours): 1 course selected from: FCS 102; HSC 105, 156*, 170*, 207.
- Students must complete all Illinois State Board of Education (ISBE) requirements for certification and the Professional Education requirements (26 hours): EAF 228 or 231 or 235; PSY 215; TCH 212, 216, 219, and 12

hours of student teaching STT 399A35; and the General Education requirements. A 2.50 cumulative and major GPA is required for admission to Professional Studies and for student teaching.

NOTE: This major does not meet middle-level endorsement requirements for the State of Illinois. See the advisor for information on this endorsement.

*Course is a General Education option.

Community Health Promotion Sequence:

- Required courses (27 hours): BSC 145*; HSC 204A01, 207, 258A02, 286, 290A01, 305, 395, 396.
- Electives (12 hours) chosen in consultation with an advisor from the following: FCS 102; HSC 105, 156**, 170**, 387, 390, 394; SOC 123.
- Professional Practice 398A02 (9 hours required), determined in consultation with the advisor and Community Health Promotion Coordinator.
- 2.50 cumulative and major GPA prior to the semester of enrollment in HSC 398A02.

*BSC 145 meets General Education requirement for SMT.

**Course is General Education option.

MINOR IN COMMUNITY HEALTH EDUCATION

- 24 hours required.
- Required courses (18 hours): HSC 190, 290, 292, 293, 294, 296.
- Electives (6 hours): 2 courses from: FCS 102; HSC 105, 156*, 170*, 208*, 387, 394. Other advanced-level Health Sciences courses may be substituted as electives with consent of the Health Sciences advisor

*Course is a General Education option.

Health Information Management Program

Website: HealthScience.IllinoisState.edu/info-management

Degree Offered: B.S.

Health information managers are professionals responsible for the management of health data and health information systems in health care organizations and organizations that use health data. They ensure data quality; code and classify data; maintain data security and privacy; design, implement and manage health information systems (both manual and electronic); evaluate medical care data to monitor quality and risk; and manage support personnel.

MAJOR IN HEALTH INFORMATION MANAGEMENT

The Health Information Management (HIM) major program offers two sequences to students who are seeking to earn a Bachelor of Science degree in Health Information Management. The sequences are the HIM On-Campus Sequence and the RHIT-HIM Online Sequence.

HIM On-Campus Sequence: This sequence is designed for and restricted to students who are taking HIM courses on campus.

New Freshmen, New and Internal Transfer Admission Requirements:

Admission to this academic program is limited and is based on space availability and the competitiveness of the applicant pool. Factors that may be considered for admission include, but are not limited to: courses completed, cumulative GPA, and hours completed. For additional information on minimum requirements for admission and applications selection process, visit IllinoisState.edu/Majors or contact the undergraduate advisor for the intended major.

Retention in the HIM On-Campus Sequence:

To be retained in the HIM major a student must:

- Be in good academic standing in the University with a minimum cumulative 2.25 GPA;
- Have a grade of C or better in the following courses, or their equivalents, to enroll in the HIM professional courses: HSC 105 and KNR 181 and 182;
- Earn grades of C or better in all major courses.

Course Requirements for the HIM On-Campus Sequence:

- Prerequisite courses (22 hours): HSC 105; IT 168, 178, 254, 261; KNR 181 and 182.
- Major courses (49 hours): HSC 201, 202, 204*, 210, 212, 213, 214, 230, 298A03, 300, 310, 320, 345, 346, 398A03; IT 250 and 262.
- Recommended courses: IT 164 and MAT 119 are highly recommended.

***NOTE:** General Education courses MQM 100 or ECO 138 or GEO 138 or POL 138 or PSY 138 may be substituted for HSC 204.

RHIT-HIM Online Sequence:

This sequence is designed for and restricted to students who have completed an associate degree program in health information technology (HIT) and are currently certified as Registered Health Information Technicians (RHIT). The Sequence is designed to give these students an opportunity to earn a Bachelor of Science Degree in Health Information Management in six semesters. All HIM courses will be delivered online via distance learning. Students will be expected to complete one course each semester.

Admission and Retention in the RHIT-HIM Online Sequence:

To be admitted and retained in the RHIT-HIM Online Sequence, a student must:

- Be admitted to Illinois State University;
- Be a graduate of an associate degree program in health information technology accredited by the Commission on the Accreditation of Health Informatics and Information Management Education (CAHIIM);

- Be currently certified as a Registered Health Information Technician;
- Complete the Associate Degree in Arts (A.A.) or an Associate Degree in Science (A.S.) or the Illinois Transferable General Education Core Curriculum;
- Maintain a minimum cumulative 2.25 GPA for retention in the HIM major;
- Earn grades of C or better in all HIM major courses.

Course Requirements in the RHIT-HIM Online Sequence:

- Major courses (66 hours): HSC 326, 327, 328, 329, 330, and 398A05 (3 hours); and 33 semester hours earned as Proficiency Credit;
- A grade of C or better is required in all HIM courses for retention in the major.

Health information technology courses are held as Proficiency Credit for the student until successful completion of three consecutive semesters of Health Information Management upper-division courses from: HSC 326, 327, 328, 329, or 330. Once these courses have been successfully completed with a grade of C or better through enrollment, thirty-three (33) credit hours are placed on the student's transcript as Proficiency Credit for the following Health Information Management courses: HSC 105, 200, 201, 202, 210, 212, 214, 230, and 298A03; KNR 181 and KNR 182.

Accreditation and Credentialing:

The HIM Program is accredited by the Commission on Accreditation of Health Informatics and Information Management (www.cahiim.org). Graduates of the program are eligible and expected to write the national registry examination. Successful completion of the registry examination leads to the Registered Health Information Administrator (RHIA) professional designation.

Criminal Background Check:

All Health Information Management students enrolling in HSC 298A03 and HSC 398A03 are required to pass a criminal background check. The complete policy is outlined in the Health Information Management Student Handbook.

Medical Laboratory Science Program

Website: HealthSciences.IllinoisState.edu/lab-science

Degree Offered: B.S.

Medical laboratory scientists work as a part of the medical team. They analyze body fluids and perform tests using highly specialized equipment to diagnose diseases and monitor treatment. They are largely employed in hospitals and private clinical laboratories and industry. Graduates of the program are eligible for national certification.

New Freshmen and New and Internal Transfer Admission Requirements:

Admission to this academic program is limited and is

based on space availability and the competitiveness of the applicant pool. Factors that may be considered include, but are not limited to: courses completed, cumulative GPA, hours completed, personal interview or written statement, and samples of work completed. For additional information on minimum requirements for admission and the application and selection process, visit IllinoisState.edu/Majors or contact the undergraduate advisor for the intended program.

Standards for Progress in the Major:

MLS majors must earn grades of C or better in all courses required by the major, including prerequisites, and maintain a minimum cumulative GPA of 2.50 or better to be retained in the program.

PROFESSIONAL PRACTICE IN MEDICAL LABORATORY SCIENCE

Professional Practice is provided off-campus in clinical facilities affiliated with the University. The experience involves technical instruction in clinical hematology, chemistry, blood banking, microbiology and other aspects of laboratory medicine. Students are responsible to provide their own transportation and housing during the Professional Practice experience. Students apply for acceptance into the clinical experience during the spring of the junior year. Students must have maintained a cumulative 2.50 GPA and have received a grade of C or better in all required courses to be eligible for professional practice.

Two Professional Practice options are available: the Standard Track and the Alternative Track. The Standard Track is one semester of professional practice and one semester of advanced coursework both occurring during the senior year of study. The Alternative Track is a 10-12 month experience in an accredited hospital-based program which includes both lecture and laboratory practice throughout. Enrollment in the Alternative Track is extremely limited (see the program director for further details). See the Medical Laboratory Science Student Handbook for more information and a current list of Standard Track and Alternative Track locations. Students must complete an entire set of Professional Practice courses (Standard Track or Alternative Track) to be eligible for graduation and national certification.

Criminal Background Check:

All Medical Laboratory Science students entering Professional Practice are required to pass a criminal background check. The complete policy is outlined in the Medical Laboratory Science Student Handbook.

Immunizations:

Evidence of immunity and/or proof of immunization against several viral agents is required for students entering professional practice. See the policy outlined in the Medical Laboratory Science Handbook for details.

MAJOR IN MEDICAL LABORATORY SCIENCE

- 83 hours as specified below.
- Required courses (18 hours): HSC 260, 261, 262, 263, 308 and either the Standard or Alternative Track:
Standard Track required courses (32 hours): HSC 301, 302, 312, 315, 316, 317, 318, 319, 325, 398A22, 398A23, 398A24, 398A27, 398A28, 398A29.
Standard Track elective courses (8 hours): BSC 170, 181 (or KNR 181), 182 (or KNR 182), 196, 203, 219, 220, 283; CHE 215, 242; PHY 105, 108.
Alternative Track required courses (32 hours): HSC 331, 332, 333, 334, 335, 336, 337, 338, 339.
Alternative Track elective courses (8 hours; 3 hours must be from CHE): BSC 170, 181 (or KNR 181), 182 (or KNR 182), 196, 203, 219, 220, 283; CHE 215, 242.
- Required courses outside Health Sciences (13 hours): BSC 160 or 260; CHE 141, 220.
- Required General Education courses (12 hours): BSC 197; CHE 140; MAT 120 or 144 or 145.
- Strongly recommended courses: HSC 105 and 204A02.
- **NOTE:** This major may require more hours than indicated due to prerequisites or lack of prior skill.

A.A.S. to B.S. Degree:

Persons possessing an Applied Associate of Science degree in clinical (medical) laboratory technology from an Illinois community college may complete a B.S. through the Illinois Articulation Initiative. To qualify, students must be certified as a medical laboratory technician by the American Society for Clinical Pathology or by American Medical Technologists. Qualified students are awarded proficiency credit for some of the A.A.S. courses. Interested students should contact the Medical Laboratory Science program director for details.

Accreditation:

The Medical Laboratory Science program is accredited by the National Accrediting Agency for Clinical Laboratory Sciences, www.nacls.org, 5600 N. River Road, Ste. 720, Rosemont, IL 60018, phone (773) 714-8880.

Safety Program

Website: HealthSciences.IllinoisState.edu/safety

Degree Offered: B.S.

Safety professionals apply principles drawn from such disciplines as technology, the sciences, management, communication, health, and education to reduce the risk of harm to people, property and the environment. Safety professionals have the knowledge and skills to identify, evaluate, and cost-effectively control or prevent the hazards that can produce harm to people, property and the environment. Successful safety professionals are effective communicators with strong “people skills.” Safety professionals are employed in a variety of public and private sector assignments, including manufacturing, insurance, construction, government, and consulting.

New Freshmen, New and Internal Transfer Admission Requirements:

Admission to this academic program is limited and is based on space availability and the competitiveness of the applicant pool. Factors that may be considered include, but are not limited to: courses completed, cumulative GPA, hours completed, personal interview or written statement, and samples of work completed. For additional information on minimum requirements for admission and the application and selection process, visit IllinoisState.edu/Majors or contact the undergraduate advisor for the intended program.

Students currently enrolled at Illinois State who wish to change their major to Safety must have a minimum GPA of 2.00. Students should see the department academic advisor for information.

Standards for Progress in the Major:

Students must earn grades of C or better in Health Sciences courses required by the major and maintain a minimum cumulative GPA of 2.00 for retention in the program. All students should have a projected plan of study completed in consultation with the departmental academic advisor.

Professional Affiliation:

Professional affiliation is with the American Society of Safety Engineers (ASSE), Central Illinois Chapter, Illinois State University student section, at: asse.org.

MAJOR IN SAFETY

- 51 hours in Health Sciences required.
- Required courses (36 hours): HSC 170, 248, 271, 359, 362, 370, 372, 378, 380, 381, 382, 385.
- Professional Practice (9 hours): HSC 398A04.
- Two elective courses selected from the following (6 hours): HSC 272, 383, 384.
- Required courses outside of Health Sciences (10 hours): CHE 141; KNR 182; TEC 130.
- Required General Education courses: CHE 140; MAT 120; PHY 105 or 108; and one of the following: MQM 100; ECO 138; GEO 138; POL 138; or PSY 138*.
- Recommended electives based on career goals (variable): BSC 160; CHE 220; ENG 145A13 or 249; FIL 250; HSC 145, 156; KNR 181, 282, 342**.

NOTE: *HSC 204A02 may be substituted, but is not a General Education course. **KNR 181, 182, and 282 are prerequisites for KNR 342.

MINOR IN SAFETY

- 21 hours in Health Sciences required.
- Required courses (9 hours): HSC 170, 271, 381.
- Elective courses selected from the following (12 hours): HSC 248, 272, 359, 362, 370, 372, 378, 380, 382, 383, 384, 385.
- Required courses outside of Health Sciences (12-14 hours): CHE 110, 112 or CHE 140; MAT 120; PHY 105 or 108.

Health Sciences Courses

105 MEDICAL TERMINOLOGY

3 sem. hrs.

Study of basic language related to medical science and allied health specialties with emphasis on word analysis, construction, definitions, pronunciation, spelling, and standard abbreviations.

145 ENVIRONMENTAL HEALTH PRACTICE

3 sem. hrs.

Introduction to problem-solving tools and skills used in the practice of environmental health from the perspective of waste in society. Prerequisite: Major or minor or consent of the instructor.

156 ENVIRONMENTAL HEALTH IN THE 21ST CENTURY: MEETING THE GLOBAL CHALLENGE SMT

3 sem. hrs.

Application of scientific methods of inquiry to understand environmental problems as they affect public health and personal well-being. Not for credit if had HSC 155.

170 SAFETY AND SOCIETY SS

3 sem. hrs.

Examines the impact of the social sciences upon safety and accident prevention. Focuses on cultural influences from a global perspective. Prerequisite: ENG 101 or COM 110 or concurrent registration.

173 ASPECTS OF PROFESSIONAL SAFETY

3 sem. hrs.

Philosophical perspectives of effective and ethical safety practices. Comparison of major concepts related to professional communication, leadership, and ethics.

176 INTRODUCTION TO MOTORCYCLE SAFETY

1 sem. hr.

Classroom and laboratory experiences provide basic knowledge, skills, and techniques necessary for the safe operation of a motorcycle. Not for credit major or minor.

190 FOUNDATIONS OF HEALTH EDUCATION

3 sem. hrs.

The historical and philosophical perspectives of the development of Health Education. A comparison of the major concepts and theories of health and characteristics of health education programs in schools and communities. Prerequisite: Health Promotion and Education major only.

201 PATHOPHYSIOLOGY I

3 sem. hrs.

Study of human disease processes, including the diagnosis, treatment and management of patients. Prerequisites: GPA 2.25. HSC 105; KNR 181 and 182. Health Sciences major only.

202 PATHOPHYSIOLOGY II

3 sem. hrs.

Continuation of HSC 201. Prerequisite: HSC 201.

204 HEALTH DATA ANALYSIS

3 sem. hrs.

Theory and practice of analysis and presentation of data for management and research in the Health Sciences. Prerequisite: Health Sciences major only.

204A01 HEALTH DATA ANALYSIS: HEALTH EDUCATION**3 sem. hrs.**

Theory and use of research, data analysis, and data display in decision-making, and basic interpretation of univariate empirical findings in Health Promotion and Education. Prerequisite: Health Sciences major only.

204A02 HEALTH DATA ANALYSIS: ENVIRONMENTAL HEALTH AND HEALTH INFORMATION MANAGEMENT**3 sem. hrs.**

Theory and use of research, data analysis, and data display in decision-making, and basic interpretation of univariate empirical findings in Environmental Health and Health Information Management. Prerequisite: Health Sciences major only.

207 MIND/BODY HEALTH**3 sem. hrs.**

Exploration of social, emotional, spiritual and intellectual health relationships to physical well-being. Active participation in mind/body practices is included.

208 DYNAMICS OF UNITED STATES CONTEMPORARY HEALTH ISSUES SMT**3 sem. hrs.**

Exploration and analysis of current health and lifestyle issues. Emphasis on how individuals, communities and society make health decisions. Also offered as FCS/KNR 208. Prerequisite: COM 110 or ENG 101.

210 INTRODUCTION TO HEALTH INFORMATION MANAGEMENT**3 sem. hrs.**

Introduction of health information management principles, policies and procedures including health data content, collection, quality, registries, access, and retention. Lecture and lab. Prerequisites: HSC 105; KNR 181 and 182.

212 INTRODUCTION TO HEALTH DATA CLASSIFICATION SYSTEMS**3 sem. hrs.**

Introduction to the application of diagnosis and procedure classification systems. Prerequisites: HSC 201 and 210.

213 ADVANCED APPLICATIONS OF HEALTH DATA CLASSIFICATIONS**3 sem. hrs.**

Application of advanced concepts in classification including quality and performance monitoring. Prerequisites: HSC 202, 212, and 298A03.

214 HEALTHCARE CLASSIFICATION SYSTEMS AND REIMBURSEMENT PROCESSES**3 sem. hrs.**

Application and analysis of specialized diagnosis and procedure classification systems for healthcare reimbursement processes. Prerequisites: HSC 213 and 298A03.

230 LEGAL ASPECTS OF HEALTH INFORMATION AND RISK MANAGEMENT**3 sem. hrs.**

Review and application of laws, policies, procedures and practices applying to the legal aspects of health information and risk management. Prerequisites: HSC 105 and 210 or consent of the instructor. Major only.

248 OCCUPATIONAL HEALTH**3 sem. hrs.**

Adverse environmental conditions encountered in the workplace affecting the efficiency, health, and well-being of employees.

249 ENVIRONMENTAL TOXICOLOGY**3 sem. hrs.**

Toxicants such as heavy metals, gases, vapors, dusts, pesticides, food additives, and their effects on health and the environment. Prerequisites: CHE 140, 141; MAT 118 or 145 or consent of the advisor; CHE 220 or concurrent registration; KNR 182 and HSC 145.

252 WATER AND WASTEWATER CONTROL**4 sem. hrs.**

Protection of water quality for human and ecosystem needs, and the control of wastewater. Lecture and lab. Materials charge optional. Formerly *WATER QUALITY AND TREATMENT*. Prerequisites: CHE 140 and 141; MAT 118 or 145, or consent of the advisor; HSC 145; BSC 160 or concurrent registration.

254 CONTROL OF INSTITUTIONAL ENVIRONMENTS**3 sem. hrs.**

Environmental health aspects of hospitals, nursing homes, penal institutions, schools, colleges and universities. Control of physical, chemical and microbiological hazards. Lecture and lab. Prerequisites: CHE 140; CHE 141 or concurrent registration; HSC 145; BSC 160 or concurrent registration.

257 AIR QUALITY AND POLLUTION CONTROL**3 sem. hrs.**

Air contaminants found in the ambient air, workplace, and home, including health effects, measurement, and control. Lecture and lab. Materials charge optional. Prerequisites: CHE 140, 141 or concurrent registration; HSC 145; MAT 118 or 145, or consent of the advisor; KNR 182 or concurrent registration.

258A01 EPIDEMIOLOGY FOR ENVIRONMENTAL HEALTH**3 sem. hrs.**

Principles and methods governing the surveillance and investigation of disease and injury in human populations. Prerequisites: HSC 145 and 204A02; MAT 119; BSC 160 or 260 or concurrent registration.

258A02 EPIDEMIOLOGY FOR PUBLIC HEALTH**3 sem. hrs.**

Principles and methods governing the surveillance and investigation of disease and injury in human populations. Prerequisite: HSC 204A01 or 204A02.

260 INTRODUCTION TO CLINICAL IMMUNOHEMATOLOGY**3 sem. hrs.**

Basic principles and procedures of immunohematology (blood banking). Lecture and lab. Materials charge optional. Prerequisites: HSC 261, 262, 263. Major only; a minimum of 45 hours completed. CHE 220 is recommended.

261 INTRODUCTION TO CLINICAL HEMATOLOGY**4 sem. hrs.**

Basic principles of hematology and body fluid analysis. Lecture and lab. Materials charge optional. Prerequisites: BSC 197; CHE 140 and 141; concurrent registration in HSC 262, 263. Major only; a minimum of 45 hours completed. CHE 220 is recommended.

262 INTRODUCTION TO CLINICAL CHEMISTRY**4 sem. hrs.**

Basic principles and procedures of clinical chemistry and urinalysis. Lecture and lab. Materials charge optional. Prerequisites: BSC 197; CHE 140 and 141; concurrent registration in HSC 261, 263. Major only; a minimum of 45 hours completed. CHE 220 is recommended.

263 INTRODUCTION TO CLINICAL IMMUNOLOGY**3 sem. hrs.**

Basic principles and procedures of immunology and serology. Lecture and lab. Materials charge optional. Prerequisites: BSC 197; CHE 140 and 141; concurrent registration in HSC 261, 262. Major only; a minimum of 45 hours completed. CHE 220 is recommended.

270 GLOBAL CONTEXTS**3 sem. hrs.**

Philosophical perspectives on professional practice in a new cultural context. Short-term study abroad. Topics and regions as approved. Multiple enrollments are allowed if content is different; maximum of 6 hours. Prerequisite: Sophomore standing.

271 SAFETY TECHNOLOGY**3 sem. hrs.**

Controlling production costs due to accidents. Addresses legislation, worker's compensation, hazard recognition, and safety planning. Includes basic engineering solutions.

272 CONSTRUCTION SAFETY**3 sem. hrs.**

Addresses employee safety training requirements, recordkeeping, hazard recognition, safety inspections, and program planning in the construction industry. Prerequisite: MAT 120.

286 NEEDS ASSESSMENT IN HEALTH EDUCATION**3 sem. hrs.**

Emphasis on procedures which identify health education priorities of populations in various settings. Examination of health needs of select populations. Prerequisites: Health Promotion and Education major only.

290 STRATEGIES IN HEALTH EDUCATION**3 sem. hrs.**

Examination of the educational process, methods, strategies, and techniques in health education, communication techniques and current resources. See topics below. Includes Clinical Experience: 5 hours. Prerequisites: Major only. HSC 190.

290A01 STRATEGIES IN HEALTH EDUCATION: COMMUNITY HEALTH**3 sem. hrs.**

The purpose of this course is to improve Community Health Promotion student's ability to select, design, and implement evidence-based health education. Prerequisites: Major only.

290A02 STRATEGIES IN HEALTH EDUCATION: SCHOOL HEALTH**3 sem. hrs.**

The purpose of this course is to improve School Health Education student's ability to select, design, and implement evidence-based health education. Prerequisites: Major only. HSC 190.

291 UNDERGRADUATE TEACHING EXPERIENCE IN HEALTH SCIENCES**1-3 sem. hrs.**

Supervised examination of issues related to the Undergraduate Teaching Experience. Requires time beyond the UTA work experience. A maximum of 3 hours may be applied toward graduation. Prerequisites: Official designation as an Undergraduate Teaching Assistant (UTA). Consent of the department chair.

292 COMMUNITY PUBLIC HEALTH**3 sem. hrs.**

Introduction to community public health at local, state, and national levels. Includes emphasis on community health problems, institutions and resources. Prerequisite: Major only.

293 PRINCIPLES OF HUMAN DISEASE**3 sem. hrs.**

Emphasis on human disease processes with special focus on cardiovascular and respiratory systems and the implications for health education. Prerequisite: Health Promotion and Education major only.

294 DISEASES OF THE HUMAN BODY**3 sem. hrs.**

The course explores human diseases affecting various body systems including the nervous, digestive, reproductive, skeletal and integumentary. Prerequisites: HSC 293. Health Promotion and Education major only.

296 HEALTH BEHAVIOR AND THEORY**3 sem. hrs.**

An examination of health determinants, major theories, and models of health behavior. Application to Health Promotion and Education programming will be emphasized. Formerly *CONCEPTS IN HEALTH EDUCATION*. Prerequisites: 45 hours completed.

298A03 PROFESSIONAL PRACTICE: HEALTH INFORMATION MANAGEMENT: CLINICAL INTERNSHIP**3 sem. hrs.**

Rotation and project assignments in hospital medical records departments. Prerequisites: Grade of C or better in HSC 202, 212, 230. Major only and consent of the program director.

300 HEALTH INFORMATION DATA ANALYSIS**3 sem. hrs.**

Management and analysis of health data using data analysis and presentation applications. Introduction to data mining and other health data analysis tools. Formerly *HEALTH INFORMATION SYSTEMS*. Prerequisites: HSC 298A03. Major only.

301 INTRODUCTION TO COAGULATION AND HEMOSTASIS**2 sem. hrs.**

Principles and test procedures related to blood coagulation and hemostasis. Correlation of test results in disease states. Materials charge optional. Prerequisite: Grade of C or better in HSC 261.

302 INTRODUCTION TO CLINICAL BIOCHEMISTRY
3 sem. hrs.

Theory and principles of advanced instrumentation and techniques used in reference, pharmaceutical, and biotechnology laboratories as related to disease diagnosis. Prerequisite: HSC 262 or consent of the instructor.

305 PUBLIC HEALTH LEADERSHIP
3 sem. hrs.

Examination of theoretical foundations, concepts, styles and practice of leadership in public health.

308 INTRODUCTION TO CLINICAL MICROBIOLOGY
4 sem. hrs.

Survey of medical microbiology with emphasis on common pathogens. Included are taxonomy, identification, culture methods, procedures and antibiotic susceptibility testing. Lecture and lab. Materials charge optional. Prerequisites: BSC 160 or 260; and HSC 263.

**310 HEALTH INFORMATION
MANAGEMENT SEMINAR**
1 sem. hr.

Synthesis of program content in preparation for initial employment and the RHIA examination. Prerequisites: HSC 213, 298A03, and 345. Major only.

312 CLINICAL CHEMISTRY II
3 sem. hrs.

Concentrated laboratory instruction and theoretical applications of clinical biochemistry. Current testing procedures, method comparison, and quality assurance are studied. Prerequisites: HSC 262; MAT 120, 144 or 145 or consent of the instructor.

**315 CLINICAL PARASITOLOGY
AND MYCOLOGY**
2 sem. hrs.

General techniques for identification of clinically significant parasites and fungi. Morphology, symptomology, and epidemiology are stressed. Prerequisite: HSC 308.

**316 CLINICAL LABORATORY SCIENCE:
RESEARCH DESIGN**
1 sem. hr.

Research design in clinical laboratory science. Prerequisites: HSC 260, 261 and 262 or consent of the instructor.

317 CLINICAL HEMATOLOGY II
2 sem. hrs.

Advanced concepts in Hematology. Clinical correlation of test results and disease are emphasized. Prerequisites: HSC 261 and 301.

318 CLINICAL MICROBIOLOGY II
2 sem. hrs.

Comprehensive medical microbiology with emphasis on characterization of less common pathogens, interpretation of clinical data and etiology. Prerequisites: BSC 260 and HSC 308.

319 CLINICAL IMMUNOHEMATOLOGY II
3 sem. hrs.

Advanced concepts in Immunohematology. Donor criteria, component therapy, transfusion and problem solving are emphasized. Prerequisite: HSC 260.

**320 ORGANIZATION AND MANAGEMENT
OF HEALTH INFORMATION SERVICES**
3 sem. hrs.

Managerial decision making for planning, organizing, staffing, directing and controlling the functions, operations and resources of a health information department. Prerequisites: HSC 230, 298A03, 345 and 346. Major only.

322 POLLUTION PREVENTION
4 sem. hrs.

Basic methods in solid and hazardous waste management with an emphasis in waste minimization/pollution prevention. Prerequisites: HSC 145; MAT 118 or 145, or consent of the advisor.

**325 LABORATORY EDUCATION
AND MANAGEMENT**
2 sem. hrs.

Foundational concepts of education and management, with emphasis on philosophies, methods and techniques for professional application with practicum. Prerequisites: HSC 260, 261 and 262 or consent of the instructor.

**326 HEALTHCARE FINANCIAL MANAGEMENT
AND REIMBURSEMENT SYSTEMS**
6 sem. hrs.

Analysis and application of principles and theories of financial management and reimbursement systems utilized in the United States healthcare system. Prerequisite: RHIT-HIM Online Sequence only.

**327 HEALTHCARE QUALITY MANAGEMENT,
LAW, AND RISK MANAGEMENT**
6 sem. hrs.

Analysis and application of principles and theories concerning United States healthcare quality management, law, and risk management. Prerequisite: RHIT-HIM Online Sequence only.

**328 PLANNING, IMPLEMENTATION
AND MANAGEMENT OF HEALTH
INFORMATION SYSTEMS**
6 sem. hrs.

Addresses the Health Information manager's role and responsibilities in planning, implementing and managing health information systems to manage health data. Prerequisite: RHIT-HIM Online Sequence only.

**329 MANAGEMENT FOR THE HEALTH
INFORMATION ADMINISTRATOR**
6 sem. hrs.

Organization and management of personnel and processes by health information administrators. Prerequisite: RHIT-HIM Online Sequence only.

**330 HEALTH DATA ANALYSIS FOR
DECISION MAKING**
6 sem. hrs.

Collect, analyze, and report clinical data to address administrative problems and issues. Prerequisite: RHIT-HIM Online Sequence only.

**331 APPLIED CLINICAL LABORATORY
MANAGEMENT**
1-3 sem. hrs.

Concentrated instruction in the fundamentals of laboratory management including regulatory, budgetary, personnel and educational issues. Lecture in a clinical setting. Multiple enrollments are allowed; maximum 3 hours. Prerequisites: HSC 260, 261 and 262 or consent of the instructor.

332 APPLIED CLINICAL BIOCHEMISTRY**1-7 sem. hrs.**

Concentrated laboratory instruction in clinical biochemistry. Current testing procedures, instrumentation and quality assurance are studied. Lecture and lab in a clinical setting. Prerequisite: HSC 302.

333 APPLIED CLINICAL IMMUNOLOGY**1-6 sem. hrs.**

Concentrated laboratory instruction in clinical serology and immunology. Current testing procedures, instrumentation and quality assurance are studied. Lecture and lab in a clinical setting. Prerequisites: HSC 260 and 308.

334 APPLIED CLINICAL URINALYSIS**1-3 sem. hrs.**

Concentrated laboratory instruction in routine and special urinalysis procedures. Clinical lab only. Prerequisite: HSC 262.

335 APPLIED SPECIAL MICROBIOLOGY**1-6 sem. hrs.**

Concentrated laboratory instruction in the identification of significant pathogens requiring unique identification methods. May include virology, parasitology or mycology. Lecture and lab in a clinical setting. Prerequisite: HSC 308.

336 CURRENT ISSUES IN CLINICAL LABORATORY SCIENCE**1 sem. hr.**

Current topics and trends in clinical laboratory science. Emphasis on concepts of education and management for professional application. Lecture and lab in a clinical setting. Prerequisites: HSC 260, 261 and 262 or consent of the instructor.

337 APPLIED CLINICAL HEMATOLOGY**1-8 sem. hrs.**

Concentrated laboratory instruction in clinical hematology and coagulation. Current testing procedures, instrumentation and quality assurance are studied. Lecture and lab in a clinical setting. Prerequisites: HSC 261 and 301.

338 APPLIED CLINICAL MICROBIOLOGY**1-6 sem. hrs.**

Concentrated laboratory instruction in clinical microbiology, including identification of pathogens, culture methods, procedures, antibiotic testing and interpretation of clinical data. Lecture and lab in a clinical setting. Prerequisite: HSC 308.

339 APPLIED CLINICAL IMMUNOHEMATOLOGY**1-5 sem. hrs.**

Concentrated laboratory instruction in blood bank. Current testing procedures, donor collection, preparation of blood components and quality assurance are studied. Lecture and lab in a clinical setting. Prerequisite: HSC 260.

345 QUALITY MANAGEMENT IN HEALTH CARE**3 sem. hrs.**

Review and application of strategies to investigate, identify, assess, resolve and monitor performance using health data. Prerequisites: HSC 204, 210, 212, and 298A03 or consent of the instructor. Major only.

346 HEALTHCARE FINANCE**3 sem. hrs.**

Systematic study of hospital financial planning; coordination of financial resources and expenditures; reimbursement methods. Formerly *HOSPITAL BUDGETING PROCEDURES*. Prerequisites: HSC 212, and 298A03 or consent of the instructor. Major only.

350 FOOD PROTECTION**3 sem. hrs.**

An intensive study of the laws, principles, and techniques applied in the protection of food and milk for human consumption. Lecture and lab. Materials charge optional. Prerequisites: HSC 145; BSC 160 or concurrent registration.

355 ENVIRONMENTAL HEALTH DECISION PROCESSES**3 sem. hrs.**

Intensive study of the decision making techniques, organizational structure, interagency relationships, program methodologies, and legal aspects of environmental health practice. Prerequisites: HSC 145 and 156. Senior standing, major in Environmental Health Program, or consent of the instructor.

359 INDUSTRIAL HYGIENE**3 sem. hrs.**

Techniques for measurement, evaluation, and control of chemical and physical hazards in occupational environments. Lecture and lab. Materials charge optional. Prerequisites: HSC 248; MAT 118 or 145, or consent of the advisor.

362 ERGONOMICS**3 sem. hrs.**

Overview of physical and psychological aspects of ergonomics, including workstation design, its role in accident causation, and ergonomic-related injuries and illnesses. Lecture. Prerequisites: MAT 120 or 145; PHY 105 or 108; HSC 204 or MQM 100 or ECO 138 or GEO 138 or POL 138 or PSY 138.

370 SAFETY TRAINING DEVELOPMENT**3 sem. hrs.**

Principles, responsibilities, and techniques for developing, and administering an industrial safety training program, including principles of adult learning. Formerly *INDUSTRIAL SAFETY*. Prerequisite: HSC 381.

372 ACCIDENT/INCIDENT INVESTIGATION, RECORDS, AND EVALUATION**3 sem. hrs.**

Theory, function and application of accident/incident investigation, reporting, and analysis systems. Form design, utilization and record keeping procedures. Prerequisites: HSC 381; MAT 120 or 145; PHY 105 or 108.

378 DISASTER PREPAREDNESS**3 sem. hrs.**

Organizing, directing, coordinating disaster services in schools, industry, and local government. Includes a hands-on disaster exercise. Prerequisites: CHE 110 and 112 or CHE 140 or BSC 145; or consent of the instructor.

380 FIRE PROTECTION AND PREVENTION**3 sem. hrs.**

Measures related to safeguarding human life and preservation of property in prevention, detection, and suppression of fire. Prerequisites: HSC 381; PHY 105 or 108.

381 OCCUPATIONAL SAFETY AND HEALTH ACT (OSHA)**3 sem. hrs.**

Interpretation of the provisions of the Occupational Safety and Health Act; the regulations, standards, and reporting requirements pursuant to it. Prerequisites: HSC 170, 271; CHE 140 or consent of the instructor.

382 IMPROVING SAFETY PERFORMANCE**3 sem. hrs.**

Development of specialized knowledge and skills in problem-solving; evaluation and implementation of occupational safety programs. Prerequisites: HSC 370; HSC 204A02 or MQM 100 or ECO 138 or GEO 138 or POL 138 or PSY 138.

383 AGRICULTURAL SAFETY AND HEALTH**3 sem. hrs.**

Major problems of accident causation and prevention applicable to agriculture and the need for farm safety education, engineering, and enforcement of countermeasures. Half-day field trip required. Also offered as AGR 383.

384 HAZARDOUS MATERIALS REGULATION**3 sem. hrs.**

Overview of federal and state safety and environmental regulations dealing with hazardous materials in the workplace and community. Prerequisite: CHE 140.

385 SYSTEM SAFETY**3 sem. hrs.**

Risk and life cycle concept. Application of inductive and deductive analytical techniques for hazard identification and risk assessment. Prerequisite: HSC 204 or MQM 100 or ECO 138 or GEO 138 or POL 138 or PSY 138.

387 PROGRAMS IN SCHOOL HEALTH**3 sem. hrs.**

Comprehensive school health education with major topics of health education, school health programs, and school community collaboration. Prerequisites: HSC 290A02 and 292.

390 DRUGS IN SOCIETY**3 sem. hrs.**

Psychological, social, medical, legal, and economic aspects of use, misuse, and abuse of substances will be explored along with the implications for education and prevention. Prerequisites: Health Promotion and Education major only. A minimum of 45 hours completed.

391 CURRICULUM AND EVALUATION IN SCHOOL HEALTH**3 sem. hrs.**

School health education standards, curriculum development and evaluation, student assessment and accommodations for students with special needs. Includes Clinical Experience: 10 hours. Prerequisites: HSC 290A02; Admission to Professional Studies.

394 HEALTH ASPECTS OF AGING**3 sem. hrs.**

Characteristics of the aging process and factors influencing adaptation and the quality of living. Also offered as FCS/KNR 394.

395 HEALTH COMMUNICATION AND SOCIAL MARKETING**3 sem. hrs.**

Analysis and development of print and non-print materials and their use by health promotion professionals. Formerly *MEDIA AND MATERIALS IN HEALTH EDUCATION*. Prerequisites: Grade of C or better in HSC 286 and HSC 290A01 or 290A02. Health Sciences major only.

396 HEALTH EDUCATION PROGRAM PLANNING AND EVALUATION**3 sem. hrs.**

Theory and application of Health Promotion planning and promotion. Grantsmanship and evaluation will be emphasized. Prerequisites: Grade of C or better in HSC 286 and HSC 290A01 or 290A02. Health Sciences major only.

398A01 PROFESSIONAL PRACTICE: ENVIRONMENTAL HEALTH INTERNSHIP**3-12 sem. hrs.**

Internship in a governmental, industrial, or institutional organization, providing on-the-job training and introduction to a career in environmental health. Multiple enrollments are allowed; maximum 2 hours. Prerequisite: Consent of the program director.

398A02 PROFESSIONAL PRACTICE: INTERNSHIP IN HEALTH EDUCATION**1-16 sem. hrs.**

Extended in-service experience under the guidance of qualified personnel in Health Promotion. Prerequisites: 2.50 major and cumulative GPA; HSC 395 and 396.

398A03 PROFESSIONAL PRACTICE: HEALTH INFORMATION MANAGEMENT: MANAGEMENT INTERNSHIP**3 sem. hrs.**

Application of advanced Health Information Management skills in a health related setting geared towards the career interests of the students. Prerequisites: Grade of C or better in all major courses. Major only and consent of program director. Evidence of health insurance and professional liability insurance required.

398A04 PROFESSIONAL PRACTICE: SAFETY**6-12 sem. hrs.**

Structured safety work experience under the supervision of an experienced safety professional in a business, industry, or government setting, with oversight by a Safety faculty member. Provides a capstone experience for Safety majors. Prerequisites: HSC 359, 381 and 6 hours from HSC 272, 362, 370, 372, 378, 380, 382, 383, 384, 385. A 2.00 major and cumulative GPA is required. Safety majors only.

398A05 PROFESSIONAL PRACTICE: HEALTH INFORMATION MANAGEMENT – RHIT**1-3 sem. hrs.**

Application of HIM knowledge and skills in a healthcare professional setting. Multiple enrollments are allowed for a maximum of 3 hours. This is a capstone course and the students are required to have a professional skills base. Prerequisites: Grade of C or better in HSC 326, 327 and 328. RHIT-HIM Online Sequence major only and consent of program director. Evidence of health insurance and professional liability may be required.

**398A21 PROFESSIONAL PRACTICE: MEDICAL
LABORATORY SCIENCE: SPECIAL STUDIES
1-8 sem. hrs.**

Structured, off-campus clinical laboratory experience under the guidance of qualified medical laboratory professionals. Students receive individualized training and practicum to develop professional attitudes, competencies and analytical skills. Primarily for students completing the B.S. requirements through clinical study standard track. Prerequisites: Grade of C or better in HSC 260, 261, 262, 263, 301, 302, 308 taken within the last 7 years.

**398A22 PROFESSIONAL PRACTICE:
MEDICAL LABORATORY SCIENCE:
BIOCHEMISTRY
2 sem. hrs.**

Structured, off-campus clinical laboratory experience under the guidance of qualified medical laboratory professionals. Students receive individualized training and practicum to develop professional attitudes, competencies and analytical skills. Primarily for students completing the B.S. requirements through clinical study standard track. Prerequisites: Grade of C or better in HSC 260, 261, 262, 263, 301, 302, 308 taken within the last 7 years.

**398A23 PROFESSIONAL PRACTICE:
MEDICAL LABORATORY SCIENCE:
SEROLOGY
1 sem. hr.**

Structured, off-campus clinical laboratory experience under the guidance of qualified medical laboratory professionals. Students receive individualized training and practicum to develop professional attitudes, competencies and analytical skills. Primarily for students completing the B.S. requirements through clinical study standard track. Prerequisites: Grade of C or better in HSC 260, 261, 262, 263, 301, 302, 308 taken within the last 7 years.

**398A24 PROFESSIONAL PRACTICE:
MEDICAL LABORATORY SCIENCE:
URINALYSIS AND BODY FLUIDS
1 sem. hr.**

Structured, off-campus clinical laboratory experience under the guidance of qualified medical laboratory professionals. Students receive individualized training and practicum to develop professional attitudes, competencies and analytical skills. Primarily for students completing the B.S. requirements through clinical study standard track. Prerequisites: Grade of C or better in HSC 260, 261, 262, 263, 301, 302, 308 taken within the last 7 years.

**398A27 PROFESSIONAL PRACTICE:
MEDICAL LABORATORY SCIENCE:
HEMATOLOGY
2 sem. hrs.**

Structured, off-campus clinical laboratory experience under the guidance of qualified medical laboratory professionals. Students receive individualized training and practicum to develop professional attitudes, competencies and analytical skills. Primarily for students completing the B.S. requirements through clinical study standard track. Prerequisites: Grade of C or better in HSC 260, 261, 262, 263, 301, 302, 308 taken within the last 7 years.

**398A28 PROFESSIONAL PRACTICE:
MEDICAL LABORATORY SCIENCE:
MICROBIOLOGY
4 sem. hrs.**

Structured, off-campus clinical laboratory experience under the guidance of qualified medical laboratory professionals. Students receive individualized training and practicum to develop professional attitudes, competencies and analytical skills. Primarily for students completing the B.S. requirements through clinical study standard track. Prerequisites: Grade of C or better in HSC 260, 261, 262, 263, 301, 302, 308 taken within the last 7 years.

**398A29 PROFESSIONAL PRACTICE:
MEDICAL LABORATORY SCIENCE:
IMMUNOHEMATOLOGY
2 sem. hrs.**

Structured, off-campus clinical laboratory experience under the guidance of qualified medical laboratory professionals. Students receive individualized training and practicum to develop professional attitudes, competencies and analytical skills. Primarily for students completing the B.S. requirements through clinical study standard track. Prerequisites: Grade of C or better in HSC 260, 261, 262, 263, 301, 302, 308 taken within the last 7 years.