

## Degree Description

Accredited by Joint Review Committee on Education in Radiologic Technology (20 N. Wacker Drive, Suite 2850, Chicago, IL 60606-3182; www.jrcert.org; 312-704-5300)

The radiologic technologist assists radiologists (physicians specially trained in uses of radiation) in the examination of patients for broken bones, ulcers, tumors, disease or malfunction of organs within the body. Students in the Radiologic Technology Program learn the positioning, exposure, professional ethics, medical terminology, physics, procedures and techniques of x-ray technology.

A student completing the program is eligible to apply for admission to the certification exam administered by the American Registry of Radiologic Technologists (ARRT). The radiologic technologist may secure employment in hospitals, clinics, and other health care agencies. If developmental courses are needed for Texas Success Initiative requirements, it is required that such courses be completed before enrolling in the program.

A student has five years to complete the radiologic technology curriculum after official enrollment in the first radiologic technology course. Contact the program director for more information.

### Marketable Skills:

Communication 1. Graduates will communicate effectively in the healthcare setting. a. Communicate clearly, effectively and tactfully with patients, faculty members, fellow students and other professionals

Critical Thinking/Problem Solving 2. Graduates will use critical thinking, good judgment, and problem solving skills in the clinical setting.

a. In the application of technical skills (image acquisition, radiographic technique, equipment operations, and positioning) b. Making appropriate adjustments in emergency and non-routine situations c. Analyze radiographic images for accuracy Reliability/Responsibility

3. Graduates will be a reliable and responsible part of the healthcare team.

a. demonstrate professional & ethical behavior in the clinical setting. b. will assess ethical situations and recognize the importance of the ASRT standards of ethics.

c. will recognize the value of life-long learning and pursue continuing education opportunities.

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## Program Prerequisites

Students must complete all prerequisite courses listed. Remaining academic courses may be taken before admission to or while in the program.

<a href="#">BIOL 2401 Anatomy &amp; Physiology I</a>	4 hours
<a href="#">Math elective</a>	3 hours
<a href="#">ENGL 1301 Composition I</a> <i>or</i> <a href="#">ENGL 1302 Composition II</a>	3 hours
<a href="#">RADR 1201 Introduction to Radiography</a>	2 hours

**Total prerequisite hours: 12 hours**

Semester I	Hours
<a href="#">RADR 1203 Patient Care</a>	2 hours
<a href="#">RADR 1311 Basic Radiographic Procedures</a>	3 hours
<a href="#">RADR 1260 Clinical-Radiologic Technology</a>	2 hours
<a href="#">BIOL 2402 Anatomy &amp; Physiology II</a>	4 hours
	<b>11 hours</b>

Semester II	Hours
<a href="#">RADR 2301 Intermediate Radiographic Procedures</a>	3 hours
<a href="#">RADR 1313 Principles of Radiographic Imaging I</a>	3 hours
<a href="#">RADR 2309 Radiographic Imaging Equipment</a>	3 hours
<a href="#">RADR 1261 Clinical-Radiologic Technology/Science-Radiographer</a>	2 hours
	<b>11 hours</b>

Summer Semester	Hours
<a href="#">RADR 1460 Clinical Medical Radiologic Technology</a>	4 hours
	<b>4 hours</b>

Semester III	Hours
<a href="#">RADR 2313 Radiation Biology and Protection</a>	3 hours
<a href="#">RADR 2266 Practicum I - Radiologic Technology</a>	2 hours
<a href="#">Language, Philosophy, &amp; Culture elective</a> <i>or</i> <a href="#">Creative Arts elective</a>	3 hours
<a href="#">RADR 2305 Principles of Radiographic Imaging II</a>	3 hours
	<b>11 hours</b>

<b>Semester IV</b>		<b>Hours</b>
<a href="#">RADR 2217 Radiographic Pathology</a>		2 hours
<a href="#">RADR 2331 Advanced Radiographic Procedures</a>		3 hours
<a href="#">RADR 2267 Practicum II - Radiologic Technology</a>		2 hours
<a href="#">PSYC 2301 General Psychology</a> <i>or</i> <a href="#">SOCL 1301 Introduction to Sociology</a>		3 hours
		<b>10 hours</b>
<b>Summer Semester</b>		<b>Hours</b>
<a href="#">RADR 2360 Clinical IV - Medical Radiologic Technology</a>		3 hours
<a href="#">RADR 2235 Radiologic Technology Seminar</a> <sup>1</sup>		2 hours
		<b>5 hours</b>

**Total hours: 52 hours**

<sup>1</sup> This is a Capstone course.

## Electives/General Education Courses

### Creative Arts

<a href="#">ARTS 1301 Art Appreciation</a>	3 hours
<a href="#">ARTS 1303 Art History I (Prehistoric to the 14th Century)</a>	3 hours
<a href="#">ARTS 1304 Art History II (14th Century to the Present)</a>	3 hours
<a href="#">DRAM 1310 Theater Appreciation</a>	3 hours
<a href="#">DRAM 2361 History of Theater I</a>	3 hours
<a href="#">DRAM 2362 History of Theater II</a>	3 hours
<a href="#">HUMA 1315 Fine Arts Appreciation</a>	3 hours
<a href="#">MUSI 1306 Music Appreciation</a>	3 hours
<a href="#">MUSI 1308 Music Literature I</a>	3 hours
<a href="#">MUSI 1309 Music Literature II</a>	3 hours
<a href="#">MUSI 1310 American Music</a>	3 hours

### Language, Philosophy, & Culture

<a href="#">ENGL 2321 British Literature</a>	3 hours
<a href="#">ENGL 2322 British Literature I</a>	3 hours
<a href="#">ENGL 2323 British Literature II</a>	3 hours
<a href="#">ENGL 2326 American Literature</a>	3 hours
<a href="#">ENGL 2327 American Literature I: Up to the Civil War</a>	3 hours
<a href="#">ENGL 2328 American Literature II: Civil War to the Present</a>	3 hours
<a href="#">ENGL 2331 World Literature</a>	3 hours
<a href="#">ENGL 2332 World Literature I: Up to the 17th Century</a>	3 hours
<a href="#">ENGL 2333 World Literature II: 17th Century to the Present</a>	3 hours
<a href="#">ENGL 2341 Forms of Literature</a>	3 hours
<a href="#">FREN 2311 Intermediate French I</a>	3 hours
<a href="#">GERM 2311 Intermediate German I</a>	3 hours
<a href="#">HUMA 1301 Introduction to Humanities I</a>	3 hours
<a href="#">HUMA 1302 Introduction to Humanities II</a>	3 hours
<a href="#">PHIL 1301 Introduction to Philosophy</a>	3 hours
<a href="#">PHIL 1304 Introduction to World Religions</a>	3 hours
<a href="#">PHIL 2306 Introduction to Ethics</a>	3 hours
<a href="#">SPAN 2311 Intermediate Spanish I</a>	3 hours
<a href="#">SGNL 2301 Intermediate ASL I</a>	3 hours

### Math

<a href="#">MATH 1314 College Algebra</a>	3 hours
<a href="#">MATH 1316 Plane Trigonometry</a>	3 hours
<a href="#">MATH 1324 Mathematics for Business &amp; Social Sciences</a>	3 hours
<a href="#">MATH 1325 Calculus for Business &amp; Social Sciences</a>	3 hours
<a href="#">MATH 1332 Contemporary Mathematics (Quantitative Reasoning)</a>	3 hours
<a href="#">MATH 1342 Elementary Statistical Methods</a>	3 hours
<a href="#">MATH 2412 Pre-Calculus Mathematics</a>	4 hours
<a href="#">MATH 2413 Calculus I</a>	4 hours
<a href="#">PHIL 2303 Introduction to Formal Logic</a>	3 hours

## Course Descriptions

### BIOL 2401 Anatomy & Physiology I

Anatomy and Physiology I is the first part of a two-course sequence. It is a study of the structure and function of the human body including cells, tissues and organs of the following systems: integumentary, skeletal, muscular, and nervous and special senses. Emphasis is on interrelationships among systems and regulation of physiological functions involved in maintaining homeostasis. NOTE: Must have passed the reading and writing portion of the TSI Assessment or have credit for INRW 0402. Semester Hours 4 (3 lec/3 lab)

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### ENGL 1301 Composition I

Intensive study of and practice in writing processes, from invention and researching to drafting, revising, and editing, both individually and collaboratively. Emphasis is on effective rhetorical choices, including audience, purpose, arrangement, and style. Focus is on writing the academic essay as a vehicle for learning, communication, and critical analysis. Prerequisite: TSI complete in Writing or the equivalent. Semester Hours 3 (3 lec)

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### ENGL 1302 Composition II

Intensive study of and practice in the strategies and techniques for developing research-based expository and persuasive texts. Emphasis is on effective and ethical rhetorical inquiry, including primary and secondary research methods; critical reading of verbal, visual and multimedia texts; systematic evaluation, synthesis, and documentation of information sources; and critical thinking about evidence and conclusions. Prerequisite: ENGL 1301 or its equivalent with a grade of C or better or consent of division chair. Semester Hours 3 (3 lec)

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### RADR 1201 Introduction to Radiography

An overview of the historical development of radiography, basic radiation protection, an introduction to medical terminology, ethical and legal issues for health care professionals, and an orientation to the profession and the health care system. Semester Hours: 2 (2 lec)

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### RADR 1203 Patient Care

Introduces the historical development of radiography, basic radiation protection, an introduction to medical terminology, ethical and legal issues for health care professionals, and an orientation to the program and to the health care system. Patient assessment, infection control procedures, emergency and safety procedures, communication and patient interaction skills, and basic pharmacology are also included. Semester Hours 2 (2 lec)

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### RADR 1311 Basic Radiographic Procedures

An introduction to radiographic positioning terminology, manipulation of equipment, positioning and alignment of the anatomical structure and equipment, and evaluation of images for demonstration of basic anatomy. Covers positioning of the chest, abdomen, upper and lower extremities, shoulder and pelvic girdles. Includes common procedures utilizing contrast media. Prerequisite: Program Acceptance. Semester Hours 3 (3 lec/2 lab)

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### RADR 1260 Clinical-Radiologic Technology

Provides a health-related work-based learning experience that enables students to apply specialized occupational theory, skills, and concepts. Direct supervision is provided by the clinical professional. Specific Detailed learning objectives are developed for each course by the faculty. On-site clinical instruction, evaluation and placement are the responsibility of the college faculty. Clinical experiences are unpaid external learning experiences. Provides for competency-based clinical education in radiographic examination of the procedures addressed in RADR 1311. Prerequisite: Acceptance into Radiologic Technology Program. Semester Hours 2 (12 clinical hours/week)

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### BIOL 2402 Anatomy & Physiology II

Anatomy and Physiology II is the second part of a two-course sequence. It is a study of the structure and function of the human body including the following systems: endocrine, cardiovascular, immune, lymphatic, respiratory, digestive (including nutrition), urinary (including fluid and electrolyte balance), and reproductive (including human development and genetics). Emphasis is on interrelationships among systems and regulation of physiological functions involved in maintaining homeostasis. Prerequisite: BIOL 2401 with a grade of C or better. Semester Hours 4(3 lec/3 lab)

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### RADR 2301 Intermediate Radiographic Procedures

Continues the study of the proper manipulation of radiographic equipment, positioning and alignment of the anatomical structure and equipment, and evaluation of images for proper demonstration of intermediate anatomy and related pathology. Introduces students to positioning of the vertebral column, bony thorax, breast, and cranium. Patient care techniques are heavily stressed. Prerequisite: Successful completion of RADR courses in Semester I, with a grade of C or better. Semester Hours 3 (3 lec/2 lab)

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### RADR 1313 Principles of Radiographic Imaging I

Radiographic image quality and the effects of exposure variables. Semester Hours 3 (3 lec/1 lab)

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### RADR 2309 Radiographic Imaging Equipment

Studies the equipment and physics of X-ray production, basic X-ray circuits, and examines the relationship of conventional and digital equipment components to the imaging process. Prerequisite: Successful completion of RADR courses in Semester I, with a grade of C or better. Semester Hours 3 (3 lec/1 lab)

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### RADR 1261 Clinical-Radiologic Technology/Science-Radiographer

Provides a health-related work-based learning experience that enables students to apply specialized occupational theory, skills, and concepts. Direct supervision is provided by the clinical professional. Detailed learning objectives are developed for each course by the faculty. On-site clinical instruction, evaluation and placement are the responsibility of the college faculty. Clinical experiences are unpaid external learning experiences. Provides for competency-based clinical education in radiographic examinations in continuation with the student's clinical competency profile. Semester Hours 2 (12 clinical hours/week)

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### RADR 1460 Clinical Medical Radiologic Technology

Provides detailed education, training and work-based experience and direct patient/client care, generally at a clinical site. Specific detailed learning objectives are developed for each course by the faculty. On-site clinical instruction, supervision, evaluation and placement is the responsibility of the college faculty. Clinical experiences are unpaid external learning experiences. Provides for competency-based clinical education in radiographic examinations in continuation with the student's clinical competency profile. Semester Hours 4 (20 clinical hours/week)

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### RADR 2313 Radiation Biology and Protection

Effects of radiation exposure on biological systems including: typical medical exposure levels, methods for measuring and monitoring radiation, and methods for protecting personnel and patients from excessive exposure. Prerequisite: Successful completion of RADR previous semester courses, with a grade of C or better. Semester Hours 3 (3 lec)

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### RADR 2266 Practicum I - Radiologic Technology

Practical, general workplace training supported by an individualized learning plan developed by the employer, college, and student. On-site clinical instruction, supervision, evaluation, and placement are the responsibility of the college faculty. Clinical experiences are unpaid, external learning experiences. Provides for competency-based clinical education in radiographic examinations in continuation with the student's clinical competency profile. Prerequisite: Successful completion of RADR previous semester courses, with a grade of C or better. Semester Hours: 2 (18 clinical hrs/wk)

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### RADR 2305 Principles of Radiographic Imaging II

Radiographic image quality and the effects of exposure variables, and the synthesis of all variables in image production. Prerequisites: Successful completion of previous RADR courses with minimum grade of C or better. Semester Hours: 3 (3 lec/1 lab)

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## **RADR 2217 Radiographic Pathology**

An overview of the disease process and common diseases and their appearance on medical images. Radiographic pathology is the study of disease processes visualized radiographically. The purpose of this course is to provide the second-year radiography student with a basic working knowledge of pathology as it pertains to diagnostic medical radiography. This course presents those pathologic conditions that are most commonly encountered by the staff of the radiology department and the medical terminology associated with those pathologic conditions. Semester Hours 2

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## **RADR 2331 Advanced Radiographic Procedures**

Positioning and alignment of anatomic structures and equipment, evaluation of images for demonstration of anatomy and related pathology, and an exploration of specialized imaging modalities. Prerequisites: Successful completion of previous RADR courses with a minimum grade of C or better. Semester Hours 3 (3 lec/1 lab)

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## **RADR 2267 Practicum II - Radiologic Technology**

Practical, general workplace training supported by an individualized learning plan developed by the employer, college, and student. On-site clinical instruction, supervision, evaluation and placement are the responsibility of the college faculty. Clinical experiences are unpaid, external learning experiences. Provides for competency-based clinical education in radiographic examinations in continuation with the student's clinical competency profile. Prerequisite: Successful completion of all prior didactic and clinical RADR courses, with a grade of "C" or better. Semester Hours: 2 (18 clinical hrs/wk)

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## **PSYC 2301 General Psychology**

General Psychology is a survey of the major psychological topics, theories and approaches to the scientific study of behavior and mental processes. NOTE: Must have passed the reading portion of the TSI Assessment or have credit for INRW 0402. Semester Hours 3 (3 lec)

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## **SOCI 1301 Introduction to Sociology**

The scientific study of human society, including ways in which groups, social institutions, and individuals affect each other. Causes of social stability and social change are explored through the application of various theoretical perspectives, key concepts, and related research methods of sociology. Analysis of social issues in their institutional context may include topics such as social stratification, gender, race/ethnicity, and deviance. Semester Hours 3 (3 lec)

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## **RADR 2360 Clinical IV - Medical Radiologic Technology**

Provides a health-related, work-based learning experience that enables students to apply specialized occupational theory, skills, and concepts. Direct supervision is provided by the clinical professional. Provides detailed educational, training and work-based experience and direct patient/client care, generally at a clinical site. Specific detailed learning objectives are developed for each course by the faculty. On-site clinical instruction, supervision, evaluation and placement are the responsibility of the college faculty. Clinical experiences are unpaid external learning experiences. Provides for competency-based clinical education in radiographic examination. Semester Hours 3

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## **RADR 2235 Radiologic Technology Seminar**

A capstone course focusing on the synthesis of professional knowledge, skills, and attitudes in preparation for professional employment and lifelong learning. Prerequisite: Successful completion of all previous RADR didactic and clinical courses, with a grade of C or better. Semester Hours 2 (2 lec/3 lab)

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## **ARTS 1301 Art Appreciation**

A general introduction to the visual arts designed to create an appreciation of the vocabulary, media, techniques, and purposes of the creative process. Students will critically interpret and evaluate works of art within formal, cultural, and historical contexts. Semester Hours 3 (3 lec)

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## **ARTS 1303 Art History I (Prehistoric to the 14th Century)**

A chronological analysis of the historical and cultural contexts of the visual arts from prehistoric times to the 14th century. Semester Hours 3 (3 lec)

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## **ARTS 1304 Art History II (14th Century to the Present)**

A chronological analysis of the historical and cultural contexts of the visual arts from the 14th century to the present day. Semester Hours 3 (3 lec)

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## **DRAM 1310 Theater Appreciation**

Survey of theater including its history, dramatic works, stage techniques, production procedures, and relation to other art forms. Participation in major productions may be required. Applies as a required Humanities or Visual & Performing Arts course for all students. Semester Hours 3 (3 lec)

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## **DRAM 2361 History of Theater I**

Study of the history of the theater from primitive times through the Renaissance. Required of theatre majors; open to non-theatre majors. Semester Hours 3 (3 lec)

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## **DRAM 2362 History of Theater II**

Study of the history of the theater from the Renaissance through today. Required of theatre majors; open to non-theatre majors. Semester Hours 3 (3 lec)

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## **HUMA 1315 Fine Arts Appreciation**

This course is an exploration of the purposes and processes in the visual and performing arts (such as music, painting, architecture, drama, and dance) and the ways in which they express the values of cultures and human experience. Semester Hours 3 (3 lec)

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## **MUSI 1306 Music Appreciation**

Understanding music through the study of cultural periods, major composers, and musical elements. Illustrated with audio recordings and live performances. (Does not apply to a music major degree.) Applies as a required humanities or fine arts course for all students. Semester Hours 3 (3 lec)

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## **MUSI 1308 Music Literature I**

Survey of the principal musical forms and cultural periods as illustrated in the literature of major composers. Surveys music literature from Gregorian chant to the early classical period. Emphasis is on music materials and listening skills through recorded music and scores. Required for music majors and minors. Semester Hours 3 (3 lec)

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## **MUSI 1309 Music Literature II**

Survey of the principal musical forms and cultural periods as illustrated in the literature of major composers. Surveys music literature from the classical period to the present. Emphasis is on music materials and listening skills through recorded music and scores. Required for music majors and minors. Semester Hours 3 (3 lec)

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## **MUSI 1310 American Music**

General survey of various styles of music in America. Topics may include jazz, ragtime, folk, rock, and contemporary art music. Satisfies general humanities elective requirements. Semester Hours 3 (3 lec)

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## **ENGL 2321 British Literature**

A survey of the development of British literature from the Anglo-Saxon period to the present. Students will study works of prose, poetry, drama, and fiction in relation to their historical, linguistic, and cultural contexts. Texts will be selected from a diverse group of authors and traditions. Prerequisite: ENGL 1301 or ENGL 2311. Semester Hours 3 (3 lec)

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### **ENGL 2322 British Literature I**

A survey of the development of British literature from the Anglo-Saxon period to the Eighteenth Century. Students will study works of prose, poetry, drama, and fiction in relation to their historical, linguistic, and cultural contexts. Texts will be selected from a diverse group of authors and traditions. Prerequisite: ENGL 1301 or ENGL 2311. Semester Hours 3 (3 lec)

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### **ENGL 2323 British Literature II**

A survey of the development of British literature from the Romantic period to the present. Students will study works of prose, poetry, drama, and fiction in relation to their historical and cultural contexts. Texts will be selected from a diverse group of authors and traditions. Prerequisite: ENGL 1301 or ENGL 2311. Semester Hours 3 (3 lec)

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### **ENGL 2326 American Literature**

A survey of American literature from the period of exploration and settlement to the present. Students will study works of prose, poetry, drama, and fiction in relation to their historical and cultural contexts. Texts will be selected from among a diverse group of authors for what they reflect and reveal about the evolving American experience and character. Prerequisite: ENGL 1301 or ENGL 2311. Semester Hours 3 (3 lec)

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### **ENGL 2327 American Literature I: Up to the Civil War**

A survey of American literature from the period of exploration and settlement through the Civil War. Students will study works of prose, poetry, drama, and fiction in relation to their historical and cultural contexts. Texts will be selected from among a diverse group of authors for what they reflect and reveal about the evolving American experience and character. Prerequisite: ENGL 1301 or ENGL 2311. Semester Hours 3 (3 lec)

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### **ENGL 2328 American Literature II: Civil War to the Present**

A survey of American literature from the Civil War to the present. Students will study works of prose, poetry, drama, and fiction in relation to their historical and cultural contexts. Texts will be selected from among a diverse group of authors for what they reflect and reveal about the evolving American experience and character. Prerequisite: ENGL 1301 or ENGL 2311. Semester Hours 3 (3 lec)

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### **ENGL 2331 World Literature**

A survey of world literature from the ancient world to the present. Students will study works of prose, poetry, drama, and fiction in relation to their historical and cultural contexts. Texts will be selected from a diverse group of authors and traditions. Prerequisite: ENGL 1301 or ENGL 2311. Semester Hours 3 (3 lec)

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### **ENGL 2332 World Literature I: Up to the 17th Century**

A survey of world literature from the ancient world through the 16th century. Students will study works of prose, poetry, drama, and fiction in relation to their historical and cultural contexts. Texts will be selected from a diverse group of authors and traditions. Prerequisite: ENGL 1301 or ENGL 2311. Semester Hours 3 (3 lec)

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### **ENGL 2333 World Literature II: 17th Century to the Present**

A survey of world literature from the 17th century to the present. Students will study works of prose, poetry, drama, and fiction in relation to their historical and cultural contexts. Texts will be selected from a diverse group of authors and traditions. Prerequisite: ENGL 1301 or ENGL 2311. Semester Hours 3 (3 lec)

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### **ENGL 2341 Forms of Literature**

The study of one or more literary genres including, but not limited to, poetry, fiction, drama, and film. Prerequisite: ENGL 1301 or ENGL 2311. Semester Hours 3 (3 lec)

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### **FREN 2311 Intermediate French I**

Review and application of skills in listening comprehension, speaking, reading, and writing. Emphasizes conversation, vocabulary acquisition, reading, composition, and culture. Prerequisite: FREN 1412, three years of high school French, or consent of instructor or division chair. Students with three years of high school French are encouraged to see a French instructor prior to enrolling. Semester Hours 3 (3 lec)

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### **GERM 2311 Intermediate German I**

Review and application of skills in listening comprehension, speaking, reading, and writing. Emphasizes conversation, vocabulary acquisition, reading, composition, and culture. Prerequisite: GERM 1412, three years of high school German, or consent of instructor or division chair. Students with three years of high school German are encouraged to see a German instructor prior to enrolling. Semester Hours 3 (3 lec)

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### **HUMA 1301 Introduction to Humanities I**

This stand-alone course is an interdisciplinary survey of cultures focusing on the philosophical and aesthetic factors in human values with an emphasis on the historical development of the individual and society and the need to create. Team taught by faculty from diverse departments as a colloquium (academic seminar led by a different lecturer and on a different topic at each session). Works may include studies, journals, novels, poems, treatises, graphic novels, films, plays, paintings, musical compositions, etc. Semester Hours 3 (3 lec)

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### **HUMA 1302 Introduction to Humanities II**

This stand-alone course is an interdisciplinary survey of cultures focusing on the philosophical and aesthetic factors in human values with an emphasis on the historical development of the individual and society and the need to create. Team taught by faculty from diverse departments as a colloquium (academic seminar led by a different lecturer and on a different topic at each session). Works may include studies, journals, novels, poems, treatises, graphic novel films, plays, paintings, musical compositions, etc. Semester Hours 3 (3 lec)

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### **PHIL 1301 Introduction to Philosophy**

A study of major issues in philosophy and/or the work of major philosophical figures in philosophy. Topics in philosophy may include theories of reality, theories of knowledge, theories of value, and their practical applications. Semester Hours 3 (3 lec)

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### **PHIL 1304 Introduction to World Religions**

A comparative study of world religions, including but not limited to Hinduism, Buddhism, Judaism, Christianity, and Islam. Semester hours 3

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### **PHIL 2306 Introduction to Ethics**

The systematic evaluation of classical and/or contemporary ethical theories concerning the good life, human conduct in society, morals, and standards of value. Semester Hours 3 (3 lec)

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### **SPAN 2311 Intermediate Spanish I**

The consolidation of skills acquired at the introductory level. Further development of proficiency in listening, speaking, reading and writing. Emphasis is on comprehension, appreciation, and interpretation of the cultures of the Spanish-speaking world. Prerequisite: SPAN 1412, three years of high school Spanish, or consent of instructor or division chair. Students with three years of high school Spanish are encouraged to see a Spanish instructor prior to enrolling. Semester Hours 3 (3 lec)

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### **SGNL 2301 Intermediate ASL I**

Review and application of conversational skills in American Sign Language and interpreting from signing to voice as well as from voice to signing. Introduction to American Sign Language literature and folklore. Prerequisite: SGNL 1402 with a grade of C or better or consent of the program director. Semester Hours 3 (3 lec)

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### **MATH 1314 College Algebra**

In-depth study and applications of polynomial, rational, radical, exponential and logarithmic functions, and systems of equations using matrices. Additional topics such as sequences, series, probability, and conics may be included. Graphing calculator required. Prerequisite: TSI math complete or MATH 0311. Semester Hours 3 (3 lec)

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### **MATH 1316 Plane Trigonometry**

In-depth study and applications of trigonometry including definitions, identities, inverse functions, solutions of equations, graphing, and solving triangles. Additional topics such as vectors, polar coordinates and parametric equations may be included. Graphing calculator required. Prerequisite: MATH 1314 with a minimum grade of C, or passing score on non-credit equivalency exam for MATH 1314, or consent of division chair. Semester Hours 3 (3 lec)

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### **MATH 1324 Mathematics for Business & Social Sciences**

The application of common algebraic functions, including polynomial, exponential, logarithmic and rational, to problems in business, economics and the social sciences are addressed. The applications include mathematics of finance, including simple and compound interest and annuities; systems of linear equations; matrices, linear programming; and probability, including expected value. Prerequisite: TSI math complete or MATH 0311. Semester Hours 3 (3 lec)

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### **MATH 1325 Calculus for Business & Social Sciences**

This course is the basic study of limits and continuity, differentiation, optimization and graphing, and integration of elementary functions, with emphasis on applications in business, economics and social sciences. This course is not a substitute for MATH 2313 or 2413 - Calculus I. Prerequisite: MATH 1314 or MATH 1324, minimum grade C. Semester Hours 3 (3 lec)

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### **MATH 1332 Contemporary Mathematics (Quantitative Reasoning)**

Intended for Non STEM (Science, Technology, Engineering, and Mathematics) majors. Topics include introductory treatments of sets and logic, financial mathematics, probability and statistics with appropriate applications. Number sense, proportional reasoning, estimation, technology, and communication should be embedded throughout the course. Additional topics may be covered. Graphing calculator required. Prerequisite: TSI math complete or MATH 0308 or consent of division chair. Semester Hours 3 (3 lec)

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### **MATH 1342 Elementary Statistical Methods**

Collection, analysis, presentation and interpretation of data, and probability. Analysis includes descriptive statistics, correlation and regression, confidence intervals and hypothesis testing. Use of appropriate technology is recommended. Graphing calculator required. Prerequisite: TSI math complete or MATH 0308 or completion of college-level math course or consent of division chair. Semester Hours 3 (3 lec)

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### **MATH 2412 Pre-Calculus Mathematics**

In-depth combined study of algebra, trigonometry, and other topics for calculus readiness. Prerequisite: MATH 1314 with a minimum grade of C, or passing score on non-credit equivalency exam for MATH 1314, or consent of division chair. Semester Hours 4 (4 lec)

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### **MATH 2413 Calculus I**

Limits and continuity; the Fundamental Theorem of Calculus; definition of the derivative of a function and techniques of differentiation; applications of the derivative to maximizing or minimizing a function; the chain rule, mean value theorem, and rate of change problems; curve sketching; definite and indefinite integration of algebraic, trigonometric, and transcendental functions, with an application to calculation of areas. Graphing calculator required. Prerequisite: MATH 2412 with a minimum grade of C, or both MATH 1314 and MATH 1316 with minimum grades of C, or passing score on non-credit equivalency exam for MATH 2412, or consent of division chair. Semester Hours 4 (4 lec)

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### **PHIL 2303 Introduction to Formal Logic**

The purpose of the course is to introduce the student to symbolic logic, including syllogisms, propositional and predicate logic, and logical proofs in a system of rules. Semester Hours 3 (3 lec)

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