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<tr>
<th>Course Code</th>
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<th>Credits</th>
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<tr>
<td>RAE 101</td>
<td>ELEMENTARY RUSSIAN.</td>
<td>4</td>
<td>The students are introduced to the language through grammatical explanations, recitation practice, and oral as well as written exercises. The emphasis is on the spoken language of everyday use, reading of graded Russian texts, vocabulary building and accurate pronunciation. Extensive work with tape recordings. Lecture, three hours; supervised recitation, one hour per week.</td>
</tr>
<tr>
<td>RAE 102</td>
<td>PRIMARY RUSSIAN.</td>
<td>4</td>
<td>A continuation of RAE 101. Lecture, three hours; supervised recitation, one hour per week. Prereq: RAE 101 or equivalent.</td>
</tr>
<tr>
<td>RAE 305</td>
<td>ADVANCED RUSSIAN GRAMMAR.</td>
<td>3</td>
<td>Detailed study of advanced points of Russian grammar, such as verbal aspect, verbs of motion, participles, conditional constructions, time expressions. Prereq: RAE 202 or equivalent.</td>
</tr>
<tr>
<td>RAE 306</td>
<td>ADVANCED RUSSIAN GRAMMAR.</td>
<td>3</td>
<td>Continuation of RAE 305. Detailed study of advanced points of Russian grammar such as reflexives, passives, complex/compound sentences, word formation, word order, syntax. Prereq: RAE 305 or consent of instructor.</td>
</tr>
<tr>
<td>RAE 310</td>
<td>RUSSIAN LISTENING AND ORAL PROFICIENCY.</td>
<td>1</td>
<td>Intensive practice with listening comprehension based on Soviet audio materials, conversation, and practice in word formation. Lecture, one hour, laboratory, one hour per week. Prereq: RAE 202.</td>
</tr>
<tr>
<td>RAE 320</td>
<td>SURVEY OF 19th CENTURY RUSSIAN LITERATURE (in English).</td>
<td>3</td>
<td>A survey of Russian literature of the 19th Century. Emphasis is on the development of romanticism, the rise of realism, and end-of-century decadence. All readings, lectures, and discussions are in English. Students taking the course for Russian major credit are expected to do outside work in Russian.</td>
</tr>
<tr>
<td>RAE 390</td>
<td>MODERN RUSSIAN LITERATURE (in English).</td>
<td>3</td>
<td>Russian literature of the 20th Century, including modernist trends, Socialist Realism, non-conformist trends, Russian literature abroad. Students taking the course for Russian major credit will be assigned outside work in Russian.</td>
</tr>
<tr>
<td>RAE 395</td>
<td>INDEPENDENT WORK IN RUSSIAN.</td>
<td>1-3</td>
<td>Students who have the proper qualifications may undertake a special problem in reading and research. May be repeated to a maximum of six credits. (Recommended.)</td>
</tr>
<tr>
<td>RAE 400</td>
<td>SEMINAR ON SPECIAL TOPICS IN RUSSIAN.</td>
<td>3</td>
<td>Detailed investigation of a given topic, author or theme. Research to be conducted at least in part using Russian materials. Subject will be announced prior to preregistration. May be repeated to a maximum of six credits.</td>
</tr>
<tr>
<td>RAE 410</td>
<td>STRUCTURE AND STYLISTICS OF RUSSIAN.</td>
<td>3</td>
<td>A concise structural study of Russian grammar combined with readings illustrating the relationship between grammar and style in Russian prose and verse. Attention is also given to techniques and elements of formal textual analysis. Prereq: Third year knowledge of Russian.</td>
</tr>
<tr>
<td>RAE 411</td>
<td>STRUCTURE AND STYLISTICS OF RUSSIAN.</td>
<td>3</td>
<td>A continuation of RAE 410. Prereq: RAE 410 or equivalent. (Recommended.)</td>
</tr>
<tr>
<td>RAE 420</td>
<td>RUSSIAN TRANSLATION.</td>
<td>3</td>
<td>Translation of unadapted texts from Russian to English, theory of translation, practice translation of Russian texts of various kinds, both technical and literary, focus on specific stylistic requirements, translation of short texts from English to Russian, introduction to oral interpretation. Prereq: RAE 303-304 or equivalent.</td>
</tr>
<tr>
<td>RAE 430</td>
<td>BUSINESS RUSSIAN.</td>
<td>3</td>
<td>Development of written and oral skills in Russian needed to conduct business activities in Russian-speaking areas of the former Soviet Union using various materials from banking, advertising, law, economics and industry. Prereq: Third year knowledge of Russian.</td>
</tr>
<tr>
<td>RAE 460</td>
<td>TOLSTOY (in English).</td>
<td>3</td>
<td>The study of Tolstoy, his art and life. All readings, lectures, and discussions are in English. Students taking the course for Russian major credit are expected to do outside work in Russian.</td>
</tr>
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</table>
RAE 462G ADVANCED READING IN THE SCIENCES AND TECHNOLOGY (in Russian). (3)
Technical reading in a broad variety of Russian literature in the natural and social sciences to improve language skills enabling the student to read, write on and discuss technical subjects. Prereq: Third-year knowledge of Russian.

RAE 463 RUSSIAN PLAYS (in Russian). (3)
Reading of selected major Russian plays as a basis for perfection of language skills, involving class discussions, compositions and translation practice. Prereq: Third-year knowledge of Russian or consent of instructor.

RAE 480 RUSSIAN POETRY (in Russian). (3)
Reading of selected major Russian poems as a basis for perfection of language skills, involving class discussions, compositions and translation practice. Prereq: A third-year knowledge of Russian or consent of instructor.

RAE 553 TEACHING OF RUSSIAN. (3)
The course is designed for teachers and prospective teachers of modern foreign languages, with emphasis on Russian. Modern methodology, theory and practice of language pedagogy. Prereq: RAE 304.

HEBREW
RAE 130 ELEMENTARY HEBREW. (3)
Coverage of Hebrew grammar designed to prepare students to use Hebrew for their particular needs and programs. Lecture, three hours; laboratory, one hour per week.

RAE 131 ELEMENTARY HEBREW. (3)
Continuation of RAE 130. Lecture, three hours; laboratory, one hour per week. Prereq: RAE 130 or consent of instructor.

RAE 324 JUDAISM IN THE MIDDLE AGES. (3)
Special reference to relation to Western civilization. Emphasis on literature, thought, and religion rather than on political history. The student may concentrate his reading in any of these fields. Given in English, no knowledge of Hebrew necessary.

RAE 325 JUDAISM IN THE MODERN WORLD. (3)
The response of Judaism to the problems resulting from "Emancipation," the rise of conservative and reform movements in Germany, emigration to the U.S. and the establishment of Israel. Given in English. No knowledge of Hebrew necessary.

ARABIC
RAE 140 ELEMENTARY MODERN STANDARD ARABIC. (3)
An introduction to the standard written language of the Arab World. Initial emphasis upon the phonology and script, followed by gradual coverage of the grammar, with exercises in reading, writing, pronunciation, and vocabulary building. Lecture, three hours; laboratory, one hour per week.

RAE 141 ELEMENTARY MODERN STANDARD ARABIC. (3)
Continuation of RAE 140. Lecture, three hours; laboratory, one hour per week. Prereq: RAE 140.

RAE 240 INTERMEDIATE MODERN STANDARD ARABIC. (3)
A continuation of RAE 141, stressing comprehension of written and oral material, the ability to read Arabic aloud and to compose written material, and the ability to speak. Lecture, three hours; laboratory, one hour per week. Prereq: RAE 141.

RAE 241 INTERMEDIATE MODERN STANDARD ARABIC. (3)
A continuation of RAE 240, stressing comprehension of written and oral material, the ability to read Arabic aloud and to compose written material, and the ability to speak. Lecture, three hours; laboratory, one hour per week. Prereq: RAE 240.

CHINESE
RAE 150 BEGINNING CHINESE I. (4)
A course in first semester Chinese language.

RAE 151 BEGINNING CHINESE II. (4)
A course in second semester Chinese language. Prereq: RAE 150 or equivalent.

RAE 250 INTERMEDIATE CHINESE I. (4)
A course in third semester Chinese language. Prereq: RAE 151 or equivalent.

RAE 251 INTERMEDIATE CHINESE II. (4)
A fourth semester course in Chinese language. Prereq: RAE 250 or equivalent.

OTHER DEPARTMENTAL OFFERINGS

RAE 120 BEGINNING JAPANESE I. (3)
A course in first semester Japanese language.

RAE 121 BEGINNING JAPANESE II. (3)
A course in second semester Japanese language. Prereq: RAE 120 or equivalent.

RAE 220 INTERMEDIATE JAPANESE I. (3)
A course in third semester Japanese language. Prereq: RAE 121 or equivalent.

RAE 221 INTERMEDIATE JAPANESE II. (3)
A course in fourth semester Japanese language. Prereq: RAE 220 or equivalent.

RAE 260 CLASSICS OF NEAR EASTERN LITERATURE IN TRANSLATION. (3)
A survey of Near Eastern literature, mainly Islamic. Some selections are chosen on the basis of their universal interest, while others demonstrate literary values and ideals with which Western readers are not ordinarily familiar. Occasional recordings and slide-illustrated lectures are included.

RAE 328 ISLAMIC CIVILIZATION: THE RISE OF ISLAM TO 1798. (3)
The rise of Islam and its classical development.

RAE 330 THE ARAB AWAKENING. (3)
The Arab World's response to westernization and the resultant reassertion of its cultural role in the modern world.

RAE 401 SEMINAR IN RUSSIAN AND EAST EUROPEAN STUDIES I (Subtitle required). (3)
Interdisciplinary seminar on a topic in Russian and East European Studies in the period before 1800. Prereq: Junior standing.

RAE 402 SEMINAR IN RUSSIAN AND EAST EUROPEAN STUDIES II (Subtitle required). (3)
Interdisciplinary seminar on a topic in Russian and East European Studies in the 19th Century. Prereq: Junior standing.

RAE 403 SEMINAR IN RUSSIAN AND EAST EUROPEAN STUDIES III (Subtitle required). (3)
Interdisciplinary seminar on a topic in Russian and East European Studies in the late 19th Century through the Revolution. Prereq: Junior standing.

RAE 404 SEMINAR IN RUSSIAN AND EAST EUROPEAN STUDIES IV (Subtitle required). (3)
Interdisciplinary seminar on a topic in Russian and East European Studies in the Soviet period. Prereq: Junior standing.

RAS Radiation Sciences

RAS 395 INDEPENDENT WORK IN MEDICAL PHYSICS AND RADIOLOGICAL HEALTH. (1-3)
Students may select an approved topic for study under the direction of a faculty member in Radiation Sciences. May be repeated to a maximum of six credits. Prereq: Upper division standing in Radiological Health or a related field, and consent of faculty adviser.

RAS 540 FUNDAMENTALS OF RADIATION BIOLOGY. (2)
Fundamental aspects of radiation biology. Radiation effects on macromolecules, cells, tissues, organs, and organisms. Prereq: One year of biological sciences, one year of chemistry, one year of physics, and MA 113, or equivalent. (Same as BIO/RM 540.)

RAS 541 RADIOISOTOPE METHODOLOGY. (2)
Radioisotope techniques and their application in the biological and medical sciences. Radiation safety, calibration and use of radiation detectors, counting statistics, uptake and assay methods, and applications. Laboratory, five hours per week. Prereq: One year biology, CHE 115, PHY 213, and MA 113, or equivalent. (Same as BIO/RM 541.)

RAS 545 RADIATION HAZARDS AND PROTECTION. (3)
An analysis of common radiation hazards encountered in medicine, research, industry, and the environment. Regulations and procedures for the safe use of ionizing and nonionizing radiations. Lecture, two hours; laboratory, two and one-half hours. Prereq: PHY/RM 472G or consent of instructor. (Same as PHY/RM 545.)
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<tbody>
<tr>
<td>RAS 546</td>
<td>GENERAL MEDICAL RADIATIONAL PHYSICS.</td>
<td>(3)</td>
<td>The uses and dosimetric aspects of radiation in medicine are analyzed, including many basic applications in the fields of diagnostic radiology physics, therapy physics, and nuclear medical physics. Prereq: PHY/RM 472G or consent of instructor. (Same as PHY/RM 546.)</td>
</tr>
<tr>
<td>RAS 575</td>
<td>APPLIED HEALTH PHYSICS LABORATORY.</td>
<td>(2)</td>
<td>Advanced laboratory analysis of common applied health physics problems. Laboratory, four hours per week. Prereq: PHY/RM/RAS 545 and upper division or graduate standing in a physical science, or consent of instructor.</td>
</tr>
<tr>
<td>RAS 647</td>
<td>PHYSICS OF DIAGNOSTIC IMAGING I.</td>
<td>(3)</td>
<td>Specialized and advanced topics in diagnostic imaging, including modulation transfer function analysis, image processing algorithms, acceptance testing, CT, NMR, ultrasound, etc. Prereq: PHY/RM/RAS 546 or consent of instructor. (Same as RM 647.)</td>
</tr>
<tr>
<td>RAS 648</td>
<td>PHYSICS OF DIAGNOSTIC IMAGING II.</td>
<td>(3)</td>
<td>A continuation of RAS/RM 647. Specialized and advanced topics in nuclear medicine imaging physics, including positron emission tomographic procedures, emerging new modalities, and quality control. Prereq: RM/RAS 647 or consent of instructor. (Same as RM 648.)</td>
</tr>
<tr>
<td>RAS 649</td>
<td>PHYSICS OF RADIATION THERAPY.</td>
<td></td>
<td>Specialized external beam and brachytherapy treatment planning; advanced Bragg-Gray cavity applications, including Ngs and TG-21; calibration, acceptance testing, and quality control of therapy physics equipment. Prereq: RAS/RM/PHY 546 and RAS/RM 601, or consent of instructor. (Same as RM 649.)</td>
</tr>
<tr>
<td>RAS 651</td>
<td>ADVANCED LABORATORY IN DIAGNOSTIC IMAGING PHYSICS.</td>
<td>(1-3)</td>
<td>Specialized experiments involving the use, calibration, and quality control of x-ray and other diagnostic imaging equipment, and the appropriate use of radiation detectors in diagnostic physics measurements. Laboratory, approximately 30 hours per credit. May be repeated to a maximum of three credits. Prereq: RAS/RM/PHY 546, or equivalent, plus graduate standing in the radiation science program.</td>
</tr>
<tr>
<td>RAS 652</td>
<td>ADVANCED LABORATORY IN NUCLEAR MEDICAL PHYSICS.</td>
<td>(1-3)</td>
<td>Specialized experiments involving the use, calibration, and quality control of nuclear medicine imaging equipment, including both traditional and emerging modalities. Laboratory, approximately 30 hours per credit. May be repeated to a maximum of three credits. Prereq: RAS/RM/PHY 548, or equivalent, plus graduate standing in the radiation science program, or consent of instructor. (Same as RM 652.)</td>
</tr>
<tr>
<td>RAS 695</td>
<td>RESEARCH IN THE HEALTH-RELATED RADIATION SCIENCES.</td>
<td>(1-4)</td>
<td>Independent directed research on theoretical and practical problems in the health-related radiation sciences. May be repeated to a maximum of eight credits. Prereq: Graduate standing in one of the radiation-related sciences, plus consent of instructor. (Same as RM 695.)</td>
</tr>
<tr>
<td>RAS 710</td>
<td>RADIATION SCIENCE SEMINAR (Subtitle required).</td>
<td>(1)</td>
<td>Topics of current interest relating to radiation and its applications in the areas of radiological medical physics and health physics. May be repeated to a maximum of four credit hours with consent of instructor. Prereq: Graduate standing in a radiation-related science.</td>
</tr>
<tr>
<td>RAS 715</td>
<td>ADVANCED PROBLEMS IN HEALTH-RELATED RADIATION SCIENCES.</td>
<td>(1-4)</td>
<td>Directed study and analysis of problems and their solutions, in areas of major concern to the health-related radiation sciences. May be repeated for a total of up to four semester hours. Prereq: Advanced standing with graduate radiation sciences, plus consent of instructor.</td>
</tr>
<tr>
<td>RAS 849</td>
<td>RADIATION SCIENCES PRACTICUM.</td>
<td>(1-6)</td>
<td>Applied practicum experiences in the radiation sciences. Laboratory, 40 hours per week equals one credit hour. Prereq: Advanced graduate standing in the radiation sciences.</td>
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### RMB Physical Medicine and Rehabilitation

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<tr>
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<tbody>
<tr>
<td>RMB 815</td>
<td>FIRST-YEAR ELECTIVE, REHABILITATION MEDICINE.</td>
<td>(1-3)</td>
<td>The student will be assigned to a faculty member and will attend inpatient rounds and staff conferences on the Spinal Cord Injury, Brain Injury or Stroke units at Cardinal Hill Hospital. Student will attend OT and PT Clinics with assigned patients; a brief discussion paper will be required on an assigned topic.</td>
</tr>
<tr>
<td>RMB 825</td>
<td>SECOND-YEAR ELECTIVE, REHABILITATION MEDICINE.</td>
<td>(1-4)</td>
<td>The student will be assigned to a faculty member and will attend inpatient rounds and staff conferences on the Spinal Cord Injury, Brain Injury or Stroke units at Cardinal Hill Hospital. Student will attend OT and PT Clinics with assigned patients; a brief discussion paper will be required on an assigned topic.</td>
</tr>
<tr>
<td>RMB 835</td>
<td>THIRD-YEAR ELECTIVE, REHABILITATION MEDICINE.</td>
<td>(1-6)</td>
<td>The student with specific interests in brain injury, stroke or spinal cord injury will be assigned to follow appropriate patients selected from the Rehabilitation Medicine service at Cardinal Hill Hospital. Student will interview, examine and study those cases in-depth to gain an expanded understanding of the selected area. Brief presentation at the end of the rotation.</td>
</tr>
<tr>
<td>RMB 850</td>
<td>ACTING INTERNSHIP IN REHABILITATION MEDICINE.</td>
<td>(1-6)</td>
<td>Acting internship in Rehabilitation Medicine. May be repeated to a maximum of eight credits. Prereq: Medicine and/or surgery clerkship.</td>
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### RC Rehabilitation Counseling

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<tr>
<td>RC 510</td>
<td>ORIENTATION TO REHABILITATION RESOURCES.</td>
<td>(3)</td>
<td>A study of the breadth of agencies involved in the rehabilitation process: medical, educational, vocational, institutional, and community services for handicapped adults. Relationships among agencies, staffing patterns, funding resources, and gaps and overlaps in services. Two hours lecture per week; two hours laboratory per week. Prereq: Twelve hours of social or behavioral sciences, or graduate standing, or consent of instructor.</td>
</tr>
<tr>
<td>RC 512</td>
<td>MEDICAL KNOWLEDGE FOR THE SOCIAL PROFESSIONS.</td>
<td></td>
<td>This course is designed to prepare rehabilitation counselors and social workers to become interpreters of medical information concerning major disabilities and to provide an understanding of the psychosocial factors encountered by the disabled. Focus will be on how these factors affect adjustment to a disability, and on professional practice with the disabled. Topics include concepts of medical and psychosocial aspects of disability which relate to conditions that impair bodily systems and/or structures due to illness or accident that result in permanent and/or chronic functional limitations. Prereq: College level courses in biology and psychology or consent of instructor. (Same as SW 515.)</td>
</tr>
<tr>
<td>RC 515</td>
<td>MEDICAL AND PSYCHOSOCIAL ASPECTS OF DISABILITIES I.</td>
<td>(3)</td>
<td>This course is designed to prepare rehabilitation counselors and social workers to become interpreters of medical information concerning major disabilities and to provide an understanding of the psychosocial factors encountered by the disabled. Focus will be on how these factors affect adjustment to a disability, and on professional practice with the disabled. Topics include concepts of medical and psychosocial aspects of disability which relate to conditions that impair bodily systems and/or structures due to illness or accident that result in permanent and/or chronic functional limitations. Prereq: College level courses in biology and psychology or consent of instructor. (Same as SW 515.)</td>
</tr>
<tr>
<td>RC 516</td>
<td>MEDICAL AND PSYCHOSOCIAL ASPECTS OF DISABILITIES II.</td>
<td>(3)</td>
<td>This course is designed to prepare rehabilitation counselors and social workers to become interpreters of medical information concerning major disabilities and to provide an understanding of the psychosocial factors encountered by the disabled. Focus will be on how these factors affect adjustment to a disability, and on professional practice with the disabled. Topics include concepts of medical and psychosocial aspects of disability which relate to conditions that impair bodily systems and/or structures due to illness or accident that result in permanent and/or chronic functional limitations. Prereq: College level courses in biology and psychology or consent of instructor. (Same as SW 516.)</td>
</tr>
<tr>
<td>RC 520</td>
<td>PRINCIPLES OF REHABILITATION COUNSELING.</td>
<td>(3)</td>
<td>A comprehensive introduction to rehabilitation as a human service system in modern America. Philosophical, historical, legislative, and organizational structures; rehabilitation programs and related specialties; referral and delivery systems; the rehabilitation process; and professional issues and ethics. Prereq: Twelve hours of social or behavioral science, or graduate standing, or consent of instructor.</td>
</tr>
<tr>
<td>RC 530</td>
<td>PSYCHO-SOCIAL IMPACT OF DISABILITY.</td>
<td></td>
<td>This course is designed to prepare rehabilitation counselors and social workers to become interpreters of medical information concerning major disabilities and to provide an understanding of the psychosocial factors encountered by the disabled. Focus will be on how these factors affect adjustment to a disability, and on professional practice with the disabled. Topics include concepts of medical and psychosocial aspects of disability which relate to conditions that impair bodily systems and/or structures due to illness or accident that result in permanent and/or chronic functional limitations. Prereq: College level courses in biology and psychology or consent of instructor. (Same as SW 515.)</td>
</tr>
</tbody>
</table>
RC 550 SPECIAL TOPICS IN REHABILITATION. (1-3)
Study of a selected topic within the field of rehabilitation. Topic to be chosen annually in accordance with student needs and interests. May be repeated to a maximum of six credits.

RC 610 CASE MANAGEMENT IN REHABILITATION COUNSELING. (3)
Development of rehabilitation counseling skills and techniques. Understanding of behavior, and implementation of appropriate intervention strategies for facilitating persons with disabilities through the rehabilitation process. Case management techniques, ethics, consultation strategies, and specialized counseling skills development. Prereq: EDP 652 and RC 520 or consent of instructor.

RC 620 VOCATIONAL EVALUATION AND WORK ADJUSTMENT FOR THE SEVERELY DISABLED. (3)
Methods and techniques used in determining and enhancing the vocational potential of persons with disabilities. Commercial evaluation systems, work adjustment techniques, personal adjustment training, the role of evaluation in rehabilitation. Laboratory experience will include administration and interpretation of vocational tests. Lecture: two hours; laboratory: two hours per week. Prereq: A vocational theories course and RC 520 or consent of instructor.

RC 630 PLACEMENT SERVICES AND TECHNIQUES IN REHABILITATION COUNSELING. (3)
Development of skills for placement of persons with disabilities into a variety of settings—competitive employment, supported employment, independent living, philosophy of placement, preplacement analysis, client readiness techniques, job development, job engineering, employer attitudes, business rehabilitation, and social security disability. Occupation information and its use in the placement process. Labor market analysis and procedures for analyzing client residual and transferable work skills. Procedures for employability skills development. Prereq: A theoretical courses theory, RC 520 and 620 or consent of instructor.

RC 640 REHABILITATION IN BUSINESS AND INDUSTRY. (3)
This course is designed to provide students with a comprehensive knowledge of rehabilitation in business environments. Skills to develop a professional working relationship between the rehabilitation professional, employers, the insurance industry, and other professionals will be taught. A thorough overview of worker compensation related legislation, and other insurance will be presented. The roles and functions of the rehabilitation professional in business rehabilitation counseling will be discussed. Prereq: Twelve hours of study in rehabilitation counseling or consent of instructor.

RC 710 PRACTICUM IN REHABILITATION COUNSELING. (3)
Learning experiences under faculty supervision in a community-based or state rehabilitation agency. Application of rehabilitation counseling methods, techniques, and vocational knowledge in working with persons with disabilities. Lecture, two hours; laboratory, 14 hours per week. May be repeated to a maximum of six credits with consent of instructor. Prereq: A minimum of 12 graduate hours in rehabilitation counseling and consent of instructor.

RC 720 INTERNSHIP IN REHABILITATION COUNSELING. (3,6,9)
Advanced learning experiences in a rehabilitation setting or agency. Lecture, two hours; laboratory, 14,28 or 42 hours per week. May be repeated for a maximum of nine credits. Prereq: A minimum of successful completion of one year in the Rehabilitation Counseling Program and RC 710 and consent of instructor.

RC 740 ADMINISTRATION, SUPERVISION AND PROGRAM EVALUATION IN REHABILITATION COUNSELING. (2-3)
Administrative and supervisory aspects of rehabilitation service delivery. Administration, clinical and technical supervision, staffing, and organizational structure(s) of the rehabilitation service delivery system (state, local, and federal). Research, program evaluation, political and ethical aspects of rehabilitation administration and supervision are overviewed. Prereq: A minimum of 12 graduate hours in rehabilitation counseling or consent of instructor.

RC 750 REHABILITATION RESEARCH. (1-3)
Application of basic research principles to the field of rehabilitation. Specific focus on client characteristics, constructs of disability, rehabilitation outcomes, counselor-client variables, and rehabilitation service components. Rehabilitation research and utilization projects, research funding and related grant mechanisms. Prereq: A basic research course and RC 520 or consent of instructor.

RC 760 CONTEMPORARY PRACTICES IN REHABILITATION. (1-3)
Contemporary practices including supported employment, independent living, engineering and technology, family matters, client rights, ethical practices, cultural diversity, aging, and present and future trends in the field of rehabilitation. Analysis of legislation, value systems, political and economic fluctuations and research. Prereq: A minimum of 12 graduate hours in rehabilitation counseling or consent of instructor.

RC 782 DIRECTED INDEPENDENT STUDY. (1-3)
Study of an individually selected topic relevant to a student’s academic development. May be repeated to a maximum of six credits. Prereq: Consent of instructor.

RM Radiation Medicine

RM 472G INTERACTION OF RADIATION WITH MATTER. (3)
Basic aspects of the interaction of ionizing radiation with matter. Bohr atom, atomic spectra, radioactivity, energetics of decay. Sources of ionization, penetration of charged particles, electromagnetic radiation, and neutrons through matter; excitation and ionization processes; reduced nuclear reactions; basic radiation detection and dosimetry. Prereq: PHY 213 or 232, MA 114 (may be taken concurrently); or equivalent. (Same as PHY 472G.)

RM 540 FUNDAMENTALS OF RADIATION BIOLOGY. (2)
Fundamental aspects of radiation biology. Radiation effects on macromolecules, cells, tissues, organs, and organisms. Prereq: One year of biological sciences, one year of chemistry, one year of physics, and MA 113, or equivalent. (Same as BIO/RAS 540.)

RM 541 RADIOISOTOPE METHODOLOGY. (2)
Radioisotope techniques and their application in the biological and medical sciences. Radiation safety, calibration and use of radiation detectors, counting statistics, uptake and assay methods, and applications. Laboratory, five hours per week. Prereq: One year biology, CHE 115, PHY 213, and MA 113, or equivalent. (Same as BIO/RAS 541.)

RM 545 RADIATION HAZARDS AND PROTECTION. (3)
An analysis of common radiation hazards encountered in medicine, research, industry, and the environment. Regulations and procedures for the safe use of ionizing and nonionizing radiations. Lecture, two hours; laboratory, two and one-half hours. Prereq: PHY/RM 472G or consent of instructor. (Same as PHY/RAS 545.)

RM 546 GENERAL MEDICAL RADIOLOGICAL PHYSICS. (3)
The uses and dosimetric aspects of radiation in medicine will be analyzed, including many basic applications in the fields of diagnostic radiology physics, therapy physics, and nuclear medical physics. Prereq or concur: RM/PHY 472G or consent of instructor. (Same as PHY/RAS 546.)

RM 601 ADVANCED RADIATION DOSSIMETRY. (2)

RM 647 PHYSICS OF DIAGNOSTIC IMAGING I. (3)
Specialized and advanced topics in diagnostic imaging, including modulation transfer function analysis, image processing algorithms, acceptance testing, CT, NMR, ultrasound, etc. Prereq: PHY/RM/RAS 546 or consent of instructor. (Same as RAS 647.)

RM 648 PHYSICS OF DIAGNOSTIC IMAGING II. (3)
A continuation of RAS/RM 647. Specialized and advanced topics in nuclear medicine imaging physics, including positron emission tomographic procedures, emerging new modalities, and quality control. Prereq: RM/RAS 647 or consent of instructor. (Same as RAS 648.)

RM 649 PHYSICS OF RADIATION THERAPY. (3)
Specialized external beam and brachytherapy treatment planning; advanced Bragg-Gray cavity applications, including Angar and TG-21; calibration, acceptance testing, and quality control of therapy physics equipment. Prereq: RAS/RM/PHY 546 and RAS/ RM 601, or consent of instructor. (Same as RAS 649.)

RM 652 ADVANCED LABORATORY IN NUCLEAR MEDICAL PHYSICS. (1-3)
Specialized experiments involving the use, calibration, and quality control of nuclear medicine imaging equipment, including both traditional and emerging modalities. Laboratory, approximately 30 hours per credit. May be repeated to a maximum of three credits. Prereq: RAS/RM 648, or equivalent, plus graduate standing in the radiation science program, or consent of instructor. (Same as RAS 652.)

RM 660 GRADUATE PRACTICUM IN RADIATION MEDICINE. (1-6)
Applied field work at the graduate level in the sciences relating to radiation medicine. May be repeated to a maximum of six credits. Prereq: Graduate standing in the biomedicine or medical sciences, plus consent of instructor.
RM 695 RESEARCH IN THE HEALTH-RELATED RADIATION SCIENCES. (1-4)
Independent directed research on theoretical and practical problems in the health-related radiation sciences. May be repeated to a maximum of eight credits. Prereq: Graduate standing in one of the radiation-related sciences, plus consent of instructor. (Same as RAS 695.)

RM 740 MAMMALIAN RADIATION BIOLOGY. (2)
The physical and biological sequelae of radiation effects will be discussed emphasizing human and mammalian responses and radiation health. Emphasis will be for health and medical workers. Prereq: Consent of instructor; BIO/RM 540 or RM 546 or equivalent background. (Same as BIO 740.)

RM 815 FIRST-YEAR ELECTIVE, RADIATION MEDICINE. (1-3)
With the advice and approval of his or her faculty adviser, the first-year student may choose approved electives offered by the Department of Radiation Medicine. The intent is to provide the student an opportunity for exploration and study in an area which supplements and/or complements required course work in the first-year curriculum. Pass-fail only. Prereq: Admission to first year, College of Medicine.

RM 821 BASIC RADIATION MEDICINE. (1)
This course is designed for recognition of various forms of malignancy; use of radiation in treatment of malignant diseases; use of radioactive isotopes in diagnosis and treatment in medicine. Prereq: Admission to the second year, College of Medicine.

RM 825 SECOND-YEAR ELECTIVE, RADIATION MEDICINE. (1-4)
With the advice and approval of his or her faculty adviser, the second-year student may choose approved electives offered by the Department of Radiation Medicine. The intent is to provide the student an opportunity for exploration and study in an area which supplements and/or complements required course work in the second-year curriculum. Pass-fail only. Prereq: Admission to second-year medical curriculum and approval of adviser.

RM 835 THIRD-YEAR ELECTIVE, RADIATION MEDICINE. (1-6)
Elective offerings in basic medical sciences and clinical medicine; will vary in length from 25 to 150 hours and will carry one to six hours credit. Electives will be chosen with the advice and approval of faculty adviser. Prereq: Admission to the third year, College of Medicine.

RM 842 RADIATION ONCOLOGY. (1)
Use of radiation therapy in clinical treatment of malignancy. Staging, histology, spread, treatment techniques, acute and late effects of radiation therapy. Prereq: RM 740 and an introductory anatomy course, or equivalent, and consent of instructor.

RM 848 PRACTICUM IN BRACHYTHERAPY PHYSICS. (1-3)
This course offers practicum training in the clinical use of therapy physics and health physics in brachotherapy. May be repeated to a maximum of three credits. Laboratory: 40 hours per week. Prereq: RM/HRS 649, or equivalent, and consent of instructional staff.

RM 849 PRACTICUM IN EXTERNAL BEAM THERAPY PHYSICS. (1-6)
This course offers practicum training in the professional use of therapy physics in external beam radiation therapy. May be repeated to a maximum of six credits. Laboratory: 40 hours per week. Prereq: RM/HRS 649, or equivalent, and consent of instructor.

RM 850-899 FOURTH-YEAR ELECTIVE FOR MEDICAL STUDENTS. (1-6)
With the advice and approval of the faculty adviser and the Student Progress and Promotions Committee, the fourth-year student may choose approved electives offered by the various departments in the College of Medicine. The intent is to provide the student an opportunity to develop his fund of knowledge and clinical competence. Prereq: Admission to the fourth year, College of Medicine and/or permission of the Student Progress and Promotions Committee.

Approved electives:
RM 850 RADIATION ONCOLOGY  
RM 852 RESEARCH IN RADIATION MEDICINE

RS Religious Studies

RS 130 INTRODUCTION TO COMPARATIVE RELIGION. (3)
Comparative study of major world and selected regional religions with emphasis on analysis of belief, ritual, artistic expression and social organization. Eastern and Western religions are considered. (Same as ANT 130.)

†RS 351 TOPICS IN RELIGIOUS STUDIES: HISTORICAL AND LITERARY (Subtitle required).

†RS 352 TOPICS IN RELIGIOUS STUDIES: COMPARATIVE AND SYSTEMATIC (Subtitle required).

†RS 395 INDEPENDENT WORK.

RSD Restorative Dentistry

RSD 812 PRINCIPLES OF OCCLUSION AND TOOTH MORPHOLOGY. (6)
This course includes a detailed study of the teeth, individually and collectively. The significance of tooth form and function is emphasized as is the relationship of this knowledge to preventive clinical dentistry. Those principles of occlusion and mandibular physiology which are common to all disciplines of clinical dentistry are coordinated to provide the student with a basic understanding of the fundamentals involved. Lecture, 24 hours; laboratory, 118 hours; self-instruction, 25 hours. Prereq: Admission to College of Dentistry or consent of course director.

RSD 814 PRECLINICAL RESTORATIVE DENTISTRY I. (5)
This course is a preclinical introduction to the etiology, pathology, prevention and treatment of dental caries. Fundamentals of dental hard-tissue surgery and the restoration of these tissues with silver amalgam, intermediate restorative materials, composite restorative material, and acrylic resin are presented. The materials science and correct manipulation of these materials are emphasized. Procedures are done on manikins and extracted teeth in a laboratory setting. Lecture, 37 hours; laboratory, 91 hours. Prereq: Admission to the College of Dentistry or consent of course director.

RSD 821 CLINICAL RESTORATIVE DENTISTRY I. (3)
This course emphasizes clinical application of the principles taught in preclinical courses. Concepts of diagnostic and therapeutic procedures as well as preventive measures are applied in the clinic with emphasis on the demonstration of competency in rendering primary care type treatment procedures. Prereq: RSD 814; coreq: RSD 824.

RSD 822 DIAGNOSIS AND TREATMENT OF TEMPOROMANDIBULAR DISORDERS. (3)
This course is directed toward the examination, diagnosis, treatment planning and treatment of functional disturbances of the masticatory system. Primary emphasis will be placed on acute muscle disorders and disc-interference disorders. The course emphasizes both theory and practice and includes clinical experience in the examination and treatment of functional disturbances in the masticatory system. The student will gain experience in using articulators, fabrication of occlusal splints and preclinical experiences in selective grinding. Lecture, 31 hours; clinic, 29 hours; laboratory, 27 hours. Prereq: BDS 811, RSD 812.

RSD 824 PRECLINICAL RESTORATIVE DENTISTRY II. (6)
This course is a preclinical continuation of RSD 814, placing emphasis on dental hard tissue surgery for extensively damaged teeth and on their restoration to meet the biological needs of the patient. Tooth preparation and restoration using dental casting alloys are performed on manikins and extracted teeth. The materials science and correct manipulation of investments, alloys and cements used to make cast restorations are emphasized. Knowledge gained in dental morphology and occlusion is applied in this course. Lecture, 42 hours; laboratory, 114 hours. Prereq: RSD 814 or consent of course director.

RSD 830 PRINCIPLES OF FIXED PROSTHODONTICS. (2)
This course is a lecture series concerning diagnosis and treatment planning for fixed prosthodontics care and the principles of providing that care. The relationship of tooth restoration and replacement to occlusion, periodontics, orthodontics and removable prosthodontics in both treatment planning and treatment is emphasized. Lecture, 33 hours; self-instruction, 11 hours. Prereq: RSD 821 and RSD 824.
RSD 831 CLINICAL RESTORATIVE DENTISTRY II.  
A continuation of RSD 821 as well as some clinical application of principles taught in RSD 824. The emphasis continues to be on the delivery of primary care type treatment with increasing competency and proficiency. Some emphasis is directed toward elementary experiences in rehabilitative type treatment procedures and occlusal dysfunctions. Clinic, 120 hours. Prereq: RSD 821 and RSD 824; coreq: RSD 830 and RSD 834.

RSD 832 DENTAL BIOMATERIALS.  
In this course, the materials science, proper manipulation and biocompatibility of a wide variety of dental biomaterials are examined. The durability and biocompatibility of similarly utilized materials are compared. Diagnosis of the causes of clinical materials-related failures is emphasized. Lecture, 40 hours. Prereq: PRO 820 and RSD 824 or consent of course director.

RSD 834 PRECLINICAL RESTORATIVE DENTISTRY III.  
This is a preclinical course with emphasis on dental hard tissue surgery and restorative procedures for anterior and posterior fixed prosthodontics. A preventive orientation is stressed as theory is applied in practice using manikins. Knowledge gained in RSD 822 and RSD 824 is applied to more extensive restorations. Lecture, 10 hours; laboratory, 78 hours. Prereq: RSD 821 and RSD 824.

RSD 840 RESTORATIVE DENTISTRY UPDATE.  
Students are provided current information on advanced restorative dentistry clinical procedures and materials. Emphasis will be given to diagnosis, treatment planning and treatment of the complex restorative dentistry patient. The format of the course will be “clinical case presentation.” Prereq: RSD 830 and RSD 834.

RSD 841 CLINICAL RESTORATIVE DENTISTRY III.  
As the final phase in the undergraduate clinical continuum, this course continues to emphasize primary care concepts and proficiency. In addition, more complicated rehabilitative type care and occlusal dysfunction problems are encountered by the student under faculty supervision. Clinic, 145 hours. Prereq: RSD 830, RSD 831 and RSD 834.

RSD 850 RESTORATIVE DENTISTRY ELECTIVE.  
Elective courses offered by the Department of Restorative Dentistry provide opportunities for further study of or experience in various aspects of restorative dentistry. Topics may include occlusion in oral reconstruction, philosophies of occlusion, complex restorative dentistry, dental ceramics and esthetics, and dental physical sciences. Hours variable, ranging from a minimum of 16 hours lecture/discussion to a maximum of 10 weeks clinical experience. May be repeated to a maximum of 10 credits. Prereq: The minimum year in dental school and any course prerequisites will be announced for each topic.