

# REHABILITATION SCIENCES (RS)

## **RS 370 Introduction to Rehabilitation Sciences**

4 Class Hours, 4 Quarter Credit Hours

Students will be introduced to the field of rehabilitation science including the disciplines of occupational science, assistive technology and physical rehabilitation, and the role of rehabilitation science specialties such as engineering, occupational therapy, physical therapy, speech pathology and vocational counseling. Students will investigate laws and policies that affect the field of rehabilitation as well as social and ethical issues.

## **RS 375 Introduction to Assistive Technology**

3 Class Hours, 2 Lab Hours, 4 Quarter Credit Hours

Introduction to the use of assistive technology within the healthcare field. This course explores the history, laws, assessments and the diversity of technology available to assist individuals with disabilities.

## **RS 380 Assessment Practices in Assistive Technology**

3 Class Hours, 2 Lab Hours, 4 Quarter Credit Hours

Prerequisites: RS 375 and RS 405 and RS 413 and RS 415

This course focuses on the components of assessing individuals for specific assistive technology needs using a team process approach. Equipment needs will be explored and determined and the placement of the equipment to gain the best access and purposeful use will be designed. Assessment using standardized and non-standardized tools will be explored.

## **RS 385 Health and Wellness**

4 Class Hours, 4 Quarter Credit Hours

This course will explore the knowledge, attitudes, and skills required to promote personal health and wellness. Students will be exposed to the topics of health-promotion, wellness, risk screening and behavior change. They will assess disease and injury risk-prevention programs and critique health and wellness programs for individuals with lifestyle-related health problems. Students will design a program to reduce the risk of disease, improve overall well-being, and implement a plan to achieve health goals.

## **RS 390 Functional Biomechanics**

3 Class Hours, 2 Lab Hours, 4 Quarter Credit Hours

Prerequisites: (BIO 310 or BIO 120 or BIO 121 or BIO 100 or BIO 101)

This course focuses on functional movement biomechanics and qualitative movement analysis of both simplistic and more complicated human movement patterns with an emphasis on optimizing technique and performance. It explores the various human systems to include the musculoskeletal and nervous systems and the different internal and external forces that act on them. Students will apply biomechanical principles to improve movement and functional performance of individuals with and without movement dysfunction.

## **RS 395 Clinical Reasoning in Rehabilitation**

4 Class Hours, 4 Quarter Credit Hours

This course is designed to provide an exploration of evidence-based health care including designing clinical questions, using search techniques, assessing evidence, applying research to practice. Students will be provided with a wide range of information relating to clinical reasoning. Students will engage in activities to foster critical thinking skills.

## **RS 405 Seating and Mobility**

3 Class Hours, 2 Lab Hours, 4 Quarter Credit Hours

Prerequisites: RS 390 and RS 375

Students will explore the advanced seating and wheeled mobility technology including recent advances in research and design. Emphasis will be placed on biomechanics of sitting, assessment of custom seating systems, pressure alleviation for prevention of pressure sores and assessment of manual and power wheelchair selection.

## **RS 410 Exercise Physiology II and Lab**

3 Class Hours, 2 Lab Hours, 4 Quarter Credit Hours

Prerequisites: RS 390 and RS 400 and (BIO 310 or BIO 100 and BIO 120)

RS 410 Exercise Physiology II and Lab 3 Class Hours 2 Lab Hours 4 Quarter Credit Hours Prerequisites: RS 390, RS 400, BIO 310 or (BIO 100 and BIO 120) Building on the knowledge gained in RS 400, Exercise Physiology I lecture and lab, this hybrid course will continue to focus on the foundations of exercise physiology to include the essentials of bioenergetics with a strong focus on the aerobic metabolic pathways. The various cardiovascular and pulmonary adaptations to aerobic exercise training will also be explored. The active lab portion of this class will look at various aerobic exercise testing measures to determine aerobic capacity, body composition, cardiovascular and pulmonary health. The class will explore various aerobic exercise program designs to maintain and improve cardiovascular health and human performance while decreasing the potential for disease in clients with and without disabilities. Finally, the class will explore special considerations for exercise prescription for females, pediatric and geriatric populations.

## **RS 411 Exercise Physiology and Laboratory**

2 Class Hours, 4 Lab Hours, 4 Quarter Credit Hours

This course will focus on the foundations of exercise physiology to include the essentials of bioenergetics, the anaerobic metabolic pathways and the aerobic metabolic pathways as they relate to human movement, health, wellness, sport and performance. The various neurological, musculoskeletal, cardiovascular and pulmonary adaptations to anaerobic and aerobic exercise training will also be explored. The active lab portion of this class will look at various exercise testing measures to include muscular strength, muscular power, muscular endurance, speed, agility, aerobic capacity and body composition. These assessment metrics help determine general health, physical fitness and prediction of sport performance with respect to human activity and athletic performance. Finally, the class will explore and implement various exercise program designs to maintain and improve both neuromuscular and cardiopulmonary health.

## **RS 413 Assistive Technology in the Classroom**

3 Class Hours, 2 Lab Hours, 4 Quarter Credit Hours

Prerequisites: RS 375

Students will be introduced to a variety of computers and computer software, as well as tablets and tablet applications available to augment education in the Pre-Kindergarten to Grade 12 classroom environments. This course will explore the legal and practical uses of technology within the educational setting for students of all abilities.

**RS 415 Environmental Accessibility**

3 Class Hours, 2 Lab Hours, 4 Quarter Credit Hours

Prerequisites: RS 375

This course will introduce students to the concepts of universal design and environmental accessibility, including accessibility in the college setting, home, employment setting and the community at large. Students will also learn about community resources to support accessibility and independent living and how accessible living and workspaces are developed for those with disabilities. Content will include exploration of the use of low tech and high-tech devices and will include cost analysis and potential funding options.

**RS 450 Capstone in Assistive Technology**

4 Class Hours, 4 Quarter Credit Hours

Prerequisites: RS 375 and RS 380 and RS 405 and RS 413 and RS 415

This course provides students with the opportunity to complete a capstone project in an area of interest as it relates to their coursework in the field of assistive technology. Through a combined partnership with faculty, students will select a project of their choice and complete the project with faculty as advisors. Students will present the capstone project in a senior colloquium. This final course of the Rehabilitation Science curriculum will allow students to expand their knowledge of their role in a healthcare, education, or service delivery team as a professional dedicated to enhancing the life of people with disabilities. Preparation for optimizing and highlighting their experience as an assistive technology specialist during the interview process will also be emphasized.