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|-----------|-----|---------------------------------------|-----------|
| AT | 644 | Clinical Education III | 1 |
| AT | 646 | Clinical Education IV | 3 |
| AT | 648 | Clinical Education V | 3 |
| | | | 13 |
| Thesis: | | | |
| AT | 695 | Thesis I | 2 |
| AT | 695 | Thesis II | 2 |
| | | | 4 |
| Elective: | | | |
| AT | 665 | CPR and First Aid Instructor Training | 1 |
| | | <i>Total Hours Required</i> | <i>66</i> |

CYBERSECURITY CERTIFICATE

Program Directors: Elmer Hoeksema and Arjen Jansen

The graduate certificate in cybersecurity is designed to take a student with a degree in a non-technical field and teach them the skill necessary to become a system/network administrator with an emphasis on cyber security. The certificate requires the completion of four 3 credit hour modules. The program can be taken in a hybrid format or fully online.

During each module students will work on a sequence of closed-ended individual problems to build competences and problem-solving skills and add proof of their approach and results to their portfolio. All assessment for the program consists of a series of oral exams per module, during which the student will defend their work and receive feedback and advise on their disposition. The faculty will support students in the form of coaching.

The program offers additional inclusion and diversity to students which are unable to travel to the University or work during the University hours (or are otherwise engaged). The students can work on their assignments at any location and at any time. Coaching and exam opportunities can be tailored to specific individual needs.

Students completing this program will be able to:

1. Administer IT Systems.
2. Apply security and forensic policies to IT Systems.
3. Apply and administer virtualization, distributed computing, kernel modules, databases, services, and libraries.
4. Apply “best practices” to establish and implement system/network policies and procedures.
5. Able to monitor system and network behavior and detect and diagnose anomalies related to security exploits.
6. Understand and comply with laws and ethical codes that are relevant to system/network administration.
7. Apply contemporary computer forensics tools to analyze and extract information from a computer system as part of a system incident response.
8. Assess risks and vulnerabilities to the system/network and develop contingency plans for security incident mitigation.
9. Detect defects in software that exposes the system to attack.
10. Develop administration related scripts, setup integrated development environments (IDEs), and administer configuration management systems.

Hours

Required Courses:

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|-----|-----|--|---|
| ITC | 610 | System Architecture and Administration | 3 |
| ITC | 620 | Distributed System Architecture and Administration | 3 |
| ITC | 630 | Cyber Security Fundamentals | 3 |
| ITC | 640 | Cyber Forensics Fundamentals | 3 |

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| | | <i>Total Hours Required</i> | <i>12</i> |
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COURSE DESCRIPTIONS

DESIGNATION OF COURSES

500 - 599 Courses are post-baccalaureate courses. They do not count for credit requirements for graduate level programs. They are also open to senior level students.

600 - 699 Courses with the 600-level designation are classes offered at the master's level.

700 - 799 Courses at the 700 level are for individuals seeking advanced (post-master's) professional opportunities or are doctoral level.

800 - 999 Courses at the 800 and 900 level are for doctoral credit.

IN COURSE DESCRIPTIONS

(Credit in semester hours is indicated by a number in parentheses.)

ATHLETIC TRAINING COURSES

AT 600 CARE AND PREVENTION IN ATHLETIC TRAINING (3) This course is designed to introduce students to the profession of athletic training and the similarities, differences, and relationship of athletic training to other healthcare professions. This course also provides students with the skills and knowledge needed to maximize the benefit of athletic training clinical education. Skills introduced in this course include, but are not limited to, taping, wrapping, splinting/spine boarding, protective padding fabrication, protective equipment fitting/removal, and modality application.

AT 610 EVIDENCE BASED PRACTICE (3) The course will provide students with an understanding of evidence based practice and the skills to search, read, and critically analyze literature relevant to athletic training. Broad topics in athletic training will be covered with an emphasis on position statements, systematic reviews, and meta-analyses as well as other pertinent original research.

AT 620 RESEARCH METHODS AND DESIGN (3) Students will become oriented with common methodological approaches utilized in athletic training research. Basic statistical concepts will be learned with appropriate computer software.

AT 625 ORTHOPEDIC EXAMINATION TECHNIQUES (4) *Prerequisite: AT 600 and DPT 710.* Students will learn appropriate orthopedic injury examination techniques for the lower extremity and lumbosacral spine. The anatomy of the lower extremities and lumbosacral spine will be reviewed, mechanisms of injury analyzed, advanced concepts in examination will be discussed, and skills necessary to accurately examine related orthopedic injuries will be practiced. Documentation in athletic training will be discussed and practiced. Evidence based practice with regard to examination techniques will be a focal point. Extensive time will be spent practicing skills in various laboratory activities.

AT 626 ORTHOPEDIC EXAMINATION TECHNIQUES II (4) Students will learn appropriate orthopedic injury examination techniques for the upper extremity, head, neck, and thorax/abdomen. The anatomy of the upper extremities, head, neck, and thorax/abdomen will be reviewed, mechanisms of injury analyzed, advanced concepts in examination will be discussed, and skills necessary to accurately examine related orthopedic injuries will be practiced. Documentation in athletic training will be discussed and practiced. Evidence based practice with regard to examination techniques will be a focal point. Extensive time will be spent practicing skills in various laboratory activities.

AT 630 GENERAL MEDICAL CONDITIONS AND PHARMACOLOGY (3) This course is designed to provide students with the knowledge and skills necessary to recognize and treat a variety of non-orthopedic injuries/illness, which may occur to the physically active. Students will learn basic recognition of these pathologies to ensure prompt and appropriate treatment and referral. In addition, basic pharmacological concepts will be introduced.

AT 640 CLINICAL EDUCATION I (3) *Prerequisite: AT 600 and DPT 710.* This course is designed to allow students to interact with certified athletic trainers (ATs) and other healthcare professionals. Students will complete assigned clinical hours of experience through one or more rotations. This experience will expose students to each professional's role in treating patients. Students will show proficiency in injury preven-