16 Aug 2019

Subj: SY201 COURSE SYLLABUS

1. Course Description. Students will develop introductory programming skills through the exploration of programming utilizing Python in a UNIX environment. Students will begin their journey to becoming professionals in the cyber domain. The activities in the course will be covered from a cyber operations perspective.

WARNING: As a student in this class, you will learn concepts and gain experience with tools that could be used unethically. DO NOT use knowledge or experience gained for unethical purposes. You MAY NOT use tools and techniques learned in this class to violate USNA policy, or any other government restrictions on information system use. You should never employ offensive cyber operations on any information system without the express written consent of the information system owner or legal authority. This activity may negatively impact future employment opportunities and result to criminal charges.

2. Student Outcomes. The knowledge and experience you gain through this course support you achieving the following Cyber Operations program Student Outcomes:

- Supported and Assessed:
  - (b) An ability to analyze a problem, and identify and define the computing requirements appropriate to its solution;
  - (e) An understanding of professional, ethical, legal, security, and social issues and responsibilities;
  - (h) Recognition of the need for and ability to engage in continuing professional development.
- Supported:
  - (c) An ability to design, implement and evaluate a computer-based system, process, component, or program to meet desired needs;
  - (f) An ability to communicate effectively with a range of audiences;
  - (i) An ability to use current techniques, skills, and tools necessary for computing practices.

3. Course Learning Outcomes. Through the course and the collective efforts of the students, students will be able to:

- Determine the basic programming concepts required to solve a problem through programming (supports Cyber Operations program Student Outcome (b));
- Design, develop, debug, and document programs in Python using structured programming techniques (supports Cyber Operations program Student Outcome (c));
- Perform normal user operations from the shell in a UNIX environment (supports Cyber Operations program Student Outcome (i));
- Display basic technical communication capabilities (supports Cyber Operations program Student Outcome (f));
- Describe the importance of and common mechanisms for continuing professional development (supports Cyber Operations program Student Outcome (h)).

Encl (2)

4. Course Themes. Across the course content the following themes are used to tie topics together:

- Viewing the programmer as part of the security solution.
- Developing test cases to evaluate programs.
- Designing and developing and managing security for programs that are modular in design.
- Developing programs consistent with the UNIX philosophy.