



**CpS 481**  
**Applied Cyber-Security**  
*Spring/2020*

Instructor:	Jim Yuill, Ph.D.
Office:	AL 76
Office Hours:	MWF 8:30-9:30 am TuTh 1:30-2:30 Other by appointment
Email:	<a href="mailto:juill@bju.edu">juill@bju.edu</a>
Telephone:	864-242-5100 x2270
Communication Policy:	The best way to contact me is by e-mail since I may answer that in the evenings. Feel free to stop by the office at other times for some help.
Classroom:	AL 76
Meeting:	Th 8:30-9:30, other TBD
Credit/Load:	3/3
Textbook – Spring 2020	<i>The Basics of Hacking and Pen Testing</i> , 2nd Edition, P. Engebretson

**Catalog Description:**

Requires the application of accumulated security knowledge to apply best practices in a variety of contexts. Course projects, including documentation, are intended to help the student transition from the classroom to the workplace.

**Course Overview:**

This course allows one or more students to study a cybersecurity topic with oversight by a CpS faculty member, but primarily in a non-classroom environment.

**Course Context:**

The faculty of the Computer Science department has aligned the computer science program with the goals of the Mathematical Sciences Division, BJU's Bible and liberal arts core objectives, and BJU's institutional goals. The goal of the Computer Science department is to align all courses in the Computer Science and Information Technology majors to support the following departmental goals:

- Design and implement solutions to practical problems
- Demonstrate an ability to communicate technological information effectively both in written and oral forms
- Demonstrate an ability to acquire new knowledge in the computing discipline

**Course Goals:**

In the context of the chosen topic, the student(s) will meet the three departmental goals listed above.

**Course Objectives:**

Upon successful completion of this course the student will (in the context of the chosen topic):

- Gain knowledge and skills in an applied cybersecurity topic
- Present the technological information effectively both in written and oral forms, and
- Demonstrate acquisition of the knowledge and skills

## Course Requirements:

- The requirements for the course will be established by the faculty member at the beginning of the semester.
- Grades will be computed as follows:
  - Timeliness: 15% (across all posted deadlines)
  - Evaluation: 85% (of required deliverables)

## Copyright Policy:

Copyright-2020 (Yuill) as to this syllabus and all lectures. Students are prohibited from selling (or being paid for taking notes during the course to, or by any person, or commercial firm, without the express written permission of the professor teaching the course.

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## Penetration-Testing, Spring 2020:

**Overview:** For the Spring 2020 semester, CpS 481 focuses on penetration testing. The course introduces students to the methods and techniques used by computer hackers and penetration testers. The course's goal is to provide the student with understanding and skill in offensive cyber-security, through hands-on assignments, for the purpose of defending against cyber attacks.

**Textbook:** *The Basics of Hacking and Pen Testing*, 2nd Edition, P. Engebretson

### Objectives:

- Understand the ethical issues and Biblical principles related to penetration testing
- Understand the basic techniques for gaining unauthorized access into an IT system
- Gain hands-on skill in penetration-testing processes, techniques, and tools
- Be able to assess IT systems for potential vulnerabilities.

### Topics covered:

- Reconnaissance, Scanning, Exploitation, Maintaining Access, Social Engineering
- Recording penetration-testing data, and reporting results

### Assignments:

- Assignments will be given weekly, with specific deliverables
- Students are expected to keep records of time worked, and penetration-testing activities