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Office hours: WED 10:45-12:00 and 4:45-6:00; FRI 10:45-1:15a (and by appointment)

## **CNT 4104 Software Project in Computer Networks (CRN 80533)**

**Holmes Hall 402, Friday 9:30-10:45am  
(plus additional online part)  
Software Engineering Program  
Whitaker College of Engineering**

### **Fall 2014 Course Syllabus (tentative)**

<http://itech.fgcu.edu/faculty/zalewski/CNT4104/CNT4104.html>

#### **I. Catalog Description**

The course covers fundamental concepts and modern technologies in network software development at the application and TCP/IP level, as well as essential knowledge of the architectures, models and performance evaluation of computer communication software. Team project is a major part of this course.

#### **II. Course Objectives and Learning Outcomes**

In this edition, the course focuses on the overview of modern technologies in network software development. The course will also provide software engineering students with fundamental knowledge of security issues and technologies, their models and respective protocols. An essential part of this class will be devoted to team and individual software projects. Specifically, the student will acquire:

- understanding of the network architecture and configurations
- understanding of fundamental network protocols and their hierarchy
- understanding of selected problems and solutions in network security
- the ability to develop software for basic networking functions
- the ability to evaluate and use Internet technologies
- the ability to use basic networking tools
- the ability to think independently and apply professional knowledge.

#### **III. Prerequisites**

COP 3530 for level UG with min. grade of C and CEN 3073 for level UG with min. grade of C. Please contact the Instructor in the first class, if you don't have any of these prerequisites.

#### IV. Textbook

There is no required textbook for this class. All class readings will be done via the Internet or Canvas (occasionally, handouts can be distributed in class or via the Reserve in the library). Recommended textbooks:

D.E. Comer, [\*Computer Networks and Internets\*](#), 6th Edition, [Pearson Higher Education](#), 2015, ISBN-13: 978-0-13-358793-7

J. Kurose, K. Ross, [\*Computer Networking: A Top-Down Approach\*](#), 6th Edition, [Pearson Higher Education](#), 2014, ISBN-13: 978-0-13-285620-1

#### V. Course Outline (Weeks and Topics) -- Subject to Change

Week	Topic
1.	Overview of the Subject: OSI Reference Model. Origins of the World Wide Web and Elements of Web Design
2.	Common Gateway Interface (CGI) and Perl Technologies
3.	Personal Home Page Tool (PHP), JavaScript
4.	ASP.NET <u>Initial Project Presentations</u>
5.	Network Security Basics.
6.	Client/Server Applications and Socket Interface
7.	Java Network Programming Overview
8.	Remote Procedure Calls (RPC)
9.	Java DataBase Connectivity (JDBC)
10.	Radio Frequency Identification (RFID)
11.	Computer Networks in Industrial Control (SCADA)
12.	Wireless Sensor Networks
13.	Transport and Network Layers: TCP/IP Protocol
14.	Data Link and Physical Layers: Ethernet <u>Final Project Presentations (I)</u>
15.	Thanksgiving Holiday
16.	<u>Final Project Presentations (II)</u>
17.	Exam Time. <u>Final Project Presentations (III)</u>

#### VI. Assessment and Administrative Issues

**Project and Assignments.** A Software Project (or projects) will be an essential part of this class. Assessment will be based on 3 phases: Draft submission (40 pts), Final submission (40 pts), and Presentation with Demo (40 pts) -- in the last three weeks, with partial presentations throughout the

semester, depending on project pace and reporting needs. Detailed topics and schedule will be discussed separately in class, based on discussions and [previous projects](#) available from the class website. Programming and other homework assignments will be given throughout the semester focusing on concepts discussed in class. Quizzes and a Review Test (dates TBD) will also be administered in class or via Canvas.

### **Grading Policy.**

- |   |             |
|---|-------------|
| 1. Programming and Homework Assignments | max 40 pts  |
| 2. Quizzes and Review Test (dates TBD)  | max 40 pts  |
| 3. Software Projects                    | max 120 pts |

A: 90-100%; B: 80-89.9%; C: 70-79.9%; D: 60-69.9%; F: < 60%  
(plus/minus grades at the discretion of Instructor)

**Attendance.** Class attendance is mandatory. Three absences are grounds for decreasing the grade by one full level (an absence is defined as missing more than 30 minutes of a class period). The student is responsible for all assignments on a weekly basis. No make-up will be given for missed deadlines, quizzes, tests or assignments, unless a case is made in advance with Instructor's approval.

*Note.* No food, drinks, cell (or equivalent) phones are allowed in classroom, labs or Instructor's office.

**Use of the CANVAS System.** Since this course is partially web-based, some aspects, such as discussions, may require the use of web-based learning management system CANVAS. CANVAS tutorials can be accessed at the following link: <http://guides.instructure.com/>

### **Ethics, Disabilities Act and Observance of Religious Holidays.**

The Instructor follows general university policies as spelled out, respectively in:

- Academic Behavior Standards & Academic Dishonesty Policy in the Student Guidebook (sections on "Student Code of Conduct" and "Policies and Procedures")  
See: <http://studentservices.fgcu.edu/JudicialAffairs/>
- Americans with Disabilities Act of 1990 -- services provided by Office of Adaptive Services  
See: <http://studentservices.fgcu.edu/adaptive/>
- Policy 4.005 Student Observance of Religious Holidays  
See: <http://www.fgcu.edu/generalcounsel/policies-view.asp>

**Disclaimer.** This syllabus has been prepared to the best of the Instructor's knowledge, but the right is reserved to modify or adjust it slightly depending on circumstances beyond Instructor's control.