



Integrated Science & Technology 457
Network Penetration and Attack
Course Syllabus

Spring 2014

MWF 10:00 – 10:50, W 12:00 – 12:50

Morrow Library 121

Instructor: Bill Gardner, Assistant Professor

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Office Hours: MWF 2:00 pm – 3:00 pm, and TTh 1:00 pm – 3:00 pm.

Course Description:

This four (4) credit hour. Students will explore tools and techniques used penetrate, exploit and infiltrate data from computers and networks.

Instruction Method:

There will be four (4) contact hours of classroom lecture and discussion per week. This will meet every Monday, Wednesday, and Friday from 10:00-10:50 AM and 12:00-12:50 pm in Morrow Library Classroom 121.

Coursework will include classroom lectures, a laboratory journal, and exams along with a variety of hands-on exercises. Evaluation of student's performance will be based on the quality of performance on projects and assignments and exams.

Lectures and course materials will be available from MUOnline as they become available.

Course Learning Objectives

Course Student Learning Outcomes	How students will practice each outcome in this Course	How student achievement of each outcome will be assessed in this Course
Demonstrate the use of common tools used in penetration testing.	In-class lecture and hands on laboratory exercises. Maintenance of laboratory journal.	Classroom Discussion, In-Class Laboratory Exercises, Laboratory Journal, Midterm Exam, and Final Exam
Explain what a penetration test is and how it is used to secure networks.	In-class lecture and hands on laboratory exercises. Maintenance of laboratory journal.	Classroom Discussion, In-Class Laboratory Exercises, Laboratory Journal, Midterm Exam, and Final Exam
Describe how vulnerabilities are found and how they can impact the financial bottom line of a typical organization	In-class lecture and hands on laboratory exercises. Maintenance of laboratory journal.	Classroom Discussion, In-Class Laboratory Exercises, Laboratory Journal, Midterm Exam, and Final Exam
Demonstrate the use of the Penetration Testing Execution	In-class lecture and hands on laboratory exercises.	Classroom Discussion, In-Class Laboratory Exercises, Laboratory Journal, Midterm

Standard in penetration testing.	Maintenance of laboratory journal.	Exam, and Final Exam
Recognize the difference between penetration testing and vulnerability assessment.	In-class lecture and hands on laboratory exercises.	Classroom Discussion, In-Class Laboratory Exercises,

Required Textbooks: Penetration Testing: A Hands-On Introduction to Hacking, First Edition by Georgia Weidman, No Starch Press (June 2014), ISBN: 1593275641

Topics and Methodologies:

The following outline delineates the tentative class schedule with topics to be addressed during the course.

Week	Lecture Topics
Week 1	Introduction and Virtual Machines
Week 2	Module 1- What is Penetration Testing
Week 3	Module 2- Recon
Week 4	Module 2- Recon
Week 5	Module 3-Scanning
Week 6	Module 4- Exploitation
Week 7	Module 4- Exploitation
Week 8	Midterm Exam , Module 4- Exploitation
Week 9	Module 5- Social Engineering
Week 10	Module 6- Web-Based Exploitation
Week 11	Module 7- Maintaining Access
Week 12	Module 8- Wrapping up the Penetration Test
Week 13	Module 9- Report Writing
Week 14	Module 10- Review and Lab Practice
Week 15	Final Exam Review

Finals Schedule - <http://muwww-new.marshall.edu/registrar/exam-schedules/>

Assignments:

Students are expected to keep up with all assignments and come to class **prepared** to discuss the material.

Exams:

There are two exams: the Midterm and the Final. They cover all the course material to that particular point.

Evaluation Method:

Course grades will be based on a total points system. Your grade will be based on a percentage of the total points possible.

Course Point Distribution

Midterm Exam	100 pts
Final Exam	100 pts
Laboratory Journal	100 pts

Total Points Possible: 300 points

Grading Policy:

Instructor reserves the right to adjust these values based on the overall class performance. Student materials and grades will be returned as soon as graded to the student and can be viewed via MUOnline

Example:

Total 378 points

378 divided by 400 = 0.945. In the example your grade would be 95%

Grading: Final letter grades will be based on the following scale:

90-100	A
80-89	B
70-79	C
60-69	D
0-59	F

In the above example your final grade would be 95, which would be a A.

Grading Policy:

Instructor reserves the right to adjust these values based on the overall class performance.

Attendance Policy:

Attendance is required, and attendance will be taken in every class. One (1) point will be deducted from the total grade at the end of the semester for each class the student misses. Students who are more than 15 minutes late will be counted as absent for the entire class. Students who leave before class is dismissed will be counted absent. Students who are found sleeping or using computers to play games, surf social media, or for other activities not related to class content will be asked to leave and will be counted as absent.

Make-up exams **will not** be given except under unusual circumstances and **satisfactory written justification**. Any student who misses a quiz/assignment due to an unexcused absence will receive a grade of zero with no opportunity for make-up or substitution. **Only University excused absences will be accepted**. Make up quizzes/assignments must be taken within **one week of the original scheduled date**. The decision to allow a make-up quiz or accept late work rests with the instructor.

Every student is responsible for all materials presented in class, including lectures, notes, and handouts. In case you are not present for a class, it is your responsibility to contact the instructor and receive information about the material presented in that class. **Class attendance is very important**.

Academic Dishonesty Policy:

Academic Dishonesty is defined as any act of a dishonorable nature which gives the student engaged in it an unfair advantage over others engaged in the same or similar course of study and which, if known to the classroom instructor in such course of study, would be prohibited. Academic Dishonesty will not be tolerated as these actions are fundamentally opposed to "assuring the integrity of the curriculum through the maintenance of rigorous standards and high expectations for student learning and performance" as described in Marshall University's Statement of Philosophy.

In this course, **STUDENTS ARE NOT TO "COPY & PASTE" MATERIAL FROM A SOURCE INTO ANY ASSIGNMENT UNLESS SPECIFICALLY AUTHORIZED BY THE INSTRUCTOR.**

If you are found cheating on projects or plagiarizing answers from the Internet or other sources (among other things), there will be no second chance. Your penalty is that you will receive a failing grade for the course. In those cases in which the offense is particularly flagrant or where there are other aggravating circumstances, additional, non-academic, sanctions may be pursued through the Office of Judicial Affairs. Notice of an act of academic dishonesty will be reported to the Department Chair, Dean of the College of Science, and to the Office of Academic Affairs. Please refer to the Marshall University Undergraduate Catalog for a full definition of academic dishonesty.

Your assignments may be analyzed using the anti-plagiarism suite of tools powered by Turnitin. Please visit <http://turnitin.com> for more information.

Class Grade Appeals:

Should you wish to appeal a grade, test question, etc, you **MUST** follow this procedure. You should send an email to me. The title of the email must read "GRADE APPEAL – Assignment Name" (i.e. Storage Quiz, Mid-Term, etc). The body of the email must include the question, question number, your answer, and why you think you deserve credit. For tests and quizzes in Blackboard, this should be done immediately after completion, before you leave class. You can copy and paste this information to make things simple. I will get back to you as soon as possible.

Electronic Submission Format:

File Names: All electronic submissions must follow this file naming convention: ist280_Last Name_First Initial_Assignment Name.doc Example: ist280_gardner_b_researchpaper.doc

Communications

Private E-mail will be used to make any general announcements, last minute changes, etc. It is **mandatory** that you monitor your email messages at least once a day. **PLEASE ONLY USE MY MARSHALL EMAIL ADDRESS FOR CORRESPONDENCE: gardner62@marshall.edu**. Messages left on Blackboard will result in a delayed response.

Please read and follow the guidelines outlined in the "How to Email Your Professor" blog post:
<http://mleddy.blogspot.com/2005/01/how-to-e-mail-professor.html>

All students are responsible for knowing the University Computing Services' Acceptable Use Policy available at <http://www.marshall.edu/ucs/CS/accptuse.asp>

Cell Phones in the Classroom:

Please set your cell phone ringer to "**Vibrate Only**" mode (or turn it off) before you enter the classroom.

Computer Use in the Classroom: Please **do not** use the computers in the classroom to surf social networks or other non-course related sites.

Professionalism:

In this course you will be treated as professionals and will be expected to behave and perform as such. **As professionals, you will be expected to attend class, be on time, complete all of your assignments, meet deadlines, ask questions when you don't understand, and participate. Your classroom language and demeanor should also be professional.**

Disclaimer

The instructor reserves that right to modify the course schedule and evaluation system should it become necessary for the effective conduct of the course.

Policy for Students with Disabilities

Marshall University is committed to equal opportunity in education for all students, including those with physical, learning and psychological disabilities. University policy states that it is the responsibility of students with disabilities to contact the Office of Disabled Student Services (DSS) in Prichard Hall 117, phone 304 696-2271 to provide documentation of their disability.

Following this, the DSS Coordinator will send a letter to each of the student's instructors outlining the academic accommodation he/she will need to ensure equality in classroom experiences, outside assignment, testing and grading. The instructor and student will meet to discuss how the accommodation(s) requested will be provided. For more information, please visit <http://www.marshall.edu/disabled> or contact Disabled Student Services Office at Prichard Hall 11, phone 304-696-2271.

University Policies:

By enrolling in this course, you agree to the University Policies listed below. Please read the full text of each policy by going to www.marshall.edu/academic-affairs and clicking on "Marshall University Policies." Or, you can access the policies directly by going to http://www.marshall.edu/academic-affairs/?page_id=802

Academic Dishonesty/ Excused Absence Policy for Undergraduates/ Computing Services Acceptable Use/ Inclement Weather/ Dead Week/ Students with Disabilities/ Academic Forgiveness/ Academic Probation and Suspension/ Academic Rights and Responsibilities of Students/ Affirmative Action/ Sexual Harassment

Acceptable Use Policy: http://muwww-new.marshall.edu/ucs/cs/acceptable_use.pdf

Dead Week

(SR-90-91-(95) 247 ASCR) The last five class days of the fall and spring semesters shall be designated as DEAD WEEK for undergraduate students. Examinations that are designated as 15% or more of the final course grade may not be given during this period. Major papers and/or projects defined as 15% or more of the final course grade may be assigned during this period only if stipulated in the official course syllabus which is

to be distributed at the beginning of the semester. Night classes, laboratories, freshmen English composition courses, and any classes meeting once a week shall be exempt from the requirements. New material and make-up examinations may be introduced or conducted during the DEAD WEEK. DEAD WEEK is not intended to be incorporated in the summer sessions of the University.

Get Involved:

There are tremendous opportunities to learn and network beyond your coursework. The student chapter of AIDE (Appalachian Institute of Digital Evidence), internships, networking with professionals, and research are just some of the possibilities. Opportunities for extra credit exist for students who get involved in learning activities including conference, student groups, etc. See me for details.

IST Software Store

The IST department maintains agreements with various software publishers to provide software for its computer labs as well as for its faculty, staff, and students. Students enrolled in IST department courses are eligible to receive a variety of software applications at no cost for use in their academic endeavors. This includes many of the same applications used in IST courses. You can find this information and more on the IST Web site at <http://www.marshall.edu/isat/software/>.

Accessing the Store

Students enrolled in this course will receive an email sent to their Marshall accounts containing information on accessing the store. Students will need to complete their account setup – which includes setting a password and agreeing to the included terms – in order to download the software. Once completed, students can use their individual accounts to “purchase” the applications. Purchasing an application will provide a license key and a link to download an installer.

Social Networking:

Follow me on: Facebook: <https://www.facebook.com/oncee> Twitter: @oncee LinkedIn: www.linkedin.com/in/304blogs/

Other Twitter accounts to follow:

Twitter:: @MUDigForensics and @AppyIDE

Other websites of interest:

Appalachian Institute of Digital Evidence - <http://www.appyide.org> Integrated Science and Technology - <http://www.marshall.edu/ISAT/>