

CYBERSECURITY 1
Project Lead The Way
Syllabus

Bob Jones High School
650 Hughes Road
Madison, AL 35758



Teacher: *Bill McIlwain*
Email: wemcilwain@madisoncity.k12.al.us
Phone: 256-772-2547

I. Course Description: This PLTW course provides students with a broad exposure to the many aspects of digital and information security, while encouraging socially responsible choices and ethical behavior. It inspires algorithmic and computational thinking, especially “outside-the-box” thinking. Students will also explore the many educational and career paths available to cybersecurity experts, as well as other careers that comprise the field of information security.

II. Course Objectives: The students will master informational technology fundamentals such as an understanding and application of personal cybersecurity, system security, network security, and applied cybersecurity. In addition, the course will help prepare the student to pursue the Security + certification exam.

III. Classroom Expectations:

Classroom Rules

Students will:

- Be respectful of the teacher, each other, and all classroom property.
- Participate in classroom discussion and group work.
- Use appropriate language at all times.
- Not bring food, drink, or gum into the classroom.
- Bring all materials to class.
- Be in class on time, seated, and dressed appropriately.
- Keep your chair at your computer unless you have permission to move.
- Pay attention during lectures and class discussions with monitors OFF.
- Do not get on the Internet until your work is complete.
- If you break a rule or conduct yourself in a manner that disrupts instruction or is disrespectful, you will be disciplined according to the severity of the crime. Action taken will include but not be limited to verbal warning, parent phone call, parent conference, and/or discipline referral.

*Other rules may be added if deemed appropriate.

Classroom Consequences

If classroom rules are violated, the following consequences will be administered:

1. Warning.
2. Refuel Detention.
3. Refuel Detention and parental contact.
4. If you continuously choose to not follow classroom rules, then an administrator will be contacted as well as a parent conference.

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Student accommodations:

Requests for accommodations for this course or any school event are welcomed from students and parents.

Student Laptop utilization:

- Student laptops should not be hard wired to the network or have print capabilities.
- Use of discs, flash drives, jump drives, or other USB devices will not be allowed on Madison City laptops.
- Neither the teacher, nor the school is responsible for broken, stolen, or lost laptops.
- Laptops and other electronic devices will be used at the individual discretion of the teacher.

IV. Grading Policy:

Test grades will account for 70% of the course grade, with the remaining 30% being determined by quiz/daily grades.

The grading scale is as follows: A (90-100), B (80-89), C (70-79), D (65-69), and F (below 65).

Grades will be a reflection of mastery of the standards. Make sure all absences are excused as class work can be made up and graded for excused absences only. The Final Exam counts for 1/5 of final grade.

V. Make-up Test Policy:

If you are absent, it is your responsibility to discuss the missed assignments and/or lecture with the teacher. All work missed on the day(s) of the excused absence(s) must be made up within three school days after returning to school. **It is also your responsibility to turn this work in to me by the third day.** If you do not turn in the work within **3 days** then it will become a zero. If you missed a test or quiz, we will need to schedule a day at either 7:30am or 3:30pm for you to take the make-up test. If you need additional laptop time to complete assignments or tutoring, please see me to arrange a time.

VI. Materials and Supplies Needed:

3 Ring Binder, Loose Leaf Paper, Pencil/Pen, brain.

Note taking is strongly encouraged!

*Other materials for Cybersecurity curriculum will be added on an as needed basis.

VII. Text and other Required reading:

TestOut.com online training; Security Pro

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| 18 – TENTATIVE WEEK PLAN* | |
|----------------------------------|--|
| Week 1 | Unit 1: Personal Cybersecurity Cybersecurity Introduction, Industry certifications, Cyber Security Jobs, Code of Conduct |
| Week 2 | Cyber ethics, Cyber Laws, Cybersecurity Lifecycle, Digital Footprint, Security Policies |
| Week 3 | Password Protection, Access Controls, and Authentication |
| Week 4 | Email and Social Media Security Risks, Social Engineering |
| Week 5 | Unit 2: Security & the Internet Security Concepts and Terminology |
| Week 6 | Managing Your Data, Protecting your Data. |
| Week 7 | Firewalls and Malware, Securing Your Browser |
| Week 8 | File Security, File Management, and Processes |
| Week 9 | Unit 3: Vulnerability Assessment Confidentiality, Integrity, and Availability, Passive Analysis |
| Week 10 | LAN Architecture, Analyzing a Network, Wireshark |
| Week 11 | The Vulnerable Host, Client/Server Vulnerabilities |
| Week 12 | Securing the Server |
| Week 13 | Unit 4: Client-Server Security Stopping the Spread of Malware |
| Week 14 | Analyzing an App, Front-End & Back-End Attacks |
| Week 15 | Securing the Client |
| Week 16 | Paired Key Encryption, E-commerce Enrichment |
| Week 17 | Debate |
| Week 18 | Review and Finals |

* The syllabus serves as a guide for both the teacher and student; however, during the term it may become necessary to make additions, deletions, or substitutions. For any necessary changes, adequate notice will be provided to the students.

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COMPUTER ASSIGNMENTS

- Each student will be assigned to a computer on the first day of class. You may **NOT** change computers without permission from me and you may **NOT** let another student access your computer. Even if your computer is not working correctly, you must inform me and you will be reassigned until the problem is fixed.
- If any inappropriate activity or vandalism occurs at your assigned computer during that class period, it will be presumed that **YOU** are responsible.
- If, at the beginning of class, you discover a problem with your computer, you must immediately let me know. Otherwise, **YOU** will be held responsible.

RULES FOR USE OF LAB COMPUTERS

- Any computer vandalism (software and/or hardware) will result in a loss of computer privileges for an indefinite period of time and a discipline referral will be issued.
- When you are allowed to access the Internet, any viewing, printing, or downloading “inappropriate” material from the Internet will result in a loss of computer privileges for an indefinite period of time and a discipline referral will be issued. You are allowed to access the Internet **ONLY** after all your work is completed. If this is not the case, you will be given a warning or detention.
- In the past, certain offenses that have been deemed by the administration and/or technical staff as harmful to the system network or as a potential security risk have resulted in removal of the responsible student(s) from the class and from ever accessing a computer at James Clemens again.
- If you are not sure about what is considered inappropriate, check with me **BEFORE** you act!
- **ALL RULES AND POLICIES STATED IN THE JCHS STUDENT HANDBOOK REGARDING COMPUTER USE WILL BE STRICTLY ENFORCED.**
- The academic misconduct policy of the school will be followed in this course.
- The attendance policy of the school will be followed for this course.
- All requests for accommodations, for this course or any school event, are welcomed from students and parents.
- Any student who receives a failing grade during this course is urged to discuss this with the teacher.

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Dear Parent/Guardian,

I look forward to having a great semester! I want to help make this a successful and enjoyable class. I feel fortunate to have your son/daughter in my class this semester and hope that you will contact me should you have any concerns about the progress of your son/daughter or any aspect of the instruction. With your son/daughter, please read the attached syllabus and policies, then sign and date this signature page and have your son/daughter return this form. Please provide a current email address and phone number at which I can contact you should the need arise. Please feel free to contact me at school with any concerns.

Thank you,

Mr. Bill McIlwain
wemcilwain@madisoncity.k12.al.us

My child and I have read and discussed the classroom syllabus and agree with all policies. Please fill out and return this page only with the correct information to Mr. McIlwain.

Student Name (Print) _____ Date _____

Student Signature _____ Date _____

Parent/Guardian Name (Print) _____ Date _____

Parent/Guardian Signature _____ Date _____

Email address _____ (w) _____ (h)

Phone number _____ (w) _____ (h) _____ (c)

Please provide me with any important information about your child that I will need to know:

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Addendum to Class Syllabus

1. Put away and silent cell phones & electronic devices

*Electronic devices and accessories (CD players, iPod, handheld games, mini-TVs or personal DVD players, cell phones, ear buds, personal laptops, earphones etc.) should not be on the desks or used unless otherwise directed. It has been proven that trying to utilize these devices (unless otherwise specified by the teacher) while in class can lead to failing the course. You must pay attention at all times to be successful in the class.

*There will be a 100-point participation grade at the end of each week averaging 20 points a day. If a student is using their cellphone and/or earbuds, or any of the above devices without teacher authorization, or they are on websites other than directed, they will receive 5 points off their participation grade for the day per occurrence.

2. Do not get up out of your seat unless you are directed to by the teacher.

3. Please be on time! If you are late to class, you could get detention.

4. Do your best work & turn it in on time! As I coach my runners..."It's easier to keep up than catch up!"

*Remember that the work that you turn-in is a reflection of your effort on the assignment. Think about the following expectations when you are preparing an assignment that I will review:

*Write your full name, date and school on all assignments. All work must be neatly done and legible in order to receive credit. If you print, capitalize properly (do not write using all capital letters).

*Late assignments will receive 5 points off per day from the initial grade.

*Never turn any assignments in with the "fringes" from spiral notebooks on the paper or I will not accept that assignment. Likewise, assignments that are bunched up, crinkled, illegible, sloppy, or contain stains or holes are unacceptable.

*ALL MAJOR ASSIGNMENTS, RESEARCH PAPERS, ESSAYS & PROJECTS MUST BE TYPED. Final draft format for typewritten work is as follows: 12-point font, double-spaced, 1" margins, and use a "normal font" such as Arial, Comic Sans, Times New Roman, etc. (nothing too difficult to read and a font that prints using capital and lower-case letters).

Student signature _____

Date _____

Parent/Guardian signature _____

Date _____