



Lebanon Community Schools

High School Course Syllabus

Lebanon High School | Mr. Tim Helland | 2025-2026

Course Number and Title:

Servers & Networking

Subject Area:

Computer Technology

Credits:

Semester 2 0.5 CT or Elective Credit

Graduation Requirements:

The following Oregon Essential Skills will be addressed throughout this course:

x	Read and comprehend a variety of text	x	Use technology to learn, live, and work
X	Write clearly and accurately		Demonstrate civic and community engagement
X	Apply mathematics in a variety of settings		Demonstrate global literacy
	Listen actively and speak clearly and coherently	x	Demonstrate personal management and teamwork skills
x	Think critically and analytically		

Prerequisites:

Web Design 1 -or- Teacher Approval

Course Overview:

In this first course of Web Design, you will:

- ❖ Interact with a Linux terminal
- ❖ Install and configure a LEMP stack (Linux, Nginx, MySQL, PHP)
- ❖ Create a basic dynamic website using PHP
- ❖ Understand commonly used network topologies
- ❖ Understand DHCP, subnetting and routing
- ❖ Configure a functional local network using standard networking equipment
- ❖ Work individually and in teams to problem-solve networking issues



Topics of Study:

Unit 1: Intro to Linux

About 4 weeks

- The Raspberry Pi
- Using the terminal
- Files, users and permissions
- IP configuration
- Least Privilege

Unit 2: Linux Web Servers

About 4 weeks

- Network services and ports
- Nginx
- PHP
- MySQL
- Firewalls
- Attack surfaces

Unit 3: Local Area Networks

About 5 weeks

- Ethernet fundamentals
- Switching and addressing
- IP Addressing
- Cabling and topology
- Segmentation and VLANs



Unit 4: Wireless / WAN Networks

About 5 weeks

- Standards
- Router fundamentals
- Gateways
- Static routing
- Encryption
- NAT, Firewall, Isolation

Unit 5: Student Choice

As time permits

- Deeper dive into server and networking topics of greatest interest

TAG/ELL/Special Education Considerations:

Students will receive appropriate accommodations consistent with their IEP and/or TAG plan. Students are encouraged to self-advocate and communicate with their teacher if they have questions or concerns about their accommodations. You may be pre-assessed on the knowledge and skills that you bring with you to this course. The purpose of the pre-assessment is to determine what you already know, guide instruction, and give you access to advanced and/or accelerated content when appropriate.

Formal or informal pre-assessments may include quizzes, student input and self-evaluation, placement tests, teacher observation, work samples, fist of five, thumbs up/thumbs down, and other forms of assessment. The following differentiation strategies will be used during instruction when appropriate: Enrichment, Multiple Intelligences, Acceleration, Compacting, Independent Projects, Critical Thinking, Assignment Modification, Flexible Grouping, and Student Contracts.

Supplemental Resources:

A variety of resources will be available on the following websites:

<http://moodle.mrhelland.com>

<https://www.raspberrypi.com/documentation/>

<https://niccs.cisa.gov/audience/cybersecurity-students>

If you don't have access to a reliable internet connection, please see the teacher for an alternate method of access.

Academic Honesty Policy:

Plagiarism and cheating are unacceptable in any classroom. Students who submit work that is not their own may receive a score of zero and/or be referred to the administration for disciplinary action.

You are encouraged to help your peers understand and make progress. Help them learn, but don't just give them your work. If multiple students submit work that is not sufficiently unique, the points for that work will be divided equally amongst them.

Homework and Late Policy:

Most learning activities in this course can be completed by an average student during the class period. If you do not complete a task during class, it will be necessary to complete work at home or by scheduling time to use the lab before or after school. The lab is also open at lunch one day per week.

Late assignments lose 10% of their possible value. For each week an assignment is late, it will lose an additional 10% in possible value. The maximum late penalty is 50%.

Behavioral Expectations:

To maintain a positive and productive learning environment each member of our classroom agrees to:

- ❖ Respect others with words and actions.
- ❖ Be seated and ready to begin when the bell rings.
- ❖ Use spill-proof containers for beverages and leave food at the door.
- ❖ Turn off and put away cell phones and entertainment devices unless otherwise directed by the teacher.
- ❖ Clean up before leaving the classroom.
- ❖ Follow the LHS Student Handbook and Network & Internet Use policies.

Personal Electronic Devices:

In accordance with Executive Order 25-09, personal electronic devices (phones, smartwatches, earbuds, etc.) are not allowed during instructional hours. Devices must be turned off and stored out of sight. Repeated violations will result in restorative intervention and parent contact.



Using personal electronic devices during an assessment without prior arrangement will result in a score of 0.

Grading Policy:

Your overall letter grade is weighted as follows:

Tests & Quizzes	30%
Assignments & Participation	60%
Final Exam	10%

Semester grades are rounded mathematically.

Your course letter grade will be determined as follows:



- A..... 90% or above
- B.....80% to 89%
- C.....70% to 79%
- D.....60% to 69%
- F.....Below 60%

You are encouraged to attempt any/all of the extra credit opportunities provided. Per district policy, extra credit may only affect your overall grade by a moderate percentage.

Labs & Assignments:

Many assignments will be scored based on detailed rubrics or sets of grading criteria. All other labs and assignments will earn a percentage of the total points possible. For example:



<ul style="list-style-type: none"> • Fully completed • Exceptional effort 	100%
<ul style="list-style-type: none"> • Mostly completed • Average effort 	70%
<ul style="list-style-type: none"> • Partially completed • Marginal effort 	40%
<ul style="list-style-type: none"> • Barely completed • Effort lacking 	0%

Notebook:

A notebook is required for this course. It should include all of the following:

- ❖ Cornell or focused notes
- ❖ Unit vocabulary
- ❖ Weekly reflection



You can use your written notebook on tests, quizzes and the final exam. Take readable notes and keep them organized for greatest benefit.

Notebook checks are 20 points. Your notebook score will be based on content, organization and overall usefulness. Use the *Cornell / Focused Notes* system to receive the highest possible score on your notebook.

Assessments:

Unit Tests are usually worth 100 points each and are announced in advance. If you opt to delay a test without prior arrangement, the maximum earnable score is 80%. You may retake each test once after successfully completing a review activity.

The *final exam* is 10% of the final grade and may include both a written and performance component.

Projects:



Projects may be assigned depending on available time.

You will likely need to work on projects outside of class to earn a high score or if you get behind.

Excused Absences:

When you return to school, be prepared to make up any missing work within the number of days you were absent + 1 day. After this, the usual late penalty will apply. On the day you return, arrange to make up any tests, quizzes or projects that were due in your absence.

Special consideration will be made for extended absence or verified emergencies. Be sure to contact the teacher as soon as possible.

Unexcused Absences:

If you have an unexcused absence, you will not be able to makeup in-class activities. Projects or unit tests that reflect multiple days of learning can be made up, but will lose a portion of their value based on the number of unexcused absences affecting that unit or project.



Course Goals:

- ❖ Demonstrate proficiency using a Linux OS on Raspberry Pi
- ❖ Install, configure, and maintain a web server stack
- ❖ Design and configure a local area network using managed switches
- ❖ Connect devices and networks using wireless access points, wireless routers and wired routers
- ❖ Apply security best-practices to protect devices, data and network infrastructure

Materials:

In addition to basic school materials, the following materials are strongly suggested for this course:



3-ring or spiral notebook

It will be evaluated periodically for content, organization and usability.

Portable or Online Storage

A USB Storage device or Google Drive account may prove useful and convenient in this course.

Home Computer

A computer running a modern operating system such as Windows 10 or Mac OS X can be useful.

I Need Help!

There are many resources available to you if you get stuck or don't understand. Some of them are:

- ❖ Your teacher
- ❖ Peer study groups
- ❖ Your teacher's website
- ❖ Course website
- ❖ Online videos
- ❖ Online tutorials
- ❖ Tutoring



With advance notice, the teacher reserves the right to adjust these guidelines to provide a safe and productive learning environment for all students.