North Central State College

MASTER SYLLABUS	2025-2026

A. Academic Division: Engineering Technology, Business & Criminal Justice Division

B. Discipline: Information Technology - Networking

C. Course Number and Title: ITEC1620 – Wireshark 101

D. Assistant Dean: Brooke Miller, M.B.A.

E. Credit Hours: 2
Lecture: 1 hour
Laboratory: 2 hours

F. Prerequisites: ITEC 1640 (minimum grade C-)

G. Last Course/Curriculum Revision Date: Fall 2025 Origin date: 02/02/2016

H. Textbook(s) Title:

Wireshark 101: Essential Skills for Network Analysis
- Author: Laura Chappell
- Copyright Year: 2017
- Edition: 2nd
- ISBN#: 9781893939752

CRUCIAL X6 1TB PORTABLE SSD - UP TO 800MB/S - PC AND MAC - USB 3.2 USB-C EXTERNAL SOLID STATE DRIVE
- eCAmpus
- ISBN#: 8780000191138

I. Workbook(s) and/or Lab Manual:

J. Course Description: This course provides a starting point for analyzing network traffic, troubleshooting network performance, and detecting network security related incidents. Students will capture, filter, and analyze network traffic based on network protocols, applications, and data origin.

K. College-Wide Learning Outcomes:

College-Wide Learning Outcome	Assessments - - How it is met & When it is met
Communication – Written	
Communication – Speech	
Intercultural Knowledge and Competence	
Critical Thinking	
Information Literacy	
Quantitative Literacy	

L. Course Outcomes and Assessment Methods:

Upon successful completion of this course, the student shall:

Outcomes	Assessments – How it is met & When it is met
1. Create virtual machines and networks	Weeks 1-2, labs, tests, mid-term and final exam
2. Compare and contrast packets and frames	Weeks 1-2, labs, tests, mid-term and final exam
3. Describe Wireshark program elements and settings	Weeks 3-6, labs, tests, mid-term and final exam
4. Identify Wireshark capture methods and associated filters	Weeks 7-9, labs, tests, mid-term and final exam
5. Demonstrate how to mark and export packet captures	Week 10, labs, tests, and final exam
6. Create tables and graphs from captured data	Week 11, labs, tests, and final exam
7. Demonstrate how to reassemble network traffic	Week 12, labs, tests, and final exam
8. Select the appropriate command line tool for a given set of conditions	Week 14, lab, tests, final exam

M. Recommended Grading Scale:

NUMERIC	GRADE	POINTS	DEFINITION
93–100	A	4.00	Superior
90–92	A-	3.67	Superior
87–89	B+	3.33	Above Average
83–86	B	3.00	Above Average
80–82	B-	2.67	Above Average
77–79	C+	2.33	Average
73–76	C	2.00	Average
70-72	C-	1.67	Below Average
67–69	D+	1.33	Below Average
63-66	D	1.00	Below Average
60-62	D-	0.67	Poor
00-59	F	0.00	Failure

N. College Procedures/Policies:

North Central State College believes that every student is a valued and equal member of the community.* Every student brings different experiences to the College, and all are important in enriching academic life and developing greater understanding and appreciation of one another. Therefore, NC State College creates an inclusive culture in which students feel comfortable sharing their experiences. Discrimination and prejudice have no place on the campus, and the College takes any complaint in this regard seriously. Students encountering aspects of the instruction that result in barriers to their sense of being included and respected should contact the instructor, assistant dean, or dean without fear of reprisal.

* *Inclusive of race, color, religion, gender, gender identity or expression, national origin (ancestry), military status (past, present or future), disability, age (40 years or older), status as a parent during pregnancy and immediately after the birth of a child, status as a parent of a young child, status as a foster parent, genetic information, or sexual orientation*

Important information regarding College Procedures and Policies can be found on the syllabus supplement located at https://ncstatecollege.edu/documents/President/PoliciesProcedures/PolicyManual/Final%20PDFs/14-081b.pdf

North Central State College

SYLLABUS ADDENDUM

Academic Division:	Engineering Technology, Business & Criminal Justice Division	**Discipline:**	Information Technology
Course Coordinator:	Daniel Foss		
Course Number:	ITEC-1620-920	**Course Title:**	Wireshark 101
Semester / Session:	Spring 2026	**Start / End Date:**	1/12/2026 - 5/8/2026

Instructor Information

Name:	Daniel Foss	**Credentials:**	M.Ed., Curriculum and Instruction – Computer B.S., Education
Phone Number:	419-755-4728	**E-Mail Address:**	dfoss@ncstatecollege.edu
Office Location:	Kehoe Room 139	**Office Hours:**	By appointment: Mondays 3:00 PM – 4:30 PM Tuesdays, 8:00 AM -11:30 AM Other times via Zoom: https://tinyurl.com/ITEC-Office-Hours

I. Topical Timeline / Course Calendar (Subject to Change – refer to Canvas for schedule):

Wireshark 101 Course Schedule – Spring 2026

Week	Modules Covered	Assignments	Due Date (Friday)
1	Week 1	Presentation: 1.0 Introduction to Wireshark; Installing Wireshark; Navigating the Interface; Lab: Installation & Setup; Quiz – Wireshark Basics	16-Jan-26
2	Week 2	Presentation: 2.0 Packet Capture Fundamentals; Capture Filters; Interface Selection; Lab: Basic Packet Capture; Quiz – Capture Filters	23-Jan-26
3	Week 3	Presentation: 3.0 Display Filters; Protocol Hierarchy; Lab: Applying Display Filters; Quiz – Display Filter Syntax	30-Jan-26
4	Week 4	Presentation: 4.0 Ethernet & IP Analysis; Frame Structure; IP Header Fields; Lab: Ethernet/IP Packet Analysis; Quiz – Ethernet & IP Basics	6-Feb-26
5	Week 5	Presentation: 5.0 TCP & UDP Analysis; Three-Way Handshake; Lab: TCP Stream Analysis; Quiz – TCP vs UDP	13-Feb-26
6	Week 6	Presentation: 6.0 DNS Traffic Analysis; Query/Response Behavior; Lab: DNS Packet Capture; Quiz – DNS Protocol	20-Feb-26
7	Week 7	Presentation: 7.0 HTTP & HTTPS Analysis; TLS Handshake; Lab: Web Traffic Capture; Quiz – HTTP/TLS Basics	27-Feb-26
8	Week 8	Presentation: 8.0 Advanced Filtering & Coloring Rules; Lab: Custom Filters & Color Profiles; Quiz – Advanced Display Filters	6-Mar-26
		Spring Break: March 14–20, 2026	20-Mar-26
9	Week 9	Presentation: 9.0 Wireshark Statistics Tools; Conversations, Endpoints, IO Graphs; Lab: Traffic Analysis with Statistics; Quiz – Wireshark Statistics	27-Mar-26
10	Week 10	Presentation: 10.0 Wireless Packet Capture; Monitor Mode; Lab: Capturing Wi-Fi Traffic; Quiz – Wireless Capture Techniques	3-Apr-26
11	Week 11	Presentation: 11.0 VoIP Analysis; RTP Streams; Lab: VoIP Call Analysis; Quiz – VoIP Protocols	10-Apr-26
12	Week 12	Presentation: 12.0 Network Troubleshooting with Wireshark; Latency & Retransmissions; Lab: Diagnosing Network Issues; Quiz – Troubleshooting Techniques	17-Apr-26
13	Week 13	Presentation: 13.0 Security Analysis; Detecting Malicious Traffic; Lab: Malware Traffic Analysis; Quiz – Security Indicators	24-Apr-26
14	Week 14	Practice Final Exam – Part A (Wireshark Fundamentals); Practice Final Exam – Part B	1-May-26
15	Week 15	Wireshark Certified Network Analyst (WCNA) Practice Exam	1-May-26
16	Finals Week	**Final Exam: May 4th, 2026**	4-May-26

II. Grading and Testing Guidelines:

Category	Count	Points	Weight
Labs	85	850	40%
Quizzes	65	650	30%
Exams	10	500	30%

Grading scale is the college grading scale:

NUMERIC	GRADE	POINTS	DEFINITION
93–100	A	4.00	Superior
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73–76	C	2.00	Average
70-72	C-	1.67	Below Average
67–69	D+	1.33	Below Average
63-66	D	1.00	Below Average
60-62	D-	0.67	Poor
00-59	F	0.00	Failure

III. Examination Policy:

- All exams must be submitted through Canvas.
- You may reference online videos and documentation, as well as other reputable sources.
- Collaboration on exams is not permitted unless explicitly authorized.
- AI tools (e.g., Copilot, ChatGPT) are not allowed during quizzes or exams.
- Free Tutoring Service is available: https://ncstatecollege.edu/student-services/tutoring/

Assignment Policy:

- All assignments must be submitted using Canvas.
- AI Tools like Copilot and ChatGPT may be used for feedback or clarification, but final submissions must reflect your own independent work.
- Use of the online materials and videos for reference is encouraged.
- You may consult documentation, tutorials, and forums for guidance.
- Download, complete, and upload your own work. All submitted project files must be your own original work.
- Plagiarism or submission of work not your own is a serious offense and may result in course failure.
- If you need assistance with the course assignments, contact the Tutoring Department or the Instructor. Tutoring Information (free) can be found at: https://ncstatecollege.edu/student-services/tutoring/

IV. Course Attendance and Late Assignment Policy:

- Class attendance is recorded by completion of weekly assignments and activities.
- Assignments are due before midnight every Friday.
- Early submissions are encouraged.
- Except for the final project, all assignments are allowed to be submitted late.
- Each assignment builds on previous work, do not skip assignments. If it is late, submit as soon as possible.
- If you anticipate missing a deadline, contact the instructor in advance to discuss possible accommodation.
- Excused absences include:

  a. Hospitalization
  b. Death in the family
  c. Personal illness or illness in immediate family
  d. Military leave
  e. Travel for employment

V. Course Expectations:

- All students are expected to demonstrate professional behavior and use language appropriate for the learning experience, both written and orally.
- For online classes, students are required to have access to an internet connection and a laptop or desktop computer. Chromebooks are not adequate for this course.
- MacBooks are acceptable, however, there may be some assignments that can only be completed on a Windows computer.
- The college provides free computer labs - https://ncstatecollege.edu/student-services/computer-labs/ and loaner laptops - https://ncstatecollege.edu/advocacy-and-resources/ - select Technology Resources