

FALL SYLLABUS 2026

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MRTS 4411.003 – Broadcast Engineering (Fall 2026) **University of North Texas | Department of Media Arts**

Course Information

Meeting Time: MONDAYS, 9:05 am – 11:55 am

Location: RTFP 177 – Broadcast Engineering Lab

Format: Face-to-face, lab-based

Canvas: <https://canvas.unt.edu>

Semester Dates: August 17 – December 11, 2026

Status: Subject to Change

Instructor Information

Instructor: Greg Oldenburg

Email: greg.oldenburg@unt.edu

Office: 179

Office Phone: 214-235-7058

Office Hours: By appointment (in person or virtual)

Department: Media Arts | Phone: 940-565-2205

Course Description

This course provides advanced, hands-on instruction in broadcast and live-production systems engineering. Students explore professional signal flow, infrastructure design, IP-based video and audio systems, large-scale routing, synchronization, and real-world troubleshooting techniques used in mobile, studio, and live-event environments.

Major Course Requirements / Assignments / Examinations (HB 2504)

- Lab Participation (30%)
- Skill Demonstrations (30%)
- Dante Level 1 Certification (20%)
- <https://www.getdante.com/resources/training/dante-certification-program/>
- NETGEAR Level 1 Certification (20%)
- <https://academy.netgear.com/course/index.php?categoryid=1>

Required Materials (Bring every class)

- Closed-toe shoes (mandatory – no exceptions)
- Headphones/earbuds
- Laptop computer (Mac or Windows recommended)

Recommended/Required Reading

- Specific textbook readings will be provided on Canvas.
- Online resources: Dante Certification training materials (Audinate), NetAcad Networking Basics course, SMPTE and AES standards references (provided via Canvas).

Learning Outcomes (Measurable)

By the end of this course, students will be able to:

1. Design and troubleshoot complete broadcast and live-event signal flows.
2. Configure, route, and certify Dante audio networks (Level 1).
3. Build and align multi-camera SDI and IP camera chains, including basic CCU/shading.
4. Patch, address, and operate professional lighting consoles and DMX networks.
5. Specify, rack, wire, label, and document a complete mobile production system.
6. Diagnose and resolve real-time system failures during live production.

General Description of Subject Matter (by week) – See detailed schedule below.

Course Schedule (Thursdays)

Week	Date	Topic	Major Lab / Deliverable
1	Aug 17	HOWDY Signal & System intro	—HOWDY
2	Aug 24	Cable Build SDI and Ethernet	Skill Demo 1
3	Aug 31	AV Control over IP / Start Dante	Live Control System
4	Sep 7	Dante Level 1 Completion	Dante Certification
5	Sep 14	Networking Part 1 –	

6	Sep 21	POSSIBLE SITE	Production Visit
7	Sep 28	ENG & EFP Camera Setup	Skill Demo 2
8	Oct 5	Visit / Studio Mobile Production	NEP Visit
9	Oct 12	UNT Broadcast Tour (Sports)	Tour
10	Oct 19	Mobile Production Engineering	Setup
11	Oct 26	Mobile Production Engineering	Full system test
12	Nov 2	Lighting, DMX & Console Training	DMX/Console Training
13	Nov 9	Online Networking Course / Advanced Topics	—
14	Nov 16	Online Networking Course / Review	Skill Demo 3
—	Nov 23–29	Thanksgiving Break – No Class	—
15	Dec 3	Final Review & Course Evaluations	Final Project Due

Schedule is subject to change. Any changes will be announced in class and on Canvas.

Grading Breakdown & Scale

- Lab Participation & Check-offs: 30%
- Skill Demonstrations: 30%
- Dante Level 1 Certification: 20%
- NETGEAR AV Level 1 Certification: 20%

Scale: A (94–100), A- (90–93), B+ (87–89), B (84–86), B- (80–83), C+ (77–79), C (74–76), C- (70–73), D (60–69), F (<60). No curve.

Attendance Policy

Attendance is required. Class begins at 9:30 a.m. Arrivals after 9:40 a.m. may receive a zero for the day's participation (one excused late arrival permitted). Aligns with UNT Policy 06.039.

Laboratory Safety

Closed-toe shoes required every session. Follow all electrical, lifting, and equipment safety procedures. UNT is not liable for injuries; maintain health insurance. Medical care available at UNT Student Health and Wellness Center.

Academic Integrity

All work must follow UNT Academic Integrity Policy 06.003. Violations (including on quizzes, demos, projects, or certifications) result in disciplinary action.

Generative AI Policy

Limited use allowed for studying or drafting diagrams with prior instructor approval and disclosure. Not permitted on quizzes, skill demos, exams, or certifications.

ADA / Disability Accommodations (Required UNT Statement)

The University of North Texas makes reasonable accommodations for students with disabilities. Students needing a reasonable academic accommodation must first register with the Office of Disability Access (ODA) to verify their eligibility. If a disability is verified, the student will request their letter of accommodation. ODA will provide faculty with a reasonable accommodation letter via email to begin a private discussion regarding a student's specific needs in a course. Students are strongly encouraged to meet with faculty regarding their accommodations during office hours or by appointment. For additional information, refer to the Office of Disability Access website: <https://studentaffairs.unt.edu/office-disability-access>.

Inclusive Learning Environment

This course promotes professionalism, collaboration, and mutual respect. Harassment or intimidation will not be tolerated.

Important Note for HB 2504 Compliance

This syllabus and the instructor's curriculum vitae are available online through the UNT Faculty Information System in accordance with Texas law.

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