MUCP 5690 Fall 2020
Topics in Electroacoustic Music:
Interactive Music Performance Systems

Time:	TuTh 3:30 – 4:50
Virtual meetings:	Zoom meeting 948 4857 8569, pwd 367280
Real-world meetings (as possible):	Merrill Ellis Intermedia Theater, COM MU1001
Instructor:	Andrew May
Office:	Zoom meeting 529 791 9218 or COM MU1003
Phone:	(940) 891-6816
E-mail:	andrew.may@unt.edu
Office hours:	Mo 9-10 am, We 2-3 pm
Final presentations:	Tuesday, December 8, 1:30 – 3:30 pm

COURSE DESCRIPTION

OVERVIEW

Students in this seminar will explore the medium of interactive computer music through the lens of user-centered design, learning to create environments and tools that will meet user needs effectively, whether the users are performers, composers, computer musicians, DJs, teachers, or listeners. The seminar will address such questions as:
- What do performers, engineers, and presenters most need to perform effectively?
- What affordances address those needs most efficiently and clearly?
- What can interactive musical agents add to the concert experience?
- What sorts of cues are most effective for real-time musical communication between human and machine?
- What sorts of musical data can the computer acquire and process, and how can these data best be organized and harnessed to drive plausible musical interactions?
- What models of musical knowledge, expectation, and adaptation can be adapted to the computer, and how (or how much) can they emulate human interaction?
- what kinds of information are useful in an algorithmic model of group improvisation?

We will alternate discussion of concepts and issues with study of musical examples and code from the repertoire, as well as articles from the research literature. We will build a library of tools and techniques through the course of the seminar, which will be useful in the development of students' final projects. Over the course of the semester, focus will shift from principles to practice, possibly including a few public debugging sessions. Midterm project will be analyses of interactive repertoire in terms of user needs, usability, affordances, and design criteria. Final projects may include compositions, improvisation environments, real-time algorithmic tools for composition, interactive computer music tools or interfaces, network-based performance systems, integrated hardware/software systems for performance, etcetera. Smaller assignments will be given every week or two. Most examples and code library materials will be given in Max; for projects, students may use any unit-generator based real-time audio coding environment they are comfortable with (Max, Pure Data, SuperCollider, ChuCK, Processing, etc).

MATERIALS

You will need to be able to download materials from the class website, open and edit them in Max, save and deliver them to your teacher. This can be done from your home computer, from a CEMI studio, or from the GA computing lab in the College of Music. More details on how to set up a home system will be sent by e-mail, should you wish to take that course of action.

TEXTBOOKS AND RESOURCES

Readings and study materials will be posted on the class website. For those less familiar with the Max environment, the tutorials that come with the software are excellent, and there are numerous online tutorials on the Cycling74 site, on YouTube, and elsewhere. Make liberal use of your instructor's office hours if you are having trouble, and ask your classmates too!

ASSIGNMENTS

Reading and practicum assignments will be given every week or two, with due dates to be announced in class and posted on the class website.

A midterm repertoire analysis project will be du Friday, October 9, by 5 pm.

A final project will be due at the beginning of the final exam time (Tuesday, December 8, 1:30 – 3:30 pm), during which students will present their projects in the Merrill Ellis Intermedia Theater. Projects will be interactive music systems: normally they will be works of music for performance, but projects involving other media or other modes of presentation may be appropriate in some cases. Students will commit to a project design by which may also involve other media, and will integrate aspects of what you have learned through work with other technologies. On Friday, December 18, from 1:30 – 3:30 pm (final exam time) students will present and discuss their projects.

Students will present a 1-2 page draft proposal by Friday, September 25, and a 2-3 page project prospectus by Friday, October 23 in order to get timely feedback and revise plans as needed. The final project will include a 5-6 page written essay documenting the goals, techniques, salient features, and results of the project. It will be due at the same time as the final project.

COURSE POLICIES

GRADING

Readings, attendance, participation	20%
Practicum assignments	20%
Midterm repertoire analysis project	25%
Final project and essay	35%

ATTENDANCE
This course will move fast; you may become *very confused* if you do not attend regularly. In case of 6 or more unexcused absences, the instructor reserves the right to summarily assign you a failing grade for the course. If you are unable to attend a class, inform the instructor in advance. It is your responsibility to come to the instructor's office hours and/or communicate with your colleagues in the class to make up material missed.

ACADEMIC INTEGRITY
Students caught cheating or plagiarizing will receive a "0" for that particular assignment or exam [or specify alternative sanction, such as course failure]. Additionally, the incident will be reported to the Dean of Students, who may impose further penalty. According to the UNT catalog, the term "cheating" includes, but is not limited to: a. use of any unauthorized assistance in taking quizzes, tests, or examinations; b. dependence upon the aid of sources beyond those authorized by the instructor in writing papers, preparing reports, solving problems, or carrying out other assignments; c. the acquisition, without permission, of tests or other academic material belonging to a faculty or staff member of the university; d. dual

submission of a paper or project, or resubmission of a paper or project to a different class without express permission from the instructor(s); or e. any other act designed to give a student an unfair advantage. The term "plagiarism" includes, but is not limited to: a. the knowing or negligent use by paraphrase or direct quotation of the published or unpublished work of another person without full and clear acknowledgment; and b. the knowing or negligent unacknowledged use of materials prepared by another person or agency engaged in the selling of term papers or other academic materials.
LINK: http://vpaa.unt.edu/dcgcover/resources/integrity

STUDENT BEHAVIOR
Student behavior that interferes with an instructor's ability to conduct a class or other students' opportunity to learn is unacceptable and disruptive and will not be tolerated in any instructional forum at UNT. Students engaging in unacceptable behavior will be directed to leave the classroom and the instructor may refer the student to the Dean of Students to consider whether the student's conduct violated the Code of Student Conduct. The university's expectations for student conduct apply to all instructional forums, including university and electronic classroom, labs, discussion groups, field trips, etc.
LINK: Student Code of Conduct - https://deanofstudents.unt.edu/conduct

ACCESS TO INFORMATION – EAGLE CONNECT
Your access point for business and academic services at UNT occurs at my.unt.edu. All official communication from the university will be delivered to your Eagle Connect account. For more information, please visit the website that explains Eagle Connect.
LINK: eagleconnect.unt.edu/

ODA STATEMENT
The University of North Texas makes reasonable academic accommodation for students with disabilities. Students seeking accommodation must first register with the Office of Disability Accommodation (ODA) to verify their eligibility. If a disability is verified, the ODA will provide you with an accommodation letter to be delivered to faculty to begin a private discussion regarding your specific needs in a course. You may request accommodations at any time, however, ODA notices of accommodation should be provided as early as possible in the semester to avoid any delay in implementation. Note that students must obtain a new letter of accommodation for every semester and must meet with each faculty member prior to implementation in each class. For additional information see the Office of Disability Accommodation.
LINK: disability.unt.edu. (Phone: (940) 565-4323)

2018-2019 Semester Academic Schedule (with Add/Drop Dates)
http://catalog.unt.edu/content.php?catoid=20&navoid=2120

Academic Calendar at a Glance, 2018-2019
https://www.unt.edu/catalogs/2018-19/calendar

Final Exam Schedule
https://registrar.unt.edu/exams/final-exam-schedule/fall

Financial Aid and Satisfactory Academic Progress

Undergraduates
A student must maintain Satisfactory Academic Progress (SAP) to continue to receive financial aid. Students must maintain a minimum 2.0 cumulative GPA in addition to successfully completing a required number of credit hours based on total registered hours per term. Students cannot exceed attempted credit hours above 150% of their required degree plan. If

a student does not maintain the required standards, the student may lose their financial aid eligibility.

Students holding music scholarships must maintain a minimum 2.5 overall cumulative GPA and 3.0 cumulative GPA in music courses.

If at any point you consider dropping this or any other course, please be advised that the decision to do so may have the potential to affect your current and future financial aid eligibility. It is recommended that you to schedule a meeting with an academic advisor in your college or visit the Student Financial Aid and Scholarships office to discuss dropping a course being doing so.
LINK: http://financialaid.unt.edu/sap

Graduates
A student must maintain Satisfactory Academic Progress (SAP) to continue to receive financial aid. Students must maintain a minimum 3.0 cumulative GPA in addition to successfully completing a required number of credit hours based on total registered hours per term. Music scholarships require a 3.5 cumulative GPA. Students cannot exceed maximum timeframes established based on the published length of the graduate program. If a student does not maintain the required standards, the student may lose their financial aid eligibility.

If at any point you consider dropping this or any other course, please be advised that the decision to do so may have the potential to affect your current and future financial aid eligibility. It is recommended you schedule a meeting with an academic advisor in your college, an advisor in UNT-International or visit the Student Financial Aid and Scholarships office to discuss dropping a course.
LINK: http://financialaid.unt.edu/sap

RETENTION OF STUDENT RECORDS
Student records pertaining to this course are maintained in a secure location by the instructor of record. All records such as exams, answer sheets (with keys), and written papers submitted during the duration of the course are kept for at least one calendar year after course completion. Course work completed via the Blackboard/Canvas online system, including grading information and comments, is also stored in a safe electronic environment for one year. You have a right to view your individual record; however, information about your records will not be divulged to other individuals without the proper written consent. You are encouraged to review the Public Information Policy and the Family Educational Rights and Privacy Act (FERPA) laws and the university's policy in accordance with those mandates.
Link: http://ferpa.unt.edu/

COUNSELING AND TESTING
UNT's Center for Counseling and Testing has an available counselor whose position includes 16 hours per week of dedicated service to students in the College of Music and the College of Visual Arts and Design. Please visit the Center's website for further information: http://studentaffairs.unt.edu/counseling-and-testing-services. For more information on mental health issues, please visit: https://speakout.unt.edu.

The counselor for music students is:
Myriam Reynolds
Chestnut Hall, Suite 311
(940) 565-2741
Myriam.reynolds@unt.edu

Course Outline – *subject to modification!!!*

Week 1 (8/25, 8/27)
User-centered design in creative practice, collaboration, and the usability of time
Project: what is a timepiece for?
Week 2 (9/1, 9/3)
Translation: what performers do, the Max environment, and reverse-engineering music
Project: how do we recognize rhythm and meter?
Week 3 (9/8, 9/10)
Synchromorphologies: proximity, causality, identity, ambiguity, cueing, and other constructs
(no new project: first final project planning meetings)
Week 4 (9/15, 9/17)
Immediacy, reliability, and predictability: when and how do we know what we know?
Project: what is a note?
Week 5 (9/22, 9/24)
Data and design: harvesting, structuring, and acting upon data in real-time
Final project proposal due 9/25 by 5 pm!
Week 6 (9.29, 10/1)
The user interface: what do end-users of music systems really want and how can they get it?
(no project; work on midterm)
Week 7 (10/6, 10/8)
Good generalizations: scripted, message-based modular architectures for interaction
Midterm repertoire analysis paper due 10/9 by 5 pm!
Week 8 (10/13, 10/15)
Vivomorphisms: designing systems that add meaningfully to the mix
Midterm presentations in class, nothing due
Week 9 (10/20, 10/22)
Freedom, error, delight and terror: the role of the computer in improvised music
More midterm presentations; project prospectus due 10/23 by 5 pm!
Week 10 (10/27, 10/29)
Subtlety or overload? Measures of timbre as actionable intelligence for interaction
Project: what do I hear first? and how long until I trust it?
Week 11 (11/3, 11/5)
Can I bring my friends? Getting beyond the virtual duo
Project: whom to listen to, and how much? Also, aren't you glad you used arguments?
Week 12 (11/10, 11/12
How many milliseconds to Singapore? Latency, virtuality, and the Internet
 (no project; work on final)
Week 13 (11/17, 11/19)
Editing and refining: what to leave out, or for another piece
Project: she who comments her code and walks away, lives to code another day
Week 14 (11/24 only; happy Thanksgiving)
Demo/debug session
(no project: work on final)
Week 15 (12/1, 12/3)
Demo/debug sessions
(no project; work on final)
Week 16 (finals week – no classes)
Friday, December 8: final exam presentations 1:30 pm - 3:30 pm (final project due 1:30 pm)