Syllabus: MU 4413—Studio Techniques

Fall 2011 – T/Th, 8:30 – 9:45 am
Music Technology Lab (BMC 208); Control Room A (HD Studio, BMC 262/3)
3 Credits

INSTRUCTOR: **Dr. David B. Wetzel**
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Phone: (570) 662-4728
Office: Butler G7 (office hours TBA)
Course Web Site: https://mansfield.desire2learn.com/
Pre-requisite(s): MU3313 Electronic Music; permission of the instructor

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Course Description

An introduction to recording studio hardware and software, including interface modules, processors, sound modules (samplers and synthesizers), studio wiring and networks, MIDI control, mixing consoles, and studio etiquette. Essential mixing and audio mastering techniques will be addressed through hands-on projects.

Studio Production Techniques is part of a sequence of courses required for the Bachelor of Music with Emphasis in Music Technology. The purpose of this course is to prepare musicians to use professional tools for audio post-production editing and mixing. No specific mathematics or engineering training is required. Students should have a basic understanding of digital audio, MIDI, electronic music sequencing, and recording techniques.

Core Content & Student Learning Outcomes

Throughout this course you will gain recording skills for diverse situations through hands-on exercises, group discussion, short homework assignments, and individual or group projects. A detailed list of course activities, assignments, and due dates will be available on the course website in Desire2Learn (D2L).

Content Area (what we will cover)	**Student Learning Outcomes** (what you should be able to do after taking this course)
Studio Equipment	- Demonstrate an understanding of the functions served by each piece of equipment in the studio - Differentiate between standard audio cables and connectors
Editing	- Arrange imported audio clips on a timeline - Perform audio cuts and insertions and apply cross-fades
Sound Design	- Apply standard audio effects to previously recorded material - Orchestrate MIDI tracks using available synthesizers - Apply standard synthesis techniques to create synthesizer patches
Mixing	- Synchronize MIDI tracks with recorded audio tracks - Balance output levels, pan assignments, set EQ and effects for a multi track audio project and mix down to two tracks for final mastering.
Career Development	- Create and present a digital portfolio of sample work - Write coherent summaries of techniques and tools used in this course - Generate a studio proposal and budget with detailed recommendations

References to Student Learning Outcomes for the BM with an Emphasis in Music Technology Program:

- Demonstrate expertise in music technology hardware and software for recording, editing, mixing, and applying audio effects, MIDI sequencing, and notation.
- Students will demonstrate broad knowledge of the music industry.

Expectations

Commit your time. Students will be expected to spend quality (and no doubt *quantity*) time each week preparing for class. Studio time will be available for project work and homework assignments. Reading assignments must be completed before class. All homework assignments will have firm deadlines and are to be submitted online (unless otherwise indicated).

Show up and do the homework. Students are expected to complete all lab exercises, including individual and group tasks. Homework assignments will give you an opportunity to apply concepts covered in lectures and labs. Several independent projects will be assigned throughout the semester allowing students to explore specific techniques in more depth. Independent projects will require advance planning, organization of materials, and some creativity. Class discussions on various techniques and student projects will help keep the class abreast of various discoveries made, pitfalls encountered, and solutions devised by fellow students. The midterm exam will test knowledge of material covered in lectures and readings from the first half of the semester, but will require independent research as well. The final exam is a cumulative presentation of your work for this course in an online portfolio format. Each student is enrolled in the course web site on Desire2Learn (D2L) and will be required to log in regularly in order to access assignment info and reading materials, submit homework, and participate in online discussions or group projects. Specific readings and assignment details will be available via D2L.

Take charge of your learning. Studio production is a field in which everyone is self-taught to a high degree. I will expect you to use the available resources to their fullest potential and to seek out additional resources on your own. Manuals are available for all software and hardware used in this class. More information is available in books, magazines, and online sources. The studio motto is "RTFM" (Read The Manual). I will expect you to do so before answering any questions about how the studio works. All students will be responsible for backing up and maintaining copies of their own work.

Materials

This course will make extensive use of information and exercises found in the required textbooks and reserve readings. You are expected to acquire your own books and to study them diligently. Supplemental readings and activities will be drawn from primary sources, such as technical manuals and interviews with prominent studio artists and producers, as well as from the myriad tutorials and articles freely available online.

Required Textbooks:

- Izhaki, Roey. Mixing Audio: Concepts, Practices, and Tools. Burlington, MA: Focal Press, 2008
- Owsinski, Bobby. *The Mixing Engineer's Handbook*. Boston: Thomson Course Technology. 2005.

Required Digital Media & Accessories:

- Headphones with ¼" adapter
- USB flash drive, 2 GB or higher (get 2 and use one as a backup!)
- Blank CD/DVD media (for archiving completed projects or distributing to "clients"
- Reliable Internet access for Desire2Learn (D2L) and other required online activities

Recommended Readings and Listening:

- Thompson, Daniel M. *Understanding Audio: Getting the Most out of Your Project or Professional Recording Studio.* Boston: Berklee Press, 2005.
- Jones, Sarah. *Assistant Engineer's Handbook: Gigs in the Recording Studio & Beyond.* New York: Schirmer Trade Books. 2004.
- Digidesign and Frank D. Cook. *ProTools 101: Version 8 Official Courseware*. Thomson Course Technology. 2009.
- Technical manuals and user guides for all Digidesign and other studio equipment. Many will be available online in PDF format.
- Additional readings TBA (available through Library eReserves and/or via D2L).

Attendance

Students must attend class and arrive on time. Absences due to illness, serious mitigating circumstances, professional commitments, university-approved activities and the like will be excused with proper documentation. To be excused from class, a student must satisfy the requirements for an excused absence as outlined in current university policy, or must obtain special approval from the instructor *in writing*. Students who miss class for any reason will be responsible for obtaining information covered in missed lectures and for completing any make-up work on their own time. Coming to class more than **ten minutes late** will count as an **absence**. Unexcused absences will be considered in the grading process.

Academic honesty

Academic honesty is critical to the value of your learning experience and your professional development. Mansfield University strives to maintain an ethic of student leadership through character, scholarship, culture, and service. Therefore, in this class, it is expected that you will do your own work, credit others for their contributions, and play a helpful role in enabling learning by others. Acts of academic dishonesty will not be tolerated and may carry severe penalties.

Acts of academic dishonesty include: plagiarism, cheating, sabotage, taking advantage of resources without proper authorization (such as pirated software or music), claiming credit for the work of others, and failing to appropriately cite sources. In cases where academic dishonesty is suspected, the student will be confronted. Sanctions for academic dishonesty are largely at the instructor's discretion and may affect individual assignment grades or final grades for the course, depending on the situation and the seriousness of the infraction. Particularly serious offences may have ramifications beyond this course. See the *Mountie Manual* for official procedures in cases of academic dishonesty.

Assignments and Activities

Students will complete lab exercises, short homework assignments, a series of independent projects, two exams, and a final portfolio for presentation at the end of the semester. Participation in class activities and discussions is essential. Detailed assignment instructions and grading criteria will be posted on D2L.

Class discussion & participation. Class discussions will be based on reading assignments, lab activities, student experiences, and current events related to sound recording and production. Students should come to class prepared, having done the assigned reading and ready to ask or answer reasonable questions. Students are encouraged to pursue readings outside those that are assigned. Assessment of overall class participation is a factor in the final grade.

Lab exercises. Each week, students will participate in hands-on activities related to subjects covered in the weekly lectures and presentations. Assessment is pass/fail, based on participation.

Homework. Students will demonstrate their skills and mastery of key concepts through short homework assignments to be done outside of class. These assignments will generally relate to a

single audio production concept or studio task. They won't be hard, but they will demonstrate competence.

Independent projects. Students will produce several independent editing and mixing projects using professional DAW software, plug-ins, utilities, and accessories.

Exams. Two written exams will encompass material covered in the first two thirds of the semester. A series of short essay questions will require independent research and critical thinking on issues related to audio effects processors, synthesis techniques, studio equipment, digital audio theory, basic acoustics, and other subjects covered in this course.

Final portfolio and presentation. Students will prepare examples of their work for inclusion in an online portfolio. This portfolio will be presented to the class at the final exam period, and will be subject to peer evaluation.

Grading

Students will be evaluated on the basis of their work in this class. This includes preparation for and participation in class discussions, lab exercises, homework assignments, exams, presentations, and independent projects. Letter grades will be given for the following class activities (overall grade weights are assigned by category):

Assignment	Weight
Lab Exercises	10%
Homework	30%
Independent Projects	30%
Exams	20%
Final Portfolio & Presentation	10%

Lab activities are graded as pass/fail (A or F; either you participate or you don't). Participation in class discussions and activities is evaluated at the end of the semester and may affect the final grade. Essays, homework assignments, and independent projects will be given letter grades according to the following criteria:

Letter	%	GP	Criteria
A	95 – 100%	4.0	Excellent. Well-prepared and thorough. Shows creativity,
A-	90 – 95%	3.7	diligence, or insight beyond the basic requirements
B+	87 – 90%	3.3	Good. Meets basic expectations. Demonstrates a basic
B	84 – 87%	3.0	understanding of the material, perhaps with minor flaws
B-	80 – 84%	2.7	
C+	77 – 80%	2.3	Fair. Completes the assignment, but demonstrates a less-
C	74 – 77%	2.0	than-firm grasp of the material; missing elements; multiple
C-	70 – 74%	1.7	technical errors; uninspired
D+	67 – 70%	1.3	Poor. Demonstrates a lack of effort or understanding of the
D	64 – 67%	1.0	material. Multiple errors, missing elements, or failure to
D-	60 – 64%	0.7	follow assignment instructions
F	< 60%	0.0	Fail. Missing, incomplete, plagiarized, clueless or incoherent

Do-overs. Assignments for which a student has received a grade of C or lower may be re-submitted pending approval by the instructor.

Late work: Late work may be accepted at the instructor's discretion given a reasonable excuse by the student for missing a deadline. Accepted late homework is subject to an automatic penalty of one grade letter. Occasionally, deadlines are extended due to technical problems. Some

assignments may have open-ended deadlines. In all cases (late work, do-overs, open-ended assignments), all work **must** be submitted by the last day of regular classes.

Final Grade determination: Scores for homework and assignments provide a baseline on which your final grade is calculated. Your final grade may be adjusted, in consideration of several factors:

Circumstances	**Consequences for the final grade**
Outstanding class participation	Raise by one-half letter grade
Poor participation, routinely unprepared, unprofessional or disruptive behavior	Lower by one to one-half letter grade
Unexcused Absences:	Reduction in letter grade for unexcused absences:
2 unexcused absences:	1 letter grades
3 unexcused absences:	2 letter grades
4+ unexcused absences:	**Fail the course**
Acts of academic dishonesty, plagiarism, or grossly unprofessional conduct:	Determined according to the instructor's discretion and/or current university policies regarding student conduct

Exceptionalities

Any students with documented psychological or learning disorders or other significant medical conditions that may affect their learning should work through Mr. William Chabala in our Counseling Center (662-4798; wchabala@mnsfld.edu) to provide me with the appropriate letter so that I may serve their particular needs more effectively. If you have an exceptionality that requires class or testing accommodations, Mr. Chabala will work with us to identify and implement appropriate interventions

Facilities

The Steadman Theatre control room houses a 24-track, high-resolution Digidesign ProTools HD-Accel system featuring 128kHz/24-bit ADCs, ICON D-Command console, an Apple Mac Pro computer, and professional-grade monitoring systems (Genelec & Adam active monitors). Tie lines connect the control room to the Steadman Theatre stage with 24 microphone inputs and four outputs for headphone or talk/listen-back on stage. The studio is equipped with linear 2-track recorders (CD-RW, DAT). The Digiserver enables project delivery, including extremely large session files, over secure Internet connections to other ProTools studios worldwide. Music production software includes ProTools 8 (for HD Accel) with multiple plug-ins for dynamic processing, pitch correction, and mastering. For electronic music scoring, the studio is equipped with MOTU Mach Five (software sampler), Reason (softsynth/sampler/ sequencer), and Sibelius (score notation/publishing). A wide array of microphones (Earthworks, AKG, Neumann, Beyerdynamic, Rode, Mojave, etc.) and options for connecting additional sound sources and instruments makes the recording possibilities nearly endless.

The Music Technology Lab includes 16 Apple iMac workstations available to students, running Pro Tools LE, Digital Performer, Peak, Reason, Sibelius, Finale, Max/MSP, and assorted utilities and supporting programs. Each workstation includes a Digidesign MBox 2 audio interface and a Korg XP5 keyboard synthesizer.

Course Calendar:

Detailed reading assignments, lab exercise, homework, project descriptions, due dates, external links, and additional notes will be available on the course web site via D2L. This calendar is subject to change at the instructor's discretion.

Week 1 – Syllabus and course/studio overview; Pro Tools review
August 30 & September 1
Homework: hands-on project 1 from PT 101 v. 8 (on reserve) due by week 3
Week 2 – Mixing consoles and signal flow
September 6 & 8
Review: effects inserts and sends
Week 3 – Studio monitoring and acoustics
September 13 & 15
Discussion: Room acoustics (listening position, axial resonances)
Week 4 – Effects processing 1: Filtering
September 20 & 22
Homework: apply filter effects to a sample session
Week 5 – Effects Processing 2: Dynamic range processors
September 27 & 29
Homework: apply compression to a sample session
Week 6 – Phase and Panning (ch 11 & 13)
October 4 & 6
Homework: apply panning effects to a sample session
Week 7 – Effects Processing 3: Delays, Reverbs, and other sound processors
October 11 & 13
Homework: apply time-based effects to a sample session
Exam 1 – Pro Tools, audio processors, and basic acoustics (10/6)
Week 8 – MIDI sequences with audio
October 20 (no class on Oct. 18 –FALL BREAK)
Homework: Add a MIDI track to existing audio
Week 9 – Synth programming
October 25 & 27
Homework: Create a *Thor* preset in Reason
Week 10 – More synth programming
November 1 & 3
Homework: Create a combi patch in Reason
Week 11 – Samplers
November 8 & 10
Homework: create a sampler patch (Reason)
Week 12 – Editing
November 15 & 17
Homework: Edit a session
Week 13 – Exam 2
November 22 (before Thanksgiving Break)
Exam 2 – MIDI, synthesizer/sampler programming
Week 14 – Mixing
November 29 – December 1
Discussion: Remix projects, general troubleshooting and feedback
Week 15 – Final remix projects
December 6 & 8
General troubleshooting and cleanup of remix projects
FINAL EXAM: Portfolio presentations