

SYLLABUS

MUSIC 222 - AUDIO RECORDING

SPRING QUARTER, 2002

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OFFICE HOURS, Mondays and Wednesdays 3:30 P.M. – 4:30 P.M. Room 806

Section 01 meets Monday and Wednesday from 12:30 P.M. to 1:45 P.M. **Section 02** meets on Monday and Wednesday from 2:00 P.M. to 3:15 P.M. **Section 03 meets** on Tuesday evenings from 7:00 P.M. to 10:00 P.M. All sections meet in room 806. Three credits are awarded upon successful completion of the course. There are no required pre-requisites for the course however English 101, Music 220, and Music 221 are recommended.

The **course objective** is to introduce students to audio mixing and recording. This will be accomplished in a lecture/demonstration format that will include hands-on learning opportunities for the students. This course is designed as the third of a five-course sequence available at the college. It is a requirement for completion of the associate degree in Digital/Audio engineering and MIDI production.

An *approximate course outline* for Music 222, AUDIO ENGINEERING, appears below.

- Week 1 - Introductions, syllabus distribution and review, course registration, corrections, and additions. A review of Air Pressure/Sound Pressure. A review of Electricity and Magnetism.
- Analog/Digital recording tape and it's construction. Care and handling of magnetic tape. Storing tape tails out as a means of reducing "print through". The design and function of the standard recording "head" on magnetic tape recorders. "Track" configurations vs. tape width.
- Week 2 - Playback head design and function. Record and playback head function during "overdub" operations. Head gap and its relation to high frequency response. Creating tape echo and loops and it's place in the evolution of recording technology. Care and maintenance of tape heads.
- Week 3 - Record and playback equalization curves and their adjustment in analog recording. Problems of hysteresis and its relation to the bias function. The function of lab created test tapes and the practice of recording tones on the head of the tape.
- Week 4 - Basic analog tape machine functions are explored through demonstration. Standard names and functions of the various hands-on parts of a tape recorder. Razor tape editing is demonstrated and a basic tape-editing project may be assigned.
- Week 5 - Multi-track analog tape machines are introduced by discussion of the Tascam 80-8 eight-track machine, and the Fostex G-16 sixteen-track machine. Advanced user functions of the Fostex G-16 tape machine including various monitoring modes, display set-ups, and spot erasure are discussed.

- Week 6 - The standard auto-locator functions of analog tape recorders will be introduced. Noise reduction systems will be introduced. The DBX system, Dolby A, Dolby B, Dolby C, and the Dolby SR system will be discussed.
- Week 7 - Digital recording theory will be presented. Amplifier types and their various applications will be discussed. Loudspeaker design will be introduced with a discussion of its history and its relationship to microphone design.
- Week 8 - Audiophile applications of speaker design. Sound reinforcement systems are introduced with a discussion of active and passive crossover networks. Pros and cons of multi-amp reinforcement systems will be discussed.
- Week 9 - High frequency dispersion systems for sound reinforcement systems will be discussed. Square horn, radial horn, the lens, and modern innovations will be discussed. Monitoring systems for stage and studio will be analyzed.
- Week 10 - New directions and the future of recording will be discussed. The influence of MIDI technology and the personal computers advancing place in the industry. The future of large-scale multi-track recording vs. the advancing quality of small in-house private recording capability.

Grading is based on scores in three areas. Area one is the combined scores on all written exams and accounts for approximately 70% of the final grade. Area two is determined by success in any hands-on projects assigned throughout the quarter and accounts for 15% of the final grade. Area three is based on attendance, participation, punctuality, and dependability throughout the quarter and accounts for 15% of the final grade. Decimal grading is used exclusively. The Z grade is awarded only for emergency withdrawals and only to students who are passing the course.

Any irrefutable evidence of **cheating** or **plagiarism** (turning in work that is not your own) on the part of a student will result in non-acceptance of the assignment or examination.

Requests for **excused absences** must be made before the scheduled class time and any subsequently missed tests or assignments completed before the next regularly scheduled class meeting.

The required **textbook** for this course is *Modern Recording Techniques* by David Miles Huber and is available in the college bookstore.

Students are expected to provide all note-taking materials as well as a storage/retrieval system for class handouts. Most handout materials will be punched for a standard three-ring binder.

In **inclement weather** conditions listen to KIRO or KING radio for official school closure announcements.