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### Proposal for Self-Determined Major in Music Production and Sound Technology

I became heavily interested in recording music when I was a junior in high school, and I knew that I wanted to pursue music technology as a serious academic endeavor before I came to college. Though I could have attended a technical institute that focused heavily on training, I came to Skidmore because I felt that a liberal arts education would help give me a broader perspective of knowledge than if I had specialized in a specific field. I feel it is incredibly important to not simply be able to “do” but to understand what you are doing. In the music world, this holds especially true. The music business is flooded with young professionals who have studied at conservatories or technical institutes where they have trained ad nauseum, spending countless hours perfecting their ability to sight read music or memorizing the intricacies of how audio equipment works. I believe what sets successful graduates apart from unsuccessful ones are a broader understanding of musical skills and an ability to adapt to different professional situations. I feel that the major I am proposing incorporates a wide range of disciplines into a cohesive, well-rounded major that will prepare me for a more specific specialization at graduate school or in the workplace. What I feel is most important is that I understand fully all aspects of producing music and engineering audio, and the classes I have chosen should reflect a variety of different angles of approaching an education in music technology.

The core courses I have chosen to represent the framework of my education can be divided into four sections: foundation courses, performance courses, applied courses, and integrative courses. Though all of these classes are a means to the same end, they provide different perspectives on creating music. My goal is to end up with a broad understanding of all aspects of music production so that I understand music from the perspective of a physicist, musician, engineer, recording artist, and computer scientist.

The foundation courses are designed to provide me with a foundation of knowledge in music theory, the physics of sound, and computer science. Music is a language all its own, and understanding the structures of western musical theory is as important for a musician as it is for a writer to be familiar with Shakespeare. Physics courses focusing on sound will deepen my understanding of how sound is produced, its properties, how it can be captured, and how I can best use it as a musician and engineer. Finally, computer science gives me a better understanding of how a computer stores and manages information, so that I can more fully take advantage of recording programs and digital equipment used in the studio.

Performance courses consist of private lessons to give me a specific understanding of how to play guitar and piano. In most popular music today, guitars and pianos or keyboards serve as the main melodic instruments. My knowledge of music theory will be applied in practice to allow me to communicate rhythmic and melodic ideas through my instrument, as well as give me more creative options as a producer. Too often will a studio technician be confined by too much technical training to the point where they are removed from the creative side of making music, these performance classes will round out my education so that I can understand both the creative and technical side to recording music.

The Applied courses are focused in music technology and music business. In the music technology classes I will use all of my previously acquired skills in performance and my understanding of computers and sound to create original compositions. I will gain firsthand knowledge and experience using studio equipment and working with sound on a tangible level. Because so many musicians today are immensely talented but cannot make the right connections to start their career, a course in music business will provide me with an understanding of the structure of the music industry so that I can best market my unique skills in the most successful way.

The Integrative classes are the final step of my core courses. They represent a conglomeration of all the knowledge I have amassed during my four years at Skidmore. During my independent study of recording, I will use my skills as an audio engineer, sound technician, and musician to create my own compositions, unbound to the assignments of the class as in previous music technology courses. Independent studies give me the creative freedom to produce music all

my own, and a professional internship in the music industry will give me real world experience and help me make connections in the workplace. This individual, real world experience has arguably more value than any classes I will have taken thus far, because there is no academic substitute for involving yourself in music creation professionally.

Lastly, my final senior project will represent a conclusive, coherent integration of all my education into a single audio CD that showcases my ability to compose, perform, edit, engineer, master, and most importantly create music. When I present my audio CD formally, I will give a presentation that details exactly how all of my classes came together to help me create the CD, focusing on how aspects of physics, computer science, performance, music theory, recording techniques, and real world experience have educated me in the abilities required to make music. I will also present a time-line of work I have done throughout my college career and highlight specifically what it is that I have improved at. This presentation will be the final step of my major, because it will fuse all of my knowledge together into a single, cohesive work of art that I have not only made, but that I understand deeply enough that I can explain in detail the individual academic courses and concepts that were involved in its creation.

Course Proposal:

Foundations Courses: These courses will give me a foundation of understanding in music theory, the physics of sound, and computer science.

MU101 Rudiments of Music  
MU241-243: Materials and Structures I-III  
PY109: Sound and Music  
PY 251: Special Topics in Physics, Acoustics  
CS106: Introduction to Computer Science

Performance Courses: These courses will give me detailed instruction on how to play keyboard and guitar.

MU197 Keyboard Skills  
MU281 Private Musical Instruction  
MU281 Private Musical Instruction in Jazz Guitar

Applied Courses: In these courses I will use my knowledge of music theory, the physics of sound, computer science, and musical performance to create original compositions and recordings.

MU255, 353: Music Technology I and II  
MU00611 Music Business  
ENE00400 Audio Engineering

Integrative Courses : These courses are the final step in my integration of all of my musical and technical education at Skidmore.

MU371 Independent Study in Music Technology  
MU399 Professional Internship in Music  
MU376 Senior Project in Music Technology

Courses at Skidmore:

MU101 Rudiments of Music (3)\*  
MU241 Materials and Structures I (4)\*  
MU242 Materials and Structures II (4)\*  
MU243 Materials and Structures III (4)\*  
MU197 Keyboard Skills (1)\*  
MU281 Private Musical Instruction (2)\*  
MU255 Music Technology I (3)\*  
MU353 Music Technology II (3)\*  
MU371 Independent Study (in music technology) (3)\*  
MU376 Senior Project in Music Technology (4)  
PY 109 Sound and Music w/Lab (4)  
PY 251 Special Topics in Physics: Acoustics (3)  
CS 106 Introduction to Computer Science I (4)  
MU399 Professional Internship in Music (3)

Courses at Southern Cross University:

MUS00611 Music Business  
ENE00400 Audio Engineering I  
MUS00642 Practical Studies II  
MUS00622 Contemporary Style Analysis

(\* indicates a course that has already been completed or is in the process of being completed  
Course Study Plan:

Fall 2003:  
Rudiments of Music

Spring 2004:  
Private Music Lessons in Jazz Guitar

Fall 2004:  
Materials and Structures I  
Music Technology I  
Private Music Lessons

Spring 2005:  
Keyboard Skills  
Materials and Structures II  
Music Technology II  
Private Music Lessons in Jazz Guitar

Fall 2005:  
Independent Study in Music Technology  
Materials and Structures III  
Private Music Lessons

Spring 2006:  
Private Music Lessons  
Sound and Music w/Lab  
Independent Study in Music Technology

Fall 2006:  
Music Business#  
Audio Engineering I#  
Practical Studies II#  
Contemporary Style Analysis#  
(# to be taken at Southern Cross University)

Spring 2007:  
Senior Project in Music Technology  
Intro to Computer Science  
Special Topics in Physics: Acoustics  
Professional Internship in Music

Course Descriptions:

**MB 107. BUSINESS ORGANIZATION AND MANAGEMENT 4**

A broadly based introduction to the field of business that can serve either as the first course in the departmental sequence or as an only course for a student desiring an overview of the business world from a manager's perspective. Topics include strategic analysis and planning, marketing, financial management, control, organizational design, human behavior, and communications. Students present individual written analyses and engage in group oral presentations.

**MU 101. RUDIMENTS OF MUSIC 3**

An introduction to musical notation, sight singing and ear training, and rudimentary concepts of music theory. Students learn material that can be applied to further study in music theory, some areas of performance, and other courses. Open to students with no prior musical experience. Students successfully mastering the material in MU101 must also pass the department's diagnostic exam to enroll in MU241. (Fulfills humanities requirement.) The Department

**MU 241. MATERIALS AND STRUCTURES I 4**

Following a brief review of the rudiments of pitch, rhythm, and meter, students will study the principles of species counterpoint and then proceed to write and analyze diatonic tonal harmony, with reference to musical literature, style, form, and compositional process. Diatonic tonal syntax is the foundation of Western art music from the 17th through the 19th centuries, as well as some jazz and popular music up to the present time. Examples will be chosen from a wide range of historical periods, musical styles, and traditions. (Fulfills humanities requirement.) Prerequisite: Diagnostic exam. B. Givan, D. Rohr

**MU 242. MATERIALS AND STRUCTURES II 4**

The second semester of theory will continue with the addition of chromatic harmony and the literature, style, forms, and compositional procedures associated with these expanded harmonic techniques, which appear in Western art music from the 18th to at least the early 20th centuries, and jazz. Topics will include chromatic chords, the resurgence of linear contrapuntal processes, modulation, and techniques that pushed to and beyond the limits of tonal harmony, such as expanded tertian chords, linear chromaticism, and finally the symmetrical scales and interval patterns associated with the dissolution of functional tonality. Prerequisite: MU152 or MU241. B. Givan, D. Rohr

**MU 243. MATERIALS AND STRUCTURES III 4**

This semester will introduce students to the compositional and analytical procedures of the 20th and 21st centuries. Topics will include the set-theoretical experiments of the atonal period, the 12-tone serialism of the mid-20th century, and the wide variety of influences (folk music, non-Western music, jazz, and popular music, as well as ongoing points of influence and connection from the harmony and counterpoint of Western art music) adopted by composers during these years. Students will develop systematic, critical approaches to the range of contemporary musical styles and possibilities as they choose their own musical pathways. Prerequisite: MU242 or MU251. B. Givan, D. Rohr

**MU 255. MUSIC TECHNOLOGY I: INTRODUCTION TO ELECTRONIC MUSIC, COMPOSITION, AND RECORDING STUDIO TECHNIQUES 3**

Introduction to basic music technology, electronic music, and professional recording studio techniques and equipment. Study of elementary acoustics, MIDI, synthesizers, microphones, analog and digital multitrack recording, sound mixing, and processing. Introduction to works in various styles by established electronic composers. Weekly studio/lab work. Prerequisites: ability to read music and QR1. (Fulfills QR2 requirement.) Studio fee: \$50. A. Holland

**MU 353. MUSIC TECHNOLOGY II: ADVANCED ELECTRONIC MUSIC, COMPOSITION, AND RECORDING STUDIO TECHNIQUES 3**

Development of original compositions using advanced studio techniques. Areas of study include advanced MIDI projects, computer algorithms for composition and sound synthesis, synthesizer programming, audio (SMPTE) and video (VITC) time code synchronization, digital sampling, digital multitrack recording, automated digital mixing, digital mastering for compact disk, and audio for video. Study of works in various styles by established electronic composers. Weekly studio/lab work. Prerequisite: MU255 or permission of instructor. Studio fee: \$50. A. Holland

MU 371, 372. INDEPENDENT STUDY† 3, 3

An opportunity for qualified students to pursue independent study, under the supervision of a member of the department, in any field of music. Prerequisite: Consent of the instructor and approval of the department. The Department

MU 361. TOPICS IN RECORDING ENGINEERING AND COMPUTER MUSIC TECHNOLOGY† 3

The study and practical application of advanced music technology topics chosen at the discretion of the instructor. Topics may include advanced MIDI applications; recording engineering, production, and marketing; digital synthesis, recording, and editing; intelligent synchronization; programming languages for synthesis and studies in psychoacoustics. Course may be repeated for credit with the permission of the department. Prerequisites: MU255, 353. Studio fee: \$50. Non-liberal arts. A. Holland

MU 376. SENIOR PROJECT IN MUSIC TECHNOLOGY 3

Independent project culminating in a substantial product in an appropriate medium and format, and an oral symposium presentation. Project proposal must be submitted to the chair for departmental approval by November 15 of the senior year. Prerequisite: MU363. Non-liberal arts. The Department

MP 197. KEYBOARD SKILLS 1

Application of fundamental theoretical concepts at the keyboard. Functional skills to include control of simple diatonic and chromatic chordal harmony, independent voicing, modal and scalar patterns, elementary transposition, and sight-reading. Course materials are keyed to concepts covered in MU151 or 241 and MU152 or 242. Successful completion of MP197 will satisfy the department's keyboard proficiency requirement for all music majors. Prerequisite: MU151 or MU241 or permission of instructor. P. Baytelman

MP 281, 381. PRIVATE MUSICAL INSTRUCTION 2, 2

Individual forty-five-minute weekly instruction in voice, piano, harpsichord, organ, fortepiano, guitar, orchestral instruments, sitar, tabla, and jazz improvisation. Prospective students accepted by audition/interview. (Fulfills arts requirement.) The fee for forty-five-minute private instruction is \$450 per course.

PY 109. SOUND AND MUSIC WITH LAB 4

The physical principles of sound—how it is produced, propagated, and perceived. Illumination of principles will emphasize examples from music. Mechanisms used to produce different types of musical sounds will be discussed as well as the physical principles behind the reproduction of music in its many forms such as radio, tape recorders, and CD players. The laboratory component will include measurement of the speed of sound, frequency analysis of musical instruments, and sound recording. (Fulfills QR2 and natural sciences requirements.) J. Linz

PY 251. SPECIAL TOPICS IN PHYSICS (Acoustics) 3

A variety of topics at the intermediate level, available to students with an interest in physics. Some examples of topics are: exploring the universe, astronomy beyond the Milky Way, atomic and molecular physics, and particle physics. Specific choice of topics will depend on student interest

and background. Prerequisite: prior physics course and permission of the department. The Department

**MU 399. PROFESSIONAL INTERNSHIP IN MUSIC 3, 6, 9**

Professional experience at an advanced level for juniors and seniors with substantial academic and cocurricular experience in the major field. With faculty sponsorship and department approval, students may extend their educational experience into such areas as arts administration, recording, and archival work. Prerequisite: Previous study related to the area of the internship experience. Permission of the supervising faculty member and approval by the department. Non-liberal arts.

**CS 106. INTRODUCTION TO COMPUTER SCIENCE I 4**

An introduction to the principles of design, implementation, and testing of object-oriented programs. The course covers language features such as control structures, classes, file I/O, and basic data structures including arrays. Other topics include recursion and fundamental algorithms, such as elementary searching and sorting algorithms. (Fulfills QR2 requirement.) The Department

**MUS00611 MUSIC BUSINESS:**

Outlines basic principles of small business management pertinent to performers, composers and producers, leading to the development of a business and marketing plan.

**ENE00400 AUDIO ENGINEERING I:**

Covers a range of techniques associated with audio engineering in multitrack recording studios and in live recording and other environments.

**MUS00642 PRACTICAL STUDIES II:**

Provides a consolidation of practical techniques, technical routines, theory applications and musicianship skills relevant to the studio specialization of the student and also introduces studio production presentations such as concerts and recordings.

**MUS00622 CONTEMPORARY STYLE ANALYSIS:**

Provides students with insight into major contemporary music styles (e.g. blues, rock, funk, jazz/fusion, techno, contemporary, classical) through analysis of harmonic, melodic, rhythmic, timbral, and formal elements.