

Interdisciplinary Honors Proposal Form

Name: STUDENT NAME

Clemson Email Address: STUDENT EMAIL

Areas of Study: Electrical Engineering, Music/Audio Technology

Interdisciplinary Honors Advisors Name: ADVISOR NAME

Interdisciplinary Honors Advisors Clemson Email: ADVISOR EMAIL

Interdisciplinary Honors Advisors Academic Department: Department of Performing Arts

Please check which Interdisciplinary Honors Track you wish to complete: 3 courses with a capstone

2 courses with a substantial project/thesis

Please describe Summary of Focus.

This should include the connection between the two academic departments, the specific goals you have within interdisciplinary honors, and learning outcomes.

Music and technology are inextricably linked—the art of music is enabled and furthered through the development of instruments and tools that help us create it. Even from the early days of electrical engineering, the field was extremely close with music and arts. After all, before Edison refined the lightbulb, he produced the phonograph, which sparked the recording industry. This connection only continued to solidify throughout the years as the microphone and radio spread the sounds Bing, Sinatra, Ellington, Ella Fitzgerald, and other stars around the world in the mid 1900s. Further, the development of the synthesizer and the era of electronic music was ushered in by electrical engineers like Bob Moog, the father of voltage-controlled synthesis.

Through interdisciplinary honors, I will continue to further my electrical engineering studies while investigating analog circuit design and other electrical engineering concepts with a specific focus on applications for music and audio technology. Through this process, I plan to gain a deeper understanding of both electrical engineering and music. I also plan to use this study to demonstrate the valuable connection between these two disciplines to connections between the Clemson Electrical and Computer Engineering department and Performing Arts departments in hope that students and faculty will take an interest in more interdisciplinary possibilities.

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Plan of Study:

	Course Title	Course Number	Credit Hours	Semester to be Taken
1	Electronics 11	ECE 3210	3	Spring 2021
2	Intro to Audio Technology	AUD 1850	3	Fall 2021
3	Honors Research	HON 4990	3	Fall 2021
4	Honors Research	HON 4990	3	Spring 2022

Please explain why you have selected each of these courses and how they will relate to your focus.

1) Electronics II

- a. This course focuses on the analysis and design of transistor and op-amp based amplifier circuits. Transistors, op-amps, and other active circuit components are fundamental components in synthesizers and other electronic audio equipment. In my independent study, I would investigate and apply class concepts to audio-specific scenarios.

2) Intro to Audio Technology

- a. Through learning the fundamentals of analog and digital recording, MIDI sequencing, and audio production, I will investigate electronic instrument recording techniques in order to record the finished synthesizer.

3) HON 4990

- a. In the first section of HON 4990, I will apply the concepts I explored in Electronics II (and concurrently in Intro to Audio) while continuing to design and prototype the synthesizer.

4) HON 4990

- a. In my last semester, I will finalize the synthesizer's design and construction. I will also record demos of the instrument and plan the presentation.

If you are completing a substantial project or thesis, please describe the project and explain how it will relate to the focus of your interdisciplinary honors.

Through this interdisciplinary study, I intend to develop a modular analog synthesizer, demonstrating an gained understanding of analog circuit design as well as audio technology and music performance concepts. At the completion of the project, I will present and discuss the development of the device, as well as demonstrate its musical capabilities.

Once you have completed this form and reviewed it with your Interdisciplinary Honors Advisor please sign and upload to the Interdisciplinary Honors Proposal Assignment in the Interdisciplinary Honors Canvas Page.

Interdisciplinary Honors Advisor Signature:

Date:

Honors Student Signature:

Date:

Date Submitted: