PY.350 (COMPUTER MUSIC)

Courses

PY.350.409. Hip Hop Production 1 (Non-Majors). 2 Credits.
A history and workshop course designed to illuminate the history of Hip Hop music. This course is open to non-majors.
Distribution Area: P, Y

PY.350.421. Mixing Electronic Music. 3 Credits.
This course builds on the skills learned in Introduction to Computer Music to focus on the art of mixing. Students will learn the techniques and tools behind making a great mix, starting with the fundamentals of EQs, compressors, filters, distortion, etc and expanding to explore creative applications of these tools. This project-based course will combine focused assignments designed to gain an understanding of the tools of the mixing studio and personal mix projects that showcase the student's personal voice as a producer. Computer Music Majors only. Completion of Intro to Computer Music 1 and 2.
Prerequisite(s): Majors only; Intro to Computer Music 1 and 2

PY.350.463. Introduction to Computer Music. 3 Credits.
A study of the techniques, repertoire, and aesthetics of computer music. Composition and research projects are completed using the resources of the Computer Music Studios. Participation in at least one public program.
Distribution Area: P, Y

PY.350.464. Introduction to Computer Music 2. 3 Credits.
A study of the techniques, repertoire, and aesthetics of computer music. Composition and research projects are completed using the resources of the Computer Music Studios. Participation in at least one public program.
Prerequisite(s): Completion of Introduction to Computer Music 1 needed, PY.350.463[C].
Distribution Area: P, Y

PY.350.466. Introduction to Programming. 3 Credits.
This course is designed for musicians and digital artists who wish to learn Multimedia Programming. We will use P5js programming language to examine techniques and algorithms to manipulate sounds, images, movies, text and web pages. Also, we will learn to acquire and use related open-source programs and libraries to simplify our work. No previous programming experience is required.
Distribution Area: P, Y

PY.350.545. Computer Music Seminar (UG). 1 Credit.
The seminar focuses on the work of student and faculty composers, with class discussion of on current developments in the field of computer music. Required for computer music majors. Open to others with permission of the faculty.
Prerequisite(s): Computer Music majors only. Non-majors interested in auditing the course should email department chair approval to peabodyregsitrar@jhu.edu.

PY.350.546. Computer Music Seminar (UG). 1 Credit.
The seminar focuses on the work of student and faculty composers, with class discussion of on current developments in the field of computer music. Required for computer music majors. Open to others with permission of the faculty.
Prerequisite(s): Computer Music majors only. Non-majors interested in auditing the course should email department chair approval to peabodyregsitrar@jhu.edu.

PY.350.691. Master's Thesis. 2 Credits.
A scholarly work describing the author's research activities as required for the Research track of the MM program in Computer Music.
Prerequisite(s): Computer Music majors only.;Completion of or co-enrollment in Research Practicum required, PY.350.842[C].

PY.350.693. Portfolio. 2 Credits.
The completion and submission of works of major proportions that utilize computer technology as required by the Master of Music degree program in Computer Music. The compositions must be written during your tenure at Peabody and be approved by your major teacher and departmental faculty. Graded on a S/U basis.
Prerequisite(s): Computer Music - Composition Track majors only.

PY.350.821. AI for Musicians. 2 Credits.
Students are introduced to the fundamentals of machine listening, data science, and machine learning by applying these techniques to musical materials. Topics include neural networks, classification, regression, dimensionality reduction, clustering, and spectral decomposition. Student work focuses on using personally-created datasets for analysis, training, and the creation of original artistic expressions.
Prerequisite(s): Digital Music Programming 1 needed.;Open to Composition or MET majors
Distribution Area: P, Y

PY.350.835. Studio Techniques. 3 Credits.
A course that covers advanced computer music studio techniques. Topics include stereo and surround sound microphone techniques, Ambisonic and Atmos multichannel diffusion, network audio, fft-based spectral processing, concert production, and audio Mastering. Prerequisite: Completion of Introduction to Computer Music 2 and Mixing Electronic Music (Undergraduate Only)
Prerequisite(s): Undergraduate Computer Music majors only.
Distribution Area: P, Y

PY.350.837. Digital Music Programming 1. 3 Credits.
This course teaches computer programming theory and skills pertaining to computer music composition, performance, and research. The primary focus of the course is the Max/MSP/Jitter suite of programming tools. Prerequisite: Undergraduates must have completed Introduction to Computer Music and Intro to Programming (Peabody) or Gateway Computing (Homewood).
Prerequisite(s): Undergraduates wishing to take Digital Music Programming must have completed Introduction to Computer Music and Intro to Programming (Peabody) or Gateway Computing (Homewood).
Distribution Area: P, Y

PY.350.838. Digital Music Programming 2. 3 Credits.
This course will offer an introduction to computer-based music making with the audio programming language SuperCollider. We will explore the potentials of SC, including sound synthesis, composing with algorithmic patterns, and the use of hardware controllers to manipulate live audio processes. The course will offer a mixture of lecture, workshop and listening sessions, providing both a historical and theoretical context to digital music programming. Prerequisite: Undergraduates must have completed Introduction to Computer Music and Intro to Programming (Peabody) or Gateway Computing (Homewood).
Prerequisite(s): Undergraduates must have completed Intro to Programming (Peabody) or Gateway Computing (Homewood).
Distribution Area: P, Y

PY.350.840. History of Electroacoustic Music. 3 Credits.
The History of Electroacoustic Music is an overview of the development of electroacoustic music in the twentieth century. Intended for the student with little or no knowledge of this field's history and literature, the course is designed to provide a general familiarity with the major trends and developments as well as to allow for more detailed study on topics of particular interest to the class.
Prerequisite(s): Computer Music majors only.
Distribution Area: P, Y

PY.350.841. Research Practicum. 4 Credits.
An intensive course for those following the computer music research/technology track. Substantial individual projects will be pursued. Enrollment by permission of the instructor.
Prerequisite(s): Computer Music - Research Track majors only. Non-Research Track Computer Music majors may take course with department approval.

PY.350.845. Computer Music Seminar (GR). 1 Credit.
The seminar focuses on the work of student and faculty composers, with class discussion of on current developments in the field of computer music. Required for computer music majors. Open to others with permission of the faculty.
Prerequisite(s): Computer Music majors only. Non-majors interested in auditing the course should email department chair approval to peabodyregsitrar@jhu.edu.

PY.350.846. Computer Music Seminar (GR). 1 Credit.
The seminar focuses on the work of student and faculty composers, with class discussion of on current developments in the field of computer music. Required for computer music majors. Open to others with permission of the faculty.
Prerequisite(s): Computer Music majors only. Non-majors interested in auditing the course should email department chair approval to peabodyregsitrar@jhu.edu.

PY.350.867. Synthesis Theory 1. 2 Credits.
Synthesis Theory explores advanced topics in digital music making. Each term will focus on one or more themes. The fall section of the course covers musical robotics and instrument building using the Arduino platform. Students will have use of the maker space in the Computer Music Studios to complete their projects. Prerequisite: Undergraduates must have completed Introduction to Computer Music and Intro to Programming (Peabody) or Gateway Computing (Homewood).
Prerequisite(s): Undergraduates wishing to take Synthesis Theory must have completed Intro to Programming and Intro to Computer Music (Peabody) or Gateway Computing (Homewood).
Corequisite(s): Students must co-register in Digital Music Programming 1, PY.350.837[C].
Distribution Area: P, Y

PY.350.868. Synthesis Theory 2. 2 Credits.
Synthesis Theory 2 explores advanced topics in Digital Signal Processing, including advanced synthesis techniques, Fourier transforms, and machine listening and machine learning. Corequisite: Students must co-register for or have already taken Digital Music Programming 2 or equivalent.
Corequisite(s): Corequisite: Students must co-register for or have already taken Digital Music Programming 2 or equivalent.
Distribution Area: P, Y