

Syllabus

Course Title: How to Write a Music Composition Book

MUS 5950 - 005 Topics in Music

Prof. Dr. Guerino Mazzola

Three Hours p. Week/Credits

General Description

This course is a follow-up course of the course “The Mathematical Design of Future Music”, Spring 2018. It complies with the desire of composition students to have a textbook reference to that course, but more generally to the possibilities of future musical creativity. The content of the book that we shall write in this course is using that course material, but will include many other topics, such as non-European approaches to music, a fundamental critique of the Western sociology of music, new perspectives of non-notational methodologies and technologies of creativity, and others.

The idea of this course is to write such a book under the guidance of the instructor and to publish it in the series “Computational Music Science” of Springer Publishers. We are happy to have the agreement with Springer for the publication of such a book.

Here is a provisional *table of contents*:

Part I Introduction

- 1 General Introduction
 - 1.1 Students’ Projects
 - 1.2 Not State of the Art, But Milestones to the Future
 - 1.3 Outdated Principles
 - 1.3.1 A Total Reengineering of Music
 - 1.4 Projects
 - 1.5 Syllabus
 - 1.6 Motivational Ideas
- 2 Only One Restriction: Quality
 - 2.1 Intelligent and Stupid Music
 - 2.2 The Quality of the Musical Message
 - 2.3 The Instrumental Setup
- 3 Communication
- 4 The Basic Function of Music
- 5 Historicity in Music
 - 5.1 Utopia
 - 5.2 Musical Anticipation
- 6 Who Carries the Creative Action of Music?

7 What Are the Walls Against Creativity in Music?

8 Musical Instruments

Part II Technological Tools

9 Software Tools

10 Musical Distribution Channels: New Networks

11 Hardware Options

12 New Concepts of Musical Instruments

13 Big Science in Music

Part III Mathematical Concepts

14 Mathematical Music Theory

15 Future Theories

16 Serialism: Failure of New Concepts without Musical Impact

17 Mazzola's Sonata Construction: A Technical Approach and its Limits

18 Imaginary Time: Extending Musical Time Concepts to Cognitive Dimensions

19 Gestures

Part IV Cultural Extensions

20 A Critique of the Western Concept of Music

21 Improvisation and the Synthesis Project on the Presto Software

22 Art Beyond Music Alone

23 What is the Fundamental Role of Music?

24 Human and Machine Music

25 The Role of Music in the African Way of Life

Part V Creative Strategies

26 Recapitulation of Creativity Theory

27 The Specifically Musical Walls Against Creativity

28 Examples of Creative Extensions in Music

29 Are Aesthetics and Business Antagonists?

Part VI COMMUTE

30 ComMute —Towards a Computational Musical Theory of Everything

- 30.1 The Physical Theory of Everything (ToE)
- 30.2 Some Directions towards ComMute
 - 30.2.1 Harmony and Rhythm
 - 30.2.2 Strings for Harmony and Counterpoint
 - 30.2.3 Complex Time for Unification of Symbolic and Physical Realities in Music
 - 30.2.4 Symbolic and Real Gestures
 - 30.2.5 Unifying Note Performance and Gestural Performance: Lie Operators
- 30.3 Imagining Big Science for ComMute

Part VII References, Index

References

Index

The book will be *written in the LaTeX* software, which is free and also mandatory for many publishers. It is the world-wide standard for any high-quality book and paper production that involves complex formulas, diagrams, figures, or tables. Accordingly, we shall first learn how to write in LaTeX, in fact not difficult if some guidance is given, apart from excellent manuals, such as [1].

The *content of the book* is also based upon the rich powerpoint online documentation from that course.

Following previous book projects that have been realized in collaboration with students, such as [2, 3, 4], the *general strategy* of writing such a book is what can be called “vertical”, i.e., going from rough summaries to more and more detailed texts. It is opposed to the “horizontal” strategy that develops a narrative thread from the beginning to the end. Such a procedure may be adequate in literature, but for systematic scientific contents, the knowledge of what is where before one delves into details is preferred.

When the contents are in their final state, which should be the case two weeks before the end of the semester, we shall add an *index* and check details of language. It is planned to submit the book to Springer in the second week of December 2018.

References

- [1] Mittelbach F, et al.: The LaTeX Companion, 2nd ed. Addison-Wesley 2004
- [2] Mazzola G, J Park, F Thalmann: Musical Creativity. Springer, 2011
- [3] Mazzola G, M Mannone, Y Pang: Cool Math for Hot Music. Springer 2016
- [4] Mazzola G, M Mannone, Y Pang, M O’Brien, N Torunsky: All About Music. Springer 2016

Vertical strategy in detail

1. Rough ToC
2. Summaries of chapters
3. Check whether subtopics can be included
4. Propose sections and subsections with summaries
5. Write first texts
6. Discuss texts, in particular also other media: figures, movies, internet, music
7. Improve texts
8. Review texts (by group exchange) and correct
9. Review cross references, review references to external sources
10. Write index
11. Last language and detail editing
12. Submit to Springer

LaTeX

1. All download and install TeXShop
2. Mazzola explains the structure of the book with its basic files
3. Write first contents
4. The students learn progressively to write more and more complex structures: Sections, textual specifications, (cross-)references, figures, formulas, bibliography, index
5. We should take care of the packages that will be used
6. Introduce TeXit and handwritten TeX recognition software and symbol lists