

CHAPMAN UNIVERSITY
University Honors Program
One University Drive
Orange, CA 92866

COURSE SYLLABUS

HON 367-01
(Pythagoras Revisited: A Quest for Interior Precision)

Fall 2018

Instructor: Dr. Domenico Napoletani

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Office Hours: Mondays and Wednesdays 2:30pm to 4pm, or by appointment. DeMille Hall, room 150F.

Catalog Description:

Prerequisite: acceptance to the University Honors Program, or consent of instructor.
(Offered as needed.) 3 credits.

Can precision and quantitative reasoning be integral parts of spirituality and introspection? How do we express a contemplative experience that does not renounce to exacting discrimination of inner and outer phenomena? In this course we will move at the intersection of mathematics, literature, philosophy and religion, to find possible answers to these questions.

Course Learning Outcomes:

By the end of this course, students will have:

1. Obtained an interwoven understanding of key philosophical, mathematical and religious concepts, as well as a broad exposure to fundamental thinkers from disparate religious and philosophical traditions.
2. Developed the ability to rigorously and creatively discuss and write about the significance of mathematics in introspective and religious thought, mediated by extensive readings of relevant primary texts and secondary literature.
3. Sharpened their research skills through an understanding of the psychological process of scientific discovery.

Honors Program Learning Outcomes:

Upon completing a course in the University Honors Program students will have:

- a. Obtained a starting point for integrative exploration of the development of cultures and intellectual achievements through a variety of disciplinary and interdisciplinary perspectives;

- b. Sharpened their ability to critically analyze and synthesize a broad range of knowledge through the study of primary texts and through engagement in active learning with fellow students, faculty, and texts (broadly understood);
- c. Understood how to apply more integrative and interdisciplinary forms of understanding in the advancement of knowledge and in addressing complex challenges shaping the world;
- d. Developed effective communication skills, specifically in the areas of written and oral exposition and analysis.

Content:

The course will start from a careful reading of relevant passages of the books and notebooks of Simone Weil, a thinker of our time that meditated deeply on the role of mathematics in spiritual matters. Through her writings, we will reach back to authors such as Plato, and the pre-Socratic thinkers, but also hear other views on mathematics and spirit, as those of Blaise Pascal and Robert Musil.

Philosophers and mystics from disparate religious traditions, such as Ibn Arabi, Dogen, and Abhinavagupta, expounded profound views on (the perception of) time, space and logical, quantitative reasoning. In their writings we will explore how far can our intellect be stretched when dealing with things that are so concealed (i.e. mystical) that they are fully manifest and therefore not amenable to our usual forms of language.

We will also introduce mathematical ideas that most powerfully convey the sense of wonder and contemplation peculiar to mathematics. Examples will include irrationality of numbers, prime numbers, non-Euclidean geometries, complex numbers, transfinite numbers, etc. The focus will always be on understanding, and developing an appreciation for, the fundamental ideas, rather than on becoming technically competent in solving problems.

Finally, we will look at the essays of those mathematicians, Henri Poincare, Jacques Hadamard, André Weil and others, that tried to understand the dynamics of scientific discovery through inner analysis of their thought processes.

Current Required Texts:

Intimations of Christianity Among the Ancient Greeks by Simone Weil. Routledge 1998.
The mathematician's mind (The psychology of invention in the mathematical field) by Jacques Hadamard, Princeton University Press, 1996.

Additional References on Reserve in The Library:

What Is Mathematics? An Elementary Approach to Ideas and Methods by Richard Courant, Herbert Robbins. Oxford University Press, 1996.

The Princeton Companion to Mathematics. Edited by Timothy Gowers, June Barrow-Green, and Imre Leader. Princeton University Press, 2008.

Whenever appropriate, I will point out online access to the primary texts and the secondary literature discussed in the course.

Instructional Strategies:

The course will include daily, in-depth discussions, based on a variety of readings. Mathematically oriented topics will be introduced by lectures. A period of creative written reflection will be set aside at the end of each class. Students will write an extensive and rigorously argued analysis of a specific topic agreed with the instructor by September 17th, they will also present their research in class and moderate the resulting discussion.

Methods of Evaluation:

Assessment of student performance will be based on the following items:

In-class discussions and written reflections (40% of the grade). Each student is expected to be directly involved in the discussion during each meeting. Because of this, daily attendance is required and at most two justified absence are permitted. For each additional absence, 2.5% of the grade will be deducted from the overall grade.

- At the end of each week, students will be given time to write down the comments they contributed during the discussion, and to engage in a creative written reflection on the problems discussed.
- The written reflection scheduled for **October 24th** will be graded and will contribute 10% to the total grade.

Final paper (40% of the grade). Students are expected to submit a final paper of 15 pages (12pt font, 1" margin and double spaced) by the **3rd of December**.

- By the **17th of September**, students need to confirm a topic for their paper related to the main themes of the course, chosen among a wide selection of given topics.
- A 5 pages preliminary draft of the paper is due on the **10th of October**.
- A second, 10 pages draft is due on the **7th of November**. This second draft will be formally graded and will account for 10% of the grade.

Papers should offer a synthesis and an original viewpoint on the chosen topic, with extensive review of relevant literature (minimum of 10 scholarly citations).

Presentation and discussion moderation (20% of the grade). All students will present the research topic of their final paper and moderate the discussion for a total of half an hour, during the last week of class and the final exam allocated time. Students will be assessed based on their grasp of the topic at hand; the creativity used in framing the topic and linking it with other discussions; the ease and effectiveness of their moderation.

Chapman University Academic Integrity Policy:

Chapman University is a community of scholars which emphasizes the mutual responsibility of all members to seek knowledge honestly and in good faith. Students are responsible for doing their own work, and academic dishonesty of any kind will not be tolerated anywhere in the university

Students with Disabilities Policy:

In compliance with ADA guidelines, students who have any condition, either permanent or temporary, that might affect their ability to perform in this class are encouraged to inform the instructor at the beginning of the term. The University, through the Center for Academic Success, will work with the appropriate faculty member who is asked to provide the accommodations for a student in determining what accommodations are suitable based on the documentation and the individual student needs. The granting of any accommodation will not be retroactive and cannot jeopardize the academic standards or integrity of the course.

Last revised: 08/24/2018