



Science and the Catholic Church

Mr. Chris Hall

Fall Semester Course

2023-2024

SCHOLÉ ACADEMY
CLASSICAL ACADEMIC PRESS

ELIGIBLE STUDENT

Grades 6–9; 10th graders welcome. Students must be able to read independently and to create notes that are organized and easy to follow. Students should be able to express themselves effectively through writing, and must be capable of reviewing information and concepts on their own throughout the year outside of class. A foundation in research, online and text-based, would be valuable.

REQUIRED TEXTS AND MATERIALS

- New American Bible
- Catechism of the Catholic Church
- Commonplace notebook
- Pencil
- Highlighter
- A variety of resources and course readings will be posted on the course website for students to download, print, and read. These will include excerpts from books, papal encyclicals, and articles relevant to the topics at hand.

COURSE SCHEDULE

REGULAR CLASS SCHEDULE: TUESDAY AND THURSDAY, 8:00-9:15AM ET

ORIENTATION SESSION:

The date and time of the student/parent orientation will depend on the particular section in which you are enrolled, but all orientation sessions will be scheduled during the week prior to the start of the class.

CLASS SESSION DATES: The dates of your class depend on the particular section in which you are enrolled. Consult the Scholé Academy [academic calendar](#) for details concerning scheduled, school-wide breaks.

OFFICE HOURS: Your teachers are available outside of scheduled class times. During “Office Hours” students may raise questions, seek assistance, or review class material. This can happen via email or a meeting in the Zoom classroom. Your teacher will do their best to respond within 24-48 hours; please keep in mind that they likely will not respond immediately to messages after 5 p.m. EST.

COURSE DESCRIPTION

In our modern moment, the public narrative pits science against Christianity. Adherents of one simply cannot adhere to the tenets and truths of the other, so it seems, and our young Catholic students are perpetually hearing about their church’s squelching of Galileo, Copernicus, and other Heroes of Modern Science in particular.

And yet, is there truth to these claims? What actually happened in those controversies, and are they being portrayed accurately? Have there been Catholic laymen, vocations, and even saints among scientists? Is science inimical to faith, or vice versa? As Catholics, what can we hold forth from the nearly two thousand year history of our faith in support of science, and what can we say that science has also offered our faith as a reflection of God’s truth?

In this course, we will explore these questions through the lenses of scientific method, resources in Catholic theology from scripture to papal encyclicals, and informal logic. We will discuss readings, perform scientific experiments as they were historically performed, engage in Socratic discussion, and debate the merits of various perspectives and arguments often encountered along the frontiers of science and faith. We will learn about historical natural philosophers and scientists through the lenses of their writings, professional and personal, to see how they reconciled their craft and their faith. We will see in them, and in their work, echoes and shadows of our own time, our own concerns, and our own walks in faith.

We will also engage modernity with an eye to the way that we use scientific knowledge through technologies and interpretation of what it means to be human. We will come face to face and argument to argument with key voices on both sides of the debate about AI, The Singularity, virtual reality, and biohacking.

As we wrangle with the ideas, narratives, and historical facts, we will form a picture of the relationship between science and faith that honors the notion that all Truth is God’s Truth, and that God has given us the tools of intellect and discernment to serve him in a variety of ways, alongside and in resonance with truth, hope, and love.

COURSE MAP

NOTE: Readings from encyclicals and other primary sources will be excerpts, not full readings. The excerpts will be selected for specificity to the topic at hand, and for discussion potential.

What is Science? What is Catholic Theology?

- What is the Scientific Process? What is revelation and how do we interpret it through the lens of theology?
 - The difference between the Scientific Method, The Scientific Process, and the Engineering Process.
 - How does theology lead to dogma, canon law, and liturgical practice? (The mass, as the center and focal point of all of these aspects, will be the core focus, along with tradition.)
- Three perspectives on the cosmos- atheism, agnosticism, theism. What are the implications of each of these perspectives on science and theology?
 - Premises about reality. How does a change in premise change the reasoning (and arguments) that follow?
 - Anthony Flew, and his late-life conversion to theism after a life of atheism. Why did this happen, and what did Flew have to say about it?
- Natural philosophy vs. science- what is the difference, how do we practice each? (C.S. Lewis, *The Abolition of Man*; Pope Pius X, *Pascendi Dominici Gregis*)
 - The role of worldview, embodiment, and epistemology in the process of science and theology.
 - How do we rightly-order our pursuit of science in the modern moment, and what are the implications of that ordering in the social sphere, as well as in lab practice?

Conflict

- How do conflicts arise between people, institutions, and between people and institutions?
- Pius IX, *The Syllabus of Errors*: how were the errors listed here products of conflict in the world, and what did Pius IX feel the strong need to write this document?

How does science agree with or come into apparent conflict with the Catholic notion of man in our current moment? (Reading and discussion points from Pope Francis, *Laudato Si*; Dawson, *The Crisis of Western Education*; Lanier, *You Are Not A Gadget*; Kurzweil, *The Singularity Is Near*; Smith, *How NOT To Be Secular*)

- Cases of Apparent Conflict Between Science and the Catholic Church
 - Copernicus
 - Galileo
 - Descartes and Pascal (two practicing Catholics, seen today as having opposing viewpoints on science, but not necessarily so...)
- Technologies and Humanity
 - AI (artificial intelligence)
 - The Singularity
 - virtual reality
 - biohacking
 - how our use of technology reflects our fundamental understandings of what it means to be human

At appropriate points throughout the course, we will learn about prominent Catholic scientists who exemplify both practice of natural philosophy/science and the Catholic faith.

STUDENT EXPECTATIONS: EXECUTIVE FUNCTION SKILLS

Students enrolling in this course will be expected to show development of Executive Function skills throughout the year. Executive Function is a set of qualities and skill sets students can develop and hone to better approach the courses, lectures, readings and teachers they will face in their future academic coursework.

Each teacher will invariably have his own set of requirements and skills he requires students to bring to their studies. Generally speaking, I believe there are five such qualities that are necessary for my students in various subjects:

- 1. An Engaged Student:** One who is willing to step into the arena of class discussion, ask questions, supply answers, take in what is being discussed, and apply it to his own experience.
- 2. Note Taking:** A student who during and after being engaged with the class has been trained to note important and relevant content in an organized fashion. His notes would then be consulted, independently, for application in assignments and assessments. For those who need a framework from which to begin or refine this process, Cornell notes is a helpful system.
- 3. Attention to Detail & Preparedness:** Students should consistently adhere to deadlines, submission requirements, proper reporting formats (ex. project reports, commonplace updates), confirm technology is working prior to the start of class, determine how to proceed after an absence, be responsible for consulting his course syllabus and adjusting as the class proceeds, etc..
- 4. Employ Critiques:** When students receive feedback to one of their submissions, they should apply that feedback to future assignments. Students should also glean information from the live class critiques to learn from the experience of others.
- 5. Initiative/Maturity:** Students should hear the teacher comments and be able to assess whether or not the teacher was describing his work, and then take the initiative to schedule office hours with his teacher if necessary.

STUDENT EXPECTATIONS IN ACTION

Students are expected to arrive to class on time and with all assigned material completed. The instructor will facilitate learning for the student, but the responsibility for staying up-to-date with classwork and assignments ultimately falls to the student.

Students will be expected to listen attentively and to participate actively in class discussions and practices. During class discussion, students will review answers, pose questions, explain and justify their answers and solution. Each week the teacher will lead discussions informed by issues and problems raised by students, as well as issues introduced by the teacher.

Students will also be expected to maintain their commonplace notebook, submit drawings and preliminary plans before starting projects when appropriate, and be prepared to discuss the current state of any ongoing projects at any time.

All assignments will be due at the date and time specified in the assignment post. Students turning in late work will earn a 10% penalty for each day the assignment is late. Students will submit their work by scanning their homework pages and uploading onto the assignment post. Photographs of projects are the best way to document the physical artifacts we'll create during this course, but all written work must be scanned for submission, not photographed.

STUDENT GRADING AND EVALUATION

The following grades will be used to document your student's level of achievement: *magna cum laude* (with great praise); *cum laude* (with praise); *satis* (sufficient, satisfactory) and *non satis* (not sufficient).

Ideally, every average student working diligently should do praiseworthy work (*cum laude*). Those who excel beyond this expectation will be the *magna cum laude* students. Students who do adequate but not praiseworthy work be designated *satis*. *Non satis* means lacking sufficiency or adequacy.

STUDENT EVALUATION : MASTERY PORTRAIT

Students who are prepared to take this class are typically early to late teens, adolescents approaching young-adulthood. It's imperative, then, that this course not only provide the academic components necessary to achieve mastery of course content and skills associated with analytical thought, but also to help engage the student in development of their moral virtues. These aspects of the course would comprise the "learning target".

- Students will be able to define science and theology, tell how each of them claims knowledge, and identify the places in which the two may either work together or come into apparent conflict.
- Students will define the process of science, and define the use of the terms fact, theory, and truth as they are used both in science and in common parlance.
- Students will identify key resources by which we can research Catholic theology, including sacred scripture, the Catechism of the Catholic Church, and encyclicals.
 - Students will know how to read and research within these resources.
- Students will explore and understand how conflicts come into being between people, between institutions, and between individuals and institutions.
- Students will tell the history of several famous instances of apparent conflict between the Catholic Church and science, including:
 - Copernicus
 - Galileo
 - Descartes and Pascal (or the seeming conflict between their positions, even as two practicing Catholics)
- Students will identify and summarize the positions and stories of prominent Catholic scientists, who practiced both science and the Catholic faith, including:
 - Albertus Magnus- patron saint of natural science
 - Fibonacci- advocated Arabic numerals and noticed geometric patterns in nature
 - Roger Bacon- proposed the foundations of the Scientific Method
 - Descartes and Pascal- competing thought and philosophy during the late Reformation and Counter-Reformation
- Students will learn how to spot key fallacies of informal logic that are often used to claim an apparent conflict between the Catholic Church and science.
- Students will learn faithful and winsome ways to engage in arguments with others about the relationship between the Catholic Church and science.
- Students will be able to articulate key descriptions of, and ethical challenges surrounding AI, The Singularity, biohacking, virtual reality, and other key technologies that are proliferating in our moment.

STUDENT EVALUATION: ASSIGNMENTS, TYPES & WEIGHTS

Students' grades will have the following weight (out of 100):

1. Class Participation: 10
2. Homework assignments: 20
3. Regular Quizzing: 30
4. Regular Testing: 40

The incremental nature of the assessments is in place to ensure that students are continually reviewing previous material. Typically Speaking:

- *magna cum laude* is the grade range of 94% or above.
- *cum laude* is the grade range of 85-93%
- *satis* is the grade range of 75-84%
- *non satis* is any grade lower than a 75%

This reflects the student's mastery and ability to move on to the next level. Students and their parents will receive quarterly feedback from their teachers in the form of a quarterly update.

STUDENT EVALUATION: ACADEMIC INTEGRITY

Students will often take tests and/or quizzes privately at home. Students are on their honor to abide by Scholé Academy's Learning Philosophy which assumes the personal cultivation of student virtues described in the Student-Parent Handbook. We ask that parents proctor quizzes and tests to help keep their children accountable.

Specifically, cheating and plagiarism are punishable offenses. Copying the work of other students is prohibited and proper citation of all sources is essential.

THE VIRTUAL CLASSROOM:

We will be using the free online "virtual classroom" software provided by Zoom. The live, interactive nature of our courses is foundational and we require cameras to be on during all class sessions. The virtual classroom will provide students with interactive audio and an interactive whiteboard in which texts, diagrams, video and other media can be displayed and analyzed. We will provide students with a link (via email) that will enable students to join the virtual classroom. Courses will be managed through our learning management system, Canvas.

Specific information regarding the technology used by Scholé Academy (including required technology) can be found by visiting the [Technology in the Classroom](#) section of the Student Parent Handbook.

ABOUT THE INSTRUCTOR



Chris Hall has a BA in philosophy from Gettysburg College and an MAT in elementary education from Towson University. He has been a classroom educator and administrator for 28 years, having served in public, independent, and classical schools. In that time, he has served as a classroom teacher in grades K-12, primarily as a science educator, PK-8 Science Department Chair, and a Lower School Academic Dean. Along with his professional pedigree, he is a lifelong practitioner of several of the common arts profiled in his book *Common Arts Education: Renewing the Classical Tradition of Training the Head, Hands, and Heart* (Classical Academic Press, 2021) and the founder of Always Learning Education, an organization dedicated to teaching, learning, and propagating the common arts. He lives on a small, homesteaded farm in central Virginia with his wife and three homeschooled sons.

Please note: While this syllabus addresses details specific to this course, it is not extensive. Parents should also read the Student-Parent Handbook located on scholeacademy.com and be familiar with the ideas, policies, and procedures outlined.