

*A New and Unique Georgia Tech Course Offering!*

# “Science, Engineering and Religion: An Interfaith Dialogue”

**Course ID = IAC 3803**

**Spring Semester 2017**

**T/Th 4:35-5:55 pm**

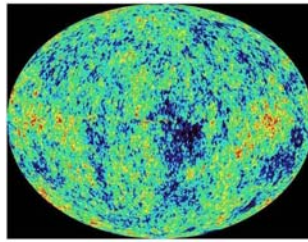
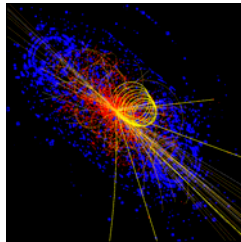
**John D. Cressler**

Schlumberger Chair Professor

School of Electrical and Computer Engineering, Georgia Tech

<http://users.ece.gatech.edu/~cressler>

[cressler@ece.gatech.edu](mailto:cressler@ece.gatech.edu)



## Course Description

Dividing lines exist within the rigorous, truth-seeking, intellectually demanding academic setting that defines Georgia Tech. I invite you to consider two examples. 1) Walls often separate science and engineering, on the one side, from religion and spirituality, on the other side. It is commonly assumed, for instance, that serious scientists and engineers cannot, by definition, be people of faith; and vice versa. Such matters are rarely, if ever, topics of conversation in classes. 2) Walls often separate the various religious traditions and worldviews that are represented in Georgia Tech’s exceptionally diverse student body. For example, Christians often know very little about the beliefs and practices of Muslims, Jews about Buddhists, Taoists about Sikhs, Hindus about secular humanists. Meaningful dialogue between different religious traditions and worldviews on campus is uncommon, or perhaps only comes in response to some tragic event. Again, such matters are rarely, if ever, topics of conversation in classes. With Georgia Tech’s strategic goal of graduating outstanding global citizens, it is my view that the educational experience Georgia Tech provides could be further enhanced by ensuring religious literacy and engaging meaningful dialogue across the boundaries of science, engineering and religion, particularly within the context of interfaith diversity. After all, we live in an ever-flattening global community.

This course is intended to help break down these barriers to meaningful dialogue in a creative way. The course will gather together a diverse set of students who are serious about their spiritual lives, and yet who are also studying hard to be Georgia Tech’s next cadre of world-class graduates. Together, we will explore a variety of topics related to the intersection of science, engineering, and religion. No prior background is assumed. We will break open these topics by engaging in open and constructive dialogue.

**Prerequisites:** (there are NO formal course prerequisites; open to UGs of ALL majors/years)

- An eagerness to engage in open and constructive discussion on a variety of controversial topics.
- An open-minded desire to learn more about other religious traditions and engage in interfaith dialogue.
- A desire to better integrate your own spiritual life and worldview with your chosen career.

### **IMPORTANT NOTE:**

**You must contact the professor to apply for a permit to register. Space is limited – act quickly.**

**Join Us for a Unique Experience!**

# Course Syllabus

## “Science, Engineering and Religion: An Interfaith Dialogue”

John D. Cressler

Schlumberger Chair Professor, Georgia Tech

### Course Description:

This course seeks to prepare students for leadership in a globally-focused, multi-cultural technological world by ensuring their religious literacy and engaging in meaningful dialogue on contemporary topics spanning the boundaries of science, engineering and religion, particularly within the context of multi-faith diversity. The course addresses foundational material in the on-going dialogue between scientific and religious worldviews, as well as reading, research and in-depth discussion of wide variety of contemporary topics spanning science and religion (the specific topics addressed are student-prioritized). Service learning, including both site visits within the local Atlanta interfaith community as well as a community service project, will be included. This course is offered in collaboration with the new GT-Emory LAMP (Leadership and Multi-Faith Program), has no prerequisites, and is intended for Georgia Tech undergraduates of all majors and years.

### Course Content:

Class meetings will consist of traditional lecture (the first half of the class period) on foundational material in the on-going models for dialogue between scientific and religious worldviews, and then in-depth discussion (the second half of the class period) on wide variety of contemporary topics spanning science and religion (the specific topics are student-prioritized from the list below).

### *Foundational Material* (the front-end of class):

#### Chapter 1: Bedrock

- 1.1 Prelude: The Big Questions
- 1.2 Definitions: What is science? What is engineering? What is religion?
- 1.3 The categories of scientific and religious interaction: conflict vs. contrast vs. convergence
- 1.4 Knowledge vs. Belief vs. Faith: Truth and the ways of knowing

#### Chapter 2: Science and Religion in the 21<sup>st</sup> Century

- 2.1 Historical clashes: Galileo, Scopes, creationism
- 2.2 Stereotypes, current events and campus culture

#### Chapter 3: The Scientific and Engineering Enterprise

- 3.1 The cosmological world
- 3.2 The quantum world
- 3.3 The biological world

#### Chapter 4: The World's Religious Traditions

- 4.1 God and the world's religious traditions
- 4.2 Organized religion vs. private spirituality, prayer, miracles, mysticism, and religious extremism

### *Discussion Topics* (the back-end of class):

#### Questions for Scientific and Religious Worldviews (to be prioritized by the class):

- Is faith opposed to science?
- Is faith compatible with evolution?
- Was the universe created?
- Can science explain intelligence?
- Are we special?
- Does the universe have a purpose?
- Does science rule out a personal God?
- Do miracles really happen?
- Can chemistry alone explain life?
- Can we be good without God?
- Is there life after death?
- What if extraterrestrials exist?

#### Case Studies at the Boundaries of Science, Engineering and Religion (to be prioritized by the class):

- The internet, social media, e-Gadgets, and the coming of the ‘Internet of Things’
- Climate change and the Green Revolution

- The human genome, stem cells, and the ‘right to life’
- ‘Just war’ theory, drones, smart bombs, and the waging of war
- Genetically modified organisms, healthcare, and bio-terrorism
- Artificial intelligence, robots, and the Age of the Machines
- Nation building: the legacy of imperialism; democracy vs. totalitarianism vs. theocracy; capitalism vs. socialism
- Exoplanets and life beyond Earth
- The role of women in science, engineering, religion and society
- Suicide bombers: Confronting religious extremism and terrorism in the 21<sup>st</sup> century
- Other relevant topics student may want to contribute

**Textbooks:** (plus substantial supplemental reading material)

- B.T. Swimme and M.E. Tucker, Journey of the Universe, Yale, 2011
- J.F. Haught, Science and Faith, Paulist Press, 2012
- J. Polkinghorne, Science and Religion in Quest of Truth, Yale, 2011
- S. Prothero, God is Not One, HarperOne, 2010

**Other Planned Activities:**

- Field trips; distinguished guest speakers; a class-selected service learning project; pizza & movie nights

**Student Requirements:**

- Class attendance is mandatory
- There is a significant amount of assigned reading (4 books and > 40 additional articles)
- Active participation in class discussions is required
- There are 8 writing assignments on a variety of course topics related to the Case Studies listed above. For each, there are assigned readings on the topic, and then students must research the topic on their own using different resources, and then write an essay on the nuances of the topic and how it intersects their particular worldview.
- Attendance on the site visits and service project is required

**Course Learning Outcomes:**

Through this course students will be able to:

- *Understand and articulate* the fundamental assumptions behind, and inherent limitations of, the scientific enterprise
- *Understand and articulate* our current scientific knowledge in the realms of cosmology, quantum theory and biology, and what those findings mean for religious worldviews
- *Understand and articulate* the history and on-going models for meaningful interaction between scientific and religious worldviews
- *Reflect upon and articulate* their own worldviews, work to better understand what they believe and why, and learn how their own worldviews compare with those of other cultures and religious traditions
- *Understand and articulate* the beliefs and practices of the world’s major religious traditions, and each traditions’ dynamic relationship with contemporary issues in science, engineering and technology
- *Experience and reflect* upon site visits and service outreach within the Atlanta multi-faith community
- *Prepare* for leadership within multi-language, multi-cultural, multi-religious global communities by researching, reflecting upon, and then engaging in meaningful dialogue on contemporary topics that span the boundaries of scientific and religious worldviews

**About the Prof:** Cressler was awarded the 2010 Class of 1940 W. Howard Ector Outstanding Teacher Award (Georgia Tech’s top teaching award), and the 2013 Class of 1934 Distinguished Professor Award (the highest honor Georgia Tech bestows on its faculty). Visit: <http://users.ece.gatech.edu/~cressler> and <http://johndcressler.com>