

# Science and Theology of Food: Learning Outcomes in Fall 2017, A Reflection

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## Science and Theology of Food: Learning Outcomes in Fall 2017, A Reflection

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### 1. Introduction

*Science and Theology of Food* is an interdisciplinary course offered at Seton Hall University in partial fulfillment of its University Core Curriculum requirement in the Catholic Intellectual Tradition, as an “Engaging the World” (Core III) course [1, 2, 3]. In the fall semester 2017, I taught *Science and Theology of Food* in its initial offering, to a total of 40 students. The course was cross-listed as chemistry (CHEM 3550, 18 students), Core III (CORE 3252, 10 students), and theology (THEO 3515, 12 students). At the conclusion of the semester, and with all the preparation, refinement, and evaluation that went into it, I can reflect on what I learned from the experience. This reflection will help me to sharpen my focus on the course for a future semester, i.e., broaden or narrow my focus on particular course topics.

### 2. Course Overview

Three observations come quickly to mind: 1) I enjoyed teaching the course, 2) I believe I can teach it much better next time, and 3) students love the topic of food, especially when presented in a manner they have not had before, i.e., viewing food in a theological, scientific, sociological, and ecological way—while the second CIT course, Christianity and Culture, looked at some connections between science and theology, students remain unused to connecting the science they are learning to social and political issues, literature, or philosophy and theology. (In addition, a class of forty students is definitely too many for a heavily interactive course; in the future, I will suggest a cap of 18-24 students.)

I recall the days and hours leading up to the first meeting of the class in late August 2017. My anxiety level was high. I had been preparing throughout the summer (and even before). But, I was dealing with so much material, so much information that I wanted to bring into the course. I was challenged by what to “keep” in the course and what not to. I had prepared what I thought was a good syllabus – all 14 pages (including a long bibliography), but I was unsure if I was covering the “right” topics. When the day of the first class meeting arrived – August 29, 2017 – I was still unsure exactly what I would say to introduce the course.

As I look back now, I survived that first class meeting and the rest of the semester. However, throughout the semester I kept asking myself, “Am I teaching the right stuff? Am I forgetting anything that should be included?”

I began the course with a two-week (four lectures) introduction. This included discussion on the relationship between faith and science by examining some parts of pertinent papal documents, including *Fides et Ratio* (1998) by Pope St. John Paul II, and *Evangelii Gaudium* (2013) and *Laudato Si'* (2015) by Pope Francis. I also discussed the application of the Catholic Intellectual Tradition to the study of food, science, and theology. In addition, I used some material from an article by Fr. Joseph Laracy [4] on priestly contributions to modern science. Since the food science text I was

using had an ecological bent to it, I discussed ecological approaches to food, including climate change and the earth's food supply. Presentation of ecological issues tied in well with *Laudato Si'*. Following the introductory component, the remainder of the course was divided into three components: 1) relationship between food and science (5-6 weeks), 2) relationship between food and theology (3-4 weeks), and 3) how all three – food, science, and theology – can come together (4 weeks). Social and sociological aspects entered through the discussion of fasts, feasts, and celebrations, of sharing, and of political and social considerations in food growth and distribution. I evaluated the students by various means: three writing assignments (25%), three quizzes (20%), service project and report (12.5%), group presentation (12.5%), final exam, cumulative take-home (22.5%), and class participation (7.5%). I will discuss most of these in the following section.

### 3. Learning Outcomes

I will examine in this section specific points of what I learned in teaching the course for the first time. I will begin with a self-evaluation, albeit somewhat of a surface view, as I am sure in time when the course settles inside me more deeply, I will have additional thoughts and observations. Looking at the food and science component, I have the sense that I spent longer with this discussion than needed.

I originally felt this was necessary since a main objective of the course (as directed by the Science in Seminary Initiative) was to provide seminarians an exposure to science. Seven seminarians were enrolled in the course – six from St. Andrew's Hall (the college seminary at Seton Hall), and one from Redemptoris Mater Missionary Seminary (Kearny, NJ). The level and depth of the science presented was basically high school level chemistry as applied to food systems. Although the science may have been somewhat of a challenge to the THEO students, it was not so to the CHEM and CORE students in general. Five of the ten students enrolled in CORE 3252 were nursing students, four of whom had already taken the nursing chemistry course I taught in spring 2017 and one who was taking my chemistry course concurrently. For all of the students, the novelty of the chemistry or science I presented was its focus on food, food components, and processing methods. Overall, I sense that I spent a bit too much time on the science component as compared to the other two components. I plan the next time I teach the course (probably fall 2018), I will devote less time to the straight science component. This is to mean, that I will lean towards fewer consecutive class meetings on science only and more to an incorporation of it throughout the course. I do not want to suggest there is a strict separation of what is science and what is theology, as I may have done in fall 2017.

I felt that my coverage of fasting and feasting and cultural aspects of foods and eating across different faith traditions was insufficient. From the student evaluations, one student commented that I should have covered in more depth the food and faith connection in faith traditions beyond the Christian faith. Additionally, my discussion of food in sacred scripture (considering its great depth) could have been expanded. These are areas I will give more attention to the next time.

#### *Writing Assignments*

I assigned three short writing assignments (3-4 pages), as follows:

1. Annotated bibliography (5-7 references) on a particular food topic that relates food to science and/or theology.
2. Select one specific food component that is classified as a vitamin, lipid/fat, protein, or carbohydrate, and discuss the points below:
  - The name, chemical formula, and chemical structure of the
  - Name and briefly describe three different foods that it is naturally present in.
  - Discuss functional properties (foaming, gelation, texture, viscosity, elasticity, body/bulking agent, sweetness, nutrition, etc.) of the component in its native

- Discuss the chemical and physical effects/changes of the component as a result of it undergoing three different food processing methods. Your answer should include how processing affects the functional properties of the component.
1. One-page reflection on the lecture of invited speaker, Dr. Nathan Stucky (11/9/2017), “Where on Earth is God?” [Dr. Stucky is Director of the Farminary Project at Princeton Theological Seminary]

The writing assignments overall were very well done. Although a very short paper, I found their reflections on Dr. Stucky’s lecture to be particularly captivating. Dr. Stucky’s talk was very interactive, more so than I tend to be. I have learned that in this course I should make my presentations more interactive, and thus increase class participation. As one example, Dr. Stucky brought fresh spinach that he had harvested from his farm the morning of the talk. He handed out a basket of the spinach during his presentation, with each person taking a leaf. We all then tasted the spinach and shared our thoughts on the experience. The students loved it and gave insightful comments!

As a result, I am also considering whether additional guest lectures might be useful, perhaps on food in different faith traditions (e.g., Judaism, Hinduism, Buddhism, and Islam). I will be reaching out to Seton Hall faculty who might contribute. Perhaps a panel with representatives from different traditions might be appropriate.

#### *Service Project and Report*

Students volunteered for a few hours/one day at a food pantry/kitchen of their choice. These establishments were primarily in the local area and typically affiliated with the Catholic Church (e.g., St. John’s Soup Kitchen, Newark, NJ). Students wrote a 4-5 page reflection paper on their experience, including their understanding of the Catholic Church’s role in feeding the poor and food security/sustainability. Their reports were fantastic! I was moved – at times literally to tears

- as I read each student’s experience with the needy people they helped Seton Hall students are extremely service-minded. The service project reports were some of the best papers I have ever read from any students. The students truly embraced the service experience and the assignment to write about it. This is an assignment I will definitely continue with for the next time.

#### *Group Presentations*

In groups of 2 or 3 students made group presentations (13-15 minutes) on a topic of their choice. Topics included:

- Overfishing
- Food Insecurity: Who Suffers from It, with a Religious View
- Food Insecurity, Hunger, and How to Solve It
- Sacrificial Eating
- Monocultures
- Bioremediation
- Genetically Modified Organisms: How This Has Changed our Appreciation for Food
- Industrial Agriculture
- History of Dessert in the Bible

- Receiving Proper Nutrition and Economics
- Stewardship of Creation: Gardening in Freedom and Generosity
- The Sabbath
- Food Commodification
- Gluttony and its Forms

The topics and presentations (a total of 14) were excellent and greatly supplemented the course, as I barely touched on some of the topics in my lectures, particularly overfishing, dessert, and gluttony. I will definitely assign group presentations the next time I teach the course. I scheduled all presentations in the last three class meetings, including the scheduled time for the final exam (a take-home final was given). I have learned that for next time I will likely schedule presentations at designated times throughout the semester.

#### *Final Exam*

The take-home final exam was cumulative, which I believe served as a good learning tool by the presentation of all of the major topics of the course. One of the student learning outcomes that I had listed on the syllabus was: “Articulated and explained on the cumulative final exam a comprehensive and integrative understanding of the various dimensions of food – scientific, theological, cultural, and ethical.” Overall, the students showed such comprehensive understanding in their final exams. I am leaning towards a similar final exam format next time.

#### *Course Textbooks*

I required two textbooks for the course (in addition to a Bible): *Food & Faith: A Theology of Eating* (2011) by Norman Wirzba and *Food Science: An Ecological Approach* (2014) by Sari Edelstein. Both books were very good and informative. I was particularly impressed with Wirzba’s book as were the students. Wirzba is Christian (not Catholic). Wirzba gave good coverage to food in scripture, and he wrote eloquently on topics such as sacrificial eating, food security and sustainability, food and ecology, food commodification, pesticides and herbicides, genetically modified food, monocultures (reliance on one crop year after year) and their impact on sustainability, and whether there is eating in heaven. I am leaning towards using Wirzba’s text again. I may use along with it a similar styled book, but from a more Catholic perspective, perhaps *The Catholic Table* (2016) by Emily Stimpson Chapman. Although Edelstein’s coverage of food science and the various food groups was certainly adequate, and I liked the ecological bent, I may seek an alternate food science text for next time or forego one entirely. Edelstein’s book is 550 pages. I only covered perhaps 25% of it in any detail and gave spot coverage to the remainder. Additionally, all or most of the ecological topics covered by Edelstein were also covered by Wirzba.

#### *Course Enrollment*

Forty students were enrolled in the course, which I found to be a bit too many, especially when it came to group presentations (a total of 14 groups/presentations), but also in discussions. This may be even more of a problem if, as discussed above, the course becomes even more interactive. My recommendation is to limit the enrollment to no more than 18-24 students in the future, a number more typical for CORE classes. I would expect class participation to improve with a smaller class.

## 4. Recommendations

The most important (and perhaps obvious) recommendation for similar interdisciplinary courses is to be careful of the composition and content of the class. A highly interactive course works best with under 30 students. The content of a course with mixed audiences has to offer something to each of them, especially at the start. And an interdisciplinary course needs to stress connections and broad perspectives.

I also recommend a service component if it at all fits with the course—which it should if the courses is connected to the Catholic or other religious traditions; group research and presentations extending the course content; and guest lectures to gain additional perspectives on course material.

## 5. Summary

I enjoyed teaching *Science and Theology of Food*. The course provided a positive exposure to science for the seminarians, and a valuable insight into the implications of science in the practical world and its interaction with other disciplines for the nursing and science students. I was blessed to have a good class of interested students. I enjoyed the diversity of the students with their various fields of study, viewpoints, and in particular choices for group presentations. I look forward to teaching the course again with expected significant improvements.

## 6. References

1. Seton Hall University Core Curriculum, <http://www.shu.edu/core-curriculum/index.cfm>.
2. G.J. Buonopane, T.J. Marlowe, Fr. J.R. Laracy, "Development of an Integrated Course in Science and Theology of Food", *Seminary Journal*, December 2015, to appear. (To be published in 2018.)
3. J.R. Laracy, T.J. Marlowe, Fr. G.J. Buonopane, "An Experiment in Interdisciplinary STEM Education: Insights from the Catholic Intellectual Tradition", *JSCI* Volume 15 – Number 6 – Year 2017, pp. 45-53, ISSN: 1690-4524 (Online)
4. J.R. Laracy, "[Priestly Contributions to Modern Science: The Case of Monsignor Georges Lemaitre](#)," *Faith*. 42(3):16-19.