



Syllabus

Course Title: Garden to Table: Natural Products and Human Health in London

Program and Date: : CCSA London Maymester 2027 | May 16–30, 2027

Instructor Name: Prof. Savita Chaurasia

Instructor Home Institution and Department: Bellarmine University, Department of Chemistry

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Get to Know Your Professor

I am a Professor of Chemistry with specializations in biochemistry and medicinal chemistry and more than 25 years of experience in natural products research. My teaching and research focus is on antioxidants and other bioactive compounds found in foods and plants, and I enjoy helping students connect molecular concepts from biochemistry with everyday experiences involving nutrition, health, and the environment. Several of my undergraduate research students investigate the antioxidant and therapeutic potential of plant-based natural products in my laboratory, and this course grew directly from that shared passion for discovery. Study abroad offers a unique opportunity to explore science beyond the traditional classroom, and for a course on natural products and human health, London is simply unmatched. Having visited the city and conducted research at the University of Strathclyde in Scotland, I have a personal appreciation for the UK's remarkable botanical heritage and scientific culture. Nowhere else can students walk from a 350-year-old apothecary garden to one of the world's greatest botanical collections to a bustling multicultural food market, connecting the science of natural products and antioxidants with living plants, food traditions, and cultural heritage from around the globe. I look forward to exploring this science with you while experiencing the culture and energy of one of the world's most fascinating cities.

Course Description

Natural products, the bioactive compounds found in plants, foods, and beverages, have shaped human health across cultures and centuries. London provides an unmatched setting to explore their science, where the Royal Botanic Gardens Kew, Chelsea Physic Garden, and Borough Market bridge centuries of botanical knowledge with contemporary nutritional science. Students investigate antioxidants in teas, chocolate, fruits, herbs, spices, and medicinal plants, tracing how these bioactive compounds interact with oxidative stress pathways and influence human health. Field investigations, multicultural market visits, and critical analysis of the scientific literature build the skills to rigorously evaluate evidence-based health claims surrounding natural products and nutrition.

Course Level and Credit Hours

Upper Division Undergraduate, Honors
Three credit hours

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Prerequisite(s)

Introductory Biology, Chemistry, Biochemistry, or consent of instructor.

Student Learning Outcomes

Upon completion of all coursework with a passing grade and full participation in course activities, students shall be able to:

- Identify major classes of natural products and antioxidants present in foods, plants, and beverages encountered during field experiences in London.
- Explain biochemical mechanisms of oxidative stress and antioxidant defense systems, including the role of dietary antioxidants and lifestyle factors such as physical activity, as investigated through London's botanical collections, scientific museums, and discussions.
- Analyze how plant-derived compounds contribute to nutrition, flavor, and traditional health practices observed in London's markets and botanical collections.
- Evaluate scientific evidence supporting or refuting health claims related to antioxidants, supplements, and plant-derived compounds encountered in London's markets, health food retailers, and regulatory environment.
- Communicate scientific observations and interpretations from London field experiences through collaborative presentations and written reports, demonstrating evidence-based reasoning and critical analysis.
- Contrast regulatory frameworks governing herbal medicines and natural product health claims in the United Kingdom and the United States, drawing on London's regulatory context and available professional resources.

Required Readings and Materials

No textbook purchase is required. All readings and background materials will be provided by the instructor before departure.

Students will need a smartphone with free plant-identification apps (iNaturalist) and a notebook for field observations and journaling. A laptop or tablet is recommended for presentations and post-program assignments. No specialized equipment is required.

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Assignments and Grades

The final grade will be based on:

- **Pre-departure Assignments** — 15%
Brief readings and activities to prepare you for our London investigations.
- **Field Journals and Observations** — 25%
Document plants, foods, and natural products encountered through field notes, observations, and reflections.
- **On-site Activities and Group Presentation** — 35%
Investigate natural products across London and connect their chemistry, health, cultural uses, and evidence through hands-on activities and a group presentation.
- **Participation** — 10%
Active engagement in field visits, discussions, and group activities.
- **Final Project (London Antioxidant Discovery Project)** — 15%
Synthesize your London experiences and research to explore a natural product and its connections to chemistry, health, and culture. **Final written project due one month after returning from the UK.**

Honors: Honors students will complete an **additional section of the final project** that explores their chosen natural product through deeper research and interdisciplinary or comparative analysis of its science, health, and cultural context.

The emphasis is on learning by exploring, observing, asking questions, and making connections. Active participation in our London experiences is an essential part of the course.

Grading Scale

The following scale will be used to compute your grade.

90.0-100.% = A
80.0-89.9% = B
70.0-79.9% = C
60.0-69.9% = D
Below 60.0% = F

Onsite Learning Experiences and Activities

Onsite learning experiences in this class will likely include the following site visits. This is a tentative list which will be replaced with a detailed daily itinerary of class meetings and field trips prior to the departure date.

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- **Royal Botanic Gardens, Kew** — Explore one of the world's great botanical collections and connect medicinal plants to their bioactive compounds.
- **Chelsea Physic Garden** — Explore a 350-year-old apothecary garden and its role in the history of medicinal plants and pharmacology.
- **Borough Market** — Explore and taste antioxidant-rich foods, teas, spices, and chocolate, including a tea-tasting experience.
- **London Health Retailer or Pharmacy** — Compare UK and U.S. natural product labels, health claims, and regulatory approaches.
- **Wellcome Collection** — Explore the history of medicine, plants, and human health through its unique collections.
- **Natural History Museum and Science Museum** — Connect natural history and botanical science with modern biomedical research.
- **Brixton Market or Southall** — Explore London's multicultural food traditions and ethnobotanical heritage shaped by generations of migration.
- **Hyde Park or Hampstead Heath** — Apply plant-identification skills through a self-guided botanical exploration.
- **University Visit and Guest Lecture** — Meet faculty and explore natural products research at a London-area university. *Site to be confirmed.*
- **London Exploration** — Explore London's iconic landmarks, neighborhoods, and cultural sites.

Attendance Policy

Attendance is mandatory at all scheduled activities and class meetings as well as field trip excursions. This includes any virtual meetings before and after the onsite experience. Repeated absences, including for ill health, will require documentation to be excused.

London is our classroom! Being present and engaged in our field experiences is an important part of the course. If illness or an unexpected emergency prevents you from participating, please let me and the CCSA Program Director know as soon as possible. We will work together to help you stay connected with the course.

Academic Integrity Policy

Plagiarism or other forms of academic dishonesty (see your campus student handbook for definitions) will not be tolerated and will result in failing assignment grades or even a course grade of F. Violations of academic honesty will be reported back to student's home campus.

Physical Expectations

Program requires walking 3-5 miles per day on uneven pavement in all kinds of weather and long periods of standing. Students must be able to carry their own bags and belongings. Comfortable walking shoes and weather-appropriate clothing are strongly recommended.



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Disability Accommodation

CCSA is committed to providing access to education abroad to the extent possible in a study abroad setting. The earlier CCSA and the faculty know the needs, the more likely we can accommodate them. At a minimum, students seeking accommodations are to contact both the CCSA office and the faculty one month in advance of the program's beginning. Students seeking such accommodation must provide CCSA with a copy of the letter on file with their own Office of Disability Services outlining what services they receive on their home campus.

Title IX Policy

Sexual misconduct (including sexual harassment, sexual assault, and any nonconsensual behavior of a sexual nature) and sexual discrimination violate CCSA policies. Students experiencing such behavior may obtain support from the Onsite Program Director or the CCSA Executive Director. To report sexual misconduct or sex discrimination, contact either of these two officers. Disclosure to faculty instructors or CCSA officers of sexual misconduct, domestic violence, dating violence, or sex discrimination occurring on the program or involving a visitor, student or employee is not confidential under Title IX. Faculty and other CCSA employees are required to forward such reports, including names and circumstances, to the CCSA Executive Director.

Statement about Final Syllabus

Please note that all CCSA syllabi are subject to change, but every effort will be made to ensure participants receive notice of such changes in a timely manner.