

Course Change Request

New Course Proposal

Date Submitted: 09/14/23 11:58 am

Viewing: **NEUR 355 : Cross-Cultural Studies in Scientific Inquiry**

Last edit: 09/25/23 1:28 pm

Changes proposed by: gscott21

Are you completing this form on someone else's behalf?

Yes

Requestor:

Name	Extension	Email
Gwendolyn Lewis	3-6239	glewis13@gmu.edu

Effective Term: Summer 2024

Subject Code: NEUR - Neuroscience

Course Number: 355

Bundled Courses:

Is this course replacing another course? No

Equivalent Courses:

Catalog Title: Cross-Cultural Studies in Scientific Inquiry

Banner Title: Cross-Cultural Studies

Will section titles vary by semester? No

Credits: 3

Schedule Type: Lecture

In Workflow

1. **NEUR Chair**
2. **SC Curriculum Committee**
3. SC Assistant Dean
4. Assoc Provost- Undergraduate
5. Registrar-Courses
6. Banner

Approval Path

1. 09/14/23 12:17 pm
Saleet Jafri (sjafri):
Approved for NEUR
Chair

Hours of Lecture or Seminar per week: 8

Repeatable: May only be taken once for credit, limited to 2 attempts (N2) **Max Allowable Credits:** 6

Default Grade Mode: Undergraduate Regular

Recommended Prerequisite(s):

Recommended Corequisite(s):

Required Prerequisite(s) / Corequisite(s) (Updates only):

Pre-Requisite: BIOL 213

Co-Requisite: NEUR 473 Current Neuroscience Research in Germany (GEO program)

Registrar's Office Use Only - Required Prerequisite(s)/Corequisite(s):

And/Or	(Course/Test Code	Min Grade/Score	Academic Level)	Concurrency?

Registration Restrictions (Updates only):

GEO Program admission

Registrar's Office Use Only - Registration Restrictions:

Field(s) of Study:

Class(es):

Level(s):

Degree(s):

School(s):

Catalog Description:

This immersive, experiential course is an exploration of the cultural and historical aspects of scientific inquiry. We will visit active research settings, interact with professional scientists from many backgrounds, learn about innovative and current research, and be able to inquire about

the current topics. We will observe the European scientific infrastructure and organization and compare to that of the North American setting. In addition, we will explore the historical background of innovation from the dawn of the printing press to current. Students will explore the cultural contexts for discovery by comparing the scientific culture between Europe and North America.

Justification:

What: This is a 3-credit course that will be taught as part of our summer study abroad program “Neuroscience and Technology in Germany” in summer 2024. This program was run for the first time in 2022 and this course was taught as a special topics course.

Why: We plan to teach this course each time we run this program, which is planned for ever other summer. We would like to submit this course for Global Contexts designation.

Does this course cover material which crosses into another department? No

Learning Outcomes:

Identify and explain how patterns of global connections across nations and/or cultures have shaped societies to create interdependence and inequality.
Use a disciplinary lens to demonstrate knowledge of how at least one nation and/or culture participates in or is affected by global contexts.
Apply an understanding of one’s own positionality within a globally interdependent and unequal world to analyze solutions to global problems.

Will this course be scheduled as a cross-level cross listed section?

Attach Syllabus

[NEUR 355 Syllabus.pdf](#)

Additional Attachments**Staffing:**

Dr. Greta Ann Herin and Dr. Wendy Lewis

Relationship to Existing Programs:

N/A

Relationship to Existing Courses:

N/A

Specialized Course Categories:

**Additional
Comments:**

**Reviewer
Comments**

Key: 18297

Cross-Cultural Studies in Scientific Inquiry

NEUR 355, Summer 2024

Instructors:

Dr. Greta Ann Herin (gherin@gmu.edu)

Dr. Wendy Lewis (glewis13@gmu.edu)



Credits: 3

Location: This course is part of a faculty-led, summer study abroad program in Germany titled “Neuroscience and Technology in Germany”.

“Neuroscience and Technology in Germany” is a two-course, six-credit study abroad program, that consists of *NEUR 355: Cross-Cultural Studies in Scientific Inquiry* (3 credits) + *NEUR 473: Current Neuroscience Research in Germany* (3 credits).

Course Overview

This immersive, experiential course is an exploration of the cultural and historical aspects of scientific inquiry. We will visit active research settings, interact with professional scientists from many backgrounds, learn about innovative and current research, and be able to inquire about the current topics. We will observe the European scientific infrastructure and organization and compare to that of the North American setting. In addition, we will explore the historical background of innovation from the dawn of the printing press to current. Students will explore the cultural contexts for discovery by comparing the scientific culture between Europe and North America.

Mason Core: Global Contexts Learning Goals

This is a Mason Core: Global Understanding course. Global understanding learning goals and the activities that support them are listed below.

- Identify and explain how patterns of global connections across nations and/or cultures have shaped societies to create interdependence and inequality.
 - Analytical Notebook
 - Final Integrative Essay
- Use a disciplinary lens to demonstrate knowledge of how at least one nation and/or culture participates in or is affected by global contexts.
 - Analytical Notebook
 - Final Integrative Essay
- Apply an understanding of one's own positionality within a globally interdependent and unequal world to analyze solutions to global problems.
 - Analytical Notebook
 - Final Integrative Essay

Readings

Readings will be available to you through Blackboard and a paper reader/packet will be made available to you before departure. Readings include:

Bagatur, E. (2018). Nazi Medicine- Part 1: Musculoskeletal Experimentation on Concentration Camp Prisoners During World War II. *Clinical Orthopaedics and Related Research*. 476,1899-1905.

Boroditsky, L. (2011). How Language Shapes Thought. *Scientific American*, 304(2), 62-65.

Docking, K. (2021). Gender, Recruitment and Medicine at Ravensbrück Concentration Camp, 1939-1942. *German History*, 39(3), 419-441.

Lerman, K. (1995) The Life and Works of Hildegard Von Bingen (1098-1179). *Internet Medieval Sourcebook*.

Müller-Jahnke, W.D. (1992). Portraits of American Pharmacy in Germany Pharmacy Journals from 1880-1950. *Pharmacy in History*, 34(3), 146-150.

Offit, P.A. (2017). Blood from Air. *Pandoras Lab*. (pp.61-95). National Geographic.

Sacks, O. (1985). The Visions of Hildegard. *The Man Who Mistook His Wife for a Hat*. (pp.166-170). Summit Books.

Weller, C. (2021). Imagining Madness: The Conceptualization of Mental Illness in Psychiatric Art Collections. *Anatomy of the Medical Image*. (pp.248-261). Brill.

Worthen, D.B. (2003). Wish You Were Here: Deutsches Apotheken-Museum. *International Journal of Pharmaceutical Compounding*, 7(1), 78-79.

Grading and Assessments

Grading Item	% of total grade
Engagement and Participation	40
Analytical Notebook	30
Final Integrative Essay	30

Grading Scale:

A 93-100%, A- 90-92.9%, B+ 88-89.9%, B 82-87.9%, B- 80-81.9, C+ 78-79.9%, C 72-77.9%, C- 70-71.9%, D 60-69%, F 0-59%

Engagement and Participation

You will be graded on your engagement and participation in the experience. You will be expected to be present, prepared, and actively participate in all aspects of the program and

discussions. Attendance and engagement will be recorded each day, and your final score will be determined by the instructors based on the rubric below.

Grade (Points)	Criteria
0	Absent.
15-16	Present, not disruptive. Tries to respond when called on but does not offer much. Demonstrates very infrequent involvement in discussion.
16-17	Demonstrates adequate preparation: knows basic material or reading facts, but does not show evidence of trying to interpret or analyze the content Offers straightforward information (e.g., straight from the reading), without elaboration or very infrequently (perhaps once a class). Does not offer to contribute to discussion, but contributes to a moderate degree when called on. Demonstrates sporadic involvement.
18-19	Demonstrates good preparation: knows material facts well, has thought through implications of them. Offers interpretations and analysis of content (more than just facts) to class. Contributes well to discussion in an ongoing way: responds to other students' points, thinks through their own points, questions others in a constructive way, offers and supports suggestions that may be counter to the majority opinion. Demonstrates consistent ongoing involvement.
20	Demonstrates excellent preparation: has analyzed content exceptionally well, relating it to readings and other material (e.g., past course readings, material, discussions, experiences, etc.). Offers analysis, synthesis, and evaluation of concepts, e.g., puts together pieces of the discussion to develop new approaches that take the class further. Contributes in a very significant way to ongoing discussion: keeps analysis focused, responds very thoughtfully to other students' comments, contributes to the cooperative argument-building, suggests alternative ways of approaching material and helps class analyze which approaches are appropriate, etc. Demonstrates ongoing very active involvement.

Analytical Notebook

The analytical notebook is a written record of your responses to what you have experienced, heard, and observed during your travel and study. The analytical notebook is by its very nature subjective, but it includes concrete observations and experiences. **It goes beyond data collection to responding to the experiences.** It records and helps to process feelings, emotional responses, intellectual reactions and reasoning. While one should give effort to writing well, the analytical notebook is not a formal research paper with citation of sources and documenting them formally. Yet we encourage you to pick up brochures and flyers that give information about places and events that we visit and to listen attentively to tour guides; you may draw upon these sources, as well as on the reading resources for support of your reflections.

Certainly, the analytical notebook is not a diary; entries which begin, “Today we went to/did such and such...” are not appropriate.

For each analytical notebook entry, you will do the following:

1. Complete reading(s) in advance of the activity
2. Participate in the activity/tour, discussion, etc.
3. Write an entry in your analytical notebook by responding to the prompt or activity.

The Final Integrative Essay

During the final days in Germany, you will be challenged to reflect on your overall experience. **For the last assignment, you will select one event/experience and deal with it in depth, based on a selection of prompts given by the instructors.** It should be an experience that challenged you in some way because you confronted a cultural difference that perhaps exposed you for who you are vis-à-vis your host culture. Your essay should include both reflection and insight. Reflection requires not just describing experiences, but analyzing them in the context of the culture (ie. take apart your experience). Insight requires you to make connections and gain a deep understanding of your experiences (ie. putting things together). Use this essay to talk about what you have gained cross-culturally from your experience. What have you learned about yourself, your limitations, your ability to step outside your comfort zone, about human nature, about culture and people, about justice, or beauty, or faith, or whatever else is on your heart that is relevant to your cross-cultural experience.

Assignments that are part of the program, but graded as part of NEUR 473

- **Scientific Visit Reports:** After each visit to a laboratory, you will write a “Scientific Visit Report”. Reports will be evaluated for analysis of the scientific merits of each research program.
- **Historical/Cultural Context Discussion:** You will regularly discuss in small groups the cultural differences observed between the German culture and subcultures, the North American culture, and the cultures of your families of origin, according to prompts that will be appropriate to each experience. You will record notes on each discussion, which will be turned into the instructors.
- **Next Steps Study Presentation:** At the end of the program, you will prepare and give a formal presentation that proposes a “Next Steps Study” from a research program you encountered during one of the laboratory visits. Presentations will be delivered to other students and faculty in the program. Details will be provided.

Skills Required

Academic skills required: Foremost, you will need to be curious and engaged in our academic adventures. Additionally, this course requires a considerable amount of writing, discussion in small groups, and analysis. There will be reading and reviewing of basic and specialized science concepts. You will be expected to learn from lectures and educate yourself of upcoming research topics enough to interact with the scientists by asking informed questions. You will

need to be able to write 1-2 page papers in a few hours of quiet time. This syllabus provides examples of rubrics used to assess learning objectives. Others will be provided via Blackboard before departure and expectations for assignments will be discussed during orientation.

Personal skills required: You need a keen sense of adventure, ability to stay alert to beauty and dangers, a tolerance of tight living quarters, willingness to live in unfamiliar places, flexibility for changing plans and conditions, openness to trying new foods, appreciation of outdoor activities and new flora and fauna, ability to dress appropriately for the weather and social circumstances, and ability to stay engaged with host scientists and other representatives despite a lack of foreign language skills.

Community Participation Required: We will be traveling together as a group for >3 weeks. Keep the following in mind:

- Attendance is mandatory at all scheduled classes and activities.
- Follow safety guidelines and leaders' instructions. These will include avoiding certain places and always traveling in small groups.
- Show **utmost** respect for lecturers, local guides, and hosts. Engage with them at every opportunity. Thank them for their contributions to your experience and learning.
- Often, you may not understand what is being said. Use non-verbal clues and remain engaged in conversations and interactions despite a lack of language skills.
- Your voice is important to us! Participation in group discussions is expected.
- Your attitude has a powerful effect on the group: Maintain a positive can-do attitude and cooperative behavior.
- Listen carefully and openly to one another, even when you disagree or take offense at what someone is saying. Remember that we are all human beings, worthy of respect, no matter our views, opinions, or perspectives.
- Please feel free to address any concerns with the leaders at all times.
- Get adequate rest at night -- cross-cultural engagement requires more than your typical energy requirements in your home culture.

Policies and Resources

Academic Integrity: Mason is an Honor Code university; please see the Office for Academic Integrity for a full description of the code and the honor committee process. The principle of academic integrity is taken very seriously and violations are treated gravely. What does academic integrity mean in this course? Essentially this: when you are responsible for a task, you will perform that task. When you rely on someone else's work in an aspect of the performance of that task, you will give full credit in the proper, accepted form. Another aspect of academic integrity is the free play of ideas. Vigorous discussion and debate are encouraged in this course, with the firm expectation that all aspects of the class will be conducted with civility and respect for differing ideas, perspectives, and traditions. When in doubt (of any kind) please ask for guidance and clarification.

Disability Services: Disability Services at George Mason University is committed to upholding the letter and spirit of the laws that ensure equal treatment of people with disabilities. Under the administration of University Life, Disability Services implements and coordinates reasonable accommodations and disability-related services that afford equal access to university programs and activities. Students can begin the registration process with Disability Services at any time during their enrollment at George Mason University. If you are seeking accommodations, please visit <http://ds.gmu.edu/> for detailed information about the Disability Services registration process. Disability Services is located in Student Union Building I (SUB I), Suite 2500. Email: ods@gmu.edu | Phone: (703) 993-2474

Diversity and Inclusion: George Mason University is committed to providing equal opportunity and an educational and work environment free from any discrimination on the basis of race, color, religion, national origin, sex, disability, veteran status, sexual orientation, gender identity, gender expression, age, marital status, pregnancy status or genetic information. George Mason University shall adhere to all applicable state and federal equal opportunity/affirmative action statutes and regulations.

The University is dedicated to ensuring access, fairness and equity for minorities, women, individuals with disabilities, and veterans (as covered by law) in its educational programs, related activities and employment. George Mason University shall thus maintain a continuing affirmative action program to identify and eliminate discriminatory practices in every phase of university operations.

Any employee who becomes aware of sexual harassment or other potentially discriminatory behavior must contact Compliance, Diversity, and Ethics.

Retaliation against an individual who has raised claims of illegal discrimination or has cooperated with an investigation of such claims is prohibited

Title IX: Notice of mandatory reporting of sexual or interpersonal misconduct: As faculty member, we are designated as a “Non-Confidential Employees,” and must report all disclosures of sexual assault, sexual harassment, interpersonal violence, stalking, sexual exploitation, complicity, and retaliation to Mason’s Title IX Coordinator per University Policy 1202. If you wish to speak with someone confidentially, please contact one of Mason’s confidential resources, such as Student Support and Advocacy Center (SSAC) at 703-380-1434 or Counseling and Psychological Services (CAPS) at 703-993-2380. You may also seek assistance or support measures from Mason’s Title IX Coordinator by calling 703-993-8730, or emailing titleix@gmu.edu.

Neuroscience and Technology in Germany Program Calendar

Assignments for *NEUR 355: Cross Cultural Studies in Scientific Inquiry* are in **RED**
 Assignments for *NEUR 473: Current Neuroscience Research in Germany* are in **BLUE**

Day	Base Location	Activities	What should I be working on? Ongoing readings and assignments	What is due? Must be completed by our first meeting time that day
-4	Fairfax	Neuro Bootcamp and Cultural Orientation on Fairfax Campus		
-3	Fairfax	Neuro Bootcamp and Cultural Orientation on Fairfax Campus		
-2	Fairfax	Neuro Bootcamp and Cultural Orientation on Fairfax Campus		
-1	Fairfax	Neuro Bootcamp and Cultural Orientation on Fairfax Campus	-Analytical notebook: Expectations	
1	Travel	Fly to Germany	-Analytical notebook: Expectations	
2	Arrival FRA/ Frankfurt	Arrive, check in, get settled, Welcome Dinner together	-Analytical notebook: First Impressions	Assignments Due: -Analytical notebook: Expectations
3	Frankfurt	Academic Overview	-Analytical notebook: First Impressions -Read How Language Shapes Thought by Lera Boroditsky -Read Weigelt visit material and do Lit Cue sheet	
4	Frankfurt	German lessons, cultural orientation, guided tour	-Read How Language Shapes Thought by Lera Boroditsky -Read Weigelt visit material and do Lit Cue sheet -Analytical notebook: Language shapes thought	Assignments Due: -Analytical notebook: First Impressions - Language Shapes Thought reading
5	Frankfurt	Academic lecture on Developmental Neuroscience, check-ins, Optional trip to Schwannheim	-Read Nikolic and Nagel visit material and do Lit Cue Sheets -H/C Context discussion	Assignments Due: -Analytical notebook: Language Shapes Thought -Lit Cue Sheet on Weigelt readings

Day	Base Location	Activities	What should I be working on? Ongoing readings and assignments	What is due? Must be completed by our first meeting time that day
6	Frankfurt	Day trip to Dortmund Lab visit- Sarah Weigelt- cognitive neuroscientist (developmental)	-Read Nikolic and Nagel visit material and do Lit Cue Sheets -Scientific Visit Report (Weigelt)	Assignments Due: -H/C Context discussion notes
7	Frankfurt	Academic Lecture on AI and Optogenetics, Scientist visit- Danko Nikolic- AI Startup in Frankfurt	-Read Heidelberg Visit readings -Scientific Visit Report (Weigelt) -Scientific Visit Report (Nikolic)	Assignments Due: -Lit Cue Sheets for Nikolic and Nagel
8	Frankfurt	Day trip to Heidelberg Pharmacy Museum	-Read Heidelberg Visit material -Analytical notebook: Heidelberg -Read Hildegard von Bingen material	Assignments Due: -Scientific Visit Report (Weigelt) -Scientific Visit Report (Nikolic) -Heidelberg reading
9	Frankfurt	Day trip to Mainz Gutenberg Museum with workshop and tour of Bingen am Rhein, Museum am Strom	-Analytical notebook: Hildegard von Bingen -H/C Context discussion (Mainz)	Assignments Due: -Analytical notebook: History of Pharmacy -Hildegard von Bingen reading
10	Frankfurt	Day trip to Wurzburg Tour Wurzburg Lab visit- Georg Nagel- channelrhodopsins and optogenetics Tour Rontgen Memorial (on x-ray discovery)	-Scientific Visit Report (Nagel)	Assignments Due: -Analytical notebook: Hildegard von Bingen -H/C Context discussion notes (Mainz/Gutenberg)
11	Frankfurt	Free time	-Read Nicke visit material and do Lit Cue sheet -Scientific Visit Report (Nagel)	
12	Frankfurt	Free time	-Read Nicke visit material and do Lit Cue sheet -Scientific Visit Report (Nagel)	

Day	Base Location	Activities	What should I be working on? Ongoing readings and assignments	What is due? Must be completed by our first meeting time that day
13	Frankfurt/ Munich	Travel to Munich Orientation in Munich	-Read Nicke visit material and do Lit Cue sheet	Assignments Due: -Scientific Visit Report (Nagel)
14	Munich	Walking tour of Munich Academic Lecture, Nicke prep	-H/C Context discussion (Munich)	Assignments Due: -Lit Cue Sheet (Nicke)
15	Munich	Guided tour of Deutsches Museum	-Analytical notebook: Deutsches Museum	Assignments Due: -H/C Context discussion (Munich) notes - Deutsches Museum reading
16	Munich	Day trip to Zugspitze		Assignments Due: -Analytical notebook: Deutsches Museum
17	Munich	Lab Visit- Annette Nicke	-Scientific Visit Report (Nicke) -Read Ravensbruck material	
18	Munich/ Berlin	Travel to Berlin Orientation in Berlin	-Read Ravensbruck material -Read Madry, Geiger, Uhlhaas visit material and do Lit Cue Sheets	Assignments Due: -Scientific Visit Report (Nicke)
19	Berlin	Tour of Ravensbrück concentration camp Debrief at hotel	-Read Madry, Geiger, Uhlhaas visit material and do Lit Cue Sheets -H/C Context discussion (Ravensbruck)	Assignments Due: -Ravensbrück reading
20	Berlin	Tour Berlin, Tour Museum of Medical History		Assignments Due: -Analytical Notebook: Ravensbrück -Medical History reading
21	Berlin	Academic Lecture, Madry, Geiger, Uhlhaas prep		Assignments Due: -Madry, Geiger, Uhlhaas Lit Cue sheets -H/C Context Discussion: Berlin
22	Berlin	Academic Lecture Lab visits at Charite/ Humboldt University: Christian Madry & Joerg Geiger	-Scientific Visit Reports (Madry, Geiger, Uhlhaas)	-Analytical Notebook/ Medical History

Day	Base Location	Activities	What should I be working on? Ongoing readings and assignments	What is due? Must be completed by our first meeting time that day
		(neurophysiology), Peter Uhlhaas		
23	Berlin	Discussion Prepare for final presentations	-Next Steps Presentation	Assignments Due: -Scientific Visit Reports (Madry, Geiger, Uhlhaas)
24	Berlin	Final presentations Final Wrap up and Conclusions		Assignments Due: -Next Steps Presentation
25	Berlin	Depart		
Final Integrative Essay due Friday, June XX				