Course Change Request

New Course Proposal

Date Submitted: 09/13/21 6:28 pm

Viewing: NEUR 473 : Current Neuroscience Research in Germany

Last edit: 09/23/21 11:40 am

Changes proposed by: gscott21

In Workflow

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

Approval Path

1. 09/14/21 9:17 am Saleet Jafri (sjafri): Approved for NEUR Chair

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 2022

Subject Code: NEUR - Neuroscience

Course Number: 473

Bundled Courses:

Is this course replacing another course? No

Equivalent Courses:

Catalog Title: Current Neuroscience Research in Germany

Banner Title: Curr. Neuro Rsrch in Germany

Will section titles vary by semester? No

Credits: 3

Schedule Type: Lecture

Hours of Lecture or Seminar per week: 12

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):

BIOL 213 and at least 9 credits in NEUR, BIOL, CHEM or BENG

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):

Junior status (minimum 60 credits)

Registrar's Office Use Only - Registration Restrictions:

Field(s) of Study:

Class(es):

Level(s):

Degree(s):

School(s):

Catalog Description:

This course is part of the “Neuroscience and Technology in Germany” summer study abroad program. Students will visit active research settings, interact with professional scientists, learn about innovative and current research, and tour historically and culturally significant sites. This course emphasizes scientific communication and evaluation of scientific findings an in an international research setting. Students will

also explore the cultural contexts for discovery by comparing the scientific culture between Europe and North America.

Justification:

What- This course will be taught as part of a summer study abroad program in Germany and will be submitted for approval as a synthesis course. This will be the first synthesis course for the neuroscience program. The course content will expose student to scientific research from another country and culture, which is important to understanding science as a whole. Why- There is no similar or equivalent course at the university. This course will open up new avenues for neuroscience and other STEM students to study abroad.

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

Learning Outcomes:

Communicate effectively in both oral and written forms, applying appropriate rhetorical standards (e.g., audience adaptation, language, argument, organization, evidence, etc.).
Using perspectives from two or more disciplines, connect issues in a given field to wider intellectual, community or societal concerns.
Apply critical thinking skills to evaluate the quality, credibility and limitations of an argument or a solution using appropriate evidence or resources.

Attach Syllabus

NEUR 473 Syllabus.pdf

Additional Attachments

Staffing:

Greta Ann Herin and Wendy Lewis

Relationship to Existing Programs:

N/A, new GEO/NEUR program

Relationship to Existing Courses:

N/A

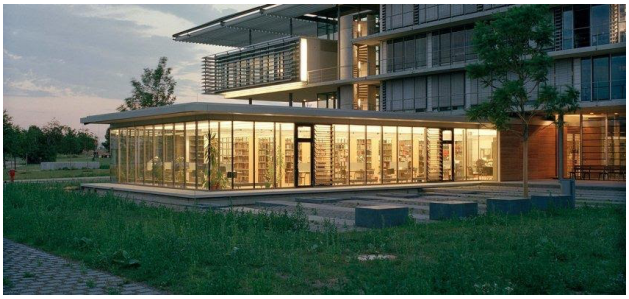
Additional Comments:

Reviewer Comments

Key: 17300

Current Neuroscience Research in Germany
NEUR 473, Summer 2022

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"

Course Overview

This immersive, experiential course integrates biological, technological, and neuroscientific learnings in an international research setting with a focus on neuroscience and technology. 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. Students will explore the cultural contexts for discovery by comparing the scientific culture between Europe and North America.

Mason Core: Synthesis Learning Goals

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

- **Communicate effectively in both oral and written forms, applying appropriate rhetorical standards (e.g., audience adaptation, language, argument, organization, evidence, etc.).** To accomplish this learning objective, you will practice conversational and formal oral and formal written communication. You will be assessed on the following items to measure learning in this domain:
    - Engagement in scientific dialogue with international scientists and students during visits.
    - Preparation of a formal presentation that proposes a "Next Steps Study" from a research program they encountered during the visits to the laboratories.
    - Short reports on site visits "Scientific Visit Reports" or Lectures "Lecture Summary" using appropriate scientific terminology and accurately recounting scientific premise and findings of each laboratory. Students will evaluate the scientific merits of the research program and imagine future directions.

- **Using perspectives from two or more disciplines, connect issues in a given field to wider intellectual, community or societal concerns.** To accomplish this learning goal, students will consider scientific findings and technological advances in light of cultural and historical backgrounds. Students will be assessed on the following items to measure learning in this domain:
    - Group discussions on site visits "Historical/Cultural (H/C) Context Discussion" expanding on the context of scientific discovery and technological advances.
- **Apply critical thinking skills to: Evaluate the quality, credibility and limitations of an argument or a solution using appropriate evidence or resources.** To accomplish this learning goal, students will evaluate scientific findings and technological advances they encounter in will be assessed on the following items to measure learning in this domain:
    - "Scientific Visit Reports" will be evaluated for analysis of the scientific merits of each research program including alternative hypotheses that were addressed, alternative hypotheses that were not addressed by the studies, and studies that will be necessary to eliminate the unaddressed alternative hypotheses.

Readings

Readings will be available to you through Blackboard before departure. A paper reader/packet will be made available to you upon arrival in Germany.

Grading and Assessments

Grading Item	% of total grade
Engagement and Participation	40
Scientific Visit Reports	30
Historical/Cultural Context Discussion	25
Next Steps Study Presentation	15

Grading Scale:

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

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.

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 including alternative hypotheses that were addressed, alternative hypotheses that were not addressed by the studies, and studies that will be necessary to eliminate the unaddressed alternative hypotheses.

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.

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.

Skills Required

Academic skills required: Foremost, you will need to be curious and engaged in our academic adventures. Additionally, because this course fulfills Core: Global Understanding and Core: Synthesis requirements, it 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, ability to participate in walking tours that may involve several miles of walking, 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 a faculty member, I am designated as a "Non-Confidential Employee," 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

For Courses NEUR 301 and NEUR 473

Day	Base Location	Activities	Hrs*	Assessment NEUR 301	Assessment NEUR 473
1 Mon 5/16	Fairfax	Orientation on Fairfax Campus	6		
2 Tues 5/17	Fairfax	Orientation on Fairfax Campus	6	Analytical notebook (1): expectations	
3 Wed 5/18	Travel	Fly to Germany			
4 Thr 5/19	Arrival FRA/ Frankfurt	Arrive, check in, get settled, meal together			
5 Fri 5/20	Frankfurt	Physical orientation	3	Analytical notebook (2): first impressions	
6 Sat 5/21	Frankfurt	German lessons, cultural orientation, guided tour, history lesson	6	Analytical notebook (3): Language shapes thought Analytical notebook (4): Mannheim history	
7 Sun 5/22	Frankfurt	Trip to Schwannheim	1		H/C Context discussion (1)
8 Mon 5/23	Frankfurt	Academic lecture 1, Lab visit- Sarah Weigelt	4		Scientific Visit Report (1)
9 Tues 5/24	Frankfurt	Academic lecture 2, Lab visit- Ivana Mesic, tour Frankfurt	5.5	Analytical notebook (5): Post-WWII Frankfurt	H/C Context discussion (2)
10 Wed 5/25	Frankfurt	Academic lecture 3, Lab visit- Heidelberg lab, tour Heidelberg	5.5	Analytical notebook (6): Pre-modern life in Heidleberg	Scientific Visit Report (2)
11 Thr 5/26	Frankfurt	Academic lecture 4, Lab visit- Frankfurt Lab	4		Scientific Visit Report (3)

12 Fri 5/27	Frankfurt	Academic lecture 5, Lab visit- Georg Nagel, Tour Wurzburg	5.5	Analytical notebook (7): Wurzburg role in German economy	Scientific Visit Report (4)
13 Sat 5/28	Frankfurt	Tour Mainz Gutenberg Museum, Tour Rudesheim and Rheingebeit	3		
14 Sun 5/29	Frankfurt	Academic lecture 6, Hiking near Frankfurt	2		
15 Mon 5/30	Frankfurt/ Munich	Academic lecture 7, Travel to Munich	3		H/C Context discussion over Darmstadt (3)
16 Tues 5/31	Munich	Academic lecture 8, Tour Munich with technology focus	3.5		
17 Wed 6/1	Munich	Visit Technisches Universitat Munich (GA)	3		H/C Context discussion (4)
18 Thr 6/2	Munich/Leipzig	Travel to Leipzig, Academic lecture 9	2		
19 Fri 6/3	Leipzig	Visit MPI: Cognitive & Brain Sciences, Tour Leipzig		Analytical notebook (8): East Germany's legacy on technology	Scientific Visit Report (5)
20 Sat 6/4	Leipzig/ Berlin	Travel to Berlin, dinner together			
21 Sun 6/5	Berlin	Tour Berlin with technology focus, cultural event	3	Analytical notebook (9): Reflections on Cultural Event	
22 Mon 6/6	Berlin	Two Lab visits at Charite/ Humboldt University (Christian Madry & TBD)	4		Scientific Visit Reports (6&7)
23 Tues 6/7	Berlin	Visit Technical University, Historical lecture and tour	5	Analytical notebook (10): Berlin's Global Influence	Scientific Visit Report (8)

24 Wed 6/8	Berlin	Discussion, time to prepare for final presentations	6		H/C Context discussion over Berlin (5)
25 Thr 6/9	Berlin	Final presentations	6		Next Steps Presentation
26 Fri 6/10	Berlin	Final Wrap up and Conclusions, preparation to leave	4		H/C Context discussion overall (6)
27 Sat 6/11	Travel	Flying back to US		Final Integrative Essay due before departure.	
Total Academic Hours			91		

*Hrs = Academic hours