



Department of Physics
and Astronomy

November 9th, 2016

Dr. J. Mark Blackwell, Director of International Studies
and International Collaboration Grant Committee
Francis Marion University

Dear Dr. Blackwell and fellow committee members,

I am pleased to present this International Collaboration Grant proposal for your review. The support requested in this grant will be used to support the development and participation of a new section of Travel-Study course that will be offered next year (2017), during the Late Spring Semester. This course will be offered as an Honors Special topics course – HNRS286-, titled *Sustainable Development in Europe and US*. This course will introduce students to the topic of sustainability, including traditional environmental sustainability, but also taking the concept beyond its usual context to other types of industry, human resources and also understanding policymaking and lawmaking. We expect that the course will expose the students to traditional and contemporary trends in Sustainable Developments in our area (as a representation of the US) and in the EU.

The course will include traditional lectures offered at FMU, as well as experiential and applied learning through travel to the European Academy Otzenhausen (EAO). In addition to lectures, workshops and site visits while at Otzenhausen, the course will offer students lectures and visits to sites in other cities, such as Luxembourg, Luxembourg; Strasbourg, France; and Brussels, Belgium. By the end of the course, students will be knowledgeable in current trends, policies, procedures and applications of Sustainability in a wide variety of areas and industry. This course will expand the strong relationship between FMU and EAO, which was established a few years ago with the implementation of the first similar Late Spring course, offered by Dr. William Daniel. This will be the third year of FMU's participation in the program with EAO and this time, there will be two courses offered, with hope to expand the participation and provide this magnificent opportunity to students in any major.

This would be my second international experience since I joined the FMU family in 2013. I have previously had the honor to travel to Northeastern Germany to build an Exchange Program for Industrial Engineering students with the Ernst-Abbe Hochschule, located in Jena, Germany.

Should you find the content of this application to be successful, I expect to use the funds requested to cover the cost of traveling and lodging during this visit to EAO and to the mentioned European cities. Attached you will find the required documents for the proposal, including details of the collaboration, proposed syllabus and cost details.

Thank you in advance for your time and your consideration.

Best regards,



Lorna R. Cintron-Gonzalez, PhD
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Coordinator of Industrial Engineering
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SUSTAINABLE DEVELOPMENT COURSE TO DEVELOP AND EXPAND COLLABORATION WITH THE EUROPEAN ACADEMY OTZENHAUSEN

Submitted to: International Programs Committee

Date: November 9TH, 2016

Submitted by:

Lorna R. Cintron-Gonzalez, PhD

Assistant Professor of Industrial Engineering

Francis Marion University

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Introduction/Background

In 2015, Francis Marion University offered a travel-study course in Late Spring for the first time. This application-based program offered students with a unique opportunity to learn more about interesting and important topics while earning academic credits towards graduation. The course will be a joint collaboration with the European Academy Otzenhausen, located in the Southwestern region of Saarland in Germany. In 2015, the first course offered was a Political Science course, taught by Dr. William Daniel. This past summer, in the second year, Dr. Caroline Padgett offered a course in International Economics. A total of ten students participated in each of those courses. In this third consecutive year, and with the determination and motivation to expand student opportunity and strengthen the relationship between EAO and FMU, two courses will be offered: a Political Science course, and a Sustainable Development course, which I will have the privilege of teaching.

Purpose of this collaboration

While this is an existing program at FMU, the main purpose of the collaboration with EAO this year is to strengthen the relationships between EAO and FMU by offering other courses that could be taught in the same study-travel format. At the same time, the program will expand options for potential participants in different majors and backgrounds. This expansion of the program will now allow 20 students to participate in this one-of-a-kind experience.

Description of collaboration

This particular project is tied with a new offering of an honors course, HNRS 286, titled “Sustainable Development in US and Europe”. This course will be one of two courses that will continue to grow the collaboration between FMU and EAO. Students enrolled in this course during the Late Spring Semester of 2017 will have the opportunity to travel to Germany to learn about the European approaches to sustainability and successful sustainable processes and applications in different areas. For this part of the course, EAO will continue to be the facilitator of workshops and lectures on sustainability in the EU and site visits to industries and organizations that have successful sustainable practices. As it has been done before, students will be housed in the EAO campus, which is located in the southwest region of Saarland, Germany (map included below).



Figure 1. Location of the European Academy Otzenhausen

The concept of sustainability has been growing exponentially over the last decade. With applications in sciences, engineering and even human resources, sustainability is a subject that is creating an impact in organizations worldwide. This course will introduce students to sustainability in its core, as well as an understanding of successful (and even unsuccessful) applications of sustainable processes. In addition, the course will allow students to compare the visions on sustainability in the US versus that of the EU. In the end, we expect that students who successfully complete the course will have a better understanding of the concept and applications of sustainability, and that they will be able to apply one or more of the concepts learned into their future careers.

This course, even though it will be listed as an Honors Course, will be open to students of all disciplines and all levels who meet the requirements listed in the next section. In addition, students with a variety of backgrounds will enable cross-learning between students in different disciplines. Please find a proposed syllabus for the course is provided as an appendix.

Students enrolled in the course will be responsible for tuition, following regular tuition costs. These three REAL grants will help counterbalance the travel- and lodging expenses to EAO, which are associated to the travel component of the course.

Although this course will be open to students of any major, students interested will go through a selection process. Students will have to complete an application to participate. The application (presented as an appendix) will gather essential academic information and other additional information, including:

- Major
- GPA
- List of science courses taken at FMU (at least one course preferred)
- Letter of interest
- Recommendation from at least one faculty member

At least one science course for participating in the program is preferable (not required), as students in the course to better understand any technical concepts or topics covered as well as tackle problem solving. This preference is considered reasonable, as every student at FMU is required to complete a science or physical science course as part as their general education requirements towards graduation.

A select faculty committee from STEM-related disciplines will review these applications and recommend applicants to the future instructor of the course (Dr. Cintron-Gonzalez). Students will then be notified of their selection. Selected students that decline participation will open a place for other qualified applicant who might not be in the first selection round.

Funding Request

The funds requested with this grant proposal will be used for my travel expenses to Otzenhausen, Germany from May 16th until the 28th of 2017. These expenses include air travel to Frankfurt, ground transportation to the city of Otzenhausen, accommodations at EAO and other cities, and travel back to the US. Other funds have been requested through a REAL Grant (included below) to support students participating in this program.

Final Notes

In conclusion, I am humbly seeking support from the International Programs Committee, in the form of grant funds, to travel to Otzenhausen, Germany in May 2017 as the instructor of a new travel-study course that will be offered in the Late-Spring Semester in 2017. The purpose of this visit can be summarized in the statements below:

- To thoroughly study the curriculum and courses of their Industrial Engineering degree
- To identify ideal and potential courses that students from both institutions may exchange for credit towards their degree
- To identify the level of knowledge and the skills needed from students of both institutions prior to their participation in the exchange program
- To meet with faculty of the UASJ that would be involved in this collaboration and develop a healthy relationship that will lead to a successful exchange program and may provide future research collaborations between both institutions



Department of Physics and Astronomy

Francis Marion University

HNRS 286 –SUSTAINABLE DEVELOPMENT IN US AND EUROPE

Instructor:	Dr. Lorna Cintron-Gonzalez	Office Hours:	TBD
Office:	MSB 101	Class Meetings	TBD
Phone:	(843) 661-1463	Class Time	TBD
Email:	lcintrongonzalez@fmarion.edu	Class Location	MSB 106

COURSE NUMBER AND NAME: HNRS 286 – Sustainable Development in US and Europe (*3 Credits*)

COURSE CO/PREREQUISITE: None (preferably have taken a natural or physical science)

REQUIRED TEXT: *Introduction to Sustainability: Road to a Better Future*, 1st Edition, by Nolberto Munier, 2009.

COURSE DESCRIPTION: The concept of sustainability has been growing exponentially over the last decade. With applications in sciences, engineering and even human resources, sustainability is a subject that is creating an impact in organizations worldwide. This course will introduce students to sustainability in its core, as well as an understanding of successful (and even unsuccessful) applications of sustainable processes in different types of industry and in several approaches within those. In addition, the course will allow students to compare the visions on sustainability in the US versus that of the EU. Students enrolled in this course during the will have the opportunity to travel to the European Academy of Otzenhausen (EAO) – located in the southwest region of Saarland, Germany - to learn about the European approaches to the same sustainability concepts discussed in regular lecture. Students will also be able to visit different sites that implement sustainable processes in a variety of areas.

COURSE OBJECTIVES:

- To introduce students to traditional and current concepts in Sustainability beyond the environmental footprint.
- To provide students with an understanding of different areas of application of sustainability thinking in areas such as: environment, energy, manufacturing/industry, healthcare, human resources, and transportation.
- To further develop students' analytical and problem-solving skills through the application of sustainability principles to real-life problems.
- To widen students' perspectives on the concept of Sustainability and how these perspectives differ between countries.

STUDENT LEARNING OUTCOMES:

Upon completion of this course, students should be able to:

- Conduct an analysis of a system and devise ways to implement sustainable concepts.
- Identify appropriate ways to improve a system/process through the implementation of sustainable practices.
- Describe main differences between different concepts/approaches sustainability in the US and in the EU.

PROJECTED CLASS TOPICS:

1. Introduction to Sustainability
2. History of Sustainability
3. Sustainable development vs. Economic Growth
4. Environmental Sustainability
5. Energy Sustainability
6. Sustainability in the household
7. Sustainability in Industry
 - Manufacturing, Healthcare
8. Sustainability in Commerce
9. Sustainability in Education
10. Differences in Sustainability Concepts and Applications across Nations

**Topics are subject to change or may not be covered. Changes will be notified in class*

GRADING:

Homework assignments, tests, quizzes, projects, tests and in-class attendance/participation will determine final grades. The weight of those on the final grade will be distributed as follows:

Homework Assignments	20%	
Mid-Term Project	2%	
Final Project and Presentation	50%	TOTAL = 100%
Participation/Attendance	10%	

GRADING SCALE

100 - 90 = A	89 - 88 = B+	79 - 78 = C+	69 - 68 = D+	59 - 0 = F
	87 - 80 = B	77 - 70 = C	67 - 60 = D	

CLASS POLICIES:

- Attendance for this course will follow FMU's policy. Tardiness is unacceptable, yet there will be a 1-2 minute grace period for latecomers. Please refrain from entering the classroom if you are later than 2 minutes. Failure to comply will affect your participation/attendance grade. Instructor may ask you to leave the classroom.
 - Use of mobile phones, tablets and/or mp3 players **will not be tolerated during class** (unless otherwise specified), **quizzes or tests**. Please put these devices at least on 'silent' mode and keep away from your desk. Failure to comply will affect your participation/attendance grade. Instructor may ask you to leave the classroom.
 - The use of a scientific calculator (not graphic) is recommended and will be allowed to use for classwork, quizzes and tests. You may not use a cell phone, tablet, or any other device as a substitute.
 - **Homework** will be assigned during or at the end of lecture and will be due as specified. While group study is encouraged, homework should be students' individual effort.
 - **Quizzes and tests** will be announced and will consist mainly of exercises, short answer questions and multiple-choice questions relevant to the current topics of the class. Students are expected to take all quizzes when they are scheduled. Make-up quizzes and tests will be allowed only in case of medical conditions that will impede your assistance to the quiz or test. Proof from a health professional may be required and you should try to contact your instructor prior to missing the quiz or test.
 - If you decide to withdraw from the course, you should do so following FMU policies and procedures. Please refer to the FMU Academic Calendar to find important deadlines.
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ACADEMIC DISHONESTY

- Cheating, plagiarism and collusion are common ways of violating the FMU's honor code. These incidents will not be tolerated in this course.
 - If a student is found responsible for academic dishonesty, based on the severity of the incident (as assessed by the instructor), he/she will receive a zero on their assignment and must attend a workshop or meeting on Plagiarism. Most severe incidents, including academic dishonesty during tests/exams, will result in an automatic failing grade in the class and may also result in suspension and expulsion from the University.
 - Please refer to your FMU student handbook.
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Application: POL 341/HNRS 286 Travel Course

Name: _____

Email: _____

Address: _____

Classification: _____

Major(s): _____

Minor(s)/Collateral(s): _____

GPA: _____ (**Freshmen:** include a copy of your midterm grades)

Academic Background:

1) Political Science Courses Completed:

2) Political Science Courses Currently Taking:

3) Language Courses Taken at FMU:

4) Names of Two Faculty References, other than your letter writer:

5) Will you have completed POL 103 by May 2015? _____

Supporting Materials:

1) Please submit a **faculty recommendation** letter in a sealed envelope, with your recommender's signature across the envelope seal. Letters should address your level of academic maturity, ability to work well with others, and your observed level of motivation and independence in your studies.

2) Please submit a **letter of interest** (max 2 pages), along with your application materials. Your letter should address:

- Why you are interested in pursuing travel study in Germany.
- If you have previous experience traveling outside of the United States.
- How you have been exposed to another culture than your own.
- Previous life experiences that demonstrate a suitable level of independent initiative and ability to take care of yourself abroad.

Additional Information:

1) Do you already have a passport that is valid for travel in Europe, with an expiration date **no earlier than November 2015**? _____

2) Are you able to commit to round-trip travel from Florence, SC, during the month of May 2015, as well as to attend a series of **required meetings** during Spring 2015 semester? _____

3) If you are accepted to the program **by December 1**, are you prepared to submit a non-refundable **deposit** of \$280, no later than **January 9**? _____

By **signing below**, you signify your interest in participating in the program and state that all provided materials are true, to the best of your knowledge.

Signature: _____ Date: _____

Francis Marion University Application for REAL FUNDS

Faculty/Principal Investigator	Lorna Cintron-Gonzalez
Faculty email	lcintrongonzalez@fmarion.edu
Title of Proposed Project	Travel Study to European Academy of Otzenhausen, Germany for Sustainability Course
Number of Students Participating	10
Project Begin Date	May 17, 2017
Project End Date	May 28, 2017
Project Location	Otzenhausen, Germany
Total Project Cost	Three grants applied for, \$4800 per grant, adding up to \$14400
Brief Project Description	<p>This project is part of the travel program initiated by the International Programs Committee at FMU, which involves the European Academy of Otzenhausen (EAO). This particular project is tied with a new offering of an honors course, HNRS 286, titled "Introduction to Sustainability (Sustainable Practices in US and EU)". This course will be one of two courses that will continue to grow the collaboration between FMU and EAO. Students enrolled in this course during the Late Spring Semester of 2017 will have the opportunity to travel to Germany to learn about the European approaches to sustainability and successful sustainable processes and applications in different areas. For this part of the course, EAO will continue to be the facilitator of workshops and lectures on sustainability in the EU and site visits to industries and organizations that have successful sustainable practices.</p> <p>As it has been done before, students will be housed in the EAO campus, which is located in the southwest region of Saarland, Germany.</p> <p>This course, even though it will be listed as an Honors Course, will be open to students of all disciplines and all levels who meet the requirements listed in the next section. In addition, students with a variety of backgrounds will enable cross-learning between students in different disciplines.</p> <p>Students enrolled in the course will be responsible for tuition, following regular tuition costs. These three REAL grants will help counterbalance the travel- and lodging expenses to EAO, which are associated to the travel component of the course.</p>

<p>Please describe the academic requirements to assure students have sufficient foundation to support a successful experience. Also describe how students will be selected to participate in this activity.</p>	<p>Although this course will be open to students of any major, students interested will go through a selection process. Students will have to complete an application to participate. The application will gather essential academic information and other additional information, including:</p> <ul style="list-style-type: none"> • Major • GPA • List of science courses taken at FMU (at least one course preferred) • Letter of interest • Recommendation from at least one faculty member <p>At least one science course for participating in the program is preferable (not required), as students in the course to better understand any technical concepts or topics covered as well as tackle problem solving. This preference is considered reasonable, as every student at FMU is required to complete a science or physical science course as part as their general education requirements towards graduation.</p> <p>A select faculty committee from STEM-related disciplines will review these applications and recommend applicants to the future instructor of the course (Dr. Cintron-Gonzalez). Students will then be notified of their selection. Selected students that decline participation will open a place for other qualified applicant who might not be in the first selection round.</p>
<p>Please explain how this experience is authentic, in that it has real-world context or is meaningful in reference to an applied setting or situation.</p>	<p>The concept of sustainability has been growing exponentially over the last decade. With applications in sciences, engineering and even human resources, sustainability is a subject that is creating an impact in organizations worldwide.</p> <p>This course will introduce students to sustainability in its core, as well as an understanding of successful (and even unsuccessful) applications of sustainable processes. In addition, the course will allow students to compare the visions on sustainability in the US versus that of the EU.</p> <p>In the end, we expect that students who successfully complete the course will have a better understanding of the concept and applications of sustainability, and that they will be able to apply one or more of the concepts learned into their future careers.</p>
<p>Reflection</p>	<p>Students will be required to complete a thorough analysis on the major differences in sustainable concepts in the US versus the EU. This paper will require students to conduct minor research as background information and to include individual reactions to the workshops, lectures and places visited while at EAO. In addition, students will be required to provide their own view about sustainability and how they foresee that it could make an impact on their career.</p>

Detailed Budget

Description	Amount Requested
The total requested budget will support the purchase of 10 Round-trip tickets from CLT to FRA. These tickets will be purchased via Travel Unlimited, the preferred travel agency of FMU. The expected cost of each ticket is approximately \$1,440, which includes a service fee to the travel agent. A total of \$14,400 will be then divided between three REAL grants.	$\$14400 \div 3 \text{ grants} = \mathbf{\$4800/ grant}$

Comments

The estimated budget detailed above does not include the travel expenses for Dr. William Daniel's course. This also will not include the student program fee (\$2000 approx. due by students to cover room/board at EAO), or the tuition fees for the course (\$1500 approx.).



FRANCIS MARION UNIVERSITY

Department of Physics
and Astronomy

November 14, 2016

J. Mark Blackwell, Ph.D.
Associate Professor of Philosophy and Religious Studies
Director, International Programs
Francis Marion University

Dear Professor Blackwell,

It is my pleasure to write a letter in support of Professor Lorna Cintron-Gonzalez's application for an International Collaboration Grant.

As you know, Lorna is planning to teach a Honors Special Topics course during Maymester which will include travel and coursework at the European Academy Otzenhausen. This course promises to be a uniquely valuable experience for both students and for Lorna. It also should go a long way towards having a positive impact on FMU students enrolling in the new exchange program with Ernst-Abbe Hochschule in Jena, Germany.

The department can easily accommodate any time Lorna misses as part of this trip. Thank you for considering her for this unique experience.

Sincerely,

Derek W. Jokisch, Ph.D., CHP
Professor and Chair