

The Florida Agricultural and Mechanical University-Florida State University
College of Engineering's Grand Challenges Scholars Program Proposal

Submitted on June 9, 2020

Approved by:

J. Murray Gibson, Ph.D.

Dean, College of Engineering

Submitted by:

Kathleen M. Ernst, Ph.D.

Pre-Engineering Director

FAMU-FSU College of Engineering

2525 Pottsdamer Street, Room B202-A

Tallahassee, FL 32301

850-410-6279

kernst@eng.famu.fsu.edu

Table of Contents

Vision	3
Table 1. NAE GCSP four Research Themes and 14 Grand Challenges.....	3
FAMU-FSU COE GCSP Competencies	4
<i>Talent Competency</i>	4
Objective: Complete at least one semester-long design project tailored to a Grand Challenge, complete at least six months of professional research experience focused on a Grand Challenge, or complete two or more semesters of undergraduate research experience focused on a Grand Challenge.	4
<i>Multidisciplinary Competency</i>	5
Objective: Complete at least two multidisciplinary courses.	5
<i>Viable Business/Entrepreneurship Competency</i>	6
Objective: Develop and compete in a business pitch competition with a pitch related to a Grand Challenge and/or complete the FAMU-FSU COE Technology Entrepreneurship & Commercialization Course.	6
<i>Multicultural Competency</i>	6
Objective: study, volunteer, or research abroad; work on a project with a significant global focus; complete the FSU Global Citizenship Certificate (or the equivalent courses and events at FAMU); or complete at least two courses with a significant global dimension.	6
<i>Social Consciousness Competency</i>	7
Objective: complete at least 60 hours of service learning in support of a local community group or connected to a larger, global effort that is focused on a specific NAE Grand Challenge or Theme.	7
University-level service-learning opportunities	7
FAMU-FSU COE service-learning opportunities	8
FAMU-FSU COE GCSP Selection and Program Management	8
Table 2. Inaugural FAMU-FSU COE GCSP Steering Committee	9
Proposal for future GCSP Scholar program funding needs	9
Table 3. Proposed future budget for the FAMU-FSU COE GCSP	9
<i>FAMU-FSU COE GCSP Scholar Selection and Tracking Process</i>	10
<i>GCSP Scholar Proposal, Progress Report, and Final Portfolio</i>	10
Table 4. FAMU-FSU COE timeline of proposed events and due dates.....	11
<i>Selection and training of faculty mentors</i>	11
<i>Creating, developing, and sustaining a network of GCSP scholars and alumni</i>	11
Closing.....	12
Appendix A: Pre-Approved Entrepreneurship Courses	13
<i>Approved Entrepreneurship Courses at FAMU</i>	13
<i>Approved Entrepreneurship Courses at FSU</i>	13
Appendix B: Pre-Approved Multicultural Courses	15
<i>Approved Multicultural Courses at FAMU</i>	15
<i>Approved Multicultural Courses at FSU</i>	16

Vision

Earning an engineering degree at the Florida Agricultural and Mechanical University-Florida State University College of Engineering (FAMU-FSU COE) is already a unique experience thanks to the FAMU-FSU COE’s distinct position as the only college of engineering in the United States (U.S.) that is jointly operated with a leading Historically Black College and University (FAMU) and a top Research 1 public university (FSU). This partnership creates a unique place to earn an engineering degree where diversity and engagement are core tenets of the institution with 27.3% of the student population identifying as female and 54.3% of the student population identifying as a person of color. Faculty and staff at the FAMU-FSU COE are committed to training the next generation of engineers to tackle today’s grand challenges and also to creating a strong National Academy of Engineering (NAE) Grand Challenges Scholars Program (GCSP) to help achieve this collective goal.

The FAMU-FSU COE NAE GCSP will attract, retain, grow, and support diverse undergraduate student leaders who are ready to engage with, and help solve, the global grand challenges engineers face today. FAMU-FSU COE GCSP Scholars will tailor their undergraduate experience to learn about, explore, and make progress towards solving one of the 14 NAE Grand Challenges and building their competencies through educational opportunities and experiences that focus on building talent, learning about and engaging with entrepreneurship and viable businesses, and increasing multidisciplinary, multicultural awareness, and social consciousness. Each FAMU-FSU COE GC Scholar will choose one Grand Challenge to explore in depth. This proposal outlines the FAMU-FSU COE plans for how GCSP Scholars can meet the five competencies and how the FAMU-FSU COE GCSP will be managed.

Table 1. NAE GCSP four Research Themes and 14 Grand Challenges.

NAE Research Themes	NAE Grand Challenges
Health	Provide access to clean drinking water
	Engineering better medicines
	Reverse-engineer the brain
	Advance health informatics
Sustainability	Provide energy from fusion
	Develop carbon sequestration methods
	Restore and improve urban infrastructure
	Manage the nitrogen cycle
	Make solar energy economical
Security	Prevent nuclear terror
	Secure cyberspace
Joy of Living	Enhance virtual reality
	Advance personalized learning
	Engineer the tools of scientific discovery

FAMU-FSU COE GCSP Competencies

Completing the GCSP will require meeting the expectations for each of the five competencies focused on talent, multidisciplinary, building viable businesses and engaging with entrepreneurship, multiculturalism, and social consciousness. Each student will choose a NAE Grand Challenge to focus on throughout their program tenure.

Some competencies may be achieved on a student's host university campus – either at FAMU or at FSU. This proposal details how each competency can be accomplished at each host university (FAMU or FSU) or at the combined FAMU-FSU COE. Additionally, due to the nature of the GCSP, the FAMU-FSU COE is working to identify more opportunities to offer shared GCSP experiences within the FAMU-FSU COE, while avoiding duplicating the great efforts and programs already in existence at FAMU and FSU. Any changes made at either host institution will be updated in the FAMU-FSU COE GCSP Manual, on the website, and on any marketing materials.

Each GCSP Scholar must complete the five GCSP competencies: talent, multidisciplinary, viable business/entrepreneurship, multicultural, and social consciousness. Three of the GCSP competencies – talent, viable business/entrepreneurship, and multicultural have a Level 1 and Level 2 distinction. Level 1 is easier to complete. At least one of the competencies with a Level 1 or Level 2 option (talent, viable business/entrepreneurship, multicultural) must be completed at a Level 2.

Talent Competency

Objective: Complete at least one semester-long design project tailored to a Grand Challenge, complete at least six months of professional research experience focused on a Grand Challenge, or complete two or more semesters of undergraduate research experience focused on a Grand Challenge.

GCSP Scholars will undertake an individual or team research and/or design project that relates specifically to an NAE Grand Challenge. GCSP Scholars can pursue a research project in one of four ways:

1. By tailoring their First-Year Engineering Design project to a Grand Challenge and writing a detailed final report on the project (Level 1). If a student chooses to present a poster or paper at a relevant conference, submit a relevant white-paper, or participate in writing a peer-reviewed journal article based on this project, then this competency can be considered complete at Level 2.
2. By tailoring their senior design project to a Grand Challenge and writing a detailed final report on the project (Level 1). If a student chooses to present a poster or paper at a relevant conference, submit a relevant white-paper, or participate in writing a peer-reviewed journal article based on this project, then this competency can be considered complete at Level 2. Note that the feasibility of tailoring a senior design project to a Grand Challenge may depend on the GCSP Scholar's engineering discipline.
3. By pursuing research related to a Grand Challenge for two or more semesters through a faculty sponsored research project or an existing undergraduate research program.

Existing undergraduate research programs include the Undergraduate Research Opportunity Program at FSU and the Educating Engineering Students Innovatively Program at the FAMU-FSU COE. FAMU primarily engages undergraduate students in research at the specific college level (e.g., with the College of Science and Technology, the FAMU-FSU COE, and the School of the Environment). Students choosing this option can choose to write a final report, present a poster or paper at a relevant conference, submit a relevant white-paper, or participate in writing a peer-reviewed journal article (Level 2).

4. By obtaining research experience as an intern (or equivalent) related to a Grand Challenge for six or more months. Students choosing this option can choose to write a final report, present a poster or paper at a relevant conference, submit a relevant white-paper, or participate in writing a peer-reviewed journal article (Level 2).

Multidisciplinary Competency

Objective: Complete at least two multidisciplinary courses.

FAMU-FSU COE GCSP Scholars will complete First-Year Engineering Lab (FYEL), an existing course, that will provide students with an educational foundation in the different disciplines of engineering, give them the opportunity to participate in five multidisciplinary engineering-related projects, and introduce the field of engineering through a multidisciplinary lens showcasing the need for scientists, engineers, and others to be able to communicate and work together across, and beyond, disciplinary silos.

FAMU-FSU COE GCSP Scholars will also take a new three-credit hour FAMU-FSU COE-specific general education course (anticipated to be available in Fall 2021) titled *Interdisciplinary Perspectives of the Global Grand Challenges of Engineering*. This course will be a deep-dive into how engineers are coming together at the global scale to solve the NAE Grand Challenges. The new class will focus on 1) identifying and understanding the complexities of global grand challenges, and on 2) the multidisciplinary and interdisciplinary education, experience, and communication requirements of solving complex global challenges. This course will ideally be taken in a GCSP Scholar's second year, helping to encourage continuity of the GCSP (*FYEL* in year 1, *Interdisciplinary Perspectives of the Global Grand Challenges of Engineering* in year 2).

Additional courses that have a multidisciplinary focus may also fulfill this requirement (see the pre-approved course list below). GCSP Scholars can seek course pre-approval to meet the Multidisciplinary Competency requirement.

Pre-approved multidisciplinary courses at FAMU

- Environmental Studies 3930, Special Topics in Environmental Science and
- Interdisciplinary Studies 5939, Interdisciplinary Seminar in Applied Social Science.

Pre-approved interdisciplinary courses at FSU

- Economic Problems and Policy 3302, Economics of Natural Resources, Energy and the Environment
- Entrepreneurship 29620, Survey of STEM
- Interdisciplinary Studies 2134, Evolution, Medicine, and Evidence
- Interdisciplinary Studies 2141, Exploring Emerging Technologies
- Interdisciplinary Studies 2165, Intercultural Communication, Business, and Sustainability: Writing for 'Green' Everywhere
- Interdisciplinary Studies 2227, Sustainable Society
- Interdisciplinary Studies 2240, Sustainable Food and Water: Soil, Animals, Vegetables, and Grain
- Urban and Regional Planning 4022, Collective Decision Making

Viable Business/Entrepreneurship Competency

Objective: Develop and compete in a business pitch competition with a pitch related to a Grand Challenge and/or complete the FAMU-FSU COE Technology Entrepreneurship & Commercialization Course.

FAMU-FSU COE GCSP Scholars have two specific opportunities to complete the Viable Business/Entrepreneurship Competency through [FAMU-FSU COE Engineering Innovation & Entrepreneurship](#) events and programs:

1. Participate in annual entrepreneurial-focused events with a pitch that is associated with a Grand Challenge. First, GCSP scholars will participate in Innoventure Weekend, a two-day team-building innovation and business pitch competition typically hosted annually in March by FSU's Innovation Hub and open to all FAMU-FSU COE students. Second, GCSP Scholars will submit a business pitch focused on a Grand Challenge to the FAMU-FSU COE Shark Tank Business Pitch Competition typically hosted annually in April (Level 1).
2. Complete the FAMU-FSU COE Technology Entrepreneurship & Commercialization Course taught by the FAMU-FSU COE Entrepreneur in Residence (currently Dr. Mike Devine, professor of Industrial and Manufacturing Engineering) (Level 1).
3. Meet the requirements for both of the above options (Level 2).

Additional courses can help to meet these requirements and some are pre-approved (See Appendix A for pre-approved viable business/entrepreneurship courses). Alternative courses and opportunities may also fulfill this requirement if a GCSP Scholar seeks pre-approval for a course or competition that meets or exceeds the opportunities identified above.

Multicultural Competency

Objective: study, volunteer, or research abroad; work on a project with a significant global focus; complete the FSU Global Citizenship Certificate (or the equivalent courses and events at FAMU); or complete at least two courses with a significant multicultural theme.

FAMU-FSU GCSP Scholars can choose five opportunities to complete the Multicultural Competency:

1. GCSP Scholars can complete two approved courses with a multicultural theme. Appendix B provides a list of pre-approved courses with a multicultural theme (Level 1).
2. GCSP Scholars can participate in an approved FAMU, FSU, or FAMU-FSU COE study abroad program (Level 2).
3. GCSP Scholars can complete a Fulbright, Rhodes Scholarship, or an equivalent international experience (Level 2).
4. GCSP Scholars can complete a six-month or longer research or internship experience focused on a Grand Challenge that also has a strong multicultural/global emphasis (Level 2).
5. GCSP Scholars can complete the FSU Global Citizenship Certificate or the equivalent coursework and requirements at FAMU. The FSU Global Citizenship Certificate consists of twelve credits of coursework with a multicultural focus, participating in six intercultural engagement activities on campus or abroad, and writing a reflection paper about their collective experiences gained while participating in their Global Citizenship Certificate coursework and activities (Level 2).

Social Consciousness Competency

Objective: complete at least 60 hours of volunteer/service work.

GCSP Scholars must complete at least 60 hours of volunteer/service work which is equal to two credits of service-learning (earned at FAMU, FSU, or the FAMU-FSU COE); 60 hours of service for a service-focused student group (e.g. Engineers Without Borders); 60 hours of service for a local community group (e.g. Habitat for Humanity); or 60 hours of service working on an approved service project related to a Grand Challenge. Alternatively, a GCSP Scholar can do a year or more of service with a local group, student group, or on a pre-approved Grand Challenge focused service project as long as they are an active participant in the group and they can account for their participation on their annual progress reports. Additionally, each FAMU-FSU COE GCSP Scholar can submit their own plans for a service-learning project for approval by the GCSP Steering Committee. Any service-based trips or activities must be recorded in GCSP Scholar Progress Reports and in the Final Portfolio.

University-level service-learning opportunities

FAMU students can become a part of the [Leadership and Service Learning unit at FAMU](#). FAMU students must serve for at least one year and become trained in volunteer effectiveness.

FSU students can participate in the [ServScript Program](#) and/or the [Service Scholars Program](#) and serve for at least one year through approved activities, projects, and courses with specified service-learning components.

FAMU-FSU COE service-learning opportunities

The FAMU-FSU COE has three identified service opportunities students can explore. Currently, FAMU-FSU COE service opportunities connect students with the nearby Providence Community Center, the Walker-Ford Community Center, and the Challenger Learning Center.

1. The FAMU-FSU COE has an established relationship with the local Providence Community Center, and has plans to expand that relationship to include more service-learning opportunities. FAMU-FSU COE students volunteer with Providence Community Center Community Garden and have approval to build a 25 by 25 feet, 900-gallon aquaponics system. FAMU-FSU COE students will help with the building and maintenance of the aquaponic system while learning about and teaching community members and local Pre-K through 12th grade students about the different types of engineering that are involved in aquaponics farming. Additionally, FAMU-FSU student service-learning volunteers get trained by MathPal to tutor students throughout Tallahassee in science technology engineering and mathematics (STEM) skills, and they tutor and host small study events at the Providence Community Center.
2. The FAMU-FSU COE Chapter of the American Society of Mechanical Engineers has a recurring service-learning opportunity with the Walker-Ford Community Center that involves tutoring, building box-cars, and introducing early engineering concepts to K-12 grade-level students.
3. GCSP Scholars can volunteer with the Challenger Learning Center and their staff by going into local middle schools and high schools and doing engineering projects and small lesson plans that fit with their existing curricula.

FAMU-FSU COE GCSP Selection and Program Management

The FAMU-FSU COE GCSP will be managed by a GCSP Director and Steering Committee. While the GCSP is still growing, the FAMU-FSU COE Pre-Engineering Director will also serve as the GCSP Director.

The FAMU-FSU COE GCSP Steering Committee will be made up of student, faculty, staff, and at-large individuals representing the FAMU-FSU COE, FAMU, FSU, and eventually broader community, research, business, or non-profit institutions and/or interests. The goal of the Steering Committee is to support the continuation, success, and growth of the FAMU-FSU COE GCSP and its scholars during and after their tenure at the FAMU-FSU COE.

The GCSP Steering Committee will meet two to four times every fall and spring semester. Most non-student members of the Steering Committee will take on a leadership role based on their specific skills and interests. GCSP Leads will work with the GCSP Director to resolve most concerns as they come up and update the larger GCSP Steering Committee as necessary.

Table 2. Inaugural FAMU-FSU COE GCSP Steering Committee

Steering Committee Member	Leadership Role
Dr. Shayne McConomy	Mechanical Engineering
Dr. Yousef Ali	Mechanical Engineering
Dr. Camilo Ordonez	Mechanical Engineering
Dr. Bruce Locke	Chemical and Biomedical Engineering Lead
Dr. Youneng Tang	Provide Access to Clean Drinking Water Lead Manage the Nitrogen Cycle Lead
Dr. Primus Mtenga	Civil and Environmental Engineering Co-Lead
Dr. Kamal Tawfiq	Civil and Environmental Engineering Co-Lead
Dr. Charalambos Konstantinou	Secure Cyberspace Lead
Ms. Miranda Manning	Social consciousness Lead
Dr. Tanu Kohli Bagwe, Dr. Elcin Haskollar (FSU)	FSU liaisons, Multicultural Co-Leads
Dr. William Hyndman	FAMU liaison, Multicultural Lead
Kosi Sumpter	FAMU Student liaison
Bond Cantrell	FSU Student liaison
Erika Craft	At-large student liaison
<i>Community Representative</i>	TBD
<i>Community Representative</i>	TBD

Proposal for future GCSP Scholar program funding needs

Initially, FAMU-FSU COE GCSP funding will be obtained on an as-needed basis through internal and external grants and the FAMU-FSU COE. Funding is primarily needed for GCSP events and recruiting, acknowledging graduating GCSP Scholars, and travel for GCSP Scholars to share their work. Eventually, it is a goal to identify specific and recurring funding for the FAMU-FSU GCSP for events, recognition, travel, scholarships, and awards. A GCSP account will be set up at the FAMU-FSU COE where donations can be made and eventually, recurring funding will be kept. Ideally, the FAMU-FSU COE GCSP annual operating budget will be at least \$10,000.

Table 3. Proposed future budget for the FAMU-FSU COE GCSP

Budget Item	Anticipated Timeline	Estimated Budget
Fall Informational GCSP Kick-Off Event	Fall semester (September)	\$500-\$1000
GC Scholar Awards Night	Spring semester (April)	\$500-\$1000
GC Scholar Conference Travel	GC Global Summit/Annual Meeting/other relevant events	\$5000-\$10,000
GC Scholar Graduation Certificate and Honor Cord (\$10/student)	Spring semester (anticipate graduating 5-20 students annually)	\$50-\$200
GC Scholar Awards	Spring semester	\$1000-5000
GC Scholar Scholarships	Spring semester	\$1000-\$10,000
Total Annual Estimated Budget Range		\$8010-\$27,200

FAMU-FSU COE GCSP Scholar Selection and Tracking Process

GCSP Scholar selection and performance decisions will be made by the GCSP Steering Committee. Fall semesters will focus on informing and recruiting GCSP Scholars and spring semesters will focus on accepting applicants, tracking GCSP Scholar progress made, approving GCSP Final Portfolios for graduating seniors, and rewarding and acknowledging the work being done by GCSP Scholars.

The FAMU-FSU COE GCSP aims to involve a diverse cohort of undergraduate students from both FAMU and FSU. Students will be introduced to the GCSP early in their undergraduate career during their mandatory FYEL course. An annual kickoff event held in the fall and awards event held in the spring will also help to keep a general level of awareness at the FAMU-FSU COE. Ideally, 10-20 students will be involved in each new annual cohort, with between 10-100 GCSP Scholars enrolled in 4-5 total cohorts at a time.

FAMU-FSU COE GCSP applicants will submit applications annually on February 15th. Applicants must be in good academic standing to apply. Applicants will be notified of their acceptance by April 15th of the same calendar year. Applicants will submit a GCSP Scholar Application that is under development by the GCSP Steering Committee and will include:

- Academic information such as university, current grade point average, information on progress made towards their current/intended major
- Optional demographic information like their gender, racial, and ethnic identity.
- Declaration of their Grand Challenge of interest.
- A short proposal built from a template under development by the GCSP Steering Committee detailing the applicant's plan and timeline for fulfilling each of the five GCSP Competencies.
- A short email from a FAMU-FSU COE/FAMU/FSU faculty member indicating that they: 1) have reviewed the feasibility of the applicant's proposal, and 2) have confidence in the ability of the applicant to succeed as a GCSP Scholar. If the faculty member is willing to serve as the applicant's mentor, they should state this in the email. This email should be brief and should not be a formal letter of recommendation.

All GCSP submission materials will be submitted to a group email, eng-grandchallenges@eng.famu.fsu.edu and stored on a shared drive that will be accessible by the GCSP Director and certain members of the Steering Committee. After each application cycle, application materials will be stored in a password protected folder on the shared drive and deleted from the shared email.

GCSP Scholar Proposal, Progress Report, and Final Portfolio

Once an applicant is accepted into the GCSP, they are responsible for working with their mentor and tracking progress made on each of the five GCSP Competencies. GCSP Scholars must submit an annual progress report by March 15th to update the GCSP Steering Committee on progress made and any proposed changes to their plans and/or timeline that were submitted in their approved application. The GCSP Steering Committee is developing a GCSP Scholar Progress

Report Template to make reports uniform and simple to complete. The GCSP Scholar’s mentor and the GCSP Steering Committee must approve any changes to the GCSP Scholar’s plans. GCSP Scholars will be notified of approval or denial of proposed changes by June 15th that same year.

The GCSP Scholar Final Portfolio must be approved by the GCSP Scholar’s faculty mentor and submitted by March 15th, June 15th, or October 15th during the semester in which the GCSP Scholar intends to graduate (spring, summer, fall). The GCSP Steering Committee must confirm that all competencies and other requirements have been met prior to graduation. Approved GCSP Scholars will receive a GCSP certificate of achievement and honor cord. The GCSP Steering Committee is in the process of creating additional incentives for GCSP Scholars.

Table 4. FAMU-FSU COE timeline of proposed events and due dates.

Event	Date	Anticipated Response Date
Fall GCSP Kickoff Event	September	
GCSP Applications Due	February 15 th	April 15 th
GCSP Progress Reports Due	March 15 th	June 15 th
GCSP Final Portfolios*	March 15 th	April 15 th
GCSP Awards Night	April	

**In the event that a GCSP Scholar is graduating in the summer or fall, they can submit their final portfolios to the GCSP Director by June 15th and October 15th for final review and approval. Progress reports will have the same due date regardless of the GCSP Scholar’s graduation timeline.*

Selection and training of faculty mentors

Faculty mentors must be affiliated with the FAMU-FSU COE and can be anyone from FAMU, FSU, or the FAMU-FSU COE. The GCSP Director will consider and must approve potential faculty mentors who are unaffiliated with the FAMU-FSU COE. Faculty mentors can serve as a mentor for up to five GCSP Scholars at one time. Each new GCSP mentor will be briefed on the requirements of the GCSP and their expectations as a GCSP Mentor. GCSP Mentors are expected to meet with their GCSP Scholars at least twice annually and work with them on developing and completing a robust plan that focuses on a specific Grand Challenge and balances all five of the GCSP Competencies.

Creating, developing, and sustaining a network of GCSP Scholars and Alumni

The FAMU-FSU COE GCSP intends to create a point of connection for graduates of the GCSP to stay connected with the FAMU-FSU COE GCSP. The fall kickoff event and spring awards event will be open to GCSP Scholar Alumni and will serve as a networking opportunity for potential, current, and past GCSP Scholars. The FAMU-FSU COE GCSP Steering Committee has at least two at-large positions available to GCSP Scholar Alumni and others. As the community of GCSP Scholar Alumni grows at the FAMU-FSU COE, it will develop its own methods of involvement and sustained connection. Eventually, GCSP Scholars will be able to specify donations to the FAMU-FSU GCSP. Additionally, GCSP Scholar Alumni (and others) can submit their own service and viable business/entrepreneurship ideas to the FAMU-FSU COE GCSP Steering Committee for approval to connect and work with current, and former, GCSP Scholars.

Closing

The FAMU-FSU COE's unique relationship between two highly ranked universities – FAMU as a Historically Black College and University and FSU as a R1 university – creates the only partnered College of Engineering in the United States. As a college, the FAMU-FSU COE focuses on diversity and engagement as part of its core mission and is intent on educating and lifting-up the engineers of the future. The next step in achieving this mission is to become a National Academy of Engineering Grand Challenges Scholars Program. The FAMU-FSU COE Grand Challenges Scholars Program will prepare students to tackle the grand challenges of today and tomorrow by combining volunteer, educational, research, and professional experiences that will enhance their research and professional talents, increase their social consciousness, and improve their entrepreneurial, multidisciplinary, and multicultural skills, thinking, and communication.

Appendix A: Pre-Approved Entrepreneurship Courses

Approved Entrepreneurship Courses at FAMU

Engineering Industrial

- EIN 4150 Technology, Entrepreneurship and Commercialization (3)

General Business

- GEB 4113 Strategic Entrepreneurship Decision Making (3)

Approved Entrepreneurship Courses at FSU

ENT 2000 Introduction to Entrepreneurship (3).

ENT 4122 Go To Market Strategies (3).

ENT 3001 Experiences in Entrepreneurship I (3).

ENT 3002 Experiences in Entrepreneurship II (3).

ENT 3111 Creating Value through Customer Acquisition (3).

ENT 3203 Managing New Venture Growth (3).

ENT 3607 Innovation by Design (3).

ENT 3629 Entrepreneurial Technologies (3).

ENT 4305 Legal and Ethical Environments for Entrepreneurs (3).

ENT 4114 Business Plan Design (3).

ENT 4255 Negotiations (3).

ENT 4604 New Product Development (3).

ENT 2630 Themed Experience (3).

ENT 2624 Enough to be Dangerous: Impact Areas of STEM Commercialization (3).

ENT 2802 Entrepreneurship in Contemporary Society (3).

ENT 3173 Franchising (3).

ENT 3203 Managing New Venture Growth (3).

ENT 3273 Family Business (3).

ENT 3283 Women and Minorities in New Ventures (3).

ENT 3613 Innovation and Creativity (3).

ENT 4227 Intrapreneuring (3).

ENT 4804 The Psychology of Entrepreneurship (3).

ISM 4882. Mobile Technology (3).
CTE 3862 Retail Operations (3).
ISS 3241 Foundations of Social Entrepreneurship and Innovation (3).
ENT 3629 Entrepreneurial Technologies (3).
ENT 3111 Creating Value Through Customer Acquisition (3).
ENT 3203 Managing New Venture Growth (3).
ENT 4305 Legal and Ethical Environments for Entrepreneurs (3).
ENT 3607 Innovation by Design (3).
ENT 3414 Measuring Financial Success (3).
ISS 4931 Human-Centered Design for Social Innovation (3).
ENT 3513 Market Solutions to Social Problems (3).
ENT 4504 Business Plan Development for Social Enterprise (3).
ENT 4110 Entrepreneurship Capstone Simulation (3).
ENT 4943 Entrepreneurship Internship (3).

Appendix B: Pre-Approved Multicultural Courses

Approved Multicultural Courses at FAMU

Afro-American Studies

- AFA 2000 Intro To African American Studies (3)
- AFA 3104 The African Amer Exp (3)
- AFA 3104E The African Amer Exp

American History

- AMH 5336 Us Intellec To 1880

Agricultural Education & Community

- AEC 4251 Sustainable Development: Program Development and Evaluation in Agricultural Development (3)

Agriculture General

- AGG 4414 Women In Development
- AGG 4420 Global Sem Human Sustainable development

Animal Science

- ANS 3204 Future Global Dem For Lives

Engineering Industrial

- EIN 6126 Global Manufacturing Strategy (3)
- EIN 6326 Global Manufacturing Strategy

Food Services

- FOS 3004 Global Food Situation
- FOS 4005 Global Food Req Of Hum & A

Health Science

- HSC 2622 Introduction to Global Health Science (3)
- HSC 5904 Global Health Issues (3)

International Relations

- INR 3502 International Organizations
- INR 4084 Politics Of Terrorism
- INR 5036 Politics Of Globalization (3)
- INR 5105 American Foreign Policy (3)
- INR 5137 Politics In Terrorism

Literature

- [LIT 2230 Intro To Global Lit](#)

Management

- [MAN 4653 Global Business \(3\)](#)
- [MAN 5000DL World Cult For Bus](#)
- [MAN 5068 Corp Soc Resp & Bus Ethics](#)
- [MAN 5068DL Corp Soc Resp & Bus Ethics](#)
- [MAN 5606 World Business Cultures \(3\)](#)
- [MAN 5615 World Resources \(3\)](#)
- [MAN 5615DL World Resources](#)
- [MAN 5785 E-business For Global Markets](#)
- [MAN 5785DL E-business For Global Markets](#)

Social Work

- [SOW 4784 Intl Sw & Social Wel](#)

Sociology

- [SYP 3454 Sociology Of Globalization](#)

Approved Multicultural Courses at FSU

AMH 2091 The African-American Experience in the United States

AMH 2095 American Indians in the United States

AMH 2096 Black Women in America

AMH 2097 Nationality, Race, and Ethnicity in the United States

AMH 4511 Twentieth-Century United States Foreign Relations

AML 2600 Contested Blackness: Introduction to African American Literature

ANT 2470 Anthropology of Globalization

COM 2412 Culture, Identity and Communication in Context

CPO 2002 Introduction to Comparative Government and Politics

CPO 3034 Politics of Developing Areas

CPO 3101 European Union

ECO 3933 Economics of Compassion

ECO 3933 Economics of Corruption

ECO 4270 Economic Growth

ECO 4704 International Trade

ECO 4713 Economies of Development

ECS 4013 Economics of Development

GEO 4340 Living in a Hazardous Environment

GEO 4357 Environmental Conflict and Economic Development

GEO 4372 Natural Resource Assessment and Analysis

GEO 4403 Global Change, Local Places
GEO 4930 Special Topics: Globalization
HOE 3330 Human Sciences and Human Development: Global Perspectives
IDS 2456 Who is Human? Culture, Gender and Human Rights
IDS 2460 Global Perspectives: Communication
IDS 3365 Global Conflicts: Analysis and Resolution
INS 2912 Developing Global Citizens: Global Issues in Theory and Practice
LDR 2213 Leadership for Social Justice
PAD 4936 Special Topics: Cultural Diversity and Leadership in International Workplaces
SOW 4620 Diversity & Social
SSE 4194 Developing a Global Perspective
SYD 3020 Population and Society
SYD 4510 Environmental Sociology
SYG 2010 Social Problems
SYP 3454 The Global Justice Movement
URP 4402 Sustainable Development Planning in the Americas
URP 4423 Introduction to Environmental Planning and Resource Management
URP 4618 Planning for Developing Regions
URP 4811 Multicultural Urbanism
WHO 1023 The Modern World
WOH 4235 Disease, Race and Environment
WST 4930 Special Topics: Global Perspectives on Contemporary Women Issues