The completed and signed proposal should be submitted by the Dean’s Office to: curriculumplanning@asu.edu.

Before academic units can advertise undergraduate certificates or include them in their offerings as described in the university catalogs, they must be recommended for approval by the Senate Curriculum and Academic Programs Committee and the University Senate, and be approved by the Executive Vice President and Provost of the University.

**Definition and minimum requirements:**

These are the minimum requirements for approval. Individual undergraduate certificates may have additional requirements.

An undergraduate certificate is a programmatic or linked series of courses from a single field or one that crosses disciplinary boundaries and may be free-standing or affiliated with a degree program. The certificate provides a structured and focused set of courses that can be used to enhance a student’s baccalaureate experience or professional development.

An undergraduate certificate program:
- Requires a minimum of 15 semester hours of which at least 12 semester hours must be upper division
- Requires a minimum grade of “C” or better for all upper division courses
- Consists of courses that must directly relate in whole or large part to the purpose of the certificate. Example: Geographic area certificates must include only courses specific to the title of the certificate, other than a non-English language
- Is cross disciplinary; or,
  - Certified by a professional or accredited organization/governmental agency; or,
  - Clearly leads to advanced specialization in a field; or,
  - Is granted to a program that does not currently have a major

**College/School/Institute:** Global Institute of Sustainability

**Department/Division/School:** School of Sustainability

**Proposed Certificate Name:** Energy and Sustainability

**Requested effective Date:** Fall 2014

**Delivery method:** On-campus only (ground courses and/or iCourses)

*Note: Once students elect a campus or Online option, students will not be able to move back and forth between the on-campus and the ASU Online options. Approval from the Office of the Provost and Philip Regier (Executive Vice Provost and Dean) is required to offer programs through ASU Online.*

**Campus/Locations:**
- [ ] Downtown Phoenix
- [ ] Polytechnic
- [ ] Tempe
- [ ] West
- [ ] Other

**Proposal Contact**

- **Name:** Candice Carr Kelman
- **Phone number:** 480-965-4460
- **Title:** Assistant Director, School of Sustainability
- **Email:** ccarrkel@asu.edu

**DEAN APPROVAL(S)**

This proposal has been approved by all necessary unit and College/School levels of review. I recommend implementation of the proposed organizational change.

**College/School/Division Dean name:** Christopher Boone, Interim Dean, School of Sustainability

**Signature**

**Date:** 9/23/2013

**College/School/Division Dean name:**

(if more than one college involved)

**Signature**

**Date:** (fill in)

*Note: An electronic signature, an email from the dean or dean’s designee, or a PDF of the signed signature page is acceptable.*
ARIZONA STATE UNIVERSITY PROPOSAL TO ESTABLISH A NEW UNDERGRADUATE CERTIFICATE

1. Overview

A. Provide a brief description of the new certificate.

Through interdisciplinary scholarship, the focus of this certificate will be to examine the current affairs of energy and sustainability. Students will begin with an overview of how energy affects our lives, and policy options for energy, as well as the science of energy and how we currently generate energy for society. Then students will have the option to choose three courses from a list of upper-division courses ranging from those in sustainability, geography and architecture to geology, engineering and economics.

B. This proposed certificate (check one):

☐ Is cross disciplinary; or
☐ Is certified by a professional or accredited organization/governmental agency; or,
☐ Clearly leads to advanced specialization in a field; or,
☐ Is granted to a program that does not currently have a major.

C. Why should this be a certificate rather than a concentration or a minor?

This set of courses augments and complements studies in engineering, architecture, business, public policy, sustainability and other disciplines, giving students a specialization in social and environmental aspects of energy studies, no matter what discipline they are in. This certificate program is meant to prepare students to utilize their education on energy in the workforce and enhance their employment opportunities.

D. Affiliation

If the certificate program is affiliated with a degree program, include a brief statement of how it will complement the program. If it is not affiliated with a degree program, incorporate a statement as to how it will provide an opportunity for a student to gain knowledge or skills not already available at ASU.

This certificate will be offered by the School of Sustainability, which is a transdisciplinary unit which offers several courses on energy and sustainability. This certificate will allow students in any major to supplement their studies with a focus on energy and sustainability. This will be done by bringing together existing courses in a variety of units and creating one new course on the science of energy, specifically designed for students with a variety of backgrounds, making the topic of energy more accessible to students of the social sciences and humanities. This new course will also augment our Energy, materials and technology track in our BS here in SOS.

The certificate will provide students with an introduction to energy that is not yet organized anywhere at ASU. Although courses about energy are taught in a wide variety of units, existing programs related to energy are mostly in engineering. This energy and sustainability minor will bring together courses on energy in a variety of other units, providing the opportunity for students to study energy in a transdisciplinary, society-oriented, manner that will help prepare them for more advanced studies in energy (should they choose that path) and also provide them with enough of a background in energy studies to apply this knowledge to a wide range of majors, real-life applications, and business opportunities.

E. Demand

Explain the need for the new certificate (e.g., market demand, interdisciplinary considerations).

By applying for a certificate in energy studies, the School of Sustainability is responding to repeated inquiries about the opportunities for energy studies, particularly by non-traditional students. The increasing attention to the study of energy reflects the increasing importance of energy to environmental quality, national security, and the efficient functioning of cities. ASU offers scattered courses in energy, mostly in engineering. The School of Sustainability wishes to meet a growing demand for the study of energy as a social issue with a technical component, rather than the other way around. The primary emphasis will be on sustainable energy futures, how we will adjust to them, and how they will affect us.
F. Projected enrollment
What are enrollment projections for the first three years?

<table>
<thead>
<tr>
<th></th>
<th>1st Year</th>
<th>2nd Year</th>
<th>3rd Year</th>
</tr>
</thead>
<tbody>
<tr>
<td>Number of Students (Headcount)</td>
<td>25</td>
<td>50</td>
<td>100</td>
</tr>
</tbody>
</table>

2. Support and Impact

A. Faculty governance
Provide a supporting letter from the chair of the academic unit verifying that the proposed certificate has received faculty approval through appropriate governance procedures in the unit and that the unit has the resources to support the certificate as presented in the proposal, without impacting core program resources.

The establishment of this Certificate has received approval by the interdisciplinary group of faculty listed in this document, as well as by the SOS Faculty. SOS Faculty approved the Certificate at the April 2013 Faculty Meeting.

B. Other related programs
Identify other related ASU programs and outline how the new certificate will complement these existing ASU programs. (If applicable, statements of support from potentially-affected academic unit administrators need to be included with this proposal submission.)

ASU offers scattered courses in energy, in units all over the University. The School of Sustainability wishes to bring these courses together so that they are visible to those with an interest in energy, particularly an interdisciplinary understanding. We also aim to meet a growing demand for the study of energy as a social issue with a technical component, rather than the other way around. This certificate aims to focus specifically on energy and sustainability, with an interdisciplinary approach to the study of energy and its relationships with society, the environment, transportation, human health and public policy. The degree programs that currently exist in energy at ASU are in Engineering, especially at the College of Technology and Innovation, where they have numerous courses about alternative energy technologies. However, these courses are often not appropriate for students without an engineering background.

C. Letter(s) of support
Provide a supporting letter from each college/school dean from which individual courses are taken.

(See Attached)
3. Academic Curriculum and Requirements

A. Knowledge, competencies, and skills

List the knowledge, competencies, and skills (learning outcomes) students should have when they complete this proposed certificate. Examples of program learning outcomes can be found at (http://www.asu.edu/oue/assessment.html).

Successfully completing the certificate in energy and sustainability will signify a basic competence in how to apply sustainable energy concepts in various segments of the workplace, such as planning, business operations, building design, economics, and environment quality.

Learning outcomes: Students will be able to:

* Describe the most common ways in which electricity is generated for the grid, where the materials come from, and the associated sustainability issues
* Name the principal natural resources used for energy generation and discuss the current geopolitics and economics related to each
* Discuss public health and regulatory implications of energy distribution and usage by sector, such as transportation versus electricity generation (non-point sources vs. point sources of pollution)
* Explain the basic science of renewable forms of energy and how they work
* Understand how energy is used, by what sectors, and what factors are associated (e.g. buildings and electricity use - therefore building codes and regulated efficiency of windows available on the market etc. play a large role in US electricity consumption. Similarly, corporate average fuel economy of vehicles largely determines petroleum demand.)
* Understand the ways in which energy generation, distribution and consumption is regulated in the US
* Analyze the social, economic and political challenges that we face with regard to energy systems and infrastructure
* Recognize the role of complexity in systems designed to generate, deliver and regulate energy
* Discuss feasible options for various geographical regions in terms of energy sustainability, and the associated costs and tradeoffs involved
* Articulate key aspects of current debates around energy security, present both sides of issues, and be able to make a strong argument for one plan of action, based on available evidence
* Recognize and address normative aspects of the debate surrounding energy and sustainability
* Explain differences between energy generation, regulation and consumption in different parts of the world, and how the US compares to other countries and regions
* Describe what is taking place at the international level regarding multilateral agreements on climate and energy

B. Admissions criteria

List the admissions criteria for the proposed certificate. If they are identical to the admission criteria for the existing major and degree program under which this certificate will be established, please note that here.

3.0 GPA

C. Curricular structure

Provide the curricular structure for this certificate. Be specific in listing required courses and specify the total minimum number of hours required for the certificate.
# Proposal to Establish a New Undergraduate Certificate

## Required Certificate Courses

<table>
<thead>
<tr>
<th>Prefix</th>
<th>Number</th>
<th>Title</th>
<th>Is this a new Course?</th>
<th>Credit Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>SOS/GCU</td>
<td>171</td>
<td>The Thread of Energy</td>
<td>No</td>
<td>3</td>
</tr>
<tr>
<td>SOS</td>
<td>314</td>
<td>The Science of Energy</td>
<td>Yes</td>
<td>3</td>
</tr>
<tr>
<td>SOS</td>
<td>315</td>
<td>Energy Policy</td>
<td>Yes</td>
<td>3</td>
</tr>
</tbody>
</table>

**Section sub-total:** 9

## Elective Certificate Courses

Elective certificate courses (students choose at least 2 courses from this list) However, electives are not limited to courses from this list only. Other courses on energy may come up (special topics, etc.) and students may get them approved as an elective for this certificate by their adviser. (Note: an * denotes more technical courses which may require more math and science knowledge or prerequisites)

<table>
<thead>
<tr>
<th>Prefix</th>
<th>Number</th>
<th>Title</th>
<th>Is this a new Course?</th>
<th>Credit Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>ALT</td>
<td>360</td>
<td>*Renewable Energy Technologies: Fundamentals and Integration</td>
<td>No</td>
<td>3</td>
</tr>
<tr>
<td>ALT</td>
<td>412</td>
<td>* Village Energy Systems</td>
<td>No</td>
<td>3</td>
</tr>
<tr>
<td>CHM</td>
<td>394</td>
<td>Topic: Chemistry, Energy and Society</td>
<td>No</td>
<td>3</td>
</tr>
<tr>
<td>EGR</td>
<td>371</td>
<td>Best Practices for Humanitarian Engineering</td>
<td>Yes</td>
<td>3</td>
</tr>
<tr>
<td>EGR</td>
<td>476</td>
<td>* Energy Infrastructures</td>
<td>Yes</td>
<td>3</td>
</tr>
<tr>
<td>EGR</td>
<td>494</td>
<td>* Topic: Design for the Developing World</td>
<td>No</td>
<td>3</td>
</tr>
<tr>
<td>ERM</td>
<td>494</td>
<td>* Topics: Energy Economics</td>
<td>No</td>
<td>3</td>
</tr>
<tr>
<td>GCU</td>
<td>364</td>
<td>Energy in the Global Arena</td>
<td>No</td>
<td>3</td>
</tr>
<tr>
<td>GCU</td>
<td>442</td>
<td>Geographical Analysis of Transportation</td>
<td>No</td>
<td>3</td>
</tr>
<tr>
<td>GLG</td>
<td>304</td>
<td>Minerals, Energy and Society</td>
<td>No</td>
<td>3</td>
</tr>
<tr>
<td>GPH</td>
<td>405</td>
<td>Energy and Environment</td>
<td>No</td>
<td>3</td>
</tr>
<tr>
<td>HST</td>
<td>306</td>
<td>Topic: Energy History</td>
<td>No</td>
<td>3</td>
</tr>
<tr>
<td>HST/PHI/SOS/BIO</td>
<td>394</td>
<td>Topic: History and Philosophy of Sustainability</td>
<td>No</td>
<td>3</td>
</tr>
<tr>
<td>JUS</td>
<td>332</td>
<td>Politics of Energy Policy and Justice</td>
<td>No</td>
<td>3</td>
</tr>
<tr>
<td>JUS</td>
<td>444</td>
<td>Environment and Justice</td>
<td>No</td>
<td>3</td>
</tr>
<tr>
<td>MET</td>
<td>435</td>
<td>* Alternate Energy Sources</td>
<td>No</td>
<td>3</td>
</tr>
<tr>
<td>PAF/SOS</td>
<td>394</td>
<td>Topic: Business, Sustainability &amp; Public Policy</td>
<td>No</td>
<td>3</td>
</tr>
<tr>
<td>PHY</td>
<td>498</td>
<td>*Topic: The Science of Sustainable Energy</td>
<td>No</td>
<td>3</td>
</tr>
<tr>
<td>POS</td>
<td>394</td>
<td>Topic: Global Environmental Politics</td>
<td>No</td>
<td>3</td>
</tr>
<tr>
<td>PUP</td>
<td>430</td>
<td>Transportation Planning and the Environment</td>
<td>No</td>
<td>3</td>
</tr>
<tr>
<td>SOS</td>
<td>394</td>
<td>Topic: Introduction to Solar Energy for Non-Engineers</td>
<td>No</td>
<td>3</td>
</tr>
</tbody>
</table>
SOS/ATE 494 Topic: Renewable Energy  No  3
SOS 494 Topic: US Energy: Pathways to Sustainability  No  3
STS 317 Science, Technology and Global Engagement  No  3
STS 329 Cultivating Technology in Newly Industrializing Countries  No  3
STS 332 Global Issues in Science and Technology  No  3

Section sub-total: 6

Other certificate requirements
E.g. - Capstone experience, internship, clinical requirements, field studies, foreign language skills as applicable

Section sub-total: 0

Total minimum credit hours required for certificate
Minimum residency requirement
How many hours of the certificate must be ASU credit?

15

D. New Courses
Provide a brief course description for each new course.

The purpose of this new course is to provide the fundamentals of the natural and physical sciences of energy, so that students will be able to understand and explain the basics of energy in scientific terms. This course will be accessible to a wide variety of majors, and specific to energy. This course will help provide a basic understanding of principles that will enhance students' ability to understand material in SOS 315 and many of the elective options.

SOS 315 - Energy Policy.
This course will introduce students to the complexities of how the production and consumption of energy are regulated in the US at the Federal, state and local levels. Students will identify energy stakeholders in the US and examine how they have shaped US policies around energy. The course will explain past and current US energy policies and identify how energy needs have shaped US relations with other countries. Students will also compare US energy policies to that of other countries in the world, as well as how Arizona's energy policies compare to other states within the US. It is best if students have already taken SOS 314 prior to this course.

Note: All new required courses should be submitted in Curriculum Changemaker and ready for Provost’s Office approval before this certificate is put on Curriculum and Academic Programs Committee (CAPC) agenda.
4. Administration and Resources

A. Administration
   How will the proposed certificate be administered (including admissions, student advisement, retention, etc.)?
   The School of Sustainability will administer this certificate.

B. Enrollment projections
   What are enrollment projections for the next three years?

<table>
<thead>
<tr>
<th></th>
<th>1st Year</th>
<th>2nd Year (Yr. 1 continuing + new entering)</th>
<th>3rd Year (Yr. 1 &amp; 2 continuing + new entering)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Number of Students</td>
<td>25</td>
<td>50</td>
<td>100</td>
</tr>
<tr>
<td>(Headcount)</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

C. Resources
   What are the resource implications for the proposed certificate, including any projected budget needs? Will new books, library holdings, equipment, laboratory space and/or personnel be required now or in the future? If multiple units/programs will collaborate in offering this certificate please discuss the resource contribution of each participating program. Letters of support must be included from all academic units that will commit resources to this certificate.

   No new resources are needed
D. Primary Faculty
List the primary faculty participants regarding this proposed certificate. For interdisciplinary certificates, please include the relevant names of faculty members from across the University.

<table>
<thead>
<tr>
<th>Name</th>
<th>Title</th>
<th>Area(s) of Specialization as they relate to proposed certificate</th>
</tr>
</thead>
<tbody>
<tr>
<td>Martin J &quot;Mike&quot; Pasqualetti</td>
<td>Professor, School of Geographical Sciences and Urban Planning</td>
<td>Geography of energy, energy and environment, energy/water nexus, renewable energy development</td>
</tr>
<tr>
<td>Harvey Bryan</td>
<td>Professor, The Design School, Herberger Institute for Design and the Arts</td>
<td>renewable energy and architecture; energy efficient design; energy conservation; solar energy systems</td>
</tr>
<tr>
<td>Yueming &quot;Lucy&quot; Qiu</td>
<td>Assistant Professor in Resource Economics, Morrison School of Agribusiness and Resource Management</td>
<td>Energy &amp; Environmental Economics, Energy Systems, Energy &amp; Climate Policy Modeling</td>
</tr>
<tr>
<td>Clark Miller</td>
<td>Associate Professor, Department of Political Science, College of Liberal Arts and Sciences</td>
<td>Energy policy, energy and society</td>
</tr>
<tr>
<td>Don Burt</td>
<td>Professor, School Of Earth &amp; Space Exploration</td>
<td>Minerals, energy and society</td>
</tr>
<tr>
<td>Agami Reddy</td>
<td>Professor, The Design School, Herberger Institute for Design and the Arts</td>
<td>Energy technology; Building environmental science</td>
</tr>
<tr>
<td>Christopher Jones</td>
<td>Assistant Professor, History, School of Historical, Philosophical, and Religious Studies</td>
<td>Energy transitions, energy history</td>
</tr>
</tbody>
</table>

5. Additional Materials
A. Complete and attach the Appendix document.
B. Provide one or more model programs of study (if appropriate).
C. Attach other information that will be useful to the review committees and the Office of the Provost.
APPENDIX
OPERATIONAL INFORMATION FOR UNDERGRADUATE CERTIFICATES
(This information is used to populate the Degree Search/catalog website.
Please consider the student audience in creating your text.)

A. Proposed Certificate Name: Energy and Sustainability
Description (150 words maximum) Students coming from any major who wish to gain a specialized knowledge about energy and society may apply. The courses are intended to provide a broad, interdisciplinary approach to energy issues such as how energy is currently generated for society, policy challenges and opportunities related to energy infrastructure and the major systemic changes we are likely to experience in our lifetimes. Courses on the science of energy are designed to be accessible to people from a variety of disciplinary backgrounds, from the social sciences and arts to the natural and physical sciences. This set of courses augments and complements studies in engineering, architecture, business, public policy, sustainability and other disciplines, giving students a specialization in energy (especially social and environmental aspects), regardless of their disciplinary training. This certificate program is meant to prepare students to utilize their education on energy in the workforce and enhance their employment opportunities.

B. Contact and Support Information
Building Name, code and room number: (Search ASU map) WGHLL108
Program office telephone number: (i.e. 480/965-2100) 480/727-6963
Program Email Address: schoolofsustainability@asu.edu
Program Website Address: http://schoolofsustainability.asu.edu/undergraduate/undergraduate_degree-programs.php

C. Program Requirements: Provide applicable information regarding the program such as curricular restrictions or requirements, specific course lists, or academic retention requirements. There are no prerequisites for the required courses, and minimal prerequisites for a few of the electives.

Required certificate courses
SOS/GCU 171 The Thread of Energy (3)
SOS 314 The Science of Energy (3)
SOS 315 Energy Policy (3)

Section sub-total: 9

Elective certificate courses (students choose at least 2 courses from this list) However, electives are not limited to courses from this list only. Other courses on energy may come up (special topics, etc.) and students may get them approved as an elective for this certificate by their adviser. (Note: an * denotes more technical courses which may require more math and science knowledge or prerequisites)

ALT 360 *Renewable Energy Technologies: Fundamentals and Integration (3)
ALT 412 * Village Energy Systems (3)
CHM 394 Topic: Chemistry, Energy and Society (3)
EGR 371 Best Practices for Humanitarian Engineering (3)
EGR 476 * Energy Infrastructures (3)
EGR 494 * Topic: Design for the Developing World (3)
ERM 494 *Topic: Energy Economics (3)
GCU 364 Energy in the Global Arena (3)
GCU 442 Geographical Analysis of Transportation (3)
GLG 304 Minerals, Energy and Society (3)
GPH 405 Energy and Environment (3)
HST 306  Topic: Energy History (3)
HST/PHI/SOS/BIO 394  Topic: History and Philosophy of Sustainability (3)
JUS 332  Politics of Energy Policy and Justice (3)
JUS 444  Environment and Justice (3)
MET 435  * Alternate Energy Sources (3)
PAF/SOS 394  Topic: Business, Sustainability & Public Policy (3)
PHY 498  *Topic: The Science of Sustainable Energy (3)
POS 394  Topic: Global Environmental Politics (3)
PUP 430  Transportation Planning and the Environment (3)
SOS 394  Topic: Introduction to Solar Energy for Non-Engineers (3)
SOS/ATE 494  Topic: Renewable Energy (3)
SOS 494  Topic: US Energy: Pathways to Sustainability (3)
STS 317  Science, Technology and Global Engagement (3)
STS 329  Cultivating Technology in Newly Industrializing Countries (3)
STS 332  Global Issues in Science and Technology (3)

Section sub-total: 6

Total minimum credit hours required for certificate 15

D. Additional Admission Requirements If applicable list any admission requirements (freshman and/or transfer) that are higher than and/or in addition to the university minimum undergraduate admission requirements.
Admission to this certificate requires a minimum GPA of 3.0.

E. Delivery/Campus Information Delivery: On-campus only (ground courses and/or iCourses)

Note: Once students elect a campus or Online option, students will not be able to move back and forth between the on-campus and the ASU Online options. Approval from the Office of the Provost and Philip Regier (Executive Vice Provost and Dean) is required to offer programs through ASU Online.

F. Campus/Locations:
Indicate all locations where this program will be offered.

- Downtown Phoenix
- Polytechnic
- Tempe
- West

Other:
TO: Christopher Boone, Professor and Interim Dean  
School of Sustainability

FROM: Daniel A. Buttry, Professor and Chair  
Department of Chemistry and Biochemistry

DATE: September 19, 2013

RE: Department Support for Undergraduate Certificate in Energy and Sustainability

On behalf of the Department of Chemistry and Biochemistry (DCB), I am happy to provide this letter of support for the School of Sustainability’s proposal to establish a new undergraduate certificate in Energy and Sustainability. Furthermore, I unreservedly support the use of our course Chemistry 394, Energy and Society as part of the curriculum for the new certificate.
September 22, 2013

Christopher Boone
Professor and Interim Dean
School of Sustainability
Arizona State University

Dear Dean Boone,

On behalf of the School of Geographical Sciences and Urban Planning (SGSUP), I am writing to voice our support for the School of Sustainability undergraduate certificate in Energy and Sustainability. This certificate centered in social and environmental dimensions of energy in a sustainability frame brings together ASU faculty across a range of fields.

This is a timely and unique certificate program that will serve ASU students in multiple fields and majors, as energy and issues of energy sustainability permeate nearly all facets of our lives, local to global. We believe the SOS-led energy and sustainability certificate complements our undergraduate majors in geography and planning, and we applaud especially the interdisciplinary thrust of the program.

We are pleased that members of the SGSUP faculty are contributing to the effort through teaching energy- and transportation-related courses, including Mike Pasqualetti who teaches one of the core courses in the certificate program, The Thread of Energy.

Do not hesitate contacting us should you need any additional input from SGSUP.

Yours sincerely,

Kevin E. McHugh
Associate Professor
Associate Director
kmchugh@asu.edu
Thank you for your letter of support.

Chris
Christopher Boone
Professor and Interim Dean
School of Sustainability
Arizona State University
http://schoolofsustainability.asu.edu/
http://cgboone.personal.asu.edu

Dean Boone,
The School of Politics and Global Studies has reviewed the certificate proposal from the School of Sustainability, "Energy and Sustainability" and support the proposed new certificate and the inclusion of the POS 394, Global Environmental Politics.

Richard Herrera

Richard Herrera
Associate Director, School of Politics and Global Studies
Director, Capital Scholars Program
University Coordinator, ASU-McCain Institute Internship Program
Associate Professor, School of Politics and Global Studies
Arizona State University
Tempe, AZ 85287-3902
Phone: 480-965-1331

On Sep 19, 2013, at 10:45 AM, Christopher Boone <Christopher.G.Boone@asu.edu> wrote:

Dear Richard,
The proposal document is attached. Thanks for taking the time to review it.

Best,
Chris
Christopher Boone
Professor and Interim Dean
School of Sustainability
Arizona State University
http://schoolofsustainability.asu.edu/
http://cgboone.personal.asu.edu

From: Richard Herrera <Richard.Herrera@asu.edu>
Date: Thursday, September 19, 2013 9:22 AM
To: Christopher Boone <Christopher.G.Boone@asu.edu>
Subject: attachment did not arrive

Dean Boone,

I'm unable to open the attachment from the forwarded email from Cameron. Would you please resend it to me.

Thanks,
Rick

Richard Herrera
Associate Director, School of Politics and Global Studies
Director, Capital Scholars Program
University Coordinator, ASU-McCain Institute Internship Program
Associate Professor, School of Politics and Global Studies
Arizona State University
Tempe, AZ 85287-3902
Phone: 480-965-1331

<Proposal_to_Establish_an_Undergrad_Energy_Certificate_September.docx>
Thank you Nicholas!

Chris
Christopher Boone
Professor and Interim Dean
School of Sustainability
Arizona State University
http://schoolofsustainability.asu.edu/
http://cgboone.personal.asu.edu

---

Dear Chris-

Thank you for considering and including us in this exciting proposal. This is my letter of support urging that the proposal move forward.

Nick.

Nicholas O. Alozie, Ph.D.
Professor of Public Policy and Head
Faculty of Social and Behavioral Sciences
School of Letters and Sciences
Arizona State University - Poly Campus
7271 E. Sonoran Arroyo Mall - MC 2780
Mesa, Arizona 85212-6415
Phone: (480) 727-1395; Fax: (480) 727-1671
E-Mail: Alozie@asu.edu

---

Dear Nicholas,

The School of Sustainability is submitting a proposal to establish a new undergraduate certificate in
Energy and Sustainability. Could you please review the courses that we will be including and provide us with a letter of support?

We would like to include the following courses from your area as electives for the new certificate:

STS 317 Science, Technology and Global Engagement
STS 329 Cultivating Tech. in Newly Industrializing Cities
STS 332 Global Issues in Science and Technology

We need to submit this proposal by Monday so would need your letter of support by then. Please let me know if you need any further information.

Best,

Chris

Christopher Boone
Professor and Interim Dean
School of Sustainability
Arizona State University
http://schoolofsustainability.asu.edu/
http://cgboone.personal.asu.edu
04 February 2013

Dr. Candice Carr Kelman
Assistant Director
School of Sustainability

Dear Candice:

This letter is to attest that the School of Earth and Space Exploration endorses your plan to include our 3-credit undergraduate course GLG 304—Minerals, Energy, and Society—as one of the elective courses for your School’s proposed new undergraduate certificate in Energy. We are happy to assist the School of Sustainability with this proposal to expand energy-related curricula for ASU undergraduate students.

With best regards,

Steve Semken, Ph.D.
Associate Professor and Associate Director for Undergraduate Education
School of Earth and Space Exploration