



PROPOSAL TO ESTABLISH A NEW GRADUATE CERTIFICATE

This form should be used by programs seeking to establish a new graduate certificate. All sections should be completed.

The graduate certificate is a programmatic or linked series of courses in a single field or in one that crosses disciplinary boundaries. The graduate certificate facilitates professional growth for people who already hold the baccalaureate degree. The graduate certificate enables the university to respond to societal needs while promoting university cooperation with corporate, industrial, and professional communities.

This proposal template should be completed in full and submitted to the University Provost's Office [mail to: curriculumplanning@asu.edu]. It must undergo all internal university review and approval steps including those at the unit, college, and university levels. A program **may not** be implemented until the Provost's Office notifies the academic unit that the program may be offered.

GRADUATE CERTIFICATE

College/School: School of Sustainability

Note: Program ownership is coded at the College/School level first and may not be a center, department or division apart from it.

Department/Division/School: School of Sustainability

Proposing faculty group (if applicable): N/A

Name of proposed graduate certificate: Graduate Certificate in Energy and Sustainability

Is a program fee required? No, a program fee is not required.

Note: for more information about program fee requests, visit <https://provost.asu.edu/curriculum-development/changemaker/form-instructions#fees>

Is the unit willing and able to implement the program if the fee is denied? Not applicable.

Requested effective term and year: Fall 2020

(The first semester and year for which students may begin applying to the certificate)

Delivery method and campus or location options: *select all locations that apply*

Downtown Phoenix Polytechnic Tempe Thunderbird West Other: _____

Both on-campus and ASU Online* - (check applicable campus(es) from options listed above)

ASU Online only (all courses online and managed by ASU Online)

Note: Once students elect a campus or Online option, students will not be able to move between the on-campus and the ASU Online options. Approval from the Office of the University Provost and Philip Regier (Executive Vice Provost and Dean) is required to offer programs through ASU Online. Please complete the ASU Online Offering form in [Curriculum ChangeMaker](#) to begin this request. Prior to completing the online Curriculum ChangeMaker form, please contact EdPlus at asuonline@asu.edu who can provide you with additional information regarding the online request process.

Do Not Fill in this information: Office Use Only

Plan Code:

CIP Code:



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PROPOSAL CONTACT

| | | | |
|----------------------|----------------------|---------------|----------------------------------|
| Name: | Caroline J. Harrison | Title: | Curricular and Academic Programs |
| Phone number: | 5-8645 | Email: | caroline.harrison@asu.edu |

DEAN APPROVAL(S)

This proposal has been approved by all necessary unit and college/school levels of review, and the college/school(s) has the resources to offer this degree program. I recommend implementation of the proposed certificate program.

Note: An electronic signature, an email from the dean or dean's designee, or a PDF of the signed signature page is acceptable.

College/School/Division Dean name: Christopher G. Boone

Signature: See attached

Date:

Please note: Proposals for new certificates also require the review and recommendation of approval from the University Graduate Council, Curriculum and Academic Programs Committee (CAPC), the Academic Senate (two readings), and the Office of the Provost before they can be put into operation.

The final approval notification will come from the Office of the Provost.

1. OVERVIEW

Below, please provide a brief overview of the certificate, including the rationale and need for the program, potential size and nature of the target audience, information on comparable programs (at ASU and/or peer institutions), how this program would relate to existing programs at ASU, and any additional appropriate information.

Our society is in the midst of a transition towards sustainable energy. Since the global energy system is a complex, socio-technical system, educating the next generation of leaders in sustainable energy requires a transdisciplinary perspective combining both technical and societal dimensions of energy systems. This proposed Certificate in Energy and Sustainability is designed to do just that, i.e. to train graduate students from diverse programs to see beyond the boundaries of traditional methodologies and disciplinary viewpoints. This 15-credit graduate certificate is suitable for students from a variety of different backgrounds, including sustainability, engineering, urban planning, and the natural sciences.

Sustainable energy is on the forefront of many students' minds, and yet there are very few universities with a graduate program that includes all aspects, not just the technical or the engineering considerations. Programs that do exist are either on the masters or the PhD level. One reason why sustainable energy may be an overlooked area in educational offerings nationwide is because it is a highly interdisciplinary area. Students need to be trained to see beyond the boundaries of traditional methodologies and disciplinary viewpoints, and integrate technological applications with societal and policy insights. ASU is well positioned to offer a certificate in Energy and Sustainability as there is a major interdisciplinary effort in this area, with strong student interest. This certificate is specifically aimed at current ASU students, either in a current graduate program or interested in adding a certificate to their education portfolio.

In particular, the ASU School of Sustainability is well positioned to offer this certificate based on our successful launch of the PhD in Sustainable Energy in the 2017-2018 academic year. Current graduate students in multiple disciplines have expressed interest in the program but are unable to pursue a PhD program for a variety of reasons. The



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proposed certificate can complement their existing programs. The certificate would build on the foundation of School of Sustainability's coursework for the PhD in Sustainable Energy, while allowing students to draw on electives from many other schools and program (see curriculum table on page 5).

2. ADMINISTRATION AND RESOURCES

A. Administration

How will the proposed certificate be administered (including recommendations for admissions, student advisement, retention etc.)? Describe the administering body in detail, especially if the proposed certificate is part of a larger interdisciplinary agenda. How will the graduate support staffing needs for this proposed certificate program be met?

Admission and oversight will be done through the processes already established for handling of students and overseeing energy education in the School of Sustainability. Specifically, SOS's Sustainable Energy Subcommittee, which oversees academic programs in energy, will be responsible for reviewing applicants, advising them on course selection, and reviewing and approving course petitions.

There is adequate support to launch and maintain the certificate. Course content will be delivered by existing faculty.

B. Resource requirements needed to launch and sustain the program

Describe any new resources required for this program's success such as new staff, new facilities, new library resources, new technology resources, etc. 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 program.

The proposed certificate is built upon existing courses taught by current ASU faculty and offered on their established schedules. Therefore, no additional personnel hours, materials, space or equipment is needed.

C. Projected Enrollment:

How many new students do you anticipate enrolling in this program each year for the next three years?

| 3-YEAR PROJECTED ANNUAL ENROLLMENT | | | |
|---|----------------------|--|--|
| Please utilize the following tabular format | 1 st Year | 2 nd Year (Yr. 1 continuing + new entering) | 3 rd Year (Yr. 1 & 2 continuing + new entering) |
| Number of students in certificate (Headcount) | 10 | 20 | 25 |

3. STUDENT LEARNING OUTCOMES AND ASSESSMENT

- A. **List the knowledge, competencies and skills** students should have attained by graduation from the proposed degree program. (Examples of program Learning Outcomes can be found at <https://uoeee.asu.edu/>. Go to the Assessment accordion dropdown and select Assessment Plan to view sample outcomes.)

Outcome 1: Graduates of the certificate program will be able to analyze the technological, political, social, and financial factors in the adoption of energy systems



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Outcome 2: Graduates of the certificate program will be able to perform credible data analysis and projections for energy availability, consumption, and costs.

- B. Describe the plans and methods to assess** whether students have achieved the knowledge, competencies and skills identified in the Learning Outcomes listed above. Please list measures and scales for each outcome. (You can find examples of assessment methods at <https://uoeee.asu.edu/>. Go to the Assessment accordion dropdown and select Assessment Plan to view sample measures.)

Outcome 1: Graduates of the certificate program will be able to analyze the technological, political, and cultural constraints on the adoption of energy systems

- *Measure 1.1:* SOS 572 Sustainable Energy II: Transitions
Performance criterion 1.1: 90% or more of students will average a grade of B or better on the SOS 572 graded discussions related to a specific topic pertaining to the process or period of changing from one primary fuel or to another (transitions).
- *Measure 1.2:* SOS 572 Sustainable Energy II: Transitions
Performance criterion 1.2: 90% or more of students will receive a grade of B or better on the final individual report on whether the next transition is underway.

Outcome 2: Graduates of the certificate program will be able to perform credible data analysis and projections for energy availability, consumption, and costs.

- *Measure 2.1:* SOS 574 Sustainable Energy Analytics in Context
Performance criterion 2.1: 90% or more of students will average a B or better on individual assignments analyzing and summarizing existing energy and climate data reports.
- *Measure 2.2:* SOS 574 Sustainable Energy Analytics in Context
Performance criterion 2.2: 90% or more of students will average a B or better on the midterm using existing energy and climate data sets.

4. ACADEMIC REQUIREMENTS

- A. Minimum credit hours required for certificate** (15 credit hour minimum)

15

- B. As applicable, please describe culminating experience if required** (e.g., applied project, portfolio, capstone course, etc.)

N/A

- C. Please state the satisfactory student academic progress standards and** guidelines (including any time limits for completion). All coursework used to complete an ASU graduate certificate must be completed within a six-year time limit, maintaining continuous enrollment.

The certificate may be completed in 18-24 months. All coursework used to complete an ASU graduate certificate must be completed within a six-year time limit. Students must abide by all policies set forth by Graduate College and the School of Sustainability. In addition, they must maintain a 3.0 GPA to remain in good standing. Students must complete the certificate program within six years, maintaining continuous enrollment. Students who are deemed unsatisfactory may be recommended to Graduate College for dismissal from the certificate program.

- D. Will this proposed certificate program allow sharing of credit hours from another ASU degree program to be used as part of this certificate program?** (Please note that a maximum of 12 graduate-level credit



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hours taken as a non-degree student at ASU, including as a part of a certificate program, may be used towards a future graduate degree at ASU. No more than 40% of coursework towards the requirements of a graduate certificate can be completed prior to admission to the certificate program.)

Yes. The certificate allows the sharing of hours based on Graduate College policy and the policy of the programs with which the credits may be shared.

- E. Below, please list all required and elective courses in the appropriate boxes** (you may attach additional pages if necessary).

Please ensure that all new core course proposals have been submitted to the Provost's office through the Curriculum ChangeMaker online course proposal submission system before this initiative is put on the University Graduate Council and CAPC agendas.

Note: a minimum of 2/3 of the courses required for a graduate certificate must be at the 500-level or above.

| Required Courses | | | Credit Hours |
|---|---|-------------------------------------|---|
| <i>(Prefix & Number)</i> | <i>(Course Title)</i> | <i>(New Course?) Yes or No?</i> | (Insert Section Sub-total) 6 |
| SOS 572 | Sustainable Energy II: Transitions | No | 3 |
| SOS 574 | Sustainable Energy Analytics in Context | No | 3 |
| Electives | | | Credit Hours |
| <i>Students will take at least one course in each of the following categories</i> | | | |
| <i>(Prefix & Number)</i> | <i>(Course Title)</i> | <i>(New Course?) Yes or No?</i> | (Insert Section Sub-total) 9 |
| Technical Fundamentals of Energy Systems Elective | | | |
| <i>One of the following courses (or approved equivalent) that provides a broad technical survey of energy technologies and systems:</i> | | | |
| SOS 571 | Sustainable Energy 1: Technologies and Systems | No | 3 |
| CEE 516 | Sustainable Energy and Material Use | No | 3 |
| CEE 598 | Topic: Sustainable Energy Technologies | No | 3 |
| EGR 598 | Alternative Energy | No | 3 |
| Policy and Governance of Energy Systems Elective | | | |
| <i>One of the following courses (or approved equivalent) on the policy, governance, or institutional dimensions of energy systems:</i> | | | |
| SOS 573 | Sustainable Energy III: Futures Analysis, Negotiation, and Governance | No | 3 |
| LAW 619 | Energy Law and Policy | No | 3 |



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| Restricted Electives | | | |
|---|--|----|----------|
| <i>One additional elective from among the following courses (or approved equivalent):</i> | | | |
| ATE 560 | Building Energy Analysis | No | 3 |
| CEE 506/SOS 546 | Life Cycle Assessment | No | 3 |
| ERM 598 | Topic: Algae in Water/Energy/Food Nexus | No | 3 |
| GCU 591 | Topic: Recycling Energy Landscapes | No | 3 |
| GCU 542 | Geographical Analysis of Transportation | No | 3 |
| GTD 512 | International Governance and Development of Nuclear Technologies | No | 3 |
| HSD 598 | Topic: Climate Change, Energy, and Social Justice | No | 3 |
| HSD 598/SOS 598 | Sustainable Energy as a Social Problem | No | 3 |
| MAE 579 | Wind Energy | No | 3 |
| MAE 582 | Renewable Energy: Mechanical Systems | No | 3 |
| MAE 585 | Solar Thermal Engineering | No | 3 |
| PUP 550 | Transportation and the Environment | No | 3 |
| SEC 598 | Topic: Operations and Maintenance of Photovoltaic Systems | No | 3 |

| Culminating Experience (if applicable) | Credit Hours |
|---|---------------------|
| <i>E.g. – Capstone course, portfolio, written comprehensive exam or applied project</i> | |
| N/A | |
| <i>Section sub-total:</i> | |
| Total required credit hours | 15 |

1. List all required core courses and total credit hours for the core (required courses other than internships, capstone course, etc.).
2. Omnibus numbered courses cannot be used as core courses.
3. Permanent numbers must be requested by submitting a course proposal to Curriculum ChangeMaker for approval.

F. Current Faculty: Complete the table below for all current faculty members who will teach in the program.

| Name | Rank | Highest Degree | Area of Specialization/Expertise | Estimated Level of Involvement |
|-----------------------|------------------------------|-----------------------|---|---|
| John (Marty) Anderies | Professor | PhD | Dynamic modeling of social-ecological systems | Graduate Director |
| Hanna Breetz | Assistant Professor | PhD | Energy policy and politics | Program Director, teaching core courses |
| Jose Lobo | Associate Research Professor | PhD | Energy transitions, economic growth, urbanization | Teaching core courses |
| Nathan Parker | Assistant Professor | PhD | Techno-economic models, transportation, biofuels | Teaching core courses |



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| | | | | |
|-------------------|---------------------|-----|--|-----------------------|
| Deborah Strumskyi | Assistant Professor | PhD | Energy economics, technological change | Teaching core courses |
|-------------------|---------------------|-----|--|-----------------------|

5. COURSES

A. New Courses Required for Proposed Certificate: Provide course prefix, number, title, credit hours and brief description for any new courses required for this certificate program.

None

6. REQUIRED SUPPORTING DOCUMENTS

(Please label accordingly, i.e., Appendix or Attachment A, B, etc.)

Please include the following with your proposal:

- A.** Statements of support from all deans
- B.** Impact statements of heads of impacted academic units (programs with similar names/content, utilizing courses, faculty, etc.) – See attached.



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APPENDIX I

OPERATIONAL INFORMATION FOR GRADUATE CERTIFICATES

(This information is used to populate the [Graduate Programs Search](#) website.)

1. Proposed name of certificate: Graduate Certificate in Energy and Sustainability

2. Marketing description *(Optional - 50 words maximum. The marketing description should not repeat content found in the program description.)*

This certificate is designed for graduate level students in energy-related fields who want to develop interdisciplinary expertise in the complex dimensions of sustainable energy transitions. This will complement their existing area of study.

3. Provide a brief program description *(Catalog type (i.e. will appear in Degree Search) – no more than 150 words. Do not include any admission or curriculum information)*

The global energy system is a complex socio-technical system. Leaders in sustainable energy require a transdisciplinary perspective that combines technical, economic, social, and policy dimensions of energy systems. This certificate is designed to train students from diverse educational backgrounds to see beyond the boundaries of traditional methodologies and disciplinary viewpoints, enabling them to integrate technological knowledge with societal insights.

Graduates of the program will have a basic understanding of sustainable energy technology and systems, including social dimensions such as markets and policies. They will understand energy transitions as a dynamic socio-technical process; and they will be able to perform analyses of energy generation, consumption, and costs and how these metrics can be utilized in policy discussions.

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

5. Campus(es) where program will be offered:

ASU Online curriculum consists of courses that have no face-to-face content. iCourses are online courses for students in on-campus programs. iCourses may be included in a program, but may not comprise the entirety of a program. On-campus programs must have some face-to-face content

Note: Office of the Provost approval is needed for ASU Online campus options.

ASU Online only (all courses online and managed by ASU Online)

All other campus or location options (please select all that apply):

Downtown Phoenix Polytechnic Tempe West Other: _____

Both on-campus and ASU Online* - (check applicable campus(es) from options listed above)

**Note: Once students elect a campus or Online option, students will not be able to move between the on-campus and the ASU Online options. Approval from the Office of the University Provost and Philip Regier (Executive Vice Provost and Dean) is required to offer programs through ASU Online. Please complete the ASU Online Offering form in Curriculum ChangeMaker to begin this request. Prior to completing the online Curriculum ChangeMaker form, please contact EdPlus at asuonline@asu.edu who can provide you with additional information regarding the online request process*

If the certificate program is ground only, it will only be open to international students who are already enrolled in a degree program at ASU and they must complete the certificate before the degree is awarded. If this certificate is ground only, please indicate this in the additional application information below.



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6. Admission Requirements

An applicant must fulfill the requirements of both the Graduate College and the School of Sustainability.

Applicants are eligible to apply to the program if they have earned a bachelor's or master's degree in any field or related field, from a regionally accredited institution.

Applicants must have a minimum of a 3.00 cumulative GPA (scale is 4.00 = "A") in the last 60 hours of a student's first bachelor's degree program, or applicants must have a minimum of a 3.00 cumulative GPA (scale is 4.00 = "A") in an applicable master's degree program.

Applicants are required to submit:

1. graduate admission application and application fee
2. official transcripts
3. proof of English proficiency

Additional Application Information

Applicants whose native language is not English (regardless of current residency) must provide proof of English proficiency.

International students who need an F1 or J1 visa will first need to apply to and be accepted into a graduate degree program prior to being considered for the certificate program. International students residing in the USA on other types of visas must adhere to all Graduate College policies and procedures regarding admission be considered for admission to this certificate program.

7. Application Review Terms (if applicable session):

Indicate the first term and year in which applications will be opened for admission. Applications will be accepted on a rolling basis after that time.

Note: It is the academic unit's responsibility to display program deadline dates on their website.

| Terms | Years | University Late Fee Deadline |
|--|-------------------------|------------------------------|
| <input checked="" type="checkbox"/> Fall (regular) <input type="checkbox"/> Session B | (year): 2020 (year): | July 1st October 1st |
| <input type="checkbox"/> Spring (regular) <input type="checkbox"/> Session B | (year): (year): | December 1st February 8th |
| <input type="checkbox"/> Summer (regular) <input type="checkbox"/> Summer B | (year): (year): | May 14th May 14th |
| <p><i>Note: Session B is only available for approved online programs.</i></p> | | |

Program admission deadlines website address: <http://schoolofsustainability.asu.edu/degrees/graduate/>



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8. Curricular Requirements:

Curricular Structure Breakdown for the Academic Catalog:

(To be completed by the Graduate College)

15 credit hours

Required Core (6 credit hours)

SOS 572 Sustainable Energy II: Transitions (3)

SOS 574 Sustainable Energy Analytics in Context (3)

Electives (9 credit hours)

Technical Fundamentals of Energy Systems Elective (3)

Policy and Governance of Energy Systems Elective (3)

Restricted Elective (3)

Additional Curriculum Information

Students should contact the academic unit for the most recent approved elective coursework. Other coursework may be used with approval of the academic unit.

9. Keywords: List all keywords that could be used to search for this certificate. Keywords should be specific to the proposed certificate – limit 10 keywords.

Sustainable Energy, Renewable Energy, Policy, Technology, Energy, Sustainability

10. Area(s) of Interest

A. Select **one (1)** primary area of interest from the list below that applies to this program.

- | | |
|--|---|
| <input type="checkbox"/> Architecture & Construction | <input type="checkbox"/> Interdisciplinary Studies |
| <input type="checkbox"/> Arts | <input type="checkbox"/> Law & Justice |
| <input type="checkbox"/> Business | <input type="checkbox"/> Mathematics |
| <input type="checkbox"/> Communication & Media | <input type="checkbox"/> Psychology |
| <input type="checkbox"/> Education & Teaching | <input type="checkbox"/> STEM |
| <input type="checkbox"/> Engineering & Technology | <input type="checkbox"/> Science |
| <input type="checkbox"/> Entrepreneurship | <input type="checkbox"/> Social and Behavioral Sciences |
| <input type="checkbox"/> Health & Wellness | <input checked="" type="checkbox"/> Sustainability |
| <input type="checkbox"/> Humanities | |

B. Select **one (1)** secondary area of interest from the list below that applies to this program.

- | | |
|--|---|
| <input type="checkbox"/> Architecture & Construction | <input type="checkbox"/> Interdisciplinary Studies |
| <input type="checkbox"/> Arts | <input type="checkbox"/> Law & Justice |
| <input type="checkbox"/> Business | <input type="checkbox"/> Mathematics |
| <input type="checkbox"/> Communications & Media | <input type="checkbox"/> Psychology |
| <input type="checkbox"/> Education & Teaching | <input type="checkbox"/> STEM |
| <input type="checkbox"/> Engineering & Technology | <input type="checkbox"/> Science |
| <input type="checkbox"/> Entrepreneurship | <input type="checkbox"/> Social and Behavioral Sciences |
| <input type="checkbox"/> Health & Wellness | <input type="checkbox"/> Sustainability |
| <input type="checkbox"/> Humanities | |



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11. Contact and Support Information:

| | |
|---|---|
| Office Location - Building Code & Room: <i>(Search ASU map)</i> | Wrigley Hall, 108 |
| Campus Telephone Number: (may not be an individual's number) | 480-727-6963 |
| Program Email Address: (may not be an individual's email) | SOSGradSunDevil@asu.edu |
| Program Website Address: (if one is not yet created, use unit website until one can be established) | https://schoolofsustainability.asu.edu/degrees/graduate/ |
| Program Director (Name): | Hanna Breetz |
| Program Director (ASURITE): | hbreetz |
| Program Support Staff (Name): | Melissa Dengler |
| Program Support Staff (ASURITE): | mdengle1 |
| Admissions Contact (Name): | Melissa Dengler |
| Admissions Contact (ASURITE): | mdengle1 |

12. Application and iPOS Recommendations:

List the Faculty and Staff that will input admission/POS recommendations to Gportal **and** indicate their approval for Admissions and/or POS:

| NAME | ASURITE | ADMSN | POS |
|-----------------|----------|-------|-----|
| Melissa Dengler | mdengle1 | Yes | Yes |
| Ivy Gerbis | bohnlein | Yes | Yes |
| Lisa Murphy | leesed | Yes | Yes |
| | | | |



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APPENDIX II

Letters of Support/Impact Statements

School of Sustainability – Official Submission

From: Caroline Harrison
Sent: Tuesday, March 26, 2019 10:18 AM
To: Curriculum Planning <CurriculumPlanning@exchange.asu.edu>; Amanda Morales-Calderon <AMANDA.MORALES-CALDERON@asu.edu>; Erin Froncek <Erin.Froncek@asu.edu>
Subject: Graduate Certificate in Energy and Sustainability

Attached is the draft proposal for the Graduate Certificate in Energy and Sustainability. Since the Academic Plan approval ends in May we are hoping to get this on the UGC agenda at the end of April. We are in the process of requesting Letters of Support from the following: Engineering, Law, Herberger, CLAS, and SFIS. However, I wanted to send this on now since I am sure there will be some edits plus I have some questions based on the new form. Previously (Graduate Certificate in Environmental and Sustainability Economics) we were able to indicate categories of electives as well as listing the electives that can be chosen. This new form does not allow that. I have attached the Plan of Study separately in case that is how you want it submitted. If there is a better way, please let me know. I will be sending a proposal for a PhD concentration based on the Env & Sust Econ certificate shortly and have the same problem on that form.

If you have any questions, please let me know.

Thanks.

Caroline J. Harrison, PhD

Curricular and Academic Programs

Senior Sustainability Scholar

Arizona State University

P.O. Box 875502 | Tempe, Arizona | 85287-5502

PH: 480-965-8645 | Main: 480-965-2975

SchoolOfSustainability.asu.edu



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School of Sustainability – College Approval

From: Christopher Boone <Christopher.G.Boone@asu.edu>
Sent: Wednesday, August 14, 2019 2:13 PM
To: Caroline Harrison <Caroline.Harrison@asu.edu>
Subject: RE: Energy Graduate Certificate Signature

Caroline,

I support the proposal for the Graduate Certificate in Energy.

Christopher Boone

Dean and Professor



P.O. Box 875502 | Tempe, Arizona | 85287-5502



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The College – Impact Statement

From: Fabio Milner
Sent: Monday, August 12, 2019 1:53 PM
To: Caroline Harrison
Cc: Christopher Boone; Patrick Kenney; Fabio Milner
Subject: Re: Letter of Support for the Grad Certificate in Energy and Sustainability

Dear Chris,

The College fully supports the graduate certificate in Energy and Sustainability that the School of Sustainability is proposing. We have already approved the use of GCU 591, GCU 542, PUP 550 for the PhD in Sustainable Energy, and extend hereby that approval to use the courses for this certificate.

Best wishes,
Fabio

Fabio Augusto Milner, PhD
Associate Dean of Graduate Initiatives
[The College of Liberal Arts and Sciences](#)
Director of Mathematics for STEM Education
[School of Mathematical and Statistical Sciences](#)
[Arizona State University](#)





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Ira A. Fulton Schools of Engineering– Impact Statement

From: Kyle Squires
Sent: Monday, April 08, 2019 10:09 AM
To: Christopher Boone
Cc: Caroline Harrison
Subject: RE: Letter of Support for the Grad Certificate in Energy and Sustainability

Hi Chris,

FSE is happy to approve. These certificates are good examples where, as we understand the opportunities following the launch, will create new pathways for cross-listing courses and involving FSE faculty, among other advantages. SoS already does a great job connecting with FSE faculty and this will accelerate those engagements. Thanks,

-- Kyle

From: Christopher Boone <Christopher.G.Boone@asu.edu>
Sent: Monday, April 8, 2019 9:39 AM
To: Kyle Squires <squires@asu.edu>
Cc: Caroline Harrison <Caroline.Harrison@asu.edu>
Subject: Letter of Support for the Grad Certificate in Energy and Sustainability

Hi Kyle,

We are proposing a grad certificate in Energy and Sustainability based on the existing PhD in Sustainable Energy in SOS. You have already approved the use of these courses for the PhD in Sustainable Energy, but we need approval again to use the courses for the certificate. I would also appreciate a brief statement of support for the certificate. Happy to answer any questions.

Thanks,
Chris

Christopher Boone
Dean and Professor





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Herberger Institute for Design and the Arts– Impact Statement



August 8, 2019

Dean Christopher Boone
School of Sustainability
Arizona State University
P.O. Box 875502
Tempe, AZ 85287-5502

Dean Boone:

I am happy to support the new graduate certificate in Energy and Sustainability, based on the existing PhD in Sustainable Energy. The PhD program currently uses the course ATE 560: Building Energy Analysis, which I also support adding to the certificate program. The program's goal to train students to see beyond the boundaries of traditional methodologies and disciplinary viewpoints compliments the way we are training architects and designers in the Herberger Institute to think cross-disciplines.

We look forward to working with you to promote this curriculum – especially around design thinking, design and sustainability, creative placemaking, and more.

The Herberger Institute looks forward to supporting and connecting with this new certificate as it evolves.

Sincerely,

A handwritten signature in black ink, appearing to read 'S. Tepper'.

Steven J. Tepper
Dean and Director, Herberger Institute for Design and the Arts
Foundation Professor
Arizona State University



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Sandra Day O'Connor College of Law– Impact Statement

From: Zachary Kramer (Law College)
Sent: Thursday, August 08, 2019 4:50 PM
To: Christopher Boone
Cc: Caroline Harrison
Subject: Grad Certificate Support

Dear Chris,

I write on behalf of the Sandra Day O'Connor College of Law to provide an official statement of support for the proposed Grad Certificate in Energy and Sustainability. We believe this is an exciting new opportunity, and we are delighted to be playing a role in its creation.

I approve the use of our course Law 691, Energy Law and Policy, for this certificate. Moreover, I fully understand that the certificate will evolve over time, so please let us know if there is anything else we can do.

Thank you for your time.

Best,
Zak

Zachary A. Kramer
Interim Dean, ASU Law



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School for the Future of Innovation in Society– Impact Statement

From: David Guston
Sent: Monday, April 08, 2019 10:00 AM
To: Christopher Boone
Cc: Caroline Harrison
Subject: Re: Letter of Support for the Grad Certificate in Energy and Sustainability

Chris

I am happy to support the creation of the grad certificate in energy and sustainability.

Best,

Dave

From: Christopher Boone <Christopher.G.Boone@asu.edu>
Date: Monday, April 8, 2019 at 9:48 AM
To: David Guston <David.Guston@asu.edu>
Cc: Caroline Harrison <Caroline.Harrison@asu.edu>
Subject: Letter of Support for the Grad Certificate in Energy and Sustainability

Hi Dave,

We are proposing a grad certificate in Energy and Sustainability based on the existing PhD in Sustainable Energy in SOS. You have already approved the use of these courses for the PhD in Sustainable Energy, but we need approval again to use the courses for this certificate. I would also appreciate a brief statement of support for the certificate. Happy to answer any questions.

Thanks,
Chris

Christopher Boone

Dean and Professor



(NEW GRADUATE INITIATIVES)

PROPOSAL PROCEDURES CHECKLIST

Academic units should adhere to the following procedures when requesting new curricular initiatives (degrees, concentrations or certificates).

Obtain the required approval from the Office of the Provost to move the initiative forward for internal ASU governance reviews/approvals. Please see the academic strategic plan website at: <https://provost.asu.edu/curriculum-development>.

Submit any new courses that will be required for the new curricular program to the Curriculum ChangeMaker online course approval system for review and approval.

- Additional information can be found at the Provost's Office Curriculum Development website: [Courses link](#)
- For questions regarding proposing new courses, send an email to: courses@asu.edu

Prepare the applicable proposal template and operational appendix for the proposed initiative.

Obtain letters or memos of support or collaboration (if applicable).

- When resources (faculty or courses) from another academic unit will be utilized
- When other academic units may be impacted by the proposed program request
- if the program will have an online delivery option support will be required from the Provost's office and ASU Online. *(Please complete the ASU Online Offering form in [Curriculum ChangeMaker](#) to begin this request.)*

Obtain the internal reviews/approvals of the academic unit.

- Internal faculty governance review committee(s)
- Academic unit head (e.g. Department Chair or School Director)
- Academic unit Dean (will submit approved proposal to the curriculumplanning@asu.edu email account for further ASU internal governance reviews (as applicable, University Graduate Council, CAPC and Senate)

Additional Recommendations

All new graduate programs require specific processes and procedures to maintain a successful program. Below are items that Graduate College strongly recommends that academic units establish after the program is approved for implementation.

Establish satisfactory academic progress policies, processes and guidelines – Check within the proposing academic unit and/or college to see if there are existing academic progress policies and processes in place. If none have been established, please go to http://graduate.asu.edu/faculty_staff/policies and scroll down to the **academic progress review and remediation processes** (for faculty and staff) section to locate the reference tool and samples for establishing these procedures.

Establish a Graduate Student Handbook for the new degree program – Students need to know the specific requirements and milestones they must meet throughout their degree program. A Graduate Student Handbook provided to students when they are admitted to the degree program and published on the website for the new degree gives students this information. Include in the handbook the unit/college satisfactory academic progress policies, current degree program requirements (outlined in the approved proposal) and provide a link to the Graduate Policies and Procedures website. Please go to http://graduate.asu.edu/faculty_staff/policies to access Graduate Policies and Procedures.