

# UNIVERSITY FACULTY SENATE FORMS

## Academic Program Approval

This form is a routing document for the approval of new and revised academic programs. Proposing department should complete this form. For more information, call the Faculty Senate Office at 831-2921.

**Submitted by:** Allen A. Jayne **Phone:** 831-7245

**Department:** Civil and Environmental Engineering **Email address:** ajayne@udel.edu

**Action:** Add a Minor in Sustainable Infrastructure

(Example: add major/minor/concentration, delete major/minor/concentration, revise major/minor/concentration, academic unit name change, request for permanent status, policy change, etc.)

**Effective term:** 13F  
(use format 04F, 05W)

**Current degree:** not applicable  
(Example: BA, BACH, BACI, HBA, EDD, MA, MBA, etc.)

**Proposed change leads to the degree of:** not applicable  
(Example: BA, BACH, BACI, HBA, EDD, MA, MBA, etc.)

**Proposed name:** Minor in Sustainable Infrastructure  
Proposed new name for revised or new major / minor / concentration / academic unit  
(if applicable)

### Revising or Deleting:

**Undergraduate major / Concentration:** not applicable  
(Example: Applied Music – Instrumental degree BMAS)

**Undergraduate minor:** not applicable  
(Example: African Studies, Business Administration, English, Leadership, etc.)

**Graduate Program Policy statement change:** not applicable  
(Must attach your Graduate Program Policy Statement)

**Graduate Program of Study:** not applicable  
(Example: Animal Science: MS Animal Science: PHD Economics: MA Economics: PHD)

**Graduate minor / concentration:** not applicable

**Note: all graduate studies proposals must include an electronic copy of the Graduate Program Policy Document, highlighting the changes made to the original policy document.**

**List new courses required for the new or revised curriculum. How do they support the overall program objectives of the major/minor/concentrations)?**

(Be aware that approval of the curriculum is dependent upon these courses successfully passing through the Course Challenge list. If there are no new courses enter "None")

One new course will be a required course for the proposed minor (recently approved and placed in course inventory):

- 1) CIEG402 Introduction to Sustainability Principles in Civil Engineering: This course provides an introduction to the principles of sustainability and considers the implication of these principles to the practice of civil engineering. Course includes presentation of life cycle assessment techniques, including software applications; discussion of green building materials; evaluation of specific materials in consideration of their use in green construction; and discussion of various sustainable construction standards such as LEED, BREEAM, Green Globes, SITES, etc. At the completion of the course, students will have the ability to define sustainability in their own words, critically evaluate alternative building materials, demonstrate life-cycle assessment techniques as part of the evaluation process, and apply the requirements of recognized sustainable assessment standards.

One new course will be offered as a core elective for the proposed minor (also recently approved and placed in course inventory):

- 2) CIEG403 Sustainability Applications in Infrastructure: This course emphasizes the application of sustainability principles to civil engineering infrastructure. The course includes application of life cycle assessment techniques for various construction materials; evaluation of economic, environmental, and social impacts of infrastructure projects; comparisons and cost-benefit analyses of alternative design solutions; and integration of recognized standards into the assessment process. Recent examples of sustainable design and innovation are demonstrated through the use of case studies. At the completion of the course, students will have the ability to compare the long-term benefits of alternative engineering design solutions, define the impact of infrastructure development projects, and assess the triple bottom line for proposed infrastructure projects.

**Explain, when appropriate, how this new/revised curriculum supports the 10 goals of undergraduate education: <http://www.ugs.udel.edu/gened/>**

The proposed Minor in Sustainable Infrastructure supports the following goals of undergraduate education:

2. Learn to think critically to solve problems.

The coursework associated with this minor will challenge students to consider environmental, social, and economic implications of civil engineering development. For most students this will be a new, fundamentally different perspective from which to approach the problems facing the civil engineering profession.

4. Engage questions of ethics and recognize responsibilities to self, community, and society.

Responsibilities to community and society form the basis of sustainability, as the sustainability principles require engineers to consider the impact of development on the environment, community, and society – both present impact and potential future impact.

**Identify other units affected by the proposed changes:**

(Attach permission from the affected units. If no other unit is affected, enter “None”)

See attached support letters from the following departments:

Department of Business Administration: BUAD429 is an elective for the proposed minor; BUAD309 is a prerequisite for this course.

Center for Energy and Environmental Policy: ENEP410 is an elective for the proposed minor; this course has no prerequisites.

Department of Economics: ECON311 and ECON676 are electives for the proposed minor. ECON151 and ECON152 are prerequisites for ECON311; there are no prerequisites for ECON676.

Department of Electrical and Computer Engineering: ELEG415 and ELEG491 are electives for the proposed minor; neither course has prerequisites.

Department of Geography: GEOG422 and GEOG434 are electives for the proposed minor; neither course has prerequisites.

Department of Marine Science and Policy: MAST676 is an elective for the proposed minor; this course has no prerequisites.

Department of Mechanical Engineering: MEEG435 is an elective for the proposed minor; MEEG332 is a prerequisite for this course.

Department of Political Science & International Relations: POSC311 and POSC350 are electives for the proposed minor; neither course has prerequisites.

Department of Philosophy: PHIL448 is an elective for the proposed minor; this course has no prerequisites.

School of Public Policy and Administration: UAPP406, UAPP448, UAPP452, and LEAD451 are electives for the proposed minor. LEAD100 is a prerequisite for LEAD451; none of the listed UAPP courses have prerequisites.

Department of Sociology & Criminal Justice: SOCI471 is an elective for the proposed minor; this course has no prerequisites.

**Describe the rationale for the proposed program change(s):**

(Explain your reasons for creating, revising, or deleting the curriculum or program.)

In the two decades since the idea of sustainability was first applied to the built environment, the resulting movement has gained considerable strength. Over 32,000 building projects have been registered with the US Green Building Council, over 200,000 projects have been registered through the Building Research Establishment Environmental Assessment Method international standard, and over fifty countries worldwide have established national standards for sustainable construction. The application of sustainability principles has expanded to all aspects of the built environment, including site planning, storm water management, green materials, construction, and transportation planning. Civil engineers, as planners and designers of society's infrastructure, are at the forefront of the sustainable infrastructure effort.

The objective of this minor is to provide our undergraduate students with the knowledge and skills needed to contribute to this vital endeavor. With this as the goal, students graduating with a minor in sustainable infrastructure will have acquired:

- An understanding of the principles of sustainability.
- The fundamental tools needed to assess sustainability.
- The ability to evaluate the impact of proposed infrastructure development on limited natural resources.
- The ability to recognize and assess the political, economic, environmental, and social impacts of infrastructure development.
- The insight to develop solutions that minimize the effect of infrastructure development on the local community and across global boundaries.

The minor is open to all majors, though several courses included as electives in the minor may require completion of prerequisite courses for students in some majors. Availability of this minor, along with other sustainability minors, will strengthen the University's commitment to the Initiative for the Planet and its role as The Engaged University.

### Program Requirements:

(Show the new or revised curriculum as it should appear in the Course Catalog. If this is a revision, be sure to indicate the changes being made to the current curriculum and **include a side-by-side comparison** of the credit distribution before and after the proposed change.)

A Minor in Sustainable Infrastructure may be earned by a student in any University bachelor's degree program. To receive a Minor in Sustainable Infrastructure, the student must successfully complete a minimum of 15 credits as described below with a minimum grade of C- in each course.

All students must complete the following core course:

- CIEG402 Introduction to Sustainability Principles in Civil Engineering ..... 3 credits

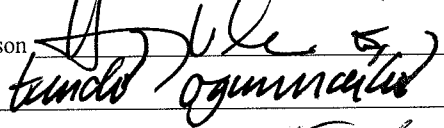
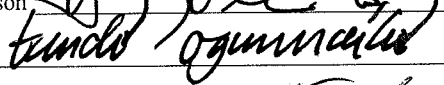
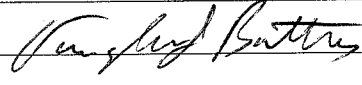
All students must complete one of the following core courses:

- CIEG403 Sustainability Applications in Infrastructure ..... 3 credits
- CIEG465 Engineers Without Borders ..... 3 credits

All students must complete three of the following sustainability-related breadth courses:

- ECON311 Economics of Developing Countries ..... 3 credits
- ENEP410 Political Economy of Environment ..... 3 credits
- LEAD451 Leadership for Sustainability ..... 3 credits
- BUAD429 Sustainability and Green Business ..... 3 credits
- GEOG422 Resources, Development, and the Environment ..... 3 credits
- POSC311 Politics of Developing Nations ..... 3 credits
- SOCI471 Disasters, Vulnerability, and the Environment ..... 3 credits
- POSC350 Politics and the Environment ..... 3 credits
- MAST676 Environmental Economics ..... 3 credits
- GEOG434 Plan Sustainable Communities & Regions ..... 3 credits
- UAPP452 International Development Policy & Administration ..... 3 credits
- PHIL448 Environmental Ethics ..... 3 credits
- ELEG415 Electric Power and Renewable Energy Systems ..... 3 credits
- ELEG491 Ethics/Impacts of Engineering ..... 3 credits
- MEEG435 Wind Power Engineering ..... 3 credits

### ROUTING AND AUTHORIZATION: (Please do not remove supporting documentation )

Department Chairperson  Date 12/17/12  
Dean of College  Date 12/18/2012  
Chairperson, College Curriculum Committee  Date 12/18/12  
Chairperson, Senate Com on UG or GR Studies \_\_\_\_\_ Date \_\_\_\_\_  
Chairperson, Senate Coordinating Com. \_\_\_\_\_ Date \_\_\_\_\_  
Secretary, Faculty Senate \_\_\_\_\_ Date \_\_\_\_\_  
Date of Senate Resolution \_\_\_\_\_ Date to be Effective \_\_\_\_\_  
Registrar \_\_\_\_\_ Program Code \_\_\_\_\_ Date \_\_\_\_\_  
Vice Provost for Academic Affairs & International Programs \_\_\_\_\_ Date \_\_\_\_\_  
Provost \_\_\_\_\_ Date \_\_\_\_\_  
Board of Trustee Notification \_\_\_\_\_ Date \_\_\_\_\_

## Shenton, Tripp

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**From:** Bauer, Gretchen M  
**Sent:** Wednesday, December 05, 2012 11:04 AM  
**To:** Shenton, Tripp  
**Subject:** RE: Request for approval of course(s) for new minor

Hi Tripp, the Department of Political Science and International Relations is pleased to see your proposal for minors in Environmental Sustainability and Sustainable Infrastructure, and we are pleased to have two of our classes, POSC 311 and POSC 350, listed among a group of elected classes for both minors. Please let us know if we can assist in any other way. Best, Gretchen

Gretchen Bauer  
Professor and Chair  
Political Science and IR  
University of Delaware  
302 831 2357  
[www.udel.edu/poscir](http://www.udel.edu/poscir)

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**From:** Shenton, Tripp  
**Sent:** Tuesday, December 04, 2012 12:03 PM  
**To:** Bauer, Gretchen M  
**Cc:** Shenton, Tripp  
**Subject:** Request for approval of course(s) for new minor  
**Importance:** High

Dear Gretchen,

The Department of Civil and Environmental Engineering is proposing two new minors, one in "Sustainable Infrastructure" and one in "Environmental Sustainability." The brief proposals are attached for your reference.

As you will see, for the "Sustainable Infrastructure" minor we will require the students to choose 3 "breadth" classes from a list of 14. Included in the breadth list are:  
POSC311 Politics of Developing Nations  
POSC350 Politics and the Environment

For the "Environmental Sustainability" minor we will require the students to choose 2 "breadth" classes from a list of 9. Included in the breadth list are:  
POSC311 Politics of Developing Nations  
POSC350 Politics and the Environment

At this time we expect the number of students in each minor at any one time to run between 10 and 20, thus with the large number of choices from the breadth lists we expect the impact on classes sizes to be minimal.

We would appreciate your support of these new minors by approving our request to include the above listed courses in the proposal.

Thank you very much

Tripp

## Shenton, Tripp

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**From:** Charles Boncelet <boncelet@UDel.Edu>  
**Sent:** Thursday, December 06, 2012 12:00 PM  
**To:** Shenton, Tripp  
**Cc:** Nelson, Deborah L.  
**Subject:** Re: Request for approval of course(s) for new minor  
  
**Importance:** High

We're curious about your "breadth" list. ELEG 415 is a technical course (though it certainly isn't one of our hardest courses). ELEG 491 is non-technical (it isn't on the college "breadth" list but should be).

We're fine with modest increases in enrollment in 415. I'm checking with the instructor of 491 to see what he thinks.

I suggest you don't call your list a "breadth" list as "breadth" has acquired a very specific meaning nowadays. (Personally I think the engineering degrees should require some "breadth" in other engineering subjects, but that's a discussion for another day.)

Charlie

On Dec 4, 2012, at 3:15 PM, Barner, Kenneth E. wrote:

> Charlie:

>

> This is your call, as it impacts the undergraduate program. Please just copy me on your response back to Tripp.

>

> Thanks.

>

> Ken

>

> From: Shenton, Tripp

> Sent: Tuesday, December 04, 2012 1:56 PM

> To: Barner, Kenneth E.

> Cc: Shenton, Tripp

> Subject: Request for approval of course(s) for new minor

> Importance: High

>

> Dear Ken,

>

> The Department of Civil and Environmental Engineering is proposing a new minor in "Sustainable Infrastructure;" the brief proposal is attached for your reference.

>

> As you will see, for the minor we will require the students to choose 3 "breadth" classes from a list of 14. Included in the breadth list are:

> ELEG415 Electric Power and Renewable Energy Systems

> ELEG491 Ethics/Impacts of Engineering

>

> At this time we expect the number of students in the minor at any one time to run between 10 and 20, thus with the large number of choices from the breadth lists we expect the impact on classes sizes to be minimal.

>  
> We would appreciate your support of the new minor by approving our request to include the above listed courses in the proposal.  
>  
> Thank you very much  
>  
> Tripp  
>  
> Harry W. "Tripp" Shenton III, Ph.D.  
> Professor and Chair  
> Department of Civil and Env. Engineering 301-B Dupont Hall University  
> of Delaware Newark, Delaware 19716  
> (302)831-2447  
> (302)831-3640 Fax  
> Email: [shenton@udel.edu](mailto:shenton@udel.edu)  
>  
>  
> <CEE Sustainable Infrastructure minor proposal 12\_4\_12.pdf>

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Charles Boncelet  
Electrical & Computer Engineering  
University of Delaware  
[boncelet@udel.edu](mailto:boncelet@udel.edu)



## Shenton, Tripp

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**From:** George Parsons <gparsons@UDel.Edu>  
**Sent:** Thursday, December 06, 2012 6:04 PM  
**To:** Shenton, Tripp  
**Cc:** Butkiewicz, James L  
**Subject:** Re: Request for approval of course(s) for new minor

Yes, I approve. Also note that ECON300 is no longer a prerequisite for ECON676. You need to strike that from your proposal. - George

On Thu, Dec 6, 2012 at 4:47 PM, Shenton, Tripp <[shenton@udel.edu](mailto:shenton@udel.edu)> wrote:

Thank you.

We received approval from Mark Moline on the MAST676.....so I will assume that we are ok on that one as well.

Thank you for your support

Tripp

Harry W. "Tripp" Shenton III, Ph.D.

Professor and Chair

Department of Civil and Env. Engineering

301-B Dupont Hall

University of Delaware

Newark, Delaware 19716

(302)831-2447

(302)831-3640 Fax

Email: [shenton@udel.edu](mailto:shenton@udel.edu)



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**From:** Butkiewicz, James L  
**Sent:** Thursday, December 06, 2012 2:19 PM  
**To:** Shenton, Tripp  
**Cc:** Parsons, George R.  
**Subject:** RE: Request for approval of course(s) for new minor

Dear Tripp,

I am happy to support your proposed minors including Econ 311.

Regarding Econ 676, the course is cross-listed and is an MAST course taught by Professor George Parson. Many economics graduate students enroll in this class, and a number also conduct research with George. I will defer to George regarding the inclusion of his class. If he supports its inclusion, I will also support it.

Jim

---

**From:** Shenton, Tripp  
**Sent:** Tuesday, December 04, 2012 12:03 PM  
**To:** Butkiewicz, James L  
**Cc:** Shenton, Tripp  
**Subject:** Request for approval of course(s) for new minor  
**Importance:** High

Dear James,

The Department of Civil and Environmental Engineering is proposing to two new minors, one in "Sustainable Infrastructure" and one in "Environmental Sustainability." The brief proposals are attached for your reference.

As you will see, for the "Sustainable Infrastructure" minor we will require the students to choose 3 "breadth" classes from a list of 14. Included in the breadth list are:

ECON311 Economics of Developing Countries

ECON676 Environmental Economics

For the "Environmental Sustainability" minor we will require the students to choose 2 "breadth" classes from a list of 9. Included in the breadth list are:

ECON676 Environmental Economics

At this time we expect the number of students in each minor at any one time to run between 10 and 20, thus with the large number of choices from the breadth lists we expect the impact on classes sizes to be minimal.

We would appreciate your support of these new minors by approving our request to include the above listed courses in the proposal.

Thank you very much

Tripp Shenton

Harry W. "Tripp" Shenton III, Ph.D.

Professor and Chair

Department of Civil and Env. Engineering

301-B Dupont Hall

University of Delaware

Newark, Delaware 19716

(302)831-2447

(302)831-3640 Fax

Email: shenton@udel.edu

## Shenton, Tripp

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**From:** Advani, Suresh G  
**Sent:** Thursday, December 06, 2012 5:15 PM  
**To:** Shenton, Tripp  
**Subject:** RE: Request for approval of course(s) for new minor

Approved

-----Original Message-----

From: Shenton, Tripp  
Sent: Thursday, December 06, 2012 4:47 PM  
To: Schwartz, Leonard W; Keefe, Michael; Advani, Suresh G  
Subject: RE: Request for approval of course(s) for new minor  
Importance: High

Thank you

Suresh if you are okay with all of this, if you could send me a basic "approved" email (to keep the emails to a minimum in the proposal!) I'd appreciate it.

Tripp

Harry W. "Tripp" Shenton III, Ph.D.  
Professor and Chair  
Department of Civil and Env. Engineering 301-B Dupont Hall University of Delaware Newark, Delaware 19716  
(302)831-2447  
(302)831-3640 Fax  
Email: [shenton@udel.edu](mailto:shenton@udel.edu)

-----Original Message-----

From: Len Schwartz [<mailto:schwartz@UDel.Edu>]  
Sent: Wednesday, December 05, 2012 1:41 PM  
To: Keefe, Michael  
Cc: Advani, Suresh G; Shenton, Tripp  
Subject: RE: Request for approval of course(s) for new minor

I am prepared to modify the requirement for any CE senior who wished to take the Wind Power course. If there are any takers, I will discuss the requirement with him/her and point out the section of any intro fluids book that treats airfoil theory. I cannot afford the time to teach airfoil theory in MEEG435.

Len

On Wed, 2012-12-05 at 12:52 +0000, Keefe, Michael wrote:

> Suresh,  
>  
> Since MEEG435 requires MEEG332 (Fluids II), it will be difficult for  
> any non mechanical engineering majors to have the prerequisite  
> necessary to register for the course. Of course, Civil Engineering  
> students could take our Fluids II as the two departments offer very  
> similar Fluids I courses (and accept each others courses) - though we  
> would have to over-ride as our junior-senior-level required courses  
> are open to majors only. That is not a problem, and I assume we would  
> be happy to do that for a couple of potentially interested civil  
> engineering students...

> Mike Keefe  
>  
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>

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> From: Advani, Suresh G  
> Sent: Tuesday, December 04, 2012 5:03 PM  
> To: Shenton, Tripp  
> Cc: Keefe, Michael; Schwartz, Leonard W  
> Subject: RE: Request for approval of course(s) for new minor  
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>  
>

> Tripp,  
>  
> I do not have any objection other than that only Len teaches this  
> course and I assume it is one of the electives and not a required  
> course so there is no pressure on us to offer it every year.  
>

> Mike and Len- any comments on this  
>

> Suresh  
>  
>  
>  
>

> From: Shenton, Tripp  
> Sent: Tuesday, December 04, 2012 1:58 PM  
> To: Advani, Suresh G  
> Cc: Shenton, Tripp  
> Subject: Request for approval of course(s) for new minor  
> Importance: High  
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>  
>

> Dear Suresh,  
>  
>  
>

> The Department of Civil and Environmental Engineering is proposing a  
> new minor in "Sustainable Infrastructure;" the brief proposal is  
> attached for your reference.

>

>

>

> As you will see, for the minor we will require the students to choose  
> 3 "breadth" classes from a list of 14. Included in the breadth list  
> are:

>

> MEEG435 Wind Power Engineering

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>

>

> At this time we expect the number of students in the minor at any one  
> time to run between 10 and 20, thus with the large number of choices  
> from the breadth lists we expect the impact on classes sizes to be  
> minimal.

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>

> We would appreciate your support of the new minor by approving our  
> request to include the above listed courses in the proposal.

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>

> Thank you very much

>

>

>

> Tripp

>

>

>

> Harry W. "Tripp" Shenton III, Ph.D.

>

> Professor and Chair

>

> Department of Civil and Env. Engineering

>

> 301-B Dupont Hall

>

> University of Delaware

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> Newark, Delaware 19716

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> (302)831-2447

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> (302)831-3640 Fax

>

> Email: [shenton@udel.edu](mailto:shenton@udel.edu)

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## Shenton, Tripp

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**From:** Butkiewicz, James L  
**Sent:** Thursday, December 06, 2012 2:19 PM  
**To:** Shenton, Tripp  
**Cc:** Parsons, George R.  
**Subject:** RE: Request for approval of course(s) for new minor

Dear Tripp,

I am happy to support your proposed minors including Econ 311.

Regarding Econ 676, the course is cross-listed and is an MAST course taught by Professor George Parson. Many economics graduate students enroll in this class, and a number also conduct research with George. I will defer to George regarding the inclusion of his class. If he supports its inclusion, I will also support it.

Jim

---

**From:** Shenton, Tripp  
**Sent:** Tuesday, December 04, 2012 12:03 PM  
**To:** Butkiewicz, James L  
**Cc:** Shenton, Tripp  
**Subject:** Request for approval of course(s) for new minor  
**Importance:** High

Dear James,

The Department of Civil and Environmental Engineering is proposing to two new minors, one in "Sustainable Infrastructure" and one in "Environmental Sustainability." The brief proposals are attached for your reference.

As you will see, for the "Sustainable Infrastructure" minor we will require the students to choose 3 "breadth" classes from a list of 14. Included in the breadth list are:  
ECON311 Economics of Developing Countries  
ECON676 Environmental Economics

For the "Environmental Sustainability" minor we will require the students to choose 2 "breadth" classes from a list of 9. Included in the breadth list are:  
ECON676 Environmental Economics

At this time we expect the number of students in each minor at any one time to run between 10 and 20, thus with the large number of choices from the breadth lists we expect the impact on classes sizes to be minimal.

We would appreciate your support of these new minors by approving our request to include the above listed courses in the proposal.

Thank you very much

Tripp Shenton

Harry W. "Tripp" Shenton III, Ph.D.  
Professor and Chair



## Shenton, Tripp

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**From:** Moline, Mark Alan  
**Sent:** Wednesday, December 05, 2012 10:12 AM  
**To:** Shenton, Tripp  
**Cc:** Lopez, Janis C.  
**Subject:** RE: Request for approval of course(s) for new minor

Hi Tripp,

In consultation with the faculty, we would like to support your request to include these course in the two new minors. It was pointed out to me that you need to slightly modify the proposal given that the prerequisite of ECON300 is being dropping for MAST/ECON676. ECON300 longer exists and now there is no formal prerequisite.

Thanks,

Mark

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**From:** Shenton, Tripp  
**Sent:** Tuesday, December 04, 2012 12:03 PM  
**To:** Moline, Mark Alan  
**Cc:** Shenton, Tripp  
**Subject:** Request for approval of course(s) for new minor  
**Importance:** High

Dear Mark,

The Department of Civil and Environmental Engineering is proposing to two new minors, one in "Sustainable Infrastructure" and one in "Environmental Sustainability." The brief proposals are attached for your reference.

As you will see, for the "Sustainable Infrastructure" minor we will require the students to choose 3 "breadth" classes from a list of 14. Included in the breadth list is:  
MAST676 Environmental Economics (cross-listed as ECON676)

For the "Environmental Sustainability" minor we will require the students to choose 2 "breadth" classes from a list of 9. Included in the breadth list is:  
MAST676 Environmental Economics (cross-listed as ECON676)

At this time we expect the number of students in each minor at any one time to run between 10 and 20, thus with the large number of choices from the breadth lists we expect the impact on classes sizes to be minimal.

We would appreciate your support of these new minors by approving our request to include the above listed courses in the proposal.

Thank you very much

Tripp Shenton

Harry W. "Tripp" Shenton III, Ph.D.  
Professor and Chair



## Shenton, Tripp

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**From:** Ware, Leland Brett  
**Sent:** Tuesday, December 04, 2012 8:33 PM  
**To:** Shenton, Tripp  
**Subject:** RE: Request for approval of course(s) for new minor

Dear Shenton,  
You have our support. Note that only 406 is offered regularly.

Leland Ware  
Louis L. Redding Professor of Law & Public Policy  
University of Delaware  
<http://www.ipa.udel.edu/directory/homepages/ware.html>

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**From:** Shenton, Tripp  
**Sent:** Tuesday, December 04, 2012 1:53 PM  
**To:** Ware, Leland Brett  
**Cc:** Shenton, Tripp; Rich, Daniel; Helfman, Audrey L  
**Subject:** Request for approval of course(s) for new minor

Dear Leland,

The Department of Civil and Environmental Engineering is proposing a new minor in "Sustainable Infrastructure;" the brief proposal is attached for your reference.

As you will see, for the minor we will require the students to choose 3 "breadth" classes from a list of 14. Included in the breadth list are:

LEAD451 Leadership for Sustainability  
UAPP452 International Development Policy and Administration  
UAPP406 Plan Sustainable Communities and Regions (cross-listed with GEOG434)

At this time we expect the number of students in the minor at any one time to run between 10 and 20, thus with the large number of choices from the breadth lists we expect the impact on classes sizes to be minimal.

We would appreciate your support of the new minor by approving our request to include the above listed courses in the proposal.

Thank you very much

Tripp Shenton

Harry W. "Tripp" Shenton III, Ph.D.  
Professor and Chair  
Department of Civil and Env. Engineering  
301-B Dupont Hall  
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Newark, Delaware 19716  
(302)831-2447  
(302)831-3640 Fax  
Email: [shenton@udel.edu](mailto:shenton@udel.edu)



✓

## Shenton, Tripp

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**From:** Becker, Thomas E  
**Sent:** Thursday, December 13, 2012 11:02 AM  
**To:** Shenton, Tripp  
**Subject:** RE: Request for approval of course(s) for new minor

Hi Tripp,

We've now checked prior enrollments and likely staffing for the future and I can confirm that the department of business administration supports your inclusion of BUAD429, "Selected Topics in Management: Sustainability and Green Business" for your two new minors.

Best wishes,

Tom

**Tom Becker | Chairperson and Professor**  
*Department of Business Administration*  
237 Alfred Lerner Hall | Newark, DE 19716  
P: 302-831-6822 | F: 302-831-4196 | E: [beckert@udel.edu](mailto:beckert@udel.edu)  
Web: [www.buec.udel.edu/beckert/](http://www.buec.udel.edu/beckert/)



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**From:** Shenton, Tripp  
**Sent:** Thursday, December 13, 2012 10:05 AM  
**To:** Becker, Thomas E  
**Cc:** Shenton, Tripp  
**Subject:** RE: Request for approval of course(s) for new minor  
**Importance:** High

Tom.....we are presenting our minor proposals to our college committee for approval on Monday. If we could get a decision from you by Monday morning on the BUAD429050 that would be much appreciated.

Thanks

Tripp

Harry W. "Tripp" Shenton III, Ph.D.  
Professor and Chair  
Department of Civil and Env. Engineering  
301-B Dupont Hall  
University of Delaware  
Newark, Delaware 19716  
(302)831-2447

(302)831-3640 Fax  
Email: [shenton@udel.edu](mailto:shenton@udel.edu)

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**From:** Becker, Thomas E  
**Sent:** Wednesday, December 05, 2012 8:52 AM  
**To:** Shenton, Tripp  
**Subject:** RE: Request for approval of course(s) for new minor

Tripp, I'll student this issue and get back to you within a few days. Tom

**Tom Becker | Chairperson and Professor**  
*Department of Business Administration*  
237 Alfred Lerner Hall | Newark, DE 19716  
**P:** 302-831-6822 | **F:** 302-831-4196 | **E:** [beckert@udel.edu](mailto:beckert@udel.edu)  
**Web:** [www.buec.udel.edu/beckert/](http://www.buec.udel.edu/beckert/)



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**From:** Shenton, Tripp  
**Sent:** Tuesday, December 04, 2012 12:02 PM  
**To:** Becker, Thomas E  
**Cc:** Shenton, Tripp  
**Subject:** Request for approval of course(s) for new minor  
**Importance:** High

Dear Thomas,

The Department of Civil and Environmental Engineering is proposing to two new minors, one in "Sustainable Infrastructure" and one in "Environmental Sustainability." The brief proposals are attached for your reference.

As you will see, for the "Sustainable Infrastructure" minor we will require the students to choose 3 "breadth" classes from a list of 14. Included in the breadth list is:

BUAD429050 Selected topics in Management: Sustainability and Green Business

For the "Environmental Sustainability" minor we will require the students to choose 2 "breadth" classes from a list of 9. Included in the breadth list is:

BUAD429050 Selected topics in Management: Sustainability and Green Business

At this time we expect the number of students in each minor at any one time to run between 10 and 20, thus with the large number of choices from the breadth lists we expect the impact on classes sizes to be minimal.

We would appreciate your support of these new minors by approving our request to include the above listed courses in the proposal.

Thank you very much

Tripp Shenton



## Shenton, Tripp

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**From:** Dougherty, Lisa  
**Sent:** Thursday, December 13, 2012 10:42 AM  
**To:** Shenton, Tripp  
**Subject:** FW: FW: Request for approval of course(s) for new minor

Hi Tripp,

Please see JB's response.

Best, Lisa

*Lisa Dougherty*  
*CEEP*  
*Academic Cordinator*  
*(302) 831-8405*

*Students always include your ID#*

**From:** John Byrne  
**Sent:** Thursday, December 13, 2012 10:37 AM  
**To:** Dougherty, Lisa  
**Subject:** Re: FW: Request for approval of course(s) for new minor

Hi Lisa,

Please let Tripp know I am happy with both.

But I have one suggestion -- for the Sustainable Infrastructure minor, there are energy course options listed for other depts. Could the author consider adding one or two from our annual offerings? Specifically, would it be possible to add:

ENEP 424 Sustainable Energy Policy and Planning  
ENEP 425 Energy Policy and Administration

Thanks, JB

--- On **Thu, 12/13/12**, Dougherty, Lisa <[ldou@udel.edu](mailto:ldou@udel.edu)> wrote:

From: Dougherty, Lisa <[ldou@udel.edu](mailto:ldou@udel.edu)>  
Subject: FW: Request for approval of course(s) for new minor  
To: "[jbnov@yahoo.com](mailto:jbnov@yahoo.com)" <[jbnov@yahoo.com](mailto:jbnov@yahoo.com)>  
Date: Thursday, December 13, 2012, 10:11 AM

Please review.

Best, Lisa

*Lisa Dougherty*

*CEEP*

*Academic Cordinator*

*(302) 831-8405*

*Students always include your ID#*

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**From:** Shenton, Tripp  
**Sent:** Thursday, December 13, 2012 10:10 AM  
**To:** Dougherty, Lisa  
**Cc:** Shenton, Tripp  
**Subject:** FW: Request for approval of course(s) for new minor  
**Importance:** High

Lisa...I sent the email below to JB on 12/4 and haven't heard back from him. It is for including ENEP410 as an elective course in two new minors we are proposing. We are presenting these to the college committee on Monday for approval. Having a decision before then would be helpful. If you can get JB to take a look at it, or pass it along to someone who can make the decision I would appreciate it.

Thanks

Tripp

Harry W. "Tripp" Shenton III, Ph.D.

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Email: [shenton@udel.edu](mailto:shenton@udel.edu)

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**From:** Shenton, Tripp  
**Sent:** Tuesday, December 04, 2012 12:03 PM  
**To:** Byrne, John Michael  
**Cc:** Shenton, Tripp  
**Subject:** Request for approval of course(s) for new minor  
**Importance:** High

Dear JB,

The Department of Civil and Environmental Engineering is proposing to two new minors, one in “Sustainable Infrastructure” and one in “Environmental Sustainability.” The brief proposals are attached for your reference.

As you will see, for the “Sustainable Infrastructure” minor we will require the students to choose 3 “breadth” classes from a list of 14. Included in the breadth list are:

ENEP410 Political Economy of Environment

For the “Environmental Sustainability” minor we will require the students to choose 2 “breadth” classes from a list of 9. Included in the breadth list are:

ENEP410 Political Economy of Environment

At this time we expect the number of students in each minor at any one time to run between 10 and 20, thus with the large number of choices from the breadth lists we expect the impact on classes sizes to be minimal.

We would appreciate your support of these new minors by approving our request to include the above listed

courses in the proposal.

Thank you very much

Tripp

Harry W. "Tripp" Shenton III, Ph.D.

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## Shenton, Tripp

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**From:** Tracy DeLiberty <tracyd@UDeL.Edu>  
**Sent:** Tuesday, December 04, 2012 7:46 PM  
**To:** Shenton, Tripp  
**Cc:** Dentel, Steven K  
**Subject:** Re: Request for approval of course(s) for new minor

Tripp,

I just sent a message to Steve Dentel who emailed me last week about the minor your program is proposing. If there is still time, I would like to talk with Steve about the minor. You have caught us at a very busy time with a faculty hire taking place and attending a conference this week. I have two initial concerns, one is with the name "Environment Sustainability" minor with our undergraduate Environmental Studies major very much focused on sustainability. I am very sensitive that we do not own the name, but wonder if you could add a qualify to the minor name to add its engineering focus. We are happy to have you include our courses within the minor. My other concern is that we currently have enrollment cap issues with Geog422. Hopefully we can overcome these with realignment of faculty courses, but its an issue to highlight at the moment. Those are my two initial concerns. Please let me know if Steve and I have a chance to talk. Tracy

--

Dr. Tracy DeLiberty  
Chair & Associate Professor  
Pearson Hall, Room 216  
Department of Geography  
University of Delaware

[tracyd@udel.edu](mailto:tracyd@udel.edu)  
(302) 831-4084  
(302) 831-6654 FAX

On 12/4/12 12:03 PM, Shenton, Tripp wrote:

Dear Tracy,

The Department of Civil and Environmental Engineering is proposing to two new minors, one in "Sustainable Infrastructure" and one in "Environmental Sustainability." The brief proposals are attached for your reference.

As you will see, for the "Sustainable Infrastructure" minor we will require the students to choose 3 "breadth" classes from a list of 14. Included in the breadth list are:  
GEOG422 Resources, Development and the Environment  
GEOG434 Plan Sustainable Communities and Regions (cross-listed as UAPP406)

For the "Environmental Sustainability" minor we will require the students to choose 2 "breadth" classes from a list of 9. Included in the breadth list are:  
GEOG320 Water and Society  
GEOG422 Resources, Development and the Environment

At this time we expect the number of students in each minor at any one time to run between 10 and 20, thus with the large number of choices from the breadth lists we expect the impact on classes sizes to be minimal.

We would appreciate your support of these new minors by approving our request to include the above listed courses in the proposal.

Thank you very much

Tripp Shenton

Harry W. "Tripp" Shenton III, Ph.D.  
Professor and Chair  
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## Shenton, Tripp

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**From:** Steve Dentel <dentel@UDel.Edu>  
**Sent:** Wednesday, December 12, 2012 10:03 PM  
**To:** Shenton, Tripp  
**Subject:** Re: Minor proposals

**Importance:** High

Tripp,

I met with Tracy DeLiberty and Del Levia in Geography - they're on board with the name of the minor and the course listings.

I have not followed up on the ELEG items and will get to that tomorrow. But so far, no changes needed to the draft.

Steve

---

Steven K. Dentel, Ph.D., P.E., DEE  
Professor, Department of Civil and Environmental Engineering  
University of Delaware, Newark DE 19716 USA  
Tel: 302-831-8120 Fax: 302-831-3640  
<http://ce.udel.edu/~dentel/>

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----- Original message -----

**Date:** Tue, 11 Dec 2012 20:57:47 +0000

**From:** "Shenton, Tripp" <[shenton@UDel.Edu](mailto:shenton@UDel.Edu)>

**Subject:** Minor proposals

**To:** "Dentel, Steven K" <[dentel@UDel.Edu](mailto:dentel@UDel.Edu)>, "Jayne, Allen A" <[ajayne@UDel.Edu](mailto:ajayne@UDel.Edu)>

**Cc:** "Shenton, Tripp" <[shenton@UDel.Edu](mailto:shenton@UDel.Edu)>

Steve, Allen....

I will not be here Friday. I'd like to have the minor proposals by Thursday am so I can review them and we can have them ready to go by COB Thursday...for the Monday EAC meeting.

The EAC mtg is Monday at 11:30...if you can attend that would be great. If not.....not a problem.

Thanks

## Shenton, Tripp

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**From:** schueler@UDel.Edu  
**Sent:** Tuesday, December 11, 2012 10:47 AM  
**To:** Shenton, Tripp  
**Cc:** Schueler, George Frederick; Draper, George Timothy  
**Subject:** Re: Request for approval of course(s) for new minor

**Importance:** High

Harry,

The Philosophy Department is happy to support these new minors and to approve the listing of our course in each one.

Best wishes,

Fred Schueler

G. F. Schueler

Email: [schueler@udel.edu](mailto:schueler@udel.edu)

Web Site: <http://udel.edu/~schueler/>

NASA Climate Change Site:

<http://climate.nasa.gov/>

----- Original message -----

>Date: Mon, 10 Dec 2012 14:37:31 +0000

>From: "Shenton, Tripp" <[shenton@UDel.Edu](mailto:shenton@UDel.Edu)>

>Subject: Request for approval of course(s) for new minor

>To: "Schueler, George Frederick" <[schueler@UDel.Edu](mailto:schueler@UDel.Edu)>

>Cc: "Shenton, Tripp" <[shenton@UDel.Edu](mailto:shenton@UDel.Edu)>, "Powers, Thomas Michael"

><[tpowers@UDel.Edu](mailto:tpowers@UDel.Edu)>

>

> Dear Fred,

>

>

>

>

> The Department of Civil and Environmental  
> Engineering is proposing to two new minors, one in  
> "Sustainable Infrastructure" and one in  
> "Environmental Sustainability." The brief proposals  
> are attached for your reference.

>

>

>

> As you will see, for the "Sustainable  
> Infrastructure" minor we will require the students

- > to choose 3 "breadth" classes from a list of 14.
- > Included in the breadth list are:
- >
- > PHIL448 Environmental Ethics
- >
- >
- >
- > For the "Environmental Sustainability" minor we will
- > require the students to choose 2 "breadth" classes
- > from a list of 10. Included in the breadth list are:
- >
- > PHIL448 Environmental Ethics
- >
- >
- >
- > At this time we expect the number of students in
- > each minor at any one time to run between 10 and 20,
- > thus with the large number of choices from the
- > breadth lists we expect the impact on classes sizes
- > to be minimal.
- >
- >
- >
- > Tom Powers recommended the course for the minors and
- > we feel it is very well suited for them.
- >
- >
- >
- > We would appreciate your support of these new minors
- > by approving our request to include the above listed
- > courses in the proposal.
- >
- >
- >
- > Thank you very much
- >
- >
- >
- > Tripp
- >
- >
- >
- > Harry W. "Tripp" Shenton III, Ph.D.
- >
- > Professor and Chair
- >
- > Department of Civil and Env. Engineering
- >
- > 301-B Dupont Hall
- >
- > University of Delaware
- >