



University Courses & Curricula Committee 2017-2018

November 8, 2017
 Talley Student Union 4140
 12:45pm-2:45pm

Call to Order 12:45pm

- Welcome from Chair Elect Marta Klesath
- Remarks and Updates from OUCCAS/DASA (Deadline Reminder)
- Approval of UCCC October 25th 2017 Minutes
- Course and Curricular Business

New Business

Consent Agenda		
Action	Type	Notes
BUS 459 Business Analytics Practicum	Minor Revision	Adjusting term offering
ET 240 Wind and Hydroelectric Energy Assessment	Drop	Course being Dropped
ET 484 Practice of Renewable Energy Assessments	Drop	Course being Dropped
FLS 395 Study Abroad Programs in Spanish	Minor Revision	Revising Title and Description
HESM 328 Dance Composition II	Minor Revision	Adjusting term offering
HI 307 Jewish History	Minor Revision	Revising grading adding S/U option and removing requisites
HI 321 Ancient and Medieval Science	Minor Revision	Removing requisites
HI 322 Rise of Modern Science	Minor Revision	Removing requisites
HI 338 Empire, War, and Revolution in Russia	Minor Revision	Removing requisites
HI 341 Technology in History	Minor Revision	Removing requisites
HI 370 Modern Egypt	Minor Revision	Removing requisites
HI 374 Visual Culture of Modern South Asia	Minor Revision	Removing requisites
HI 381 NGO Nonprofits in a Global Context	Minor Revision	Removing requisites
USC 101 Introduction to University Education I	Minor Revision	Minor description update
USC 102 Introduction to University Education II	Minor Revision	Minor description update

University College			
Presenter	Reviewers	Action	Type
Beller	Hessling, Nadvi, Bruce	HESF 113 High Intensity Conditioning	New Course
Beller	Trivedi, Krause, Ferguson	MUS 135 Symphonic Band	New Course
Fath	Cherry, Lindsay, Kotek	MUS 370 Intermediate Songwriting using Digital Audio Workstations	New Course

College of Natural Sciences			
Presenter	Reviewers	Action	Type
Lindsay	Orphanides, Beller, Nadvi	CNR 295 Special Topics in College of Natural Resources	Revising: Grading method to allow GRD
Lindsay	Seracino, Griffin Hillis, Despain	ET 255 Hydro, Wind, and Bioenergy Assessment	Revising: title, university competencies attribute, description, objectives, SLOs
Lindsay	Fath, Krause, Robinson	Renewable Energy Assessment Certificate	Revising Course list
Lindsay	Podurgal, Rieder, Hessling	Renewable Energy Assessment Minor	Revising Course list

Discussion: Vote on Electronic Voting protocol proposed by OUCCAS.

Notes:

- All linked course actions are viewable in CIM.
- To view actions, please click on the hyperlink. You may need to use your Unity ID to log in.
- If you experience issues logging in, please go to <https://next-catalog.ncsu.edu/courseadmin/> and type the course prefix and number into the search bar.

SLO = Student Learning Outcomes

University Courses and Curricula CommitteeOctober 25, 2017
Talley Student Union 4140
Call to Order: 12:48 pm

Members Present: Chair Helmut Hergeth, Amanda Beller, Elizabeth Fath, Andreas Orphanides, Kathleen Rieder, Richard Podural, Scott Ferguson, Marta Klesath, Edwin Lindsay, Megan Cherry, Shweta Trivedi, Walter Robinson, Berkley Griffin Hillis, Peter Hessling, Jackie Bruce, Scott Despain, Wendy Krause, Erin Peterson, Rudi Seracino, Jackie Bruce, Zeenat Nadvi

Members Absent: Richard Kotek

Guest: Jane Lubischer, Kristen Schaffer

Ex-Officio Members Present: Lexi Hergeth, Li Marcus, Rebecca Swanson, Kyle Pysker, Charles Clift, Jordan Luzander, Bret Smith

WELCOME AND INTRODUCTIONS

- **Remarks from Chair Helmut Hergeth-** Welcomed the committee members introduced guests.
- **Remarks and Updates from OUCCAS/DASA-** Bret Smith told the committee that OUCCAS, in collaboration with the Chair, will be coming up with a few statements about the official process of UCCC and what should be prepared before coming to UCCC. This information will be presented to be discussed and reviewed at UCCC as well at the next meeting. Bret Smith also spoke about involving the Associate Deans to clarify the procedures at the college curricula committee level. Li Marcus thanked the committee members that participated in the OUCCAS assessment and invited any members who are interested to contact her to participate. She will be bringing the results and themes of the assessment to Drs. Smith and Mullen as well as to UCCC.
- **Approval of the Minutes from October 11th 2017 – Approved Unanimously**
 - Discussion: Member Walter Robinson moved to approve. Minutes from the previous meeting were presented and approved without further discussion.

NEW BUSINESS

- **Consent Agenda -Approved Unanimously**
(ARC 241, DF 101, EC 351, EC 413, EC 451, 13MTHEDST)
Discussion: Member Scott Despain moved to approve.
- **BSC 305 Professional Development for Life Science Studies-Approved Unanimously**
Discussion: Member Walter Robinson presented the course. Presenter asked if the course having no pre-requisite for second or third year standing is appropriate/desirable for this course. Guest Jane Lubischer indicated this would depend on the individual student as the department has many transfer students and prerequisites would affect their enrollment. The department elected to leave the course without any requisites and the course was approved without further discussion.
- **Evolutionary Biology (17EVOM) -Approved Unanimously**
Discussion: Member Marta Klesath presented the curricular action.
- **Forensic Science (17FSCM)-Approved Unanimously**
Discussion: Member Marta Klesath presented the curricular action.
- **ARC 141 Introduction to Architectural History –Approved Unanimously with friendly suggestion.**
Discussion: Member Kathleen Rieder presented the course. Presenter introduced the professor of record, guest Kristen Schaffer. Member asked if CIM indicates the grading option is Letter grade only and the syllabus includes section of the syllabus should be excluded. Guest indicated they plan to only allow for letter grading is correct and indicated she will remove the section in the syllabus about pass/fail grading.
- **Sports Science Minor -Approved Unanimously**
Discussion: Member Amanda Beller presented curricular action.

- **NTR 495 Special Topics in Nutrition -*Approved Unanimously***
Discussion: Member Shweta Trivedi presented the course.

Discussion: Electronic Voting. No additional feedback was provided since the last meeting. Both Li Marcus and Chair Helmut Hergeth stressed that electronic voting would be a rare occurrence and would not want to get in the way of the positive connections and networking opportunities or the debate-style discussions inherent in an in-person meeting. Li Marcus suggested parameters for electronic meetings show; 3 or fewer items outside of the consent agenda (no curricular actions outside of the consent agenda), during Sep/Oct or Mar/Apr due to enrollment. If an agenda met these parameters, OUCAS would reach out to the presenters and reviewers to verify their consent to do an electronic vote. A notification of the electronic vote would go out with the agenda a week before the in-person meeting would have been. If there were any significant discussion on actions, the action would be pulled from the electronic agenda to be discussed in person at the next meeting. Members elected to have Li write up these parameters and send them out for voting by the committee at the next meeting.

Meeting adjourned at 1:06 pm

Respectfully submitted by Lexi Hergeth

North Carolina State University

This request has been reviewed and approved by the appropriate campus committees and authorities.

Endorsed By:

JMT

Oct 13, 2017

Head, Department/Program

Date

Recommended By:

Lara Pacific
Chair, College Curriculum Committee

10-16-17

Date

Endorsed By:

Adrian G. Kukma
College Dean

10/16/2017

Date

Recommended By:

Vice Provost, DELTA (if DE degree/certificate)

Date

Recommended By:

Chair, University Courses & Curricula Committee

Date

Approved By:

Dean, (DASA or the Graduate School)

Date

Recommended By:

Dean's Council

Date

Approved By:

Executive Vice Chancellor and Provost

Date

Approved By:

Chancellor

Date

**N. C. STATE UNIVERSITY
UNIVERSITY UNDERGRADUATE CERTIFICATE PROGRAM FORM**

COLLEGE/DEPARTMENT/PROGRAM NAME:

College of Natural Resources/Forestry and Environmental Resources

CERTIFICATE TITLE:

Renewable Energy Assessment

TYPE OF PROPOSAL:

New:

Revision:

Discontinuation:

CIP DISCIPLINE#: 15.0507

PROPOSED OR CURRENT PROGRAM CODE: 15REACTU

CERTIFICATE TYPE: On-campus Distance On-campus & Distance

PROPOSED EFFECTIVE DATE: 1/2018

APPROVED EFFECTIVE DATE:

ATTACHMENTS TO BE INCLUDED:

- Statement of Justification for Program
- Statement of Program Objectives
- Proposed Revision(s) with Reasons
- List of Program Requirements (use attached Format B)
- Catalog Description of Proposed Certificate
- Number of Certificate recipients in the past Five Years
- Projected Enrollment
- Admission Requirements
- Statement on Other Departments Likely to be Affected and Summary of Consultations with those Departments
- Signature Page
- Routing Form

**Undergraduate Certificate in Renewable Energy Assessment
Environmental Technology & Management, Department of Forestry & Environmental Resources,
College of Natural Resources**

1. Statement of Justification for Program (Revisions): Not required for revision

2. Statement of Program Objectives: The objectives of this minor are to prepare science and non-science undergraduate majors for careers that assess and implement renewable energy technologies for various stakeholders and landscapes to meet growing demands in an emerging workforce, to educate and train non-agricultural majors in important agricultural assessment practices required for renewable energy technologies such as wind, solar, and bioenergy that are particularly relevant to North Carolina, and to promote availability of these courses to sister colleges and programs from business to education to social sciences at NCSU. Online delivery provides a flexible educational program designed to attract students to these merging areas of agricultural management with renewable energy technologies. The courses developed in this program target undergraduates across campus from all disciplines; we strongly advocate and support interdisciplinary participation by the undergraduate community at NC State.

3. Proposed Revision(s) with Reasons: The Renewable Energy Assessment (REA) online undergraduate certificate is being revised to compliment the development of a graduate certificate in renewable energy assessment within the Masters of Environmental Assessment, a Delta-funded program. The undergraduate REA program requires 12 hours for the online certificate. Required courses for the REA certificate are ET 120 and ET 262. Electives for the REA program are ET 240, ET 255, and ET 220.

The requested changes will keep the certificate at 12 hours. The certificate will add an elective course, ES 300 Energy and Environment (3 hrs). The certificate will drop ET 240 Wind and Hydro Renewable Assessment as an elective. Content from ET 240 will be blended with ET 255 (Assessing lands for bioenergy) for spring 2018 and thus still provide Wind and Hydro energy course material to students. A requested revision to ET 255 for a course title change has also been submitted as well as dropping ET 240 from the catalog.

These requested changes reflect alignment of the online certificate with undergraduate feedback and enrollment interest, departmental support for instruction, and the development of new courses for a graduate online certificate in Renewable Energy Development (RED) to be offered in the Online Masters of Environmental Assessment.

Adding ES 300 to the minor will improve the breadth of the minor and provide students important context to renewable energy technologies relative to other energy systems in society. Dr. Krim, instructor for ES 300, was consulted on this change (please see below).

4. List of Program Requirements: See attached Format B

5. Catalog Description of Certificate: The Undergraduate Certificate Renewable Energy Assessment provides students the opportunity to assess and implement renewable energy technologies. The certificate is intended to provide students with the ability to assess facilities and land for renewable energy production. The certificate is achieved by taking 12 credit hours in renewable energy assessment topics. The certificate is designed to provide students on campus and other not enrolled in a degree

program at North Carolina State University opportunities to learn basic renewable energy assessment techniques and principles that are useful in emerging careers in renewable energy.

6. Number of Certificate Recipients in the past 5 years:

Academic Year	Number of Graduates
2014-2015	4
2015-2016	6
2016-2017	2

7. Projected Enrollment: We anticipate enrollment of 25 students per year. We would like to grow the enrollment for the certificate to 50 students per year in five years.

8. Requirements for admission: Students must have an overall GPA of 2.5 GPA to be accepted inot the certificate program in Renewable Energy Assessment.

9. Consultations: Please see below an email to Dr. Krim with the request to list ES 300 as a requirement for the REA minor and as an elective for the REA undergraduate online certificate.

----- Forwarded message -----

From: **Jacqueline Krim** <jkrim@ncsu.edu>
Date: Thu, Sep 14, 2017 at 3:10 PM
Subject: Re: Request to include ES 300 as an elective to the REA minor and certificate
To: Elizabeth Nichols <egnichol@ncsu.edu>
Cc: William Winner <wewinner@ncsu.edu>

Hi Eliz,
Of course yes! I also cc Bill Winner, in case he has anything to add and/or you would need someone with authority over the ES program to also add approval.
Best wishes,
Jackie

Jacqueline Krim
Distinguished University Professor of Physics
North Carolina State University
Raleigh, NC 27695-7518

email: jkrim@ncsu.edu
Partners III Office Phone: (919) 513-2684
website: www.physics.ncsu.edu/nanotribology

On Thu, Sep 14, 2017 at 2:15 PM, Elizabeth Nichols <egnichol@ncsu.edu> wrote:
Hello Jackie

I manage the Renewable Energy Assessment program on campus and we are revising our program as we work towards developing a companion graduate online certificate as part of our well-subscribed Online Master's of Environmental Assessment.

I wanted to ask you if we can list ES 300 as an elective to the undergraduate REA minor. Most of our minors are ES students. I have also reviewed the description of the course, and I think the diversity and breadth of the course will be a nice compliment to the emphasis of the REA courses on renewable technologies and the practice of assessing sites for implementation of wind, solar, hydro, or bioenergy.

The nice outcome for ES students is that taking ES 300 can count towards their requirements for their ES major and also the REA minor without a conflict.

We typically have 10 students getting the REA minor each year, and I would estimate 7 of them are ES students. So, I guess one question is whether your course could accommodate 3 or 5 non-ES students (generally they are ETM, Natural Resource, or Engineering majors). I do not anticipate the pre-reqs for ES 300 as a problem for those majors. If pre-reqs do pose a problem for our non-science majors getting the REA minor, they can opt to just get the REA certificate. I would not expect you to waive your pre-reqs for your course for them.

Would you let me know if this is agreeable to you as the instructor.

Thank you for your time and I'm happy to discuss by phone if that will be helpful to your response.

--

Eliz

Elizabeth Guthrie Nichols, Ph.D.
Professor, Environmental Technology and Management
Dept. of Forestry and Environmental Resources
College of Natural Resources
North Carolina State University
910.658.2800 (c)
919.513.4832 (o)
<http://cnr.ncsu.edu/blogs/elizabethnichols/>
<http://ea.cals.ncsu.edu/>
<http://research.cnr.ncsu.edu/blogs/rea/>

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I limit my email management to only two times a day which may result in a delayed response.

Renewable Energy Assessment

Description

The Undergraduate Certificate Renewable Energy Assessment provides students the opportunity to assess and implement renewable energy technologies. The certificate is intended to provide students with the ability to assess facilities and land for renewable energy production. The certificate is achieved by taking 12 credit hours in renewable energy assessment topics. The certificate is designed to provide students on campus and other not enrolled in a degree program at North Carolina State University opportunities to learn basic renewable energy assessment techniques and principles that are useful in emerging careers in renewable energy.

Program Coordinator

Dr. Elizabeth Nichols
Jordan Hall Addition 2225, Box 8008
919.513.4832
elizabeth_nichols@ncsu.edu

Curriculum

A grade of 'C' (2.0) or better is required for certificate courses.

Required Courses:

- ET 120 Introduction to Renewable Energy Technologies and Assessment (3 credits)
- ET 262 Renewable Energy Adoption: Barriers and Incentives (3 credits)

Elective Courses: Choose 2 (6 credits) from the courses below:

- ET 220 Solar Photovoltaic Energy Assessment (3 credits)
- ET 240 Wind/Hydro Energy Assessment (3 credits)
- ET 255 Assessing Lands for Bioenergy Production (3 credits)

Total Credit Hours Required: 12 hours

Admissions Requirement

Students must have an overall GPA of 2.5 to be accepted to the certificate program in Renewable Energy Assessment.

Plan of Study

Contact the Program Coordinator.

Registration Information

Contact the Program Coordinator.

Academic Structure

Term Effective: 01/2015

Plan Code: 15REACTU, 32REACTU

CIP Code: 15.0507

Description: Undergraduate Certificate in Renewable Energy Assessment

Offered: Distance Education

Renewable Energy Assessment

Description

The Undergraduate Certificate Renewable Energy Assessment provides students the opportunity to assess and implement renewable energy technologies. The certificate is intended to provide students with the ability to assess facilities and land for renewable energy production. The certificate is achieved by taking 12 credit hours in renewable energy assessment topics. The certificate is designed to provide students on campus and other not enrolled in a degree program at North Carolina State University opportunities to learn basic renewable energy assessment techniques and principles that are useful in emerging careers in renewable energy.

Program Coordinator

Richard Ebersohl
Jordan Hall 3136G, Box 8008
919.515.4832
rdeberso@ncsu.edu

Curriculum

A grade of 'C' (2.0) or better is required for certificate courses.

Required Courses:

- ET 120 Introduction to Renewable Energy Technologies and Assessment (3 credits)
- ET 262 Renewable Energy Adoption: Barriers and Incentives (3 credits)

Elective Courses: Choose 2 (6 credits) from the courses below:

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Students must have an overall GPA of 2.5 to be accepted to the certificate program in Renewable Energy Assessment.

Plan of Study

Contact the Program Coordinator.

Registration Information

Contact the Program Coordinator.

Academic Structure

Term Effective: 01/2015

Plan Code: 15REACTU, 32REACTU

CIP Code: 15.0507

Description: Undergraduate Certificate in Renewable Energy Assessment

Offered: Distance Education

**NORTH CAROLINA STATE UNIVERSITY
UNDERGRADUATE CURRICULUM ACTION FORM
Academic Minor**

DEPARTMENT(S):
Forestry and Environmental Resources/College of Natural Resources
TITLE OF THE MINOR:
Renewable Energy Assessment

TYPE OF PROPOSAL:
New Minor: _____
Revision to Minor: X
Discontinuation: _____

PROPOSED EFFECTIVE DATE: January 2018 APPROVED EFFECTIVE DATE: _____

ATTACHMENTS INCLUDED:

1. Statement of Justification
2. Statement of Academic Minor Program Objectives
3. List of Courses constituting the Proposed Minor
4. Catalog Description of Proposed Minor
5. Administration of the Minor (Contact information for Administrator of the Minor)
6. Requirements for Admission and Completion of the Minor
7. Statement on Other Departments Likely to be Affected and Summary of Consultations with those Departments
8. *Optional*: Projected Resources and Enrollment

REQUIRED SIGNATURES:

OTHER REQUIRED SIGNATURES AS NEEDED:

 10/13/2017
Head, Department/Program Date

 10-16-17
Chair, College Curriculum Committee Date

 10/16/2017
College Dean Date

Chair, College Curriculum Committee Date

College Dean Date

Chair, University Courses & Curricula Committee Date

Dean, Division of Academic and Student Affairs (DASA) Date

September 26, 2017

919.515.2891
919.515.6193 (fax)**From:** Dr. Elizabeth Guthrie Nichols
Environmental Technology and Management Program
Department of Forestry and Environmental Resources**To:** University Courses and Curricula Committee**Re:** Proposal to revise required courses for Environmental Technology & Management Renewable Energy Assessment Minor

With support from the College of Natural Resources Office of Academic Affairs, we request a change in the courses required to receive the REA minor. These changes result from evolution of the program. The requested changes include:

New RequestET 484 Renewable Energy Assessment Practicum (1 hrs)
ET 240, Wind and Hydro Energy Assessment (3 hrs)
Add ES 300, Energy and the Environment (3 hrs)**Requested Change**Remove from course catalog
Remove from course catalog
Already in catalog**1. Justification:**

The Renewable Energy Assessment (REA) Minor is being revised to compliment the development of a graduate certificate in renewable energy assessment within the Masters of Environmental Assessment, a Delta-funded program. The undergraduate REA program requires 16 hours for the minor. Required courses are ET 120, ET 220, ET 240, ET 255, ET 262, and ET 484.

The requested changes will change the minor to 15 hours. The minor will add an required course, ES 300 Energy and Environment (3 hrs). The minor will drop ET 484 (1 hr) and ET 240 Wind and Hydro Renewable Assessment as required courses. Content from ET 240 will be blended with ET 255 (Assessing lands for bioenergy) for spring 2018 and thus still provide Wind and Hydro energy course materials students. A requested revision to ET 255 for a course title change has also been submitted as well as dropping ET 240 and ET 484 from the catalog.

These requested changes reflect alignment of the minor with undergraduate feedback and enrollment interest, departmental support for instruction, and the development of new courses for a graduate online certificate in Renewable Energy Development (RED) to be offered in the Online Masters of Environmental Assessment. The minor was 16 hours and will now be 15 hrs with the requested changes.

Changes in the semester of course offerings are due to the availability of faculty teaching and course workload. Because ET 484 could only be offered once a year due to instructor availability, students interested in the minor were not able to complete the minor if they had not completed the other required REA courses. Offering the course again in the fall was not possible.

Adding ES 300 to the minor will improve the breadth of the minor and provide students important context to renewable energy technologies relative to other energy systems in society. Dr. Krim, instructor for ES 300, was consulted on this change (please see #7 below).

2. Statement of Objectives: The objectives of this minor are to prepare science and non-science undergraduate majors for careers that assess and implement renewable energy technologies for various stakeholders and landscapes to meet growing demands in an emerging workforce, to educate and train non-agricultural majors in important agricultural assessment practices required for renewable energy technologies such as wind, solar, and bioenergy that are particularly relevant to North Carolina, and to promote availability of these courses to sister colleges and programs from business to education to social sciences at NCSU. Online delivery provides a flexible educational program designed to attract students to these merging areas of agricultural management with renewable energy technologies. The courses developed in this program target undergraduates across campus from all disciplines; we strongly advocate and support interdisciplinary participation by the undergraduate community at NC State.

3. List of Courses constituting the Proposed Changes for the Minor (15 hours):

ET 120. Introduction to Renewable Energy Technologies and Assessments (3 credits- online).

ET 262. Renewable Energy Adoption: Barriers and Incentives (3 credits- online).

ET 220. Solar Photovoltaic Energy Assessment (3 credits- online).

ET 255. Assessing Lands for Wind, Hydro, and Bioenergy (3 credits- online).

ES 300. Energy and the Environment (3 credits –face to face).

4. Catalog Description of Proposed Minor: The minor in Renewable Energy Assessment provides students the opportunity to assess and implement renewable energy technologies. The minor is intended to provide students with the ability to assess facilities and land for renewable energy production. The minor is achieved by taking 15 credit hours in renewable energy assessment topics. The minor is designed to engage students from all majors, and may be especially appropriate for students majoring in many of the environmental degrees on campus.

5. Administration of the Minor: Elizabeth Guthrie Nichols, Professor, Box 8006, Room 2225 Jordan Addition, Department of Forestry and Environmental Resources, egnichol@ncsu.edu 919-513-4832.

Use “Declare a Minor” Form and submit form to: Elizabeth Guthrie Nichols, Professor, Box 8006, Room 2225 Jordan Addition, Department of Forestry and Environmental Resources, egnichol@ncsu.edu 919-513-4832.

6. Requirements for admission and completion of the Minor: Applicants must have a 2.5 GPA overall for application. For completion, students must complete all required courses with a 2.5 GPA average for minor courses.

Budget: No new resources are needed.

Current CIP: 15.0507 (Environmental Technology and Management Program)

Proposed implementation date: January 2018

Impact on Students: These changes will stream-line completion of the minor for completion by students graduating in spring or fall.

7. Consultation: Please see below an email to Dr. Krim with the request to list ES 300 as a requirement for the REA minor.

----- Forwarded message -----

From: **Jacqueline Krim** <jkrim@ncsu.edu>

Date: Thu, Sep 14, 2017 at 3:10 PM

Subject: Re: Request to include ES 300 as an elective to the REA minor and certificate

To: Elizabeth Nichols <egnichol@ncsu.edu>

Cc: William Winner <wewinner@ncsu.edu>

Hi Eliz,

Of course yes! I also cc Bill Winner, in case he has anything to add and/or you would need someone with authority over the ES program to also add approval.

Best wishes,

Jackie

Jacqueline Krim

Distinguished University Professor of Physics

North Carolina State University

Raleigh, NC 27695-7518

email: jkrim@ncsu.edu

Partners III Office Phone: (919) 513-2684

website: www.physics.ncsu.edu/nanotribology

On Thu, Sep 14, 2017 at 2:15 PM, Elizabeth Nichols <egnichol@ncsu.edu> wrote:

Hello Jackie

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Eliz

Elizabeth Guthrie Nichols, Ph.D.

Professor, Environmental Technology and Management

Dept. of Forestry and Environmental Resources

College of Natural Resources

North Carolina State University

910.658.2800 (c)

919.513.4832 (o)

<http://cnr.ncsu.edu/blogs/elizabethnichols/>

<http://ea.cals.ncsu.edu/>

<http://research.cnr.ncsu.edu/blogs/rea/>

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I limit my email management to only two times a day which may result in a delayed response.

Renewable Energy Assessment (15REAM)

Description

The minor in Renewable Energy Assessment provides students the opportunity to assess and implement renewable energy technologies. The minor is intended to provide students with the ability to assess facilities and land for renewable energy production. The minor is achieved by taking 15 credit hours in renewable energy assessment topics. The minor is designed to engage students from all majors, and may be especially appropriate for students majoring in many of the environmental degrees on campus.

Requirements

- Applicants must have a 2.5 GPA overall for application.
- For completion, students must complete all required courses with a 2.5 GPA average for minor courses.
- All courses must be completed with a grade of 'C' (2.0) or higher.

Required Courses

- ET 120 Introduction to Renewable Energy Technologies and Assessments (3 credits-*online*)
- ET 220 Solar Photovoltaic Energy Assessment (3 credits-*online*)
- ET 255 Assessing Lands for Bioenergy Production (3 credits-*online*)
- ET 262 Renewable Energy Adoption: Barriers and Incentives (3 credits-*online*)
- ES 300 Energy and the Environment (3 credits-face to face)

Admissions and Certification of Minor

- Applicants must have a 2.5 GPA overall for application.
- For completion, students must complete all required courses with a 2.5 GPA average for minor courses.

Contact the Minor Coordinator for questions. To apply for the minor, submit a "[Declare a Minor](#)" Form to Dr. Elizabeth Nichols Room, egnichol@ncsu.edu, 2225 Jordan Addition, Department of Forestry and Environmental Resources, 919-513-4832.

Minor Coordinator

Dr. Elizabeth Guthrie Nichols, Associate Professor
Department of Forestry & Environmental Resources
Campus Box 8006
Room 2225 Jordan Addition
egnichol@ncsu.edu
919-513-4832

SIS Code: 15REAM

Renewable Energy Assessment (15REAM)

Description

The minor in Renewable Energy Assessment provides students the opportunity to assess and implement renewable energy technologies. The minor is intended to provide students with the ability to assess facilities and land for renewable energy production. The minor is achieved by taking 16 credit hours in renewable energy assessment topics and is designed to engage students from all majors. This minor may be especially appropriate for students majoring in environmentally focused degrees on campus.

Requirements

- Applicants must have a 2.5 GPA overall for application.
- For completion, students must complete all required courses with a 2.5 GPA average for minor courses.
- All courses must be completed with a grade of 'C' (2.0) or higher.

Required Courses

- ET 120 Introduction to Renewable Energy Technologies and Assessments (3 credits-*online*)
- ET 220 Solar Photovoltaic Energy Assessment (3 credits-*online*)
- ET 240 Wind/Hydro Energy Assessment (3 credits-*online*)
- ET 255 Assessing Lands for Bioenergy Production (3 credits-*online*)
- ET 262 Renewable Energy Adoption: Barriers and Incentives (3 credits-*online*)
- ET 484 Practice of Renewable Energy Assessments (1 credit-*face to face*)

Admissions and Certification of Minor

- Applicants must have a 2.5 GPA overall for application.
- For completion, students must complete all required courses with a 2.5 GPA average for minor courses.

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Minor Coordinator

Dr. Elizabeth Guthrie Nichols, Associate Professor
Department of Forestry & Environmental Resources
Campus Box 8006
Room 2225 Jordan Addition
egnichol@ncsu.edu
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SIS Code: 15REAM