Program Change Request

Date Submitted: 09/24/20 2:12 pm

Viewing: RNRG : Renewable Energy Interdisciplinary Minor

Last approved: 03/16/20 10:45 am

Last edit: 11/15/20 3:57 pm

Changes proposed by: prubin

Catalog Pages Using this Program	Renewable Energy Interdisciplinary Minor

2020-2021

Rationale for

Are you completing this form on someone else's behalf?

No

Requestor:

Effective Catalog:	2020-2021
Program Level:	Undergraduate
Program Type:	Minor
Degree Type:	
Title:	Renewable Energy Interdisciplinary Minor
Banner Title:	Renewable Energy Interdiscipl

In Workflow

1. **Registrar-Programs:Workflow Review**
2. **PHYS UG Committee**
3. **PHYS Chair**
4. **SC Curriculum Committee**
5. SC Associate Dean
6. SC CAT Editor
7. Assoc Provost-Undergraduate
8. Registrar-Programs

Approval Path

1. 04/27/20 10:28 am Tory Sarro (vsarro): Approved for Registrar-Programs:Workflow Review
2. 05/13/20 9:34 am Philip Rubin (prubin): Approved for PHYS UG Committee
3. 05/13/20 11:05 am Paul So (paso): Approved for PHYS Chair
4. 08/25/20 10:16 am Jennifer Bazaz Gettys (jbazaz): Rollback to Initiator
5. 09/29/20 11:56 am Tory Sarro (vsarro): Approved for

Registrar-Programs:Workflow Review
6. 11/01/20 1:54 pm Philip Rubin (prubin): Approved for PHYS UG Committee
7. 11/01/20 2:31 pm Paul So (paso): Approved for PHYS Chair

History

1. Nov 14, 2017 by clmig-jwehrheim
2. Feb 22, 2018 by Rebekah Zacharias (rzachari)
3. Feb 3, 2019 by Philip Rubin (prubin)
4. Mar 16, 2020 by Tory Sarro (vsarro)

Is this a retitling of an existing program?

Existing Program

Registrar/OAPI Use Only – SCHEV

Registrar's Office Use Only – Program Start Term

Registrar/OAPI Use Only – SCHEV

Registrar/OAPI Use Only – SACSCOC Status

Concentration(s):

INTO Major(s):

Registrar/IRR Use Only – Concentration CIP

College/School: College of Science

Department / Academic Unit:	Physics & Astronomy
Jointly Owned Program?	No
Participating	
Participating	
Justification	Increase the minor's accessibility to non-science majors and increase the interdisciplinarity of the program by allowing students to choose from three course grouping options and expanding the courses. PHYS 411 is a recently approved new course.

Catalog Published Information

Total Credits Required:	Total credits: **15-17** ~~17-20~~
Registrar's Office Use Only - Program Code:	RNRG
Registrar/IRR Use Only – Program CIP Code	
Admission Requirements:	
Program-Specific Policies:	

Policies

Eight credits of coursework must be unique to the minor and students must complete all coursework with a minimum GPA of 2.00. For policies governing all minors, see AP.5.3.4 Minors.

Degree Requirements:

Students should refer to the Admissions & Policies tab for specific policies related to this program.

Core Courses

~~PHYS 331~~	~~Physics of Renewable Energy~~	~~3~~
~~PHYS 385~~	~~Materials Science with Applications to Renewable Energy~~	~~3~~
~~MATH 113~~	~~Analytic Geometry and Calculus I (Mason Core)~~	~~4~~
Complete the following core courses:		
PHYS 131	**Introduction to Renewable Energy**	**3**
PHYS 411	**Renewable Energy Internship**	**3**
Total Credits		6

Minor Options

Choose one of the following three options: **9 - 11**

Option One: Choose 3 credits from Category A, and 3-4 credits from Category B, and 3-4 credits from Category C

Option Two: Choose 3 credits from Category A, and 6-7 credits from Category B (with at least 3 credits in 300-400 level courses)

Option Three: 6 credits from Category A (with at least 3 credits in 300-400 level courses), and 3-4 credits from Category B

Category A: Economics and Policy

ECON 100	Economics for the Citizen (Mason Core)
or ECON 103	Contemporary Microeconomic Principles (Mason Core)
or ECON 104	Contemporary Macroeconomic Principles (Mason Core)
or ECON 105	Environmental Economics for the Citizen (Mason Core)
ECON 309	Economic Problems and Public Policies
ECON 335	Environmental Economics
ECON 435	Economics of Energy
EVPP 338	Economics of Environmental Policy
EVPP/GOVT 361	Introduction to Environmental Policy
EVPP 432	Energy Policy
GGS 303	Geography of Resource Conservation (Mason Core)
GGS 307	Geographic Approaches for Sustainable Development
GOVT 304	American State and Local Government
GOVT 364	Public Policy Making

Category B: Science and Technology

CEIE 100	Environmental Engineering around the World (Mason Core)
CHEM 101	Introduction to Modern Chemistry (Mason Core)
or CHEM 102	Chemistry for Changing Times (Mason Core)
or CHEM 103	Chemical Science in a Modern Society (Mason Core)
or CHEM 104	Chemistry for Changing Times (Mason Core)
or CHEM 155	Introduction to Environmental Chemistry I (Mason Core)
or CHEM 211	General Chemistry I (Mason Core)
or CHEM 271	General Chemistry for Engineers Lecture (Mason Core)
CHEM 156	Introduction to Environmental Chemistry II (Mason Core)
or CHEM 212	General Chemistry II (Mason Core)
CHEM 331	Physical Chemistry I
CHEM 332	Physical Chemistry II
CLIM 101	Global Warming: Weather, Climate, and Society (Mason Core)
or CLIM 102	Introduction to Global Climate Change Science (Mason Core)
GGS 102	Physical Geography (Mason Core)
GGS 121	Dynamic Atmosphere and Hydrosphere (Mason Core)
GGS 122	Dynamic Geosphere and Ecosphere
GEOL 321	Geology of Energy Resources
PHYS 331	Physics of Renewable Energy
PHYS 332	Solar Cells

PHYS 385	Materials Science with Applications to Renewable Energy
STAT 250	Introductory Statistics I (Mason Core)
or STAT 344	Probability and Statistics for Engineers and Scientists I
or STAT 346	Probability for Engineers

Category C: Business and Communication

ACCT 203	Survey of Accounting
or ACCT 204	Honors Survey of Accounting
BULE 303	Legal Environment of Business
BUS 200	Global Environment of Business (Mason Core)
BUS 210	Business Analytics I
BUS 310	Business Analytics II
COMM 303	Writing across the Media
COMM 330	Principles of Public Relations
COMM 391	Writing for Public Relations
EVPP 322	Business and Sustainability
EVPP 401	Integrated Environmental Assessment
EVPP 472	Tools and Techniques for International Development
GOVT 358	Nonprofit Financial Planning
MBUS 300	Accounting in a Global Economy
MBUS 306	Managing Projects and Operations
MGMT 303	Principles of Management

Total Credits 9-11

~~Core Courses Physics~~

~~Select one from the following:~~ ~~1-3~~

~~PHYS 245~~	~~College Physics II (Mason Core)~~
~~PHYS 262~~	~~University Physics III (Mason Core)~~
~~PHYS 266~~	~~Introduction to Thermodynamics~~

~~Total Credits~~ ~~0~~

~~Other Science or Engineering Course~~

~~Select 3-4 credits from the following in consultation with minor advisor:~~ ~~3-4~~

~~PHYS 332~~	~~Solar Cells~~
~~CHEM 212~~	~~General Chemistry II (Mason Core)~~
~~& CHEM 214~~	~~and General Chemistry Laboratory II (Mason Core)~~
~~GEOL 321~~	~~Geology of Energy Resources~~
~~CHEM 271~~	~~General Chemistry for Engineers Lecture (Mason Core)~~
~~CHEM 272~~	~~General Chemistry for Engineers Lab (Mason Core)~~
~~ECE 301~~	~~Digital Electronics~~

~~Other appropriate science or engineering course chosen in consultation with the minor advisor.~~

~~Total Credits~~ ~~0~~

~~Internship~~

~~Select one from the following options:~~ ~~3~~

~~PHYS 409~~	~~Physics Internship 1~~

~~Total Credits~~ ~~0~~

~~1 Or a 3 credit internship in another natural science or engineering field. The course must be focused on renewable energy and chosen in consultation with the minor advisor.~~

Retroactive Requirements Updates:

Plan of Study:

Honors Information:

Accelerated Description/Dual Degree Description:

INTO-Mason Requirements:

College Requirements & Policies:

Department / Academic Unit Requirements & Policies:

Program Outcomes

Additional Program Information

This information is required by the Office of Accreditation and Program Integrity.

Courses offered via distance (if

Indicate whether students are able

What is the primary delivery format for the program?

Does any portion of this program occur off-campus?

Off-campus details:

Are you working with a vendor / other collaborators to offer your program?

Please explain:

Related Departments

Could this program prepare students for any type of professional licensure, in Virginia or elsewhere?

Additional SCHEV & SACSCOC Information

Are you changing the total number of credits required for this program?

Are you changing the delivery format in any way (e.g adding an online option)?

Are you adding/removing a licensure option which was approved by SCHEV?

Will any portion of this program be offered at an off-campus location?

What off-campus location(s)? List all

What percentage of credits toward this program are offered at the off-campus location(s)? Please list percentages by site (i.e. 15% at Site A, 35% at Site B etc.)

Will this program change affect any specialized accreditation?

Is the content of the new program closely related to that of an existing approved program?

Which existing approved program(s)?

Is this new program considered to be "advancing the degree level of a currently approved program" (i.e. existing content is at lower degree level, new content is at the higher degree level)?

Which existing approved program(s)?

Is this new program considered to be "lowering the degree level of a currently approved program" (i.e existing content is at higher degree level, new content is at the lower degree level)?

Which existing approved program(s)?

Does this change represent a repackaging of content in an existing approved degree/certificate program?

Which existing approved program(s)?

Percentage of total credits containing new course content, excluding gen ed courses for undergraduate

OAPI Use Only – Determination of SACSCOC Impact

Comments or Notes

Green Leaf Program Designation

Is this a Green Leaf program? No

Green Leaf Designation

Sustainability-focused academic programs require at least one green leaf course. Either that course is itself sustainability-focused or else the program requires a set of sustainability-related courses with aggregated

Relationship to Existing Courses

Relationship to Existing Programs

List sustainability-focused courses currently required in the degree

Sustainability-related academic programs either require at least one sustainability-related course or else offer any green leaf course as an option or elective. *

List sustainability-related courses currently required in the degree

Does this program cover material which crosses into another department?

No

Impacted Departments

Additional Attachments

SCHEV Proposal

Executive Summary

Reviewer Comments **Jennifer Bazaz Gettys (jbazaz) (08/25/20 10:16 am):** Rollback: Rolling back for ease of revision post-COSCC.

Additional Comments

Is this course required of all students in this degree program?

%wi_required.eschtml%

Attached Document %attach_document.eschtml%

Key: 350