

IRAO OFFICE USE ONLY	
Received	4/1/2016
In Banner	
MTVCOMP/Codeset	
Master Curriculum	
CIP Code	
Program Code	
Program Description	

University of Hawai'i
Code Request Form for Academic Programs for

Reset Form

NEW OR MODIFY PROGRAM CODE

New Program Code **Modify Program Code**

Date: 2/8/2016

REQUESTOR CONTACT INFORMATION

Name Shelby Wong Campus UH Hilo
 Title Curriculum & Catalog Coord Email shelbyw@hawaii.edu
 Office/Dept OVCAA Phone (808) 932-7927

NEW PROGRAM CODE TO CREATE

Institution HIL - UH Hilo Campus HIL - UH Hilo
 Level UG - Undergraduate Effective Term Fall 2016

	Code (Max. Characters)	Description	Check if requesting new code:
College	(2) <u>AG</u>	<u>Agriculture & Nat. Res. Mgmt.</u>	<input type="checkbox"/> See Banner form STVCOLL
Department	(4) <u>AG</u>	<u>Agriculture</u>	<input type="checkbox"/> See Banner form STVDEPT
Degree/Certificate	(6) <u>SC</u>	<u>Subject Certificate</u>	<input type="checkbox"/> See Banner form STVDEGC
Major	(4) <u>AG4</u>	<u>Agriculture</u>	<input type="checkbox"/> See Banner form STVMAJR
Concentration	(4) <u>ENST</u>	<u>Energy Science- Technical</u>	<input checked="" type="checkbox"/> See Banner form STVMAJR
Minor	(4) _____	_____	<input type="checkbox"/> See Banner form STVMAJR

If a similar major/concentration code exists in Banner, please list the code: _____

Justification to warrant a new major/concentration code similar to an existing major/concentration code:

N/A

Is this major/concentration code being used the same way at the other UH campuses? Yes No
 Should this program be available for applicants to select as their planned course of study on the online application? *If yes, student may select the code as their only program of study.* Yes No

RULES PERTAINING TO FINANCIAL AID AND 150% DIRECT SUBSIDIZED LOAN LIMIT LEGISLATION

Is 50% or greater of the classes in this program offered at a location other than the Home Campus? Yes No

Is this program/major/certificate financial aid eligible? Yes No

Does this certificate qualify as a Gainful Employment Program (Title IV-eligible certificate program)? Yes No

See <http://www.ifap.ed.gov/GainfulEmploymentInfo/index.html>

Program Length

In academic years; decimals are acceptable. The length of the program should match what is published by the campus in any online and/or written publication.

2.75

Special Program Designations

See *Special Program Designations Code Definitions on IRAO Program Code Request webpage*

A B N P T U

Required Terms of Enrollment: Fall Spring Summer Extended

ADDITIONAL COMMENTS

New Subject Certificate in Energy Science- Technical Concentration.

ATTACHMENTS

BOR Approved: Associate, Bachelor and Graduate Degrees, and sole credential certificates

BOR Meeting Minutes & Supporting Documents Curriculum

Chancellor Approved: Certificates related to authorized BOR program & Associate in Technical Studies (ATS) Degree

Memo from Chancellor to notify VPAA about new program Curriculum

For new certificates approved by the Chancellor, the related BOR authorized academic program is:
BS- Agriculture

VERIFICATIONS

By signing below, I verify that I have reviewed and confirm the above information that is pertinent to my position.

Registrar:

Chelsea Kay-Wong

Print Name



Signature

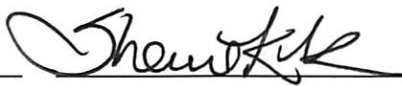
2/29/16

Date

Financial Aid Officer:

Sherrie Padilla

Print Name



Signature

2/29/16

Date

For Community Colleges, verification of consultation with OVPCC Academic Affairs:

Print Name

Signature

Date



March 3, 2016

MEMORANDUM

TO: Donald Straney, Chancellor
University of Hawai'i at Hilo

FROM: Matthew Platz
Vice Chancellor for Academic Affairs
University of Hawai'i at Hilo

SUBJECT: Request for Approval of Program Codes for use at UH Hilo

SPECIFIC ACTION REQUESTED:

We request that the following new program codes be approved for use. All programs below were reviewed and approved during the 2015-2016 curriculum review cycle.

Degree Program Tracks:

BA-ANTH-MANT Anthropology BA, Medical Anthropology Track
BA-GEOG-ENVS Geography, BA, Environmental Studies Track
BS-BIOL-BMD5 Biology, BS, Cell, Molecular and Biomedical Sciences Track

New Subject Certificate Programs:

SC-LSTU-PREL Pre-Law Certificate
SC-NURS-HCMG Healthcare Management Certificate
SC-CHEM-PPHR Pre-Pharmacy Certificate
SC-ENG-CWRT Creative Writing Certificate
SC-HIST-PHIS Public History Certificate
SC-AG4-ENSM Energy Science Certificate, Management & Policy Track
SC-AG4-ENST Energy Science Certificate, Technical Track
GCER-PHRM-HSCR Health Sciences Research Certificate
GCER-PHRM-HCAL Healthcare Leadership Certificate
GCER-CPP Clinical Psychopharmacology Certificate
GCER-CPP-PSP Psychopharmacology Certificate

RECOMMENDED EFFECTIVE DATE:

We request the effective date of Fall 2016 for all program codes.

ADDITIONAL COST:

There is no additional cost associated with this request.

PURPOSE:


The purpose of this request is to request approval for new program codes from the UH System Office of Institutional Research for the above-mentioned degree and certificate programs. These programs were proposed, reviewed and approved during the 2015-2016 curriculum review cycle.

The three degree tracks are new tracks under existing BOR approved degree programs and the ten certificate programs are all new subject certificate programs.

ACTION RECOMMENDED:

We recommend that you approve the new program codes for use for the above-mentioned degree and certificate programs.

APPROVED/DISAPPROVED:



Donald Straney, Chancellor

3/4/16

Date

Cc: Risa Dickson, UH System Vice President for Academic Planning & Policy
Zachary Street, Interim Director of Admissions
Chelsea Kay-Wong, Interim Registrar

UH-IRLO
CHANCELLOR'S OFFICE

2016 MAR -7 AM 8:50

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Welcome: SHELBY WONG
(CHEM)

Program Detail: Energy Science Certificate CAFNRM -

Approval History | Approver Comments | Approval Status | Action Log

Approval History

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12/18/2015 - SHELBYW
(Vote for: 0; Vote against: 0; Vote abstain: 0)

12/18/2015 - MARCEL
(Vote for: 0; Vote against: 0; Vote abstain: 0)

12/18/2015 - ERIKC
(Vote for: 0; Vote against: 0; Vote abstain: 0)

12/19/2015 - BMATHEWS
(Vote for: 0; Vote against: 0; Vote abstain: 0)

02/01/2016 - NFURUMO
(Vote for: 7; Vote against: 0; Vote abstain: 0)

02/03/2016 - MPLATZ
(Vote for: 0; Vote against: 0; Vote abstain: 0)

Approval Comments

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- Reviewer comments (0)
- Approval comments (0)
- Review within approval comments (0)

Approval Status

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Completed approvals

Search:

Sequence	Approver	Title	Position	Date	Role	Approved	Progress
No data available in table							

Showing 0 to 0 of 0 entries

Pending approvals

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Search:

Sequence	Approver	Title	Position	Delegate
4	BMATHEWS	PROFESSOR	INTERIM DEAN	
3	ERIKC	PROFESSOR	CURRICULUM CHAIR	
2	MARCEL	PROFESSOR, AGRICULTURAL ENGINEERING, AND CHAIR, CA	CAFNRM CRC CHAIR	
6	MPLATZ	VCAA	VCAA	
5	NFURUMO	PROFESSOR	CHAIR, FAC CONGRESS CURRICULUM REVIEW COM.	
1	SHELBYW	CURRICULUM COORDINATOR	CURRICULUM COORDINATOR FOR ACADEMIC AFFAIRS	CKWONG

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Action Log

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User	script	Action	Date
PBINDER	ACTION	Program added Energy Science Certificate	12/15/2015 1:44 PM
PBINDER	ADD	Modify Program Proposal - Energy Science Certificate	12/15/2015 1:44 PM
PBINDER	ACTION	Program created - 23	12/15/2015 1:44 PM
PBINDER	ACTION	document email-permissions.docx - attached as Q43b15m15237-V01-email-permissions.docx	12/16/2015 11:25 AM
PBINDER	REMOVE	Modify Program Proposal - Energy Science Certificate	12/18/2015 9:55 AM
PBINDER	ADD	Approve Program Proposal - Energy Science Certificate	12/18/2015 9:55 AM
PBINDER	ADD	Approve Program Proposal - Energy Science Certificate	12/18/2015 9:55 AM
PBINDER	ACTION	CC: Program Notification (SHELBYW) - Energy Science Certificate	12/18/2015 9:55 AM
PBINDER	ACTION	Program approval submitted for SHELBYW@hawaii.edu - Energy Science Certificate	12/18/2015 9:55 AM
SHELBYW	ACTION	Save history - Energy Science Certificate	12/18/2015 10:04 AM
SHELBYW	ACTION	Program approval by SHELBYW - Energy Science Certificate	12/18/2015 10:04 AM
SHELBYW	REMOVE	Approve Program Proposal - Energy Science Certificate	12/18/2015 10:04 AM
CKWONG	REMOVE	Approve Program Proposal - Energy Science Certificate	12/18/2015 10:04 AM
MARCEL	ADD	Approve Program Proposal - Energy Science Certificate	12/18/2015 10:04 AM
PBINDER	ACTION	CC: Program Notification (MARCEL) - Energy Science Certificate	12/18/2015 10:04 AM
SHELBYW	ACTION	Approval recommendation (Energy Science Certificate) from shelbyw@hawaii.edu to marcel@hawaii.edu	12/18/2015 10:04 AM
MARCEL	ACTION	Save history - Energy Science Certificate	12/18/2015 10:58 AM
MARCEL	ACTION	Program approval by MARCEL - Energy Science Certificate	12/18/2015 10:58 AM
MARCEL	REMOVE	Approve Program Proposal - Energy Science Certificate	12/18/2015 10:58 AM
ERIKC	ADD	Approve Program Proposal - Energy Science Certificate	12/18/2015 10:58 AM

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First Previous 1 **2** 3 Next Last

UH Hilo

Degree:	Academic Subject Certificate
Division:	CAFNRM
Title:	Energy Science Certificate
Description:	The conversion of energy to useful forms for humans, its distribution and its impact are among the most pressing issues of our time. They are at the same level as climate change, population growth and social justice. The Certificate in Energy Science provides students with extensive, integrated knowledge about this field - enough to access entry-level jobs. The courses take advantage of the Island of Hawaii's privileged opportunities in solar, wind, biofuel, tide and geothermal energies, with field trips planned according to the course subject matter. The Management and Policy Concentration places an emphasis on policy, yet it requires at least two courses with significant technical content. It is intended for students majoring in humanities, social sciences, business and similar fields. It can lead to potential careers in energy policy or management. The Technical Concentration is a rigorous program consisting of year-long surveys of energy science and biofuels as well as a laboratory course. This track will prepare students for graduate work in the energy field. It is intended for students in the natural sciences or CAFNRM. It will lead to potential careers in technical areas.
Effective Date:	Fall 2016

1. Is this a proposal for

(a) modification of an existing undergraduate or graduate program/degree/major/minor/certificate?

(b) a new certificate or minor or track within an existing baccalaureate or graduate program?

(c) a proposal for an individual liberal studies major equivalent?

(d) a request for Approval To Plan a new graduate or undergraduate degree program (ATP)?

(e) a new graduate degree program or a new baccalaureate degree program?

If (a) or (b), please answer all questions in this proposal form.

If (c), provide student's name, student ID, faculty advisor's name, and title of proposed program in the space below; then answer question 2 only, and attach the proposal and advisor's letter.

If (d), answer only questions 1 and 9 and attach your request for Approval to Plan.

If (e), answer all questions and attach both the signed, approved ATP for your proposed program and the program proposal by clicking the "Attachment" tab at the bottom of the proposal form.

The BOR E5.201 template for new programs and budget template are posted on the VCAA Curriculum Resources page:

<http://hilo.hawaii.edu/uhh/vcaa/CurriculumResources.php>

Consult CurrCtrl campus administrator Jon Awaya awayaj@hawaii.edu for assistance.

B) This is a new certificate program under the BOR Approved BS- Agriculture degree.

2. Please answer the following, for both new programs and modifications, numbering your answers.

1. Specify (a) the number of credits required for the program and (b) the number of elective credits.

2. Specify the minimum required GPA for courses taken for the major, minor or certificate. Unless otherwise stipulated here, the minimum required GPA will be set as 2.0 (C) in Banner.

3. Specify the minimum acceptable grade for each course taken for the major, minor, or certificate. Unless otherwise stipulated here, the minimum acceptable grade will be set as 1.0 (D) in Banner.

1. The certificate is comprised of two concentrations:

1) Management and Policy Concentration (15 Required credits of which 3 are elective credits)

2) Technical Concentration (31-33 Required credits, 0 elective credits)

2. Minimum required GPA is 2.0 (C)

3. Minimum Acceptable Grade for each course is: C

3. How does the NEW program or program modification benefit students, the curriculum, and the institution, and how does this change relate to or impact other programs at the university?

UH Hilo lacks a practical degree in the physical sciences. An Energy Science program can take advantage of UH Hilo's privileged position in an Island where energy production and distribution are major issues, and several initiatives in alternative energy are ongoing, in order to develop a competent, flexible workforce in this field. There is no impact on existing programs. A certificate does not replace any existing majors, but rather will provide additional training to our students.

4. Describe any additional library resources, facilities, equipment or other resources required for the new or modified program and provide an estimate of such costs.

Type in "None" if appropriate.

Additional resources in the area of equipment and lab space will be required:

The ENGR 361 Energy Laboratory course will require about \$10,000 in new equipment, to be covered with County of Hawaii grant already in hand.

The same course will require lab space. The old STB machine shop is ideal for this course.

5. Describe any additional faculty required for the new or modified program and provide an estimate of such costs.

An additional faculty member in engineering/energy science will be needed. There is a ongoing search to fill such a position within CAFNRM.

6. If this is a new program or a new certificate or a minor or a new track within an existing program, copy and paste from a Word document into the window below a catalog-ready list of the graduation (or minor or certificate) requirements, including required courses and acceptable electives.

If this is a program modification, copy and paste the current requirements into the window below; strike out portions to be deleted, and underline any new or additional portions.

Reminder: This proposal is for one type of program. Include requirements for only one type of program: the BA, or the minor, or the certificate, as indicated by the type

of program you selected when you created this proposal.**Energy Science Subject Certificate****Contact:** Philippe Binder**Email:** pbinder@hawaii.edu

The conversion of energy to useful forms for humans, its distribution and its impact are among the most pressing issues of our time. They are at the same level as climate change, population growth and social justice. The Certificate in Energy Science provides students with extensive, integrated knowledge about this field - enough to access entry-level jobs. The courses take advantage of the Island of Hawai'i's privileged opportunities in solar, wind, biofuel, tide and geothermal energies, with field trips planned according to the course subject matter.

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Management and Policy Concentration**Requirements (15 credits)**

- ENGR 200 Introduction to Energy Science (3)
- ENGR 240 Conventional Energies (3) **or** ENGR 250 Alternative Energies (3)
- ENGR 310 Energy Policy Analysis (3)
- ENGR 340 Sustainable Biofuels (3)
- At least 3 additional credits of Energy Science Electives below:
 - AGECE 201 Agricultural Economics (3)
 - GEOG 326 Natural Resources (3)
 - PHYS 341 Thermodynamics (3)
 - POLS 335 Environmental Politics & Policy (3)

Technical Concentration**Requirements (31-33 credits)****Pre-Certificate Core: (16-18)**

- MATH 104 Pre-Calculus (4) **or** Math 205 Calculus I (4) or placement
- PHYS 106-107 College Physics I-II (6) **or** PHYS 170-171 General Physics I-II (8)
- BIOL 101 General Biology (3) **or** BIOL 125 Intro. Cell & Molecular Biol (3) **or** BIOL 175 Introductory Biology (3)
- CHEM 161: General Chemistry I (3)

Energy Science Core: (15)

- ENGR 240: Conventional Energies (3)
- ENGR 250: Alternative Energies (3)
- ENGR 340: Sustainable Biofuels (3)
- ENGR 361: Energy Laboratory (3)
- ENGR 400: Biochemical Energy Conversion (3)

Notes:

- All courses within the certificate program must be taken and passed with a grade of C or better.

7. **List any new courses or modified courses being proposed with this program proposal, providing alpha, number, and title of each one. The proposals for these new/modified courses MUST be submitted at the same time as this program proposal, to ensure proper review by approvers. Specify "Proposal submitted" next to each course in your list.**

The Following are new courses being proposed with this certificate program, all are entered into Curriculum Central:

ENGR 200 Introduction to Energy Science (3) This course studies the relationship between human societies and the global energy system. Topics will include energy in everyday life, the geography, politics and economics of energy. Case studies that include Hawaii will be studied.

ENGR 240: Conventional Energies (3) Fundamentals of thermal physics and fluid mechanics. Chemical bonds. Energy from fossil fuels. Hydropower. Nuclear power. Energy storage. Pre: 6 credits in Natural Science courses.

ENGR 250: Alternative Energies (3) Wind, solar, geothermal, tide and wave power. Brief surveys of bioenergy. Energy distribution and microgrids. Pre: 6 credits in Natural Science courses.

ENGR 310: Energy Policy Analysis (3) An introduction to how the production and consumption of energy in the United States are regulated at the Federal, state and local levels. Stakeholders will be identified, and their roles analyzed. Historical and international dimensions of this topic will also be explored. Hawaii energy policies will be studied in detail. GE global citizenship status and WI designation will be sought. Pre: ENGR 200 or ENGR 240 or ENGR 250.

ENGR 340: Sustainable Bioenergy (3) This course provides an introductory overview of the relevance of bioenergy production for the global energy supply, bioenergy conversion technologies and feedstocks, and critically evaluates sustainability issues involved with bioenergy production.

ENGR 361: Energy Laboratory (3) (lecture/lab) Desktop experiments on several of the following: energy content and products of combustion, solar cells, biofuel reactors, heat engines, fuel cells and hydroelectric power. Emphasis will be on quantitative energy balances. Field trips to Island facilities on ocean, wind and geothermal power may be included. Co-req: Either ENGR 240 or ENGR 250 or ENGR 200 with permission of instructor.

ENGR 400: Biochemical Energy Conversion (3) A course on anaerobic digestion and fermentation with application to animal, municipal and industrial wastes, and to the production of synthetic gas and bioethanol. Pre: BIOL 101 or BIOL 125 or BIOL 175, and CHEM 161.

8. **Does this new or modified program involve courses offered by other departments? If not, type in "no."**

If yes, please attach an email (in PDF) or other document from the chair(s) of the other department(s) approving the inclusion of those courses by alpha, number, and title.

To attach, click on the ATTACHMENT button at the bottom of this page, next to the SUBMIT button.

Yes, email approvals from the following department chairs are attached:

Biology, Chemistry, Physics, Agriculture, Geography, Political Science, Mathematics


9. **Please record the department vote approving the proposed change(s): Approve, Not Approve, Abstain; give the date of the vote.**

Date of vote: December 18, 2015

Approve: 11
Not approve: 0
Abstain: 0

10. Provide other attachments that you believe will be useful and informative to reviewers and approvers.

Attachments

History	Version	File Name
	1	email-permissions.docx

Campus: HIL
Updated By: SHELBYW
Updated Date: 12/18/2015 10:03 AM