

UNIVERSITY OF HAWAI'I  
CODE REQUEST FORM FOR ACADEMIC PROGRAM CODES

REQUESTOR CONTACT INFORMATION	
Date: 3/18/14	Effective term of request (Semester-Year): Fall 2014
Name: Kailana Soto	Title: Assistant Registrar
Campus: Kauai Community College	Office/Department:
Phone: (808) 245-8224	Email: kailana@hawaii.edu

1. PROGRAM CODE, MAJOR CODE, CONCENTRATION CODE		Banner forms: SMAPRLE, SOACURR, STVMAJR
Institution:	College:	Department:
<input type="checkbox"/> New program code <input type="checkbox"/> Change/replace existing program code:		
Level: <input checked="" type="checkbox"/> Undergraduate <input type="checkbox"/> Graduate <input type="checkbox"/> First-Professional <input type="checkbox"/> Post-Baccalaureate <input type="checkbox"/> Other:		
Degree:	Certificate:	
If requesting an existing Major code and/or Concentration code in Banner:		
Existing Major:	Existing Concentration:	
<small>Code</small>	<small>Description</small>	<small>Code</small> <small>Description</small>
If requesting a new <input type="checkbox"/> Major code or <input type="checkbox"/> Concentration code that does not exist in Banner:		
New Code [4 char/space limit]:	Description [30 char/space limit]:	
If a similar major/concentration code exists in Banner, please list the code:		
Is this major/concentration code being used the same way at other UH campuses?		
Is 50% or greater of the classes in this program offered at a location other than the Home Campus? <input type="checkbox"/> Yes <input type="checkbox"/> No <small>(Please consult your Financial Aid Officer on Program Participation Agreement impact)</small>		
Is this program/major/certificate financial aid eligible? <input type="checkbox"/> Yes <input type="checkbox"/> No <small>(Financial Aid Officer consultation required for all new program codes)</small>		
Should this program be available for applicants to select as their planned course of study on the online application? <input type="checkbox"/> Yes <input type="checkbox"/> No <small>(if yes, students may select the code as their <u>only</u> program of study.)</small>		

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**Replacing or eliminating an existing program code:**

If replacing an existing program code, are current students "grandfathered" under the old code?  Yes  No

Should the old program code be available for use in Banner?  Yes  No

Will the old program code be available for:	Banner Module	Yes	No	Ending Term (Semester-Year)
	Online Application	<input type="checkbox"/>	<input type="checkbox"/>	_____
	Recruitment	<input type="checkbox"/>	<input type="checkbox"/>	_____
	Admissions	<input type="checkbox"/>	<input type="checkbox"/>	_____
	General Student	<input type="checkbox"/>	<input type="checkbox"/>	_____
	Academic History	<input type="checkbox"/>	<input type="checkbox"/>	_____

**2. CERTIFICATES ONLY:**

Does this certificate qualify as a Gainful Employment Program (Title IV-eligible certificate program)?  Yes  No  
(Please consult your Financial Aid Officer or see: <http://www.ifap.ed.gov/GainfulEmploymentInfo/index.html>)

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

**3. NEW CAMPUS, COLLEGE, DIVISION, OR DEPARTMENT CODE**

Banner forms: STVCAMP, STV\_COLL, STVDIVS, STVDEPT

Campus code [3 char]:	Campus description [30 char/space limit]:
College code [2 char]:	College description [30 char/space limit]:
Division code [4 char/space limit]:	Division description [30 char/space limit]:
Department code [4 char/space limit]:	Department description [30 char/space limit]:

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<b>4. NEW COURSE SUBJECT CODE (Subject Alpha)</b>		Banner form: STVSUBJ
College: Instructional	Department: Science and Mathematics Division	
Subject code [4 char/space limit]: ENRG	Subject description [30 char/space limit]: Energy	

<b>5. NEW MINOR (Minor codes are listed on the Major code table)</b>		Banner form: STVMAJR
Minor Code [4 char/space limit]:	Minor Description [30 char/space limit]:	

Please briefly describe your request and explain why you are requesting the code(s):

*see attached. P.R.*

**SUPPORTING DOCUMENTATION**

Please see the **Code Request Guide** for the required supporting documents to be submitted. Documents submitted with this form:

- Board of Regents meeting minutes and supporting documents provided to the BOR
- Memo from UH President
- Memo from Chancellor
- Curriculum (required for requests for new programs/majors/minors/certificates)
- Gainful Employment Program notification to the US Department of Education
- Other: Course Outline via Curriculum Central

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<b>CAMPUS VERIFICATION</b>		
Requestor Signature <u>James R. Dine</u>	Date <u>3/19/14</u>	
<b>Registrar</b> (If different from Requestor)		
Kailana Soto	<u>Kailana A. Soto</u>	<u>3/19/14</u>
Print name	Signature	Date
Email/memo in lieu of Registrar's signature may be attached		
<b>Financial Aid Officer</b> (Financial Aid Officer consultation required for all new program codes)		
Jeffrey Anderson	<u>Spoke for Jeff Anderson</u>	<u>3/19/14</u>
Print name	Signature	Date
Email/memo in lieu of Financial Aid Officer's signature may be attached		
<b>For Community Colleges, verification of consultation with OVPCC Academic Affairs:</b>		
Suzette Robinson	<u>Suzette Robinson</u>	<u>3/25/14</u>
Print name	Signature	Date
Email/memo in lieu of signature may be attached		

**Send completed form and supporting documentation to:**

Institutional Research and Analysis Office (IRAO)	
1633 Bachman Place	Email: iro-mail@lists.hawaii.edu
Sinclair Annex 2, Room 4	Fax: 808-956-9870
Honolulu, HI 96822	Phone: 808-956-7532

After all required forms and supporting documents have been submitted, please allow at least two weeks for processing by IRAO and Banner Central.

<b>FOR INTERNAL USE ONLY</b>	Date form/docs received:
Program code [12]:	Program Description [30]:
CIP code [6]:	CIP description [30]:

## Kauai Community College

### ENRG 101 - Introduction to Sustainable Energy Technology

**1. What is the purpose of this modification/proposal?**

New course proposal.

**2. What modification(s) are being made to this course that affect the Banner course record?**

- **N/A - This is a new course.**

Existing alpha or number listed below (**only if a new alpha or number is being modified** ).

CURRENT ALPHA:

CURRENT NUMBER:

**3. Why is this course being modified? If this is a new course, why is a new course being proposed?**

This course is already offered at Maui College. It is being proposed to be offered here to be a part of the new Sustainability Science certificate programs. The information for this course is being updated to the new online Course Outline.

**4. A copy of the programs and/or courses that are impacted by this course (e.g., in a program's/course's pre-requisite, description, etc.) is attached as a PDF. If this is a new course or an inactive course being reactivated, skip this question.**

A copy of the information provided in the Course Impact Tracker database is attached.

Note: If this course is going through its first submission in Curriculum Central, nothing will be attached. Therefore, the proposer must attach the database information. If this course has already been approved in Curriculum Central, the information should already be attached.

**5. Course alpha.**

ENRG

**6. Course number.**

101

**7. Catalog title.**

Introduction to Sustainable Energy Technology

**8. Catalog description.**

This course introduces alternative methods for meeting long term energy needs, identifies and explores local resources including demand-side management of conventional gas and electric power and sustainable energy resources such as solar, wind, biomass, small hydroelectricity, geothermal, ocean thermal energy conversion, and alternative transportation fuel options.

**9. Maximum enrollment per class section.**

25

**10. Credits.**

3

**11. How many hours of instruction (lecture, lab, etc.) per week are required for the semester?**

- Lecture (Ratio - 1 contact hour : 1 credit) (3)

**12. Is this course repeatable for credit? If yes, how often can this course count towards a degree or certificate?**

NO

This course is repeatable for a maximum of:

**13. Is this course cross-listed with any other course on campus?**

NO

**14. Pre-requisites.**

Qualified for ENG 22.  
Qualified for either MATH 26 or MATH 75.

**15. Recommended preparation (Information included for college catalog only).**

ISC 100, and qualified for ENG 100.

**16. Co-requisites.**

None.

**17. What is the effective term for the changes proposed for this course?**

Fall 2014

**18. List all course student learning outcomes (CSLOs) that apply to this course.**

<b>Course SLO</b>
Describe existing power production systems.
Describe energy management systems, lighting systems, HVAC systems, timers and controls.
Operate appropriate software for on-line monitoring of campus meters, graphing, footprinting, and report writing.
Conduct pre- and post-retrofit testing of lighting circuits, calculations of energy savings and implications for reduction in electric bill.
Detail various solar thermal applications, heating water, drying/ cooking food products, running air conditioning systems and distilling water.
Compare and contrast various alternative and renewable energy production systems.
Summarize the relevant features of biomass systems, composting, agriculture wastes, ocean plants, feed stock, landfill implications, chemical processes and anaerobic digestions systems.
Describe hybrid systems, battery technology, low voltage control systems, inverters and generators, alternative transportation fuels, and geothermal and ocean thermal applications.
Prepare an integrated resource plan (IRP), combining all systems into a written plan for a small power systems such as a college campus or residential community.

**19. Select methods of assessment from the list provided and show how they align with the CSLOs.**

- Demonstration (0)
- Essay tests (0)
- Locally developed tests (0)
- Overall analysis (0)
- Supervisor Observation (0)
- Written products (0)

<b>Method of</b>	Describe	Describe	Operate	Conduct	Detail	Compare	Summarize	Describe	Prepare an
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<b>Evaluation/ Course SLO</b>	existing power production systems.	energy management systems, lighting systems, HVAC systems, timers and controls.	appropriate software for on-line monitoring of campus meters, graphing, footprinting, and report writing.	pre- and post-retrofit testing of lighting circuits, calculations of energy savings and implications for reduction in electric bill.	various solar thermal applications, heating water, drying/ cooking food products, running air conditioning systems and distilling water.	and contrast various alternative and renewable energy production systems.	the relevant features of biomass systems, composting, agriculture wastes, ocean plants, feed stock, landfill implications, chemical processes and anaerobic digestions systems.	hybrid systems, battery technology, low voltage control systems, inverters and generators, alternative transportation fuels, and geothermal and ocean thermal applications.	integrated resource plan (IRP), combining all systems into a written plan for a small power systems such as a college campus or residential community.
Demonstration			<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>					
Essay tests	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>			<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	
Locally developed tests	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>			<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	
Overall analysis									<input checked="" type="checkbox"/>
Supervisor Observation			<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>					
Written products	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>			<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>

20. Include program student learning outcomes (PSLOs) and show how they align with the CSLOs.

<b>Program SLO/Course SLO</b>	Describe existing power production systems.	Describe energy management systems, lighting systems, HVAC systems, timers and controls.	Operate appropriate software for on-line monitoring of campus meters, graphing, footprinting, and report writing.	Conduct pre- and post-retrofit testing of lighting circuits, calculations of energy savings and implications for reduction in electric bill.	Detail various solar thermal applications, heating water, drying/ cooking food products, running air conditioning systems and distilling water.	Compare and contrast various alternative and renewable energy production systems.	Summarize the relevant features of biomass systems, composting, agriculture wastes, ocean plants, feed stock, landfill implications, chemical processes and anaerobic digestions systems.	Describe hybrid systems, battery technology, low voltage control systems, inverters and generators, alternative transportation fuels, and geothermal and ocean thermal applications.	Prepare an integrated resource plan (IRP), combining all systems into a written plan for a small power systems such as a college campus or residential community.
Detail valid sustainability concerns and potential solutions, the inter-related nature of these concerns, and their implications in an island context.						<input checked="" type="checkbox"/>			<input checked="" type="checkbox"/>
Identify and	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>			<input checked="" type="checkbox"/>		<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	

describe the basic scientific components behind existing and emerging technologies in a variety of areas related to sustainability.									
Demonstrate skills needed to work towards sustainability, in a variety of contexts, including collaboration, making presentations, preparing reports, and the use of appropriate science and technology and other information gathering techniques to access information.			<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>					<input checked="" type="checkbox"/>
Design comprehensive solutions to basic sustainability problems that are well-researched and supported.									<input checked="" type="checkbox"/>
Use science principles or methods to critically evaluate proposed solutions to basic sustainability problems.						<input checked="" type="checkbox"/>			<input checked="" type="checkbox"/>

21. Select all institutional student learning outcomes (ISLOs) that apply to this course and show how they align with the CSLOs.

	<b>(Respect for Diversity)</b> - Demonstrate cognitive, affective, and behavioral skills and characteristics that are respectful of others' opinions, feelings, values, and individual expression.
<input checked="" type="checkbox"/>	<b>(Written Communication)</b> - Write in clear and organized Standard American English to present, explain, and evaluate ideas, to express feelings, and to support conclusions, claims, or theses.  <input checked="" type="checkbox"/> Preparatory Level



	<b>(Oral Communication)</b> - Speak in understandable and organized Standard American English to explain ideas, to express feelings, and to support conclusions, claims, or theses. Receive, construct meaning from, and respond to spoken and/or nonverbal messages.
<input checked="" type="checkbox"/>	<b>(Reading)</b> - Read, evaluate, and interpret written material critically and effectively. <input checked="" type="checkbox"/> Preparatory Level
<input checked="" type="checkbox"/>	<b>(Symbolic Reasoning)</b> - Use appropriate mathematical and logical concepts and methods to understand, analyze, and explain issues. <input checked="" type="checkbox"/> Preparatory Level
<input checked="" type="checkbox"/>	<b>(Integrative Thinking)</b> - Use problem-solving skills and creative thinking strategies to make connections among ideas and experiences and to synthesize and transfer learning to new and varied situations. <input checked="" type="checkbox"/> Preparatory Level
<input checked="" type="checkbox"/>	<b>(Information Literacy)</b> - Locate, retrieve, evaluate, and interpret the value of information gained from reading text materials, making observations, and using electronic media, and reflectively use that information. <input checked="" type="checkbox"/> Preparatory Level
	<b>(Technological Competency)</b> - Identify, allocate, and utilize technological resources effectively.
	<b>(Teamwork)</b> - Participate proactively and interact cooperatively and collaboratively in a variety of settings.
	<b>(Ethics)</b> - Demonstrate an understanding of ethical issues in public and personal contexts that can be used to make sound judgments and decisions.

<b>GenED SLO/Course SLO</b>	Describe existing power production systems.	Describe energy management systems, lighting systems, HVAC systems, timers and controls.	Operate appropriate software for on-line monitoring of campus meters, graphing, footprinting, and report writing.	Conduct pre- and post-retrofit testing of lighting circuits, calculations of energy savings and implications for reduction in electric bill.	Detail various solar thermal applications, heating water, drying/cooking food products, running air conditioning systems and distilling water.	Compare and contrast various alternative and renewable energy production systems.	Summarize the relevant features of biomass systems, composting, agriculture wastes, ocean plants, feed stock, landfill implications, chemical processes and anaerobic digestions systems.	Describe hybrid systems, battery technology, low voltage control systems, inverters and generators, alternative transportation fuels, and geothermal and ocean thermal applications.	Prepare an integrated resource plan (IRP), combining all systems into a written plan for a small power systems such as a college campus or residential community.
(Written Communication) - Write in clear and organized Standard American English to present	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>			<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>

present, explain, and evaluate ideas, to express feelings, and to support conclusions, claims, or theses.									
(Reading) - Read, evaluate, and interpret written material critically and effectively.									<input checked="" type="checkbox"/>
(Symbolic Reasoning) - Use appropriate mathematical and logical concepts and methods to understand, analyze, and explain issues.	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
(Integrative Thinking) - Use problem-solving skills and creative thinking strategies to make connections among ideas and experiences and to synthesize and transfer learning to new and varied situations.									<input checked="" type="checkbox"/>
(Information Literacy) - Locate, retrieve, evaluate, and interpret the value of information gained from reading text materials, making observations, and using electronic media, and reflectively use that information.									<input checked="" type="checkbox"/>

**22. List the topics and activities that will be presented during the course and include the approximate time spent on each topic.**

Topics, times, and activities are suggested, and up to individual instructor discretion.

3-5 Weeks: General power distribution and management systems, demand side management, PCMapping, retrofitting

Activities may include, but are not limited to: Lectures, discussion, reflection, assignments, readings, group work, guest speakers, films, field trips, etc.

2-3 Weeks: Solar thermal, solar electric, wind, microhydro, and hybrid systems design and construction methods

Activities may include, but are not limited to: Lectures, discussion, reflection, assignments, readings, group work, guest speakers, films, field trips, etc.

2-4 Weeks: Biomass energy/ digestion systems, design, and operation, alternative fuels

Activities may include, but are not limited to: Lectures, discussion, reflection, assignments, readings, group work, guest speakers, films, field trips, etc.

2-3 Weeks: Energy storage, low voltage control systems, inverters and generators

Activities may include, but are not limited to: Lectures, discussion, reflection, assignments, readings, group work, guest speakers, films, field trips, etc.

2-3 Weeks: Integrated resource planning

Activities may include, but are not limited to: Lectures, discussion, reflection, assignments, readings, group work, guest speakers, films, field trips, etc.

**23. List possible textbooks and/or materials appropriate for this course. If there are none, explain why.**

Text(s) are up to individual instructor discretion and may be chosen from those currently available in the field at the time the course is being offered. Suggestions may include:

- Editor, Godfrey Boyle. [Renewable Energy Power for a Sustainable Future](#). Third Edition. Oxford University Press, 2012, 978-0-19-954533-9.

**24. What course delivery methods will be used?**

- Classroom/Lab/Studio (0)
- Distance: Online (0)

**25. What teaching methods are required for this course?**

- Field trips (0)
- Lectures and group discussions (0)
- Problem-based learning (focused on students working cooperatively in groups to seek solutions to real world problems) (0)
- Research (0)
- Student reports and presentations (0)

Other:

**26. Grading and evaluation.**

- Grading Scale:  
A = 90 - 100%  
B = 80 - 89%  
C = 70 - 79%  
D = 60 - 69%  
F = 59% and below (0)

Specific course requirements are at the discretion of the instructor at the time the course is being offered. Suggested requirements might include, but are not limited to:

Example (for evaluation):

Descriptions	%	Points Possible
E-Portfolio	5	50
Activities	25	250
Exams and quizzes	30	300
Integrated Resource Plan	30	300
Participation, Attendance, and Course Conduct	10	100
Total	100	1,000

27. Include similar courses taught at other UH campuses and, if applicable, explain how course content is different.

List similar courses taught...	Course alpha and number	Explain how course content is different
...at another KCC campus unit(s)	FENG 56, ELEC 70, 75, 85	FENG 56 is Solar Thermal Systems. ELEC 70, 75, and 85 are PV centered classes. The course we are proposing is an introduction to various aspects regarding energy and its management and distribution.
...at Hawaii CC	N/A	N/A
...at Honolulu CC	N/A	N/A
...at Kapiolani CC	N/A	N/A
...at Leeward CC	N/A	N/A
...at Windward CC	N/A	N/A
...at UH Hilo	N/A	N/A
...at UH Manoa	EE 438	EE 438 is a renewable energy course. The one we are proposing also discusses conventional sources of energy and how to better manage them, additionally it is an introduction to these concepts.
...at UH Maui College	ENRG 101, 102, 103, 104, and 105; SSM 375, 403	ENRG is the same course- we will be articulating. ENRG 102, 103, 104, and 105 are deeper looks into various aspects regarding energy: management systems, production systems, storage, biomass, etc. SSM 375 and 403 are renewable energy conversions and integration courses. The course we are proposing will cover most of these aspects in one course, and at an introductory level.
...at UH West Oahu	N/A	N/A

**28. Is this course already articulated, appropriate for articulation, or not appropriate for articulation? If this course is already articulated provide evidence (see question mark icon). If this course is appropriate for articulation OR not appropriate for articulation, explain.**

This course is appropriate for articulation.

Explanation for Appropriate for articulation or Not appropriate for articulation statuses -- or website link **only** for already articulated courses (if there is no link below, the information is attached):

This course is appropriate for articulation with ENRG 101, currently taught at Maui College. We will be articulating at a later date.

**29. If the course modifications affect the articulation status of this course, explain. If the proposed changes do not affect the articulation status or if this is a new course, type N/A.**

N/A.

**30. Date proposed (CANNOT BE MODIFIED).**

12/19/2013

**31. Which area requirements (including Foundations and Diversification requirements) for the Associate in Arts, A.A., degree apply to this course?**

- Electives.

**32. Which area requirements for the Associate in Applied Science, A.A.S., degree apply to this course?**

- Electives.

**33. Which area requirements for the Associate in Science, A.S., degree apply to this course?**

- Electives.

**34. What five-year review cycle is this course going through?**

2014/2015

**35. The Google Doc format of the syllabus for this course can be found using the link provided.**

<https://docs.google.com/a/hawaii.edu/document/d/1wXl7znLU2FK06L9nxnduBhtdjCePS6MHnG36eSdHrzw/edit>