



Princess Soares <pfrederi@hawaii.edu>

MINOR-BIOE

Susan Nishida <susansyn@hawaii.edu>

Mon, May 23, 2016 at 3:14 PM

To: Princess Soares <pfrederi@hawaii.edu>, Pearl Iboshi <iboshi@hawaii.edu>, Shelby Wong <shelbyw@hawaii.edu>, Joanne Itano <itano@hawaii.edu>

Cc: Melissa Tome <mtome@hawaii.edu>

All,

After consulting with a number of folks, I believe the following summarizes the issue:

- Hilo approved two minors based on the two BS Biology tracks; Cell and Molecular Biology track and Ecology, Evolution and Conservation track (see attached program documentation).
- When the minor was created, it used BIOL; however, it should have used the minors attached to the two BS Biology tracks (instead of attaching to what appears as BA BIOL).
- Hilo plans to retain the two BS Biology tracks and would like two minors to reflect those two tracks (BA Biology does NOT have a minor).

I believe the following is the best way to resolve Hilo's dilemma:

- For the Ecology, Evolution and Conservation track, the minor box should be activated for this major code (EEC) and the campus should use EEC for coding all Hilo students seeking the Ecology, Evolution and Conservation track minor (not BIOE).
- For the Cell and Molecular track, Hilo has submitted a request to change the code to something else to reflect the title change (UHM uses CMB and their old code was BMD5). When this change is made, the minor box should be activated for this major code and the campus should use this code for coding all Hilo students seeking the Cell and Molecular track minor.

If everyone is OK with this proposed solution, the following actions should occur:

- Melissa Tome in Banner will activate the EEC minor in Banner
- Hilo will need to recode students with the EEC minor so their minor description appears correctly (and update STAR, if needed)
- Princess will work with Hilo to determine how best to recode the Cell and Molecular track and get any documentation needed to support the EEC minor

Please let the group know if you have any concerns by end of day on Tuesday, May 24. If there are no concerns raised, Melissa will activate the EEC minor code on Wednesday and the campus can recode the student and confer their degree. If you have any questions and/or need further clarification, please let me know.

Thanks!

-Susan

On Thu, May 12, 2016 at 9:31 AM, Princess Soares <pfrederi@hawaii.edu> wrote:

Aloha Joanne and Susan,

UH Hilo is wanting to change the description for the minor code BIOE. Currently, the description is Biology, but according to the campus it should have been Ecology, Evolutn, Conserv Biol. Unfortunately, Hilo does not have any supporting documents of the minor, but has always offered the minor. When checking the Academic Program Actions Report by Academic Planning and Policy, no new minors have been reported at UH Hilo since the Annual 1996-97 report.

The Biology minor has two tracks and uses minor codes BIOL (Biology) and BIOE.

[Quoted text hidden]

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UHH Biology Minor- Add EEC Track 1999.pdf
2083K

CNC done 6/16/99

off Fall 1999

MAR 11 1999

PLEASE SUBMIT ORIGINAL AND 6 COPIES TO YOUR DIVISION CHAIR

APPLICATION FOR PROGRAM MODIFICATION
COLLEGE OF ARTS AND SCIENCES, UNIVERSITY OF HAWAII AT HILO



TYPE OF PROGRAM: / / MAJOR / / MINOR / / CERTIFICATE / / MASTERS

1. Division: Natural Sciences Department: Biology

Name of Program: Biology BA / Major & Minor

Copied... see in minor

2. Description of existing program as it is in the current catalog: (Put entire statement on another sheet if space is not sufficient here. Underscore all parts to be changed or deleted.)

ATTACHED: Existing Program Description

3. Description of modified program in college catalog form. (Put entire statement on another sheet if space is not sufficient here. Underscore all new or changed parts.)

ATTACHED: Modified Program Description

4. Brief statement of reasons for the requested modification: (Put entire statement on another sheet if space is not sufficient here.)

ATTACHED: Reason For Requested Modification

Program Modification of Biology BA

Leon Hallacher
Name of submitter (please type) LE Hallacher
Signature Date: 17 NOV 98

Leon E. Hallacher
Name of Department Chair LE Hallacher
Signature Date: 17 NOV 98
Department Vote: 8 1 0 1 0

Name of cross-listed Department Chair _____
Signature Date: / /
Cross-listed Department Vote: / /

Signature of Division Chair *
*or Liberal Studies Coordinator _____
Date / /
Signature of Division Chair / /
Date 11/17/98

NOTE: THE SUBMITTER FORWARDS THIS APPLICATION TO THE FACULTY SENATE CHAIR AFTER DIVISION CHAIR(S) SIGNATURE(S).

Academic Affairs Committee: Approved Not Approved
 / / Date: 11/18/98 Vote: 5 1 0 1 0
Signature of AAC Chair / / Date: 2/17/99 Vote: 6 0 0
AAC Comments: CRK (AAC chair) Approved

Senate: Approved Not Approved
 / / Date: 3/10/99 Vote: 13 1 0 1 0
Signature of Senate Chair

Senate Comments: _____
Dean: Approved Not Approved Articulation: N/A
 / / Date: 3/10/99 Completed:
Signature of Dean

Dean's Comments: _____
Signature page returned to: Senate Chair on 3/11/99 (date)
Submitter on 3/11/99 (date)
Copy of Application sent to Course Inventory/OSS - Records on 3/11/99 (date)
Placed in catalog on _____ (date)

**APPLICATION FOR PROGRAM MODIFICATION
COLLEGE OF ARTS AND SCIENCES, UNIVERSITY OF HAWAII AT HILO**

Division: Natural Sciences

Department: Biology

Program: Bachelor of Arts Degree in Biology

EXISTING PROGRAM DESCRIPTION

The Biology program provides the student with "hands-on" training in a wide variety of disciplines ranging from natural history of the Hawaiian Islands to cell biology and microbiology. Small class sizes allow students to accompany professors to tide pools to study marine invertebrates and algae and to work individually on the scanning and transmission electron microscopes. Upper division biology majors are encouraged to participate in research projects directed by the faculty. The program prepares students for further study in graduate schools in the biological sciences, as well as professional schools in medicine, dentistry, veterinary medicine, and other health related programs. The program also provides the scientific background for high school biology teaching.

Instruction in biology includes a variety of classroom, laboratory, and field work which emphasizes the unique terrestrial and marine environment of Hawaii. Classes in natural history plan excursions into volcanic areas and tropical rain forests to study plant succession and unique biomes. Minority students headed for professional careers in the health sciences may apply for participation in the Minority Schools Biomedical Research Support Program funded by the National Institute of Health.

Major: (B.A. Option) 38 semester hours in biology

The following are required for all majors who choose to seek the B.A. degree in Biology:

Major Requirements:

Biol 150-150L, 153-153L, 270, 275-275L, 281, 380, 410-410L, 415, 466, 495A, 495B, a minimum of one additional advanced laboratory course chosen from 415L or 466L, and a minimum of two units of biology elective as a lecture course, laboratory course, or directed research.

Supplemental Requirements:

General chemistry (Chem 124-124L, 125-125L), organic chemistry (Chem 241-241L, 242-242L); college physics (Phys 106-170L, 107-171L) or general physics (Phys 170-170L, 171-171L); and applied calculus (Math 115) or calculus (Math 205-205L). Forty-five upper division credits needed for graduation are met in the process of completing this degree.

The following is also recommended: (I) majors planning to pursue graduate studies in cell and molecular biology take both Biol 415L and 466L, Math 205-205L, 206-206L, courses in quantitative analysis and physical chemistry (Chem 330-330L and 350-350L or 351-351L), and at least two semesters of directed research (Biol 399 or 499); (II) majors planning to pursue graduate studies in conservation biology, ecology, and evolution, or marine biology take additional electives in those subject areas chosen from Biol 157, 171-171L, 181, 250, 264, 301-301L, 309, 360, 371-371L, 372, 382, and at least two semesters of directed research (Biol 399 or 499); and (III) majors planning to apply to medical/dental/veterinary school take human anatomy and physiology (Biol 243-243L and 244-244L) and participate in volunteer and shadowing experiences in the local medical/dental/veterinary community as appropriate.

Minor: 21 semester hours in biology

Required: Biol 125 or 270, 150-150L, 153-153L, 275-275L, 281 and three additional semester hours of biology in courses numbered above Biol 150.

No University of Hawaii at Hilo biology courses numbered below 125 are required for, or credited toward, the major or minor in Biology.

MODIFIED PROGRAM DESCRIPTION

The Biology program provides students with "hands-on" training in a wide variety of disciplines ranging from evolution, ecology, and conservation biology to cell and molecular biology. Instruction includes a variety of classroom, laboratory, and field work which emphasizes the unique terrestrial environment of Hawaii. Classes make excursions into volcanic areas and tropical rain forests to study ecological and evolutionary processes. Students are afforded individual attention and provided with the opportunity to work individually on advanced equipment like the transmission electron microscope. Upper division biology majors are encouraged to participate in research projects directed by the faculty. Two degree options **and multiple tracks** prepare students for the job market or further study in graduate school in the biological sciences, as well as professional schools in medicine, dentistry, veterinary medicine, and other health related programs. The program also provides the scientific background for teaching biology at the intermediate and high school levels. Minority students headed for professional careers in the health sciences may apply for participation in the Minority Schools Biomedical Research Support Program funded by the National Institute of Health.

Two degree options are available to students interested in studying biology: the Bachelor of Arts in Biology and the Bachelor of Science in Biology. In addition, a biology minor is available.

Students who work toward the Bachelor of Arts in Biology have two degree tracks from which to choose; a cell and molecular track and an ecology, evolution, and conservation biology track. The cell and molecular track is designed for students interested in cell and molecular biology as a career as well for students intending to attend medical, dental, or veterinary school. The ecology, evolution, and conservation biology track was created to take advantage of Big Island's unique natural environment. It is designed for students wishing to attend graduate school or seek employment in ecology, evolution, conservation biology or other related fields of natural resource planning and management or the ecotourism industry.

The Bachelor of Science in Biology is a degree with a cell and molecular emphasis which also has additional chemistry and math requirements. While it was designed specifically for students interested in attending graduate school in the area of cell and molecular sciences, it also supports students who intend to pursue careers in medicine, dentistry, or veterinary medicine.

Biology Major (B.A. Option)

Cell and Molecular Track Requirements: 38 semester hours in biology

Biol 150-150L, 153-153L, 270-270L, 275-275L, 281, 380, 410-410L, 415, 466, 495A, 495B, and a minimum of one additional advanced laboratory course chosen from 415L or 466L, and a minimum of three units of biology elective as a lecture course, laboratory course, or directed research.

Supplemental Requirements:

General chemistry (Chem 124-124L, 125-125L), organic chemistry (Chem 241-241L, 242-242L); college physics (Phys 106-170L, 107-171L) or general physics (Phys 170-170L, 171-171L); and applied calculus (Math 115) or calculus (Math 205-205L).

The following is also recommended: (I) majors planning to pursue graduate studies in cell and molecular biology take both Biol 415L and 466L, Math 205-205L, 206-206L, courses in quantitative analysis and physical chemistry (Chem 330-330L and 350-350L or 351-351L), and at least two semesters of directed research (Biol 399 or 499); (II) majors planning to apply to medical/dental/veterinary school take human anatomy and physiology (Biol 243-243L and 244-244L) and participate in volunteer and shadowing experiences in the local medical/dental/veterinary community as appropriate.

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37 + 1 = 38

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Ecology, Evolution and Conservation Biology Track Requirements: 38 semester hours in biology

Biol 150-150L, 153-153L, 270-270L, 281-281L, 357-357L, 380, 443-443L, 481-481L, 495A, 495B, and a minimum of three units of biology elective as a lecture course, laboratory course, or directed research.

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Supplemental Requirements:

General chemistry (Chem 124-124L, 125-125L), organic chemistry (Chem 241-241L, 242-242L); college physics (Phys 106-170L, 107-171L) or general physics (Phys 170-170L, 171-171L); and applied calculus (Math 115) or calculus (Math 205-205L).

10 + 8 + 8 + 3 + 1

Minor: 21 semester hours in biology

Cell and Molecular Track:

Required: Biol 150-150L, 153-153L, 270, 275-275L, 281 and three additional semester hours of biology in courses numbered above Biol 150. = 21

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Ecology, Evolution and Conservation Biology Track:

Required: Biol 125, 150-150L, 153-153L, 181, 281-281L, and 357. = 21

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No University of Hawaii at Hilo biology courses numbered below 125 are required for, or credited toward, the major or minor in Biology.

REASONS FOR REQUESTED MODIFICATION

For over twenty years, the biology department has offered a degree with a cell and molecular focus. This degree has been a solid foundation for the department and remains a viable avenue of study for students. The proposed program modification therefore retains a cell and molecular option. However, with the recent addition of new faculty, the biology department now has the capability of offering a degree track in ecology, evolution, and conservation biology. It is wholly appropriate that we do so.

Hawaii is the only state in the union with tropical rain forest habitat. It is also the world's premier location for study of evolutionary processes as indicated by the fact that more than 90% of Hawaii's native flora and fauna is endemic. Moreover, the Island of Hawaii is the most ideal in the Hawaiian chain for studies of ecology and evolutionary biology. Unfortunately, much of this unique habitat and many of the endemic species

are threatened. Education in the area of ecology, evolution, and conservation biology is badly needed if we, as a state, are to conserve these precious natural resources.

As an institution, we must take advantage of what we can teach that other institutions cannot as long as it makes academic sense and there is sufficient student interest. As outlined by President Mortimer in his State of the University address on September 11, 1998, the University wishes to expand programs ideally suited for Hawaii like marine science, astronomy, volcanology, *and ecology, evolutionary, and conservation biology.*

The Big Island is truly a natural ecological and evolutionary laboratory which we, as a department, have failed to utilize to its fullest. The proposed B.A. degree track in ecology, evolution, and conservation biology will rectify this situation. This track will take advantage of UH Hilo's location on the Big Island. It should appeal to students interested in working in natural resource management or the expanding ecotourism industry, to those wishing to attend graduate school in ecology, evolution, or conservation biology, as well as those interested in teaching at the intermediate and high school level.

Biology is already one of the largest majors on the Hilo campus. We anticipate that the new ecology, evolution, and conservation biology track will substantially increase biology's major count which is in line with UHH's master plan to expand our enrollment.

Existing

The existing major in biology has a cell and molecular emphasis. Of the 38 required semester hours in biology, 20 semester hours are in courses dealing with aspects of cell and molecular biology (Biol 270, 275-275L, 410-410L, 415, 466, and 415L or 466L). With the exception of biology seminar, all senior-level course work contains a cell and molecular accent. The focus of the biology major curriculum reflects the current national trend toward emphasizing cell and molecular biology. The existing major is ideal for students interested in working in the growing private sector molecular biology industry or those interested in attending graduate school in the area of cell and molecular biology. It is also suited for students interested in professional schools like medical, dental, and veterinarian schools. The existing biology minor, which has a modest cell and molecular emphasis, appeals to students from a number of majors, but especially those enrolled in the Natural Sciences Major.

Proposed

The new biology B.A. program will afford students two tracks in the major from which to choose; a cell and molecular track (C&M) and an ecology, evolution, and

conservation biology track (EECB). There will also be two minors available: one with a C&M focus, the other emphasizing EECB.

The cell and molecular track is essentially the same as the existing major. One new course has been added (Biol 270L), and two semester hours of electives have been dropped. This track will continue to provide a track for students interested in cell and molecular biology as well as for students intending to attend medical, dental, and veterinarian school.

The ecology, evolution, and conservation biology track has been added to take advantage of UH Hilo's location on the Big Island, student interest in this curriculum, the local job market, and to support the University mission as recently outlined by President Mortimer in his State of the University message. This track includes twelve semester hours of newly created ecology, evolution, and conservation biology courses; five newly created laboratory courses (Biol 270L, 281L, 357L, 443L, 481L), and two newly created lecture classes (Biol 443 and 481). The EECB track will appeal to students interested in working in natural resource management and the expanding ecotourism industry, as well as those wishing to attend graduate school in ecology, evolution, or conservation biology.

The C&M and EECB minors afford students the opportunity to choose the emphasis of their minor.