Science 2011-12 Developing a Watershed Science Program: CT and Transfer

Summary:

The Science Division is requesting funding to support planning and developing a dual-track Watershed Science Program leading to an AAS degree for technician level careers and an AAOT Course of Study for students wishing to continue to a higher degree in watershed related fields. These include watershed management, field mapping and data mapping, watershed restoration, groundwater assessment, water quality assessment, and watershed ecosystems to name a few. Related fields are forestry management, fisheries management, hydrology and conservation biology. CD and/or Perkins funds will support advisory meetings and faculty development work leading to an AAS program outline; an AAOT course of study and articulation agreements; and, an initial course, Introduction to Watershed Science.

Description

The Science Division at Lane is ideally suited to develop a new AAS degree program in Watershed Technician and an AAOT Course of Study in Watershed Science. Students will be able to pursue a core curriculum that includes CT courses and transfer sciences. The AAS degree will lead to jobs in watershed related careers; and many students will be able to transfer to university degree programs should they choose to. Existing courses in biology, botany, environmental science, chemistry, water conservation, and sustainability will all support the new program. New courses will be developed for the technical skills needed for the AAS program.

Lane's outdoor learning areas include forested slopes, the native landscaped area, the wetlands and a stream that runs alongside the campus. In other words, we own a watershed learning laboratory!

The proposed new program supports Lane's sustainability in learning goals and complements the existing AAS degrees in Energy Management, Water Conservation and Sustainability Coordinator.

This request will fund the ground work needed to develop the new program in detail and submit it to the State for approval. Preliminary work has been done to network with area professionals and explore career tracks and employment data in preparation for submitting a Letter of Intent by the end of March 2011. The program will build on existing courses in Science, GIS, other Social Science courses, and the Water Conservation Technician programs (all to be worked out).

Questions and Answers

How is the initiative linked to the Unit Plans most recently submitted?

- 1. How does it continue the achievement of those goals?
- 2. If this is a continuation of an initiative started last year, make sure that relationship is clear.

How is this initiative linked to the efficiencies and productivities plans you had last year?

- 1. How does it continue the achievement of these plans?
- 2. If this is a continuation of an efficiency or productivity plan started last year, make sure that relationship is clear.

This initiative continues the achievement of the two themes in the FY2011-12 Science Division Unit Plan, which have been consistent over the past three years. This initiative also supports Lane's strategic direction for optimal student preparation, progression and completion by providing a new, laddered curriculum for Watershed Technician and Watershed Science. The initiative is strongly supportive of Lane's sustainability value and strategic direction.

A) Optimizing sustainable access for students and options for quality learning

B) Optimizing the curricula and resources we already have.

Specific goals and activities are:

3. Increase sustainability-related curricula in support of sustainability in learning goals.

5. Stewardship of outdoor learning laboratories and increasing visibility for sustainability branding for science.

6. Enhance curricula in disciplines.

Describe the resources needed:

1. Developing AAS program outline and Career Pathways map (meetings with outside advisors, curriculum plan, working with Career Pathways office, state approval process)

100 CD hours

Source: Perkins

\$\$\$, Travel funds for advisory contacts, visits to UO, OSU and other four-year colleges

Source: Perkins

2. Developing the AAOT Course of Study and articulation agreements (meetings with outside advisors, faculty and academic advisor meetings, curriculum plan)

100 CD hours

Source: CDs

3. Developing Introduction to Watershed Science (course outline, curriculum approval, acquiring materials and supplies)

100 CD hours

Source: CD, Perkins

\$\$\$ for course equipment and teaching materials

Source: Perkins

What specific measurable program outcomes do you expect to achieve with this initiative? The outcomes should be specific enough to be measurable. Also, outline the method that will be used to determine the results.

- 1. AAS program outline submitted to State
- 2. Career Pathways map, indicating both AAS and AAOT tracks
- 3. AAOT Course of Study approved by Curriculum Committee

4. New course development: Introduction to Watershed Science

Outcomes will be measured by level of completeness, timeline to completion, and successful approval by each level of administrative process.

Department Priority:

2

Unit Resources:

Priority ranking for this initiative was determined by SAC members drawing numbers randomly. All the initiatives are valuable to the Division and to the proposing disciplines; all have the support of the Division.

Many faculty and staff within the Science Division and other college divisions will collaborate on this project. Existing courses will be incorporated, and existing teaching resources will be enlisted for the new program. In addition, volunteer advisors will contribute strongly to the design and success of the program. We will rely heavily on the successful models of Energy Management and Water Conservation Technician in the design of the Watershed Technician AAS degree program. The Division Dean will be actively involved in this project.

Funding Request: Carl Perkins

Is this a Career & Technical Education program approved by the state and offered through Lane for credit?

No

If not a Career & Technical Education program, does your request provide considerable support for students enrolled in these programs?

No

Do you have an advisory committee that meets 2-3 times per year?

No

If request is for personnel, will funds be used to replace an existing position?

No, funds will provide coordination for the project, using existing PT staff

How will funding this initiative increase or sustain the academic achievement and technical skills attainment (GPA of 2.0 or better) of Career and Technical Education students?

This request is for developing a new AAS degree for Watershed Technician. The degree program will included numerous AAOT transfer courses, enabling students to easily continue to a four-year degree if they choose to. The program will have multiple emphasis areas in keeping with the variety of watershed related career tracks. These include, among others:

- Conservation biology in watersheds
- Water quality
- Engineering and surveying
- Restoration technology
- Urban watershed management

• We are in the early stages of assembling a pre-program advisory committee to assist with program design and implementation.

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How will funding this initiative increase or sustain the number of CTE students that graduate or receive a one year certificate from Lane and help prepare the students for employment?

The proposed AAS program will be cohort based with 24 students initially in the AAS track. The program will increase the number of CTE students by providing a new degree with a strong sustainability emphasis. One-year Career Pathway certificates will be embedded in the curriculum, including a naturalist certificate. AAOT students may be able to complete one or more certificates by successfully completing a defined set of CT and transfer courses. Up to 250 students a year could be enrolled in certificate-related courses.

EQUIPMENT \$

COMPUTER HARDWARE \$

COMPUTER SOFTWARE \$

MATERIALS & SUPPLIES \$

\$2500

CURRICULUM DEVELOPMENT (Hours)

200

PART-TIME FACULTY \$

Coordination \$4530 (salary + OPE)

TIMESHEET STAFF \$

TRAVEL \$

\$1000

Can this initiative be partially funded?

Yes

EQUIPMENT \$

(E) Explanation of effect of partial funding:

COMPUTER HARDWARE \$

(CH) Explanation of effect of partial funding:

COMPUTER SOFTWARE \$

(CS) Explanation of effect of partial funding:

MATERIALS & SUPPLIES \$

1500

(MS) Explanation of effect of partial funding:

Reduced funding will limit the specialized equipment and materials needed for the new course.

CURRICULUM DEVELOPMENT (HOURS)

(CD) Explanation of effect of partial funding:

PART-TIME FACULTY \$

2265

(PF) Explanation of effect of partial funding:

This is a 50% reduction in the time provided for project coordination. This will limit the efficiency of the project and increase workload substantially for other Science faculty and staff, including the Division Dean.

TIMESHEET STAFF \$

(TS) Explanation of effect of partial funding:

TRAVEL \$

\$600

(T) Explanation of effect of partial funding:

This will restrict the ability of project team members to travel to meet with industry advisors and university contacts.

Funding Request: Curriculum Development

1. List the following information

- Course Numbers (titles if not currently offered)
- Instructor Name(s) who will work on the curriculum development
- Whether each of the courses is in, or has been through, the curriculum approval process

Introduction to Watershed Science (100 CD hours)

Claudia Owen (Science), Pat French (Science), Eric Sproles (Social Science)

Not developed or approved.

Development of AAOT Course of Study and articulation agreements (100 CD hours)

Not developed or approved.

Science team and academic advisor

- 2. List each course number (or title) and the materials to be created for each class
- Instructional goals, objectives, syllabi and outlines
- Lab instruction packets
- Practice, quiz, presentation &/or demonstration materials
- Other (specify)

Introduction to Watershed Science

- Instructional goals, objectives, syllabi and outlines
- Lab activities
- Field activities
- Practice, quiz, presentation &/or demonstration materials
- Assessments of student learning
- Case studies for problem solving
- Guest speakers and worksite visits for career exploration

Development of AAOT Course of Study and articulation agreements

- Identify courses
- Work with Oregon universities for articulation agreements
- Develop plan of study
- Identify certificate tracks to align with AAS degree program

3. List each course number (or title) and give your timeline for beginning and completing each course curriculum development.

Introduction to Watershed Science

Begin development, May 2011, complete by end of Fall term 2011

Offer course as WS 199 in Spring 2012.

Development of AAOT Course of Study and articulation agreements

Begin development, May 2011, complete by end of Spring, 2012

4. What are up to 3 departmental instructional goals that are met through the development of curriculum in each class?

1. Development of dual-track AAS and AAOT programs to provide new career opportunities in the sciences.

2. Development of courses with sustainability emphasis and values at the forefront.

3. Development of courses that make use of Lane's outdoor learning laboratories for student research and skills practice.

5. List each course number (or title) and give the value of the development of curriculum in each course to other faculty members.

Introduction to Watershed Science

Development of AAOT Course of Study and articulation agreements

As part of an interdisciplinary program, the Watershed Science course development will bring together geology, geography, environmental science, ecology, botany, and other life science faculty.

The program will open up new teaching opportunities for current faculty and expand our connection with regional and local science professionals in a wide range of careers related to Watershed Science.

6. List each course number (or title) and say how many students will be served by the development of curriculum in each class.

Introduction to Watershed Science

Development of AAOT Course of Study and articulation agreements

Initial enrollment, 24 students.

In other related courses in the Watershed Science Course of study, about 250 students annually

7. List each course number (or title) and give the specific benefits to students that you expect from the development of curriculum in each class.

Introduction to Watershed Science

Development of AAOT Course of Study and articulation agreements

- New career pathways
- Multiple career goals: from technician through graduate level programs
- Integrated curriculum with strong sustainability focus.

8. List each course number (or title) and give the specific benefits for diversity that you expect from the development of curriculum in each class.

Introduction to Watershed Science

Development of AAOT Course of Study and articulation agreements

Everyplace on the planet is part of a watershed! Students who complete the program will have a local, regional and global awareness of water issues and how they affect communities. Water will be the major geopolitical factor in the world in the coming years. Managing water resources will be a primary objective of governments at every level from local to national and international bodies. Water will be a political and cultural issue.

9. List each course number (or title) and give the specific benefits to sustainability that you expect from the development of curriculum in each class.

Introduction to Watershed Science

Development of AAOT Course of Study and articulation agreements

Use of Lane's outdoor learning laboratories

- Content and activities specific to sustaining water resources
- Development of career tracks in sustainability fields

10. List each course number (or title) and give the specific effects on distributed learning that you expect from the development of curriculum in each class.

Introduction to Watershed Science

Development of AAOT Course of Study and articulation agreements

The new course will incorporate online learning tools. Many of the existing courses that will be part of the AAOT Course of Study rely heavily on online learning tools.

Hours requested for Curriculum Development funding:

Please enter the amount of one of the following:

- 100 hours maximum for new development.
- 70 hours maximum for course revision
- 50 hours for 3-4 credit conversion
- other (use if multiple courses addressed in one initiative

Do not enter any characters other than numbers and a decimal.

How many hours are you requesting? If there are multiple courses addressed in the initiative, please list each course number (or title) and give the number of hours requested for each course.

200

Can this initiative be partially funded?

Yes

Partially funded curriculum development HOURS requested:

150

Explanation of effect of partial funding:

This will provide 100 hours for developing Introduction to Watershed Science and only 50 hours for developing the AAOT Course of Study and articulation agreements. This work is vital to the success of the AAOT track of the new program. We do not favor reducing the CD hours.

Funding Request: Technology Fee