Proposal for the Initiation of New Instructional Program Leading to the Graduate Certificate in Urban Forestry

Oregon State University

College of Forestry - Department of Forest Ecosystems and Society

Submitted October 29, 2013

CIP # 03.0508

Proposed Effective Term: Fall, 2014

Executive Summary

This proposal would establish a Graduate Certificate in Urban Forestry. The 18-20 credit Certificate would be available as a stand-alone program, or as the foundation for a student’s participation in OSU’s online Master of Natural Resources (MNR), where it would join the six existing Certificates as a new option. Urban forestry involves the planning, planting, and management of trees and related vegetation in and around cities. The urban forest is made up of the mosaic of the planted landscape and native forest remnants left behind as cities have developed. Urban forestry is an academic discipline that is related to Forestry, Horticulture, Urban Planning, Landscape Architecture, and Land Use Planning. Urban foresters work in municipal governments, non-profit organizations, other public agencies, and the private sector.

The target audience for this Certificate includes professionals already working in urban forestry programs at the state, local, national, and non-profit levels. The online delivery of this proposed program via Ecampus will allow time- and place-bound natural resource professionals new access to graduate level education by allowing them to remain in their jobs and not have to move to a residential university setting. This new program will train professionals to further advance their urban forestry programs, to address critical contemporary challenges such as climate change and invasive species, and to make their cities more livable by capitalizing on the ecosystem services produced by the urban forest and reaping the economic, environmental, and social benefits that urban trees provide.

OSU’s Graduate Certificate in Urban Forestry would be the first of its kind in North America – no other university currently offers graduate urban forestry education online. OSU Ecampus has agreed to invest in the development of this new program, and numerous urban forestry professionals have already expressed interest in the potential new program.
1. Program Description

a. Proposed Classification of Instructional Programs (CIP) number: 03.0508

   Title: Urban Forestry

   Definition: A program that prepares individuals to apply the principles of forestry and related sciences to the development, care, and maintenance of individual trees and forested areas within or close to areas of dense human habitation. Includes instruction in urban environments; effects of pollution on tree species; environmental design and landscaping; urban pest infestation; urban forest management; and applicable policies and regulations.

b. Brief overview (1-2 paragraphs) of the proposed program, including its disciplinary foundations and connections; program objectives; programmatic focus; degree, certificate, minor, and concentrations offered.

   Urban forestry – the management of trees and vegetation in and around cities – first appeared in academic literature in 1965, in federal US policy in 1978, and in academic degree offerings in the early 1990s. Urban forestry is a diverse field that takes in concepts from many natural resource disciplines. Today, urban forestry professionals deal with critical urban natural resource issues while employed at the government, non-profit, and private sector levels. Due to the relatively young nature of the profession, most urban foresters have varied academic backgrounds and few have advanced degrees. Most lack the ability to complete an advanced degree without leaving the workforce, making them a prime audience for online education.

   OSU is the first US University to offer a regularly scheduled online urban forestry course (2009 to present) and the first to offer an online urban forestry degree option (the new BS in Natural Resources – Urban Forest Landscapes Option). OSU’s initial offering of online urban forestry courses (FES/HORT 350 Urban Forestry, FES/HORT 447/547 Arboriculture, and FES/HORT 455/555 Urban Forest Planning Policy and Management) have been well received by urban natural resource professionals across the US, Canada, and beyond. Many urban foresters have approached OSU inquiring about a graduate level offering, and initial market research suggests that it would have great potential to attract students. OSU has a highly successful and innovative online Master of Natural Resources (MNR) degree that provides an ideal framework for expansion. There are already multiple areas of emphasis in the online MNR degree, with a set of core courses and an emerging visibility among natural resource professionals. Consequently, this proposal will create a Graduate Certificate in Urban Forestry as an Area of Emphasis in OSU’s online MNR degree program.

c. Course of study – proposed curriculum, including course numbers, titles, and credit hours.

   The Proposed Curriculum for an 18-20 credit Graduate Certificate in Urban Forestry would use existing OSU courses, supplemented by three proposed new course offerings. The Certificate would align with the online Master of Natural Resources, giving students the option to complete a stand-alone Urban Forestry Certificate, or to continue on to the MNR graduate degree with the Urban Forestry Certificate as their
Students would complete 12 required credits, and take two elective courses resulting in a combined credit hour total of between 18 and 20 depending on the electives selected. These courses are:

**Required Courses (12 credits)**
1. FES/HORT 555 Urban Forest Planning, Policy, Management
2. SNR 511 Sustainable Natural Resources
3. FES 5XX (new) Urban Natural Resource Planning
4. FES 5XX (new) Urban Forestry Leadership
5. FES 506 (new section) Urban Forestry Capstone

**Elective Courses – Chose TWO (6-8 credits total)**
1. FES 545 Ecological Restoration
2. FES/HORT 547 Arboriculture
3. FES 554 Managing at the Wildland-Urban Interface
4. FES 593 Environmental Interpretation
5. FES 585 Consensus and Natural Resources
6. GEO 551 Environmental Site Planning
7. GEO 565 Geographic Information Systems
8. FES 5XX (new) Urban Ecosystems or FW 562 Ecosystem Services
9. FES 592 Ecosystem Services or (3) FW 562 Ecosystem Services

Each of the existing courses, with the exception of GEO 551, is currently available online, or in development with OSU Ecampus. GEO 551 is expected to be available online by 2014-15. The various new courses (listed here as 5XX) will be available online by 2014-15 as well, pending completion of CAT II approval processes. The Director of the Certificate program may approve the substitution of a similar course or course at a higher level at his/her discretion on petition by a registered student. The Director may also approve any other course deemed relevant to the study of urban forestry as a substitute for any of the above courses based on the experience level of the student.

d. **Manner in which the program will be delivered, including program location**

This program will be delivered exclusively online in order to meet the needs of its target audience – working professionals. No other university in North America offers online urban forestry curricula at either the graduate or undergraduate level. By making this graduate education opportunity available online, this program will attract graduate students who might not otherwise attend OSU. The online nature of the program, and the focus on working professionals, will create access to higher education for a diverse population who can’t currently access it in their preferred discipline.

e. **Ways in which the program will seek to assure quality, access, and diversity.**

The program will assure quality, access and diversity through the following efforts:

**Application Review** - All applications will be reviewed by the Certificate Director. Applicants must have a bachelor’s degree and an undergraduate GPA of at least 3.0 plus a demonstrated interest in the Graduate Certificate for career or academic advancement (as shown in the application materials). Students with a bachelor’s degree
in a non-natural resources field may be required to take preparatory courses prior to admission unless they have relevant work experience that can serve as a basis for admission. Students who do not meet the 3.0 GPA requirements may petition for conditional admission at the discretion of the Certificate Director, pending review by the Graduate Admissions Committee. Students who do not meet admission requirements will be advised to take 1-2 graduate-level courses as a non-degree seeking student, or apply to an appropriate post-baccalaureate program. As a unique program in all of North America, this program is expected to attract significant interest among practicing urban foresters, and enrollment may need to be limited to the most qualified applicants.

Retention and Evaluation – An advisor will check the status of currently enrolled Graduate Certificate students at the end of each academic term to assure that they are making progress and are meeting Continuous Enrollment requirements. Students who need to file Leave of Absence forms will be contacted by email, and those who are struggling will be referred to the Certificate Director and the Academic Success Center. Final grades, capstone products, and mentor evaluations of the capstone project will be reviewed by the Certificate Director prior to awarding the Graduate Certificate in Urban Forestry to a student.

Access and Diversity - Access to higher education and opportunities and the diversity of student populations should increase under this proposal. Natural resources has historically been a profession that has struggled to attract large number of minority students. Urban Forestry typically attracts a more diverse racial, ethnic, and gender composition than other fields within the natural resources profession. Urban Forestry training has historically been diverse – urban foresters are often hired from a variety of backgrounds, including Forestry, Horticulture, Landscape Architecture, and Urban Planning. The focus on urban areas has the potential to attract more minorities than a rural-focused program.

Course Quality – The Certificate Director has already completed the Peer Review Course from Quality Matters, an online course design and review process recently implemented by OSU, and he will be serving as a reviewer for other OSU courses in the next few years. The required content courses for this Certificate will designed using the Quality Matters Rubric and may be submitted for Peer Review prior to the third year they are taught. Required courses will be updated on a regular basis.

f. Anticipated fall term headcount and FTE enrollment over each of the next five years.

Applications for the Graduate Certificate in Urban Forestry will be accepted year-round. Based on interest conveyed to OSU faculty over the past two years that this idea has been under discussion, the program should attract 6 students enrolled in the first term, Fall Quarter 2014. The Certificate should take at least four quarters to complete. Once the program is fully operational, there should be an estimated 20 students in the program at any given time. The program goal by year 5 will be to have a stable enrollment of 20 students at any one time, including students just entering the program, students completing a Certificate, and students continuing on to complete the Master of Natural Resources degree.
g. Expected degrees/certificates produced over the next five years.

It is estimated that of the students enrolling in the program, up to 50% would continue on to the MNR online degree, using the Graduate Certificate in Urban Forestry as their program option. Thus, while the first Certificate graduates will complete the program by Fall 2015, the first MNR graduates wouldn’t likely occur until Summer 2016. By the end of the 2016-17 academic year, the program could be producing 5 Certificate holders and 5 MNR degree graduates each year. It should be recognized that with working professionals as a target audience, the program should expect a few students who need a leave of absence from the program and thus will take longer to complete the curriculum. However, with subsequent growth and assuming an average of 4 terms per student, the program should produce 50 Certificate holders by the five-year mark at end of the 2018-19 academic year.

h. Characteristics of students to be served (resident/nonresident/international; traditional/nontraditional; full-time/part-time; etc.)

Urban Forestry professionals work in a variety of capacities in local, regional, and state governments, the private sector, and in non-profit organizations. Almost 80% of the US population lives in urban areas and Urban Foresters have increasingly pivotal roles in dealing with the interface of the natural and the built environments. According to the UN, it is estimated that by 2030, 60% of the world’s population will live in urban areas. The 2005 UN Millennium Ecosystem Assessment details the surprisingly direct connections between the ecosystems services and human well-being. Thus, urban foresters with a greater understanding of complex climate, environmental, and social issues should be able to play valuable roles in improving the quality of life in their cities.

The target audience for this proposal includes working professionals who are already contributing to the quality of life in their communities by working on sustainable natural resource issues. Today, all major US cities, most medium cities, and even many smaller ones employ urban forestry professionals who deal with a myriad of environmental issues, and who have a great untapped potential to play an increased role in addressing more complex issue such as climate change. The new Graduate Certificate in Urban Forestry will be appropriate to all students, especially mid-career, company, industry or agency employees who want more training and experience in natural resources management. Typical students would come from across the US and Canada, and have a Bachelor’s Degree and preferably at least two years’ experience working in the urban natural resources field. Students will be attracted by the online nature of the program, allowing them the opportunity to continue employment while working on the Certificate.

i. Adequacy and quality of faculty delivering the program.

The Certificate Director will be Mr. Paul D. Ries, MS, an Instructor in the Department of Forest Ecosystems and Society. Mr. Ries has over 25 years of urban forestry experience at the local, state, national, international, non-profit, and academic levels. He has been affiliated with OSU for the past 9 years, and currently holds a .50 FTE appointment at OSU. He was the 2011 recipient of the OSU Vice Provost's Award for Excellence in Innovation - Online Credit Teaching for his teaching efforts at OSU. He currently serves on the Board of Directors of the International Society of Arboriculture, a
worldwide professional association of arborists and urban foresters with over 20,000 members. In 2006, he received the President’s Award from the Society of Municipal Arborists for his work as the curriculum chair for the innovative Municipal Forestry Institute – a weeklong leadership course in urban forestry. Under this proposal, Mr. Ries will teach many of the core courses in the program, and will handle the administrative duties as Certificate Director. He will coordinate student advising, review all applications and programs of study, be a resource for students with questions about their program or career paths, and review coursework and capstone projects for Certificate completion.

All courses in this Certificate program will be taught by graduate faculty members having expertise in a broad range of natural resource topics applicable to an Urban Forestry setting.

ej. Faculty resources – full-time, part-time, adjunct.

The following table lists the graduate faculty will supervise and/or teach graduate courses in this Certificate. CVs are available upon request.

<table>
<thead>
<tr>
<th>Faculty Member</th>
<th>Area of Expertise</th>
<th>Course(s) taught in the Certificate Program</th>
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<tbody>
<tr>
<td>Badege Bishaw, PhD</td>
<td>Agroforestry, Social Forestry, Silviculture</td>
<td>SNR 511 Sustainable Natural Resources</td>
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<tr>
<td>Director of MNR Program</td>
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<tr>
<td>John Bliss, PhD</td>
<td>Private forest policy, Forest-based rural development</td>
<td>FES 592 Ecosystem Services: Ecology, Sociology, Policy</td>
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<tr>
<td>Professor, Forest Ecosystems and Society</td>
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</tr>
<tr>
<td>Sandra DeBano, PHD</td>
<td>Ecosystem services</td>
<td>FW 562 Ecosystem Services</td>
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<tr>
<td>Associate Professor of Wildlife</td>
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<tr>
<td>Anita Morzillo, PhD</td>
<td>Landscape ecology, Wildlife ecology, Human dimensions</td>
<td>FES 585 Consensus and Natural Resources</td>
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<tr>
<td>Assistant Professor, Forest Ecosystems and Society</td>
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<td>FES 5XX Urban Ecosystems</td>
</tr>
<tr>
<td>Mark Reed, MA</td>
<td>Forest ecosystems and society</td>
<td>FES 545 Ecological Restoration</td>
</tr>
<tr>
<td>Instructor, Forest Ecosystems and Society</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Paul D. Ries, MS</td>
<td>Urban forestry, Arboriculture, Tree risk assessment</td>
<td>FES/HORT 555 Urban Forest Planning, Policy, Management</td>
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<tr>
<td>Instructor, Forest Ecosystems and Society</td>
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<td>FES/HORT 547 Arboriculture</td>
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<td>FES 5XX Urban Forestry Leadership</td>
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<tr>
<td></td>
<td></td>
<td>FES 506 Urban Forestry Capstone</td>
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</tbody>
</table>
k. Other Staff

Capstone project members will be drawn from the ranks of urban forestry professionals serving in local, state, or federal agencies. The Certificate Director will serve as the capstone project coordinator and instructor of record for the FES 506 section. Support staff from the FES Department will handle graduate program admissions coordination. In the later two years, a Graduate Teaching Assistant would be added at .25 FTE. OSU faculty members who have agreed to serve as capstone project mentors include:

- Glenn Ahrens, MS, Extension Forester, OSU Extension Service
- Max Bennett, MS, Extension Forester, OSU Extension Service
- Stephen Fitzgerald, MS, Extension Forester, OSU Extension Service
- Amy Grotta, MS, Extension Forester, OSU Extension Service
- John Lambrinos, PhD, Associate Professor, OSU Horticulture Department
- Gail Langelotto, PhD, Associate Professor, OSU Horticulture Department
- David Shaw, PhD, Extension Forester, OSU Extension Service
- Al Shay, MS, Instructor, OSU Horticulture Department

Additional mentors involved with capstone projects will come from urban forestry, horticulture, urban planning, and natural resource professionals from public agencies throughout the state. These may include:

- Jenn Cairo, MS, MPA, City Forester, City of Portland, OR
- Jennifer Karps, MS, Urban Canopy Coordinator, City of Portland, OR
- Kristin Ramstad, MF, Community Assistance Forester, Oregon Dept. of Forestry
- Vivek Shandas, PhD, Associate Professor of Urban Studies, Portland State Univ.

These individuals would be eligible for courtesy faculty status while serving as mentors. CVs are available upon request. Additional mentors will be recruited to assist students as the program expands.
I. Facilities, library, and other resources.

The Department of Forest Ecosystems and Society is housed in two buildings on the Corvallis campus. Because students admitted to the Graduate Certificate in Urban Forestry will be Ecampus online learners, the current facilities are sufficient for meeting the needs of these students. OSU Library resources are also readily available to online students, though some additional library resources may later be needed. One new journal, *Urban Forestry and Urban Greening*, would be added to the library collection.

m. Anticipated start date.

Pending all appropriate reviews, the program should be available by Fall Quarter, 2014. Several individuals from across the US have already inquired about enrolling in this new Certificate program if it is approved.

2. Relationship to Mission and Goals

a. Manner in which the proposed program supports the institution’s mission and goals for access; student learning; research, and/or scholarly work; and service.

This program is very directly aligned with OSU’s Strategic Plan and advances its Phase I goal aimed to place OSU among the ten best Land Grant universities in the nation. The proposed Graduate Certificate in Urban Forestry and MNR degree option is closely aligned with the elements of the OSU Strategic Plan for interdisciplinary collaboration, the land-grant mission, national and international dimensions to the curricula, and the environmental and socio-economic health of the state, the nation and globe. Of the six strategic initiatives that focus on interdisciplinary approaches to education, the Graduate Certificate in Urban Forestry directly supports three of these initiatives:

- Understanding the origin, dynamics, and sustainability of the Earth and its resources.
- Optimizing enterprise, technological change, and innovation.
- Managing natural resources that contribute to Oregon’s quality of life, and growing and sustaining natural resources-based industries in the Knowledge Economy.

The Graduate Certificate in Urban Forestry also supports the Initiatives found in Phase II’s Strategic Plan Goals:

- The Graduate Certificate in Urban Forestry supports Goal 1 (*Provide outstanding academic programs that further strengthen our performance and pre-eminence in the thematic areas*) through its contribution to the following strategies:
  - Strategy D (enhance collaboration and coordination among academic units, centers, institutes, and programs).
  - Strategy I (focus outreach programs from the thematic areas on the state’s most critical economic and environmental issues, as well as on issues affecting human well-being, while creating new programs that target the critical needs of Oregon’s increasingly diverse population).
  - Strategy K (focus on scholarship creating international partnerships that address critical issues of environment, health, and socio-economic well-being in the context of a global society).
The Graduate Certificate in Urban Forestry also supports Goal 2 (*improve the teaching and learning environment, and achieve student persistence and success through graduation and beyond, that matches the best land grant universities in the country*). This initiative contributes to the OSU mission to serve the people of Oregon and the nation by providing a flexible professional training program through an e-campus format that can provide new job skills and opportunities for Oregonians to work in municipalities and public agencies across the state.

b. **Connection of the proposed program to the institution’s strategic priorities and signature areas of focus.**

The OSU Strategic Plan goal to ‘focus even more intently on enhancing OSU’s ability to produce strategies and solutions for the most important – and intractable – issues facing Oregon, the nation, and the world’ is addressed by this proposal. These goals encompass faculty development for both instruction (to enable students to think critically and solve complex problems) and research (to, develop skills and capacities for research to help create solutions).

The Graduate Certificate in Urban Forestry helps educate working professionals (through the accessible on-line degree) as well other students in dealing with climate change to improve livability in communities and other natural resource issues. The capstone project with a major professor/mentor gives even more exposure to critical thinking skills and processes.

Phase II of the OSU Strategic Plan includes a signature area of focus that can be addressed by this new program. *Advancing the Science of Sustainable Earth Ecosystems* -“Improving the understanding of the earth ecosystems upon which all life depends, and promoting their sustainability through high-impact public policy involvement with issues such as climate change, food security and safety, renewable energy production, and economically viable natural resource management.” The Graduate Certificate in Urban Forestry is designed to help advance the science of sustainable earth ecosystems. It is targeted at professionals who work in management and interpretation to the public of the trees, parks and open spaces in cities. These areas, as much as or more than other places on earth, are subject to issues related to climate change such as how will mature plantings survive, how much water do urban trees use and during what seasons, how do their new stresses affect performance in the face of typical urban stressors (e.g. from air pollution, invasives, vandalism), and other contemporary issues.

c. **Manner in which the proposed program contributes to Oregon University System goals for access; quality learning; knowledge creation and innovation; and economic and cultural support of Oregon and its communities.**

Online degrees and certificates are a high priority for the Oregon University System. OSU’s College of Forestry is recognized as the premier provider of forestry professionals in the US. Adding a strong urban forestry component to the College’s offerings has enormous growth potential. With 80% of the US population (and 68% if all Oregonians) living in cities, the demand for skilled people who can help cities maintain a livable environment will only increase.
As an online program, the Graduate Certificate in Urban Forestry will be fully accessible by students from around Oregon, the West, the entire US, and the world. The courses will focus on specific knowledge, skills, and competencies to address critical urban natural resource issues. The online delivery component makes this an innovative project because it involves a new Certificate and degree option that isn’t currently available anywhere in North America.

d. Manner in which the program meets broad statewide needs and enhances the state’s capacity to respond effectively to social, economic, and environmental challenges and opportunities.

The proposed Graduate Certificate in Urban Forestry involves an integrated curriculum with courses, case studies and readings coordinated throughout the Program by the instructors and the Certificate Director. Students will work on a capstone project throughout their course of study with faculty advisor who will help each student frame and analyze a problem important to his/her city, organization, or region.

The proposed Graduate Certificate in Urban Forestry is needed to help natural resource professionals respond the challenges of managing urban environments in such a way that captures the economic, environmental, and social benefits that trees provide. Each student will complete the Graduate Certificate in Urban Forestry only after having demonstrated:

- Skill in integrative thinking and collaborative learning across several disciplines within the natural resource professions.
- Familiarity with a wide variety of disciplinary knowledge and capacity to apply knowledge to natural resource problems at multiple scales.
- Ability to construct a study project about a specific policy issue using multiple data collection techniques, cross-disciplinary interactions, and integrated analysis methods.

The Graduate Certificate in Urban Forestry will not only help students gain new knowledge, it will also be a problem-solving experience. The program’s capstone projects provide students with extensive experience developing their problem-solving skills. This project focuses the substantial capabilities of our students and faculty on real-world natural resource problems faced by agencies, institutions, and organizations – problems which often involve balancing the “triple bottom line” of sustainability – economic, environmental, and social aspects.

Within the field of Urban Forestry, this Certificate fills an important niche – providing graduate level training to natural resource professionals who play an on-the-ground role in responding to social, economic, and environmental challenges and opportunities facing our cities, where 68% of all Oregonians live. The flexibility of the program will attract urban foresters from cities both large and small. Given that the Certificate Director has 25 years of experience in this professional field, he has extensive contacts throughout the US that can help connect students to a variety of urban forestry problems and issues that can be addressed during the capstone projects, making this a real-life problem-solving experience rather than a theoretical one.
3. Accreditation

a. Accrediting body or professional society that has established standards in the area in which the program lies, if applicable.

There are no accreditations programs in the field of urban forestry graduate education.

b. Ability of the program to meet professional accreditation standards. If the program does not or cannot meet those standards, the proposal should identify the area(s) in which it is deficient and indicate steps needed to qualify the program for accreditation and date by which it would be expected to be fully accredited.

While there is no accreditation program for urban forestry education programs, there are similar efforts for individuals and municipal programs. The closest approximation to professional accreditation program available for urban foresters would be the International Society of Arboriculture (ISA) Municipal Specialist Certification. This program is a voluntary one that individual urban foresters can attain. A related organization, the Society of Municipal Arborists (SMA), accredits municipal urban forestry programs. The Graduate Certificate in Urban Forestry could be a valuable tool in helping individuals obtain ISA Municipal Specialist certification and in helping municipal urban forestry programs gain SMA accreditation.

c. If the proposed program is a graduate program in which the institution offers an undergraduate program, proposal should identify whether or not the undergraduate program is accredited and, if not, what would be required to qualify it for accreditation.

The Society of American Foresters accredits undergraduate Forestry curricula, and OSU has held this accreditation since 1935.

d. If accreditation is a goal, the proposal should identify the steps being taken to achieve accreditation. If the program is not seeking accreditation, the proposal should indicate why it is not.

There is no suitable accreditation program available for the proposed Graduate Certificate in Urban Forestry.

4. Need

a. Evidence of market demand.

The Society of Municipal Arborists (SMA), a professional society for arborists and urban foresters working at the municipal level, surveyed graduates of their innovative annual national leadership course, the Municipal Forestry Institute (MFI). The survey results provide some interesting “market research” for OSU regarding the relevance of the Graduate Certificate in Urban Forestry. SMA surveyed 319 MFI graduates, and obtained a 45% response rate. The following table reveals that 60% of the respondents had some interest in an online urban forestry degree such as the one in this proposal.
The SMA has a membership of approximately 1,500 people in the US and Canada, while the ISA has a membership of over 20,000 people worldwide. This group of nearly 400 MFI graduates and 20,000 ISA urban foresters and arborists would be the primary target audience of the new Graduate Certificate in Urban Forestry.

b. If the program’s location is shared with another similar OUS program, proposal should provide externally validated evidence of need (e.g., surveys, focus groups, documented requests, occupational/employment statistics and forecasts).

After review of Environmental Science and Natural Resources Programs with the OUS, it was determined that this program does not overlap with any other OUS institution.

c. Manner in which the program would serve the need for improved educational attainment in the region and state.

In OSU’s Strategic Plan, the University commits itself to “Focus even more intently on enhancing OSU’s ability to produce strategies and solutions for the most important – and intractable – issues facing Oregon, the nation, and the world”. The Graduate Certificate in Urban Forestry would be a significant step towards that goal. OSU is in a prime competitive position to offer the Certificate for several reasons: 1) it would be the only online program being offered in this topic area in the entire US, 2) OSU has a track record of existing online natural resource courses that is unparalleled anywhere else, and 3) Urban Forestry continues to be an emerging topic of importance, and OSU’s national leadership role in the Forestry profession makes this offering a natural addition to an already excellent program.

d. Manner in which the program would address the civic and cultural demands of citizenship.

The Graduate Certificate in Urban Forestry emphasizes the integration of social and biological sciences, balanced with critical thinking skills and a strategic thinking approach to natural resource management. The Department’s online courses encourage thoughtful debate through discussion boards, group projects, case studies, and simulations. Because urban foresters are engaged in managing the environment for public benefits, the civic nature of this endeavor is always present. Urban forestry programs at the municipal level almost always have a civic engagement and cultural diversity component, and this Certificate program will address those components.

<table>
<thead>
<tr>
<th>Table: Survey of Municipal Forestry Institute Alumni interest in advanced Urban Forestry credit based courses and degree.</th>
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<tbody>
<tr>
<td>Would have applied for credit for MFI if it had been offered</td>
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<tr>
<td>Interest in obtaining an online Urban Forestry graduate degree</td>
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5. Outcomes and Quality Assessment

a. Expected learning outcomes of the program.

The curriculum requirements for the Graduate Certificate in Urban Forestry are intentionally designed to be broad in order to provide students with flexibility in scheduling and tailoring their program of study to meet their individual needs, educational background, and work experience. For example, a city forester working in a municipal program may have some commonality but also some very different needs or interests than an executive director of a non-profit tree planting group. Both would be able to tailor the program by taking elective courses that suit their needs, in addition to taking a common set of required courses. All students will be expected to meet the following learning outcomes of the proposed program:

- **Demonstrate** proficiency (overall GPA of 3.0 or greater) in graduate-level coursework in urban forestry and natural resources.
- **Integrate** biological and social science concepts in a capstone project designed to address a specific urban forestry situation, issue, or problem.
- **Synthesize** scientific information from a variety of sources and demonstrate research and writing skills through a capstone project proposal, outline, and revision process, as well as correct citation and documentation of sources.
- **Improve** knowledge and understanding of critical urban forestry issues to prepare for advancement in the field.

The ultimate outcome of the Graduate Certificate in Urban Forestry program is to produce well-rounded natural resource professionals who contribute to the advancement of the profession and the improved management of urban natural resources.

b. Methods by which the learning outcomes will be assessed and used to improve curriculum and instruction.

Faculty advisors and mentors will provide a review of each student’s capstone project and overall coursework to assess learning outcomes described above during an oral presentation prior to graduation. All students will receive an exit questionnaire that includes an opportunity to evaluate their courses and experience in the program. The Quality Matters Rubric will also be used to improve the courses. The Certificate Director and the Head of the Department of Forest Ecosystems and Society will annually review the results in order to identify program needs and potential improvements.

c. Program performance indicators, including prospects for success of program graduates and consideration of licensure, if appropriate.

Program success will be measured by the number of graduates, and the success those graduates achieve post-Certificate completion (promotion or movement to higher levels of managerial responsibility). A LinkedIn group, Facebook page, or annual newsletter are the types of tools that may be used to maintain contact with graduates.
d. Nature and level of research and/or scholarly work expected of program faculty; indicators of success in those areas.

The Certificate Director will review exit surveys, course evaluations, and employment histories of Certificate students in this program, potentially synthesizing the information for publication in an education journal or commentary in an online forum, as well as presentations at regional and national meetings. When a critical mass of graduates is achieved, a survey will be conducted to quantify the experience and subsequent ways the graduates have applied the information they learned in the program.

6. Program Integration and Collaboration

a. Closely related programs in other OUS universities or Oregon private institutions.

No other OUS institution offers an urban forestry curriculum at either the undergraduate or graduate level. Portland State University offers a single undergraduate Geography course in Urban Forestry. PSU offers an Urban Studies Masters Degree encompassing urban planning, transportation, livability, and sustainability, and is tangentially related to forestry and natural resources. The University of Oregon offers an Ecological Design Certificate that relates to architecture and landscape architecture, and is tangentially related to forestry and natural resources. No private colleges or universities in the state offer any related programs.

b. Ways in which the program complements other similar programs in other Oregon institutions and other related programs at this institution. Proposal should identify the potential for collaboration.

The Graduate Certificate in Urban Forestry would complement the two aforementioned programs at PSU and UO. Those programs are focused on urban planning and design, whereas the OSU Certificate would focus on the broader management of urban natural resources and particularly the urban forest component. There are several potential collaborations possible here, including guest lectures by PSU and UO faculty in OSU courses (and vice-versa), collaborative networks for group projects with PSU or UO graduate students, and even the possibility of adding PSU or UO courses as an elective if the latter two institutions offer any of these classes online in the future. Such collaboration would strengthen all three programs.

c. If applicable, proposal should state why this program may not be collaborating with existing similar programs.

Not applicable.

d. Potential impacts on other programs in the areas of budget, enrollment, faculty workload, and facilities use.

Other Departments teach several of the elective courses listed in the Certificate curriculum. As with the MNR degree and other certificate programs, we seek collaboration across campus and hope that our courses and majors enhance the diversity and quality of all natural resource-based programs.
7. Financial Sustainability (attach the completed Budget Outline)

a. Business plan for the program that anticipates and provides for its long-term financial viability, addressing anticipated sources of funds, the ability to recruit and retain faculty, and plans for assuring adequate library support over the long term.

The Graduate Certificate in Urban Forestry utilizes many existing OSU courses, plus new graduate level courses that would be created as part of this proposal. Ecampus has awarded a faculty development grant to the FES Department for these new courses, which will be developed and submitted through the CAT II process during the 2013-14 academic year. Beginning in 2014-15, the Certificate program will be supported by tuition revenues resulting from an increase in FTE created by the student enrollment in the three new courses and one existing graduate course. Since 80% of Ecampus tuition revenues are returned to the academic unit, these funds should be sufficient to support the new Certificate program.

Expected revenues are based on a conservative estimate of 6-20 enrolled students per year multiplied by 7 credit hours of new required FES coursework and 4 credit hours of existing FES coursework (FES 555), followed by a gradual increase in enrollment to the target of 20 students per year. Revenues are calculated at the 2013-14 Ecampus graduate tuition rates that can be expected to return $410 per credit hour to the academic unit, less 15% allocated to the College of Forestry.

| Anticipated Ecampus Tuition Revenues from new Graduate Certificate in Urban Forestry |
|----------------------------------------|---------|--------|---------|--------|
| Year 1 | Year 2 | Year 3 | Year 4 |
| 6 students | 10 students | 15 students | 20 students |
| $23,001 | $38,335 | $57,502 | $76,670 |

The addition of this Certificate will create a larger online graduate student body that will add to the credit hours in the elective courses offered by the other departments represented in the proposed curriculum. Those increased tuition revenues will be retained by the departments hosting the elective courses.

As noted on the proposed Budget Worksheet, the Certificate Director will be supported by .25 FTE, which will cover instruction (.15 FTE for the three new classes totaling 7 credits), and administration (.10 FTE for program coordination and student advising). The remaining .25 FTE of the Certificate Director’s faculty position (for a total of .50 FTE) is already devoted to undergraduate instruction. Graduate Teaching Assistant and Support Staff FTE would be added in years 3 and 4 as the workload for the Certificate increases. Ecampus does not provide funding for advising and administrative support for graduate-level programs at this time. Tuition revenue from the three new courses and the one existing course are expected to cover these costs. Library resources are adequate to begin the program, however as the program expands, there may be additional need to increase regular and electronic library resources required for the program. The budget calls for one new journal, Urban Forestry and Urban Greening, to be added to the OSU collection to support this new Certificate.
b. Plans for development and maintenance of unique resources (buildings, laboratories, technology) necessary to offer a quality program in this field.

Given the online nature of this program, brick-and-mortar facilities aren’t as relevant as they would be in a residential graduate program. OSU’s nationally recognized Ecampus program has sufficient infrastructure to support this increase in enrollment. This Graduate Certificate will join other online MNR graduate certificates in a partnership with Ecampus. We are dedicated to providing the best available online education, utilizing cutting-edge technologies and continually updating course materials and delivery. The Certificate Director has already completed the Quality Matters course requirements to become a Peer Reviewer of online courses. We will continue to work with Ecampus on technological advances, continually updating courses and improving our efforts to connect with distance education students.

The quality of the program will be based on the quality of the classes, and the reputations and teaching abilities of the instructors. Another key piece of the experience for this program will be the case studies. OSU is working with the Oregon Department of Forestry’s (ODF) Urban Forestry Assistance Program to identify cities across the state that would be willing to work with students to make their Capstone Project a real-life experience rather than a theoretical exercise. ODF has contacts with urban forestry programs in the other 49 states, and we expect that eventually we should be able to help students find a Capstone Project close to their home.

c. Targeted student/faculty ratio (student FTE divided by faculty FTE).

1:10, moving to 1:20 when the Certificate is fully operational.

d. Resources to be devoted to student recruitment.

This new Certificate will be promoted widely through various urban forestry professional association meetings and publications. Ecampus will help market the Graduate Certificate in Urban Forestry through its extensive networks. OSU is also a member of the Natural Resource Distance Learning Consortium, a collaboration of multiple land-grant institutions offering online courses. The Certificate Director’s personal contacts formed through 25 years experience in the Urban Forestry professional will be leveraged to recruit new students from throughout Oregon and across the US.

8. External Review (if the proposed program is a graduate level program, follow the guidelines provided in External Review of new Graduate Level Academic Programs in addition to completing all of the above information)

This proposal is a Certificate and not a stand-alone graduate degree program. Although the specific Certificate is new, this proposal is an extension of the Master of Natural Resources program at OSU, where five other related Certificates currently exist. The MNR program has already undergone an external review.