

# Landscape Technology Program Review



**November 14, 2014**

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**1. Program/Discipline Overview:**

- A. What are the educational goals or objectives of this program/discipline? How do these compare with national or professional program/discipline trends or guidelines? Have they changed since the last review, or are they expected to change in the next five years?**

The Landscape Technology Program prepares students for entry and supervisory work in landscape construction, landscape management, landscape design, and environmental landscape management. In the construction area, students work with landscape contractors installing landscapes. Those specializing in management work primarily in maintaining existing landscapes, both private and public. Landscape designers work with clients and contractors to produce residential design. Students completing the Environmental Landscape Management Technology degree work in natural resources management and sustainable landscape technologies.

Our program trains students in subjects to allow them to sit for several licensing exams upon graduation. Graduation from our program allows students completing any of the Associate of Applied Science degrees in Landscape Technology to sit for the Oregon Landscape Contractors licensing exam. The Pesticides class trains students to sit for the Oregon Pesticide License exam. The Tree Care classes cover the material to allow students to take the International Society of Arboriculture Certified Arborist exam. And although there is no licensing required to become a landscape designer, students completing our Landscape Design AAS degree can become certified through the Association of Professional Landscape Designers. We work closely with all of these organizations and update our curriculum to match industry and licensing standards.

- B. Please summarize changes that have been made since the last review.**

Since the last review, we added the new Environmental Landscape Management degree which is described below. We also changed the three 2-year certificates for Design, Management and Construction into Associate of Applied Science degrees. In addition, we added 4 new classes.

The new Environmental Landscape Management Technology AAS degree is designed to develop skills and knowledge in Landscape Technology, Biology and Environmental Science to prepare students for careers working with natural resources and sustainable landscape technologies. Students who complete the degree will have a broad background in science and the technical skills to construct, maintain and monitor sustainable landscape systems such as bioswales, greenroofs and environmental restoration projects.

In changing our 2 year certificates into degrees, we felt that the coursework for our 2-year certificate was not significantly less than for an AAS degree. Therefore it made sense to give students an actual degree which would carry more weight on the job market and be a significant credential for their future.

In addition to adding a new degree and changing our 2 year certificates into degrees, we added 4 new classes: Sustainable Landscape Water Management (LAT 273), Grading and Drainage (LAT 224), Landscape Construction II (LAT 211), and Permaculture Design (HOR 285). Sustainable Landscape Water Management was ultimately eliminated because there was a lot of curriculum overlap between this class and the Sustainable Landscaping class.

**C. Were any of the changes made as a result of the last review? If so, please describe the rationale and result.**

In the last program review, the department recommended the following focus areas for new classes or focus within the program:

- Sustainable Landscaping
- Water Quality or storm water management
- Drip irrigation and water conservation
- Soil conservation or soil practicum
- Site drainage and grading
- Organic gardening and urban food production, including home orchards

Since this recommendation, all of these focal areas have been added to the curriculum, either as new classes or as new curriculum added to existing classes. Each of these recommendations is addressed below:

- Sustainable Landscaping. Sustainable Landscaping was an existing elective class, but it was made into a required class for every one of our degrees and the content of the class was expanded and made more rigorous. In addition, we are now planning to change the class from a 3 hour/week lecture class to a 5 hour/week class with a lab component. This will give students more hands-on experience installing ecoroofs, bioswales, and other sustainable technologies.
- Water quality or stormwater management. We added a class called Sustainable Landscape Water Management, which addressed bioswales, greenwalls, greenroofs, rainwater harvesting and greywater systems. Unfortunately, there was a lot of curriculum overlap between this class and the Sustainable Landscaping class, so we decided to eliminate the Sustainable Landscape Water Management class and roll some of that curriculum into the Sustainable Landscape class.
- Drip irrigation and water conservation. We have continued to include drip irrigation and water conservation as part of our Irrigation classes. We also discuss water conservation in our Sustainable Landscaping class as well as throughout our curriculum.
- Soil conservation or soil practicum. We added an extra hour per week to our Soils and Plant Nutrition class, in order to allow more time for lab activities.

- Site drainage and grading. We added a class called Grading and Drainage.
- Organic gardening and urban food production. We added the Permaculture Design class, which covers organic food production.

The new Environmental Landscape Management Technology AAS degree was brought on as a result of consultation with the advisory board and with Clean Water Services, who partnered with LAT in developing the degree. Converting our 2-year Certificates into degrees was also done in conjunction with our Advisory Board. The new classes were developed to support the changes to the degrees.



2. **Outcomes and Assessment:** reflect on learning outcomes and assessment, teaching methodologies, and content in order to improve the quality of teaching, learning and student success.
  - A. **Course-Level Outcomes:** Identify and give examples of changes made in instruction to improve students' attainment of course outcomes that were made as a result of assessment of student learning. Where key sequences exist (for example, MTH, WR, RD, ESOL) also include information about any assessment-driven changes to improve student success at each level.

Our 2012-2013 Learning Assessment used a project from the Grounds Maintenance class, LAT 110, to assess the course outcomes. One of the course outcomes is: "Apply horticultural practices to care for lawns, native, ornamental and food producing beds, and hardscapes." In the selected project, students are asked to create a Grounds Maintenance calendar for a specific property. The project must address

all aspects of landscape maintenance on the property for a full year, including mowing, weeding, fertilizing, pruning, mulching, and integrated pest management. A rubric was developed in order to focus on the most important skills.

During the learning assessment process, we found that there were several problems with the project. Many students were cutting and pasting information from the internet and not thinking critically. In addition, students were not getting much hands-on time in class to develop the skills to achieve the course outcomes and the SAC felt that the course outcomes would be better served by hands-on learning beyond the skill enhancing competencies given.

This year (spring 2014) the project was changed to give two options: the traditional project stated above, or a hands-on service learning project, in which students spend time on maintenance projects around the LAT Grounds or Learning Garden, developing the skills to care for lawns and plant beds, or vegetable gardens, respectively. Students felt the 10 hours spent around each site was valuable and important for learning the necessary skills to maintain and run equipment in the care of the landscape, or plant and maintain a sustainable vegetable garden. While each site was valuable for developing skills, all but one participant thought the time on the LAT Grounds was the most useful. The other student felt his interest in food production was confirmed by his experience in the Learning Garden, and was most appreciative to have that opportunity. Both site experiences seemed to be successful in giving the students more hands-on application of the principles of Ground Maintenance. Therefore, it is recommended to keep service learning as a viable option or as a replacement for the Grounds Maintenance Calendar of past years.

Other changes to instruction as a result of assessment include changing the CSS 200 project from a group project to an individual one, based on the results of the 2012-2013 assessment which found that it was difficult to determine accountability within a group project, where some students benefit from the hard work of others (and others are left with the majority of the work load).

This year (winter 2014) the project remained similar in group testing and analysis of soils, but differed in that each student had to develop a separate written report. This made the students accountable for learning how to interpret the results and make recommendations for soil fertilization and management. Thus, each student was better prepared to meet the outcomes for the course.

## **B. Addressing College Core Outcomes**

- i. Describe how each of the College Core Outcomes are addressed in courses, and/or aligned with program and/or course outcomes.**

<http://www.pcc.edu/resources/academic/core-outcomes/index.html>

### Communication:

All LAT students will write papers, make presentations, and work in groups with their peers to install hands-on projects throughout the program. Communication is an essential part of the learning experience in LAT. One example is a group project in the Introduction to Design class to measure a site and draw a base map, showing all measurements on the property to scale. This project requires students to communicate with each other to develop a plan for measuring, then work together to take measurements and translate those measurements into a graphic representation as a group.

### Community and Environmental Responsibility:

The LAT program by its very nature is focused on the environment. Every class addresses environmental responsibility, whether through a field trip to Clean Water Services to look at ecoroofs and bioswales, or a project to install a rainwater harvesting tank, or simply a reading assignment on soil erosion, environmental responsibility is at the heart of the LAT program.

### Critical Thinking and Problem Solving:

In the LAT program students learn by doing. All classes in the program teach critical thinking and problem solving, often through hands-on projects. One example would be the Introduction to Design class, in which students are presented with a real client and site to design. Students must analyze the site for problems like poor drainage, sun and wind patterns, and all the existing site constraints, and draw a design that takes into account the needs of the client and the challenges of the site. The project challenges students to think critically and balance many conflicting elements to create a harmonious design.

### Cultural Awareness:

Cultural awareness is not specifically addressed in our classes, however students are exposed to other cultures and to ethnic, gender, and age diversity through peer interaction. Through teamwork, students are exposed to peers of different backgrounds and cultures. This can cause friction on group projects, as they learn to communicate with people who may have a different perspective. Ultimately most students learn to overcome differences and discover commonalities in the process of working together. In addition, the LAT department is currently planning to change all of the AAS degrees to require Spanish, since the landscape industry has a high percentage of Hispanic workers.

### Professional Competence:

Professional competence is a combination of hands-on skill and the knowledge to know how, when and why to apply it. Professional competence is at the core of the LAT program, and integral to the success of our students. Because technology evolves rapidly, the LAT program teaches both practical applications that are relevant today, as well as the ability to reason and adapt to changing technology. One example of professional competence for our construction degree would be the ability to install a paver patio. Students gain hands-on experience in the installation of pavers by working in groups to design and install small paver sections. They are then required to document the process in a portfolio, which not only shows the student's understanding of the project, but serves as a document to present to a prospective employer during a job interview.

### Self-Reflection:

The construction portfolio mentioned above requires students to complete a hands-on project, then to document the process with photos and detailed descriptions of the steps taken and the lessons learned. Problems may arise during the installation process which may require the group to make changes or to correct something which was installed improperly. The process of making mistakes and learning from them can be highly instructive, and students have the opportunity to learn by doing. At the end of the course, students use the portfolio to reflect on their experience and on their own performance. Some specific questions that students are asked to answer as part of the self-reflection process for this portfolio include:

- Why are these things most important to you?
- How is what you learned connected to other courses?

- How is what you learned connected to other experiences?
- What do you need to know next?
- What's the value of this knowledge?
- How do you think you might use this knowledge in the future?
- Can you build on, increase or otherwise improve this knowledge?

ii. **Update the Core Outcomes Mapping Matrix.**

<http://www.pcc.edu/resources/academic/core-outcomes/mapping-index.html> (You can copy from the website and paste into either a Word or Excel document to do this update).

For each course, choose the appropriate Mapping Level Indicator (0-4) to match faculty expectations for the Core Outcome for passing students. The SAC should consider the Core Outcomes in the context of the discipline/program. Suggestions of how the Core Outcomes might be demonstrated are offered as sample level indicators for each Core Outcomes (see link in Bi). More appropriate indicators for your program or discipline may need to be developed by the SAC.

In addition, please note with a single asterisk courses in which these outcomes have been intentionally assessed as part of the SACs annual assessment work, and a double asterisk courses in which these outcomes are expected to be a part of every faculty member's routine student evaluation/grading.

**CORE OUTCOMES MAPPING**

**Mapping Level Indicators:**

- 0 Not Applicable.
- 1 Limited demonstration or application of knowledge and skills.
- 2 Basic demonstration and application of knowledge and skills.
- 3 Demonstrated comprehension and is able to apply essential knowledge and skills.
- 4 Demonstrates thorough, effective and/or sophisticated application of knowledge and

**SAC LAT: Landscape Technology**

**Core Outcomes:**

1. Communication.
2. Community and Environmental Responsibility.
3. Critical Thinking and Problem Solving.
4. Cultural Awareness.
5. Professional Competence.
6. Self-Reflection.

skills.

<b>Course #</b>	<b>Course Name</b>	<b>CO1</b>	<b>CO2</b>	<b>CO3</b>	<b>CO4</b>	<b>CO5</b>	<b>CO6</b>
CSS 200	Soils and Plant Nutrition	*3	*3	3	1	3	1
HOR 226	Plant Materials - Deciduous	4	3	4	1	3	2
HOR 227	Plant Materials – Evergreens	4	3	4	1	3	2
HOR 228	Plant Materials – Flowering	4	3	4	1	3	2
HOR 255	Spring Annuals and Perennials	4	3	4	1	3	2
HOR 272	Summer Annuals and Perennials	4	3	4	1	3	2
HOR 290	Intro to Landscape Design	*4	4	4	3	3	3
LAT 104	Pesticides	2	4	4	1	3	3
LAT 106	Basic Horticulture	3	3	4	2	3	3
LAT 108	Landscape Irrigation I	3	3	4	2	3	2
LAT 109	Plant Propagation	2	2	4	1	3	2
LAT 110	Grounds Maintenance	*3	*3	4	2	3	2
LAT 111	Landscape Construction	3	3	4	3	3	4
LAT 214	Plant Composition	4	3	4	4	4	4
LAT 217	Landscape Drafting	3	3	4	2	4	3
LAT 219	Landscape Illustration	4	2	2	2	3	4
LAT 223	Site Survey and Analysis	2	2	4	1	3	2
LAT 225	Water Gardens	2	2	4	2	3	2
LAT 232	Landscape Irrigation II	3	2	4	0	3	2
LAT 235	Tree Care Fall	3	4	4	2	3	2
LAT 236	Landscape Math	3	1	4	1	3	2
LAT 240	Tree Care Spring	3	4	4	2	3	2
LAT 241	Turf Grass Cultural Practices	2	3	3	1	3	2
LAT 243	Landscape Business	4	4	4	3	3	4
LAT 250	Plant Diseases, Insects and Weeds	2	4	4	2	3	2
LAT 262	Native Plant of Oregon	2	3	4	2	3	2
LAT 264	Landscaping Estimating and Bidding	4	1	4	2	3	3
LAT 271	Computer Aided Landscape Design	4	2	4	2	3	2

LAT 272	Sustainable Landscaping	4	4	3	2	3	4
LAT 280	Landscape Co-op Work Experience	4	3	3	3	3	4

**C. For Career and Technical Education Programs: Degree and Certificate Outcomes**

- i. **List your degree and certificate student learning outcomes, showing the alignment with the college core outcomes, and identify the strategies that are in place to assess the degree and certificate outcomes. (Feel free to use the Plan prepared in Fall 2013, updated as appropriate.)**

**Student Learning Outcomes and Codes**

- Communication (C)
- Cultural Awareness (CA)
- Community and Environmental Responsibility (C&ER)
- Professional Competence (PC)
- Self Reflection (SR)
- Critical Thinking and Problem Solving (CT&PS)

<i>Outcome</i>	<i>Applicable Degree(s)/ Certificate(s)</i>	<i>Core Outcome Code(s) ‡</i>	<i>TSA*</i>	<i>Every Year</i>	<i>2013-2014</i>	<i>2014-2015</i>
Graduates should function as competent landscape professionals in their chosen area of the landscape industry whether it's landscape construction, maintenance, or design.	LAT AAS	C, C&ER,PC,CT&P S				YES
Demonstrate knowledge to obtain and maintain certification and/or licensing required for their chosen field as prescribed by local, state or national	LAT AAS	We will be removing this outcome				YES

organizations or associations.						
Communicate effectively using verbal, written and/or graphic skills, individually or as a member of a team, to listen and relate with clients and coworkers of diverse cultures and backgrounds in a professional manner.	LAT AAS	C, CA, C&ER, PC, CT & PS		YES	YES	YES
Develop sensitivity toward current environmental and sustainable issues as they directly impact the landscape industry, and be able to assess and change practices to align with cultivating care for the earth.	LAT AAS	C&ER	YES	YES	YES	YES

*The following three questions are essentially the same as are asked for in the Annual Assessment report. Please provide a link to those, and summarize the results here*

- ii. **Briefly describe the assessment design and processes that are used to determine whether students have met the outcomes of their degree or certificate.**

*From the 2013 Outcomes Assessment*

[http://www.pcc.edu/resources/academic/documents/LAT\\_2013\\_report\\_Landscape.pdf](http://www.pcc.edu/resources/academic/documents/LAT_2013_report_Landscape.pdf)

Our outcome assessments addressed the three major areas of our program: Landscape Design, Landscape, Construction and Landscape Management. We used 4 rubrics in key classes for grading of the student projects. Each rubric was used within the time frame submitted with the plan, as each class was completed. After the grading was complete, the entire full-time faculty took time to “norm” the results for each class. This process has led to a better overall plan for assessment with the promise of developing it into a useful tool for the department.

**Outcome 1** - Graduates should function as competent landscape professionals in their chosen area of the landscape industry whether it’s landscape construction, maintenance, or design.

**For Landscape Construction:**

In LAT 111 - Landscape Construction Practices classes – individual portfolios were used for assessment and a rubric was constructed for grading the final project for professional competence. The portfolio documented the installation techniques used on several of the class projects, as well as the use of tools and power equipment. The project contained both direct and indirect assessment of skills.

**For Landscape Design:**

In HOR 290 – Introduction to Landscape Design class – Individual final projects were used for assessment. The project contained direct assessment of skills only. For this project, students are asked to complete a landscape design for a real client, and follow the steps of design from the initial site visit, taking measurements of the property, drawing up a base map of the site, and drawing a design that includes all the necessary detail for installation. One student’s design is selected for installation, and the entire class goes to the site and installs the project towards the end of the term. A rubric was used for assessment.

**For Landscape Management:**

LAT 110 Grounds Maintenance—Individual projects were used for assessment and a rubric was created for grading. The project contained direct assessment of skills. In this project, students are asked to create a Grounds Maintenance calendar for a specific property. A rubric was used for assessment.

**Outcome 2** - “Demonstrate knowledge to obtain and maintain certification and/or licensing required for their chosen field as prescribed by local, state or national organizations or associations.”

As stated in our plan, we evaluated this outcome and decided that it wasn’t valid considering licensing and certification for landscape design, landscape management and even landscape construction are currently optional, although recommended and certainly valued in the industry. Our new AASO degrees have dropped this outcome completely in favor of assessable outcomes that are needed by our students upon graduation.

**Outcome 3 / Outcome 4**

“Communicate effectively using verbal, written and/or graphic skills, individually or as a member of a team, to listen and relate with clients and coworkers of diverse cultures and backgrounds in a professional manner.”

“Develop sensitivity toward current environmental and sustainable issues as they directly impact the landscape industry, and be able to assess and change practices to align with cultivating care for the earth.”

**For Landscape Design, Landscape Construction and Landscape Management:**

In CSS 200 – Soils and Plant Nutrition classes – group projects were used for direct assessment of outcomes 3 and 4 above. The project consisted of testing soils, recording results, compiling data, analyzing existing soil conditions, making recommendations on fertilization and Best Management Practices (BMP’s) for improving soils. They presented their results, analysis and recommendations to the class verbally, using a variety of visuals, and also put together a written report graded by the instructor. A rubric was developed for grading the project.

**iii. Summarize the results of the assessments of these outcomes.**

The assessment process revealed that the majority of students are meeting the degree outcomes. For outcome 4, developing sensitivity toward current environmental and sustainable issues, we found that although students often come into the program with a keen interest in sustainability, they may not necessarily understand how to implement that in the real world. Their understanding may be superficial and lacking in critical thinking. Because the students sampled are mainly first year students, they are

still developing their skills and knowledge. The LAT program is currently planning to develop a capstone class which would require a project which would allow students to use the skills and knowledge that they had acquired during their studies. This would be a perfect course in which to assess their attainment of degree outcomes. Our plan is to use the capstone class for learning assessment in the future.

**iv. Identify and give examples of changes that have been made to improve students' attainment of degree and certificate outcomes that are based on the results obtained from assessment.**

Specific results as well as changes that will be made are noted below, by class and project:

**Grounds Maintenance Calendar Project – Spring 2013**

\*See question #2A above

**Soils and Plant Nutrition Group Project – Winter 2013**

The class changed from 3 credits to 4 credits this year, and therefore many students were not from the program and perhaps had less interest in working as a group. This resulted in some students not contributing their part of the presentation and written report, and a few not showing up for the final presentation. Students left hanging were understandably upset. The students that didn't participate were graded down, but the student who does work hard is unfairly given the heavy workload. Going back to group testing and individual reports will remedy this problem. This creates more accountability for the student (although more work for the instructor).

Divide "Recommendations for Soil Fertilization and Amendments" into two parts; "Interpretation of Results" and "Recommendations". They are usually reasonably good at interpretation, but it needs more weight and emphasis. They are not as good at the calculations. These take time to understand (although the information is reviewed and handouts are given on the process), only the brightest understand them. Calculations will be taught with more examples and earlier in the course.

Get rid of "Conclusion" area of report. Students either rehash what they already stated in "Recommendations" or leave out altogether (due to time?). Getting "best Management Practices" right is important. Therefore, let them focus on the BMP's for each SMU.

Lastly, move to just written report without presentation. Presentations are valuable for students to see other sites and information, but students focused on them to the exclusion of the written report this year (even though only 10% of grade). The instructor did put together a handout on presentation tips, which a few groups utilized to their advantage. It proved to be helpful to those that read and applied it.

## **Introduction to Landscape Design Project Spring 2013**

The Introduction to Landscape Design project involves the students going to the site of a real client's house, taking measurements and doing a site analysis, and drawing up a scaled map of the site, then drawing a design—one of which is selected by the client and installed by the class. The project is a very challenging one for a new designer. Because the project is real, the client is real, and one of the designs will actually be installed, the students take it very seriously and work very hard on what is essentially about 6 weeks of work.

This year we implemented an entirely new rubric to evaluate the designs. As a result of the norming process and discussions between the two instructors, changes to the rubric, and to the class, will be made for next year. The changes include:

- The rubric items under “design areas” are too vague to be useful. In addition, these are “site-specific” and did not necessarily apply to this site. In the future we will change this part of the rubric to reflect the site itself, and it will therefore be different from year to year.
- The “neatness” category in the rubric will be increased from 10 points to 30 points.
- There has not been a required text for this class because we have not found a suitable text that is not too simplistic nor too advanced. It is necessary to find one and make a required text so that all students will have a resource that will be consistent. The instructors will begin researching options for a required text.
- It was decided that students need an extra week to work on the project. Therefore, the lecture on design elements will be moved to week 5, the site visit will occur week 3 rather than week 4, and the students will have one more week to work on the project.
- The site visit day and the installation days are integral to the class, and without them students are missing a significant learning experience. Some students did not show up to the installation day, and the syllabus only awarded/deducted five percentage points. It was decided to make each lab day worth 10% of their grade, so that missing one of those days would incur more of a penalty and encourage participation.



### 3. Other Curricular Issues

- A. **To what degree are courses offered in a Distance modality (on-line, hybrid, interactive television, etc)? For courses offered both via DL and on-campus, are there differences in student success? (Contact the Office of Institutional Effectiveness, either Laura Massey or Rob Vergun, for course-level data). If so, how are you, or will you address these differences? What significant revelations, concerns or questions arise in the area of DL delivery?**

By their nature, most LAT courses require real-time experience to fully internalize the subject at hand. Likewise, experience shows us that most of our students prefer a tactile, hands-on approach to learning the material. Our interest continues to be developing curriculum and coursework that trains students at the deepest level possible. While we are not opposed to delivering instruction via distance modalities we have yet to find a natural fit. Hybrid classes may be a possibility for LAT. In this scenario, students might complete the lecture and written assignments via a DL platform but then come to campus for the hands-on lab portion of the unit.

- B. **Has the SAC made any curricular changes as a result of exploring/adopting educational initiatives (e.g., Service Learning, Internationalization of the Curriculum, Inquiry-Based Learning, Honors, etc.)? If so, please describe.**

Not specifically, although many of these educational initiatives have long been a central part of our curriculum. For example, students in many of our classes work on real jobsites with real clients in a service learning context (e.g. Intro to Landscape Design, Irrigation I & II and Co-op Ed.).

**C. Are there any courses in the program that are offered as Dual Credit at area High Schools? If so, describe how the SAC develops and maintains relationships with the HS faculty in support of quality instruction. Please note any best practices you have found, or ideas about how to strengthen this interaction.**

Forest Grove High School

- 1) Soils and Plant Nutrition
- 2) Introduction to Landscape Design
- 3) Plant Propagation

Hillsboro High School

- 1) Soils and Plant Nutrition
- 2) Basic Horticulture
- 3) Plant Propagation

Newberg High School

- 1) Basic Horticulture
- 2) Plant Propagation

LAT instructors meet with the high school instructors once a year to share information and teaching practices. In addition, instructors exchange syllabi and teaching materials and LAT faculty are available to the high school faculty for questions and help with class development. All of the high school class syllabi are evaluated by a member of the LAT faculty to ensure that course content matches the CCOG's. Going forward, all of the dual enrollment high school classes will be visited by an LAT SAC member to evaluate the course content and confirm that the high school course is equivalent. If there are any discrepancies, the SAC member will work with the high school instructor to make sure that the content is changed to align with the CCOG's and is equivalent in content to the PCC course.

**D. Does the SAC plan to develop any additional Dual Credit agreements with area high schools? If so please describe. If not, what does the SAC see as barriers to developing further dual credit agreements?**

LAT has been approached by other high school instructors who are interested in developing dual credit courses, and at least one of those is in the process of evaluation for approval. The main barrier to developing further dual credit agreements is that faculty at PCC as well as faculty at the high schools are simply stretched too thin to devote the time to pursuing more agreements.

**E. Please describe the use of Course Evaluations by the SAC. Have you developed SAC specific questions? Has the information you have received been of use at the course/program/discipline level?**

The LAT SAC continues to use course evaluations for:

- course and instructor feedback i.e. individual professional development
- scheduled teaching evaluations (full and part time faculty)

We have recently developed a set of SAC specific questions and will receive feedback on them Spring 2014. We value direct student feedback as perhaps the most valuable tool we have in improving our

teaching and course, and are not encouraged by the college wide drop in feedback participation since going electronic.

**F. Identify and explain any other significant curricular changes that have been made since the last review.**

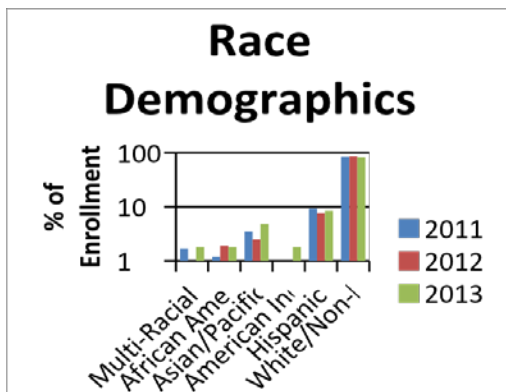
Since the 2010 review, the SAC has transitioned all of our certificates (3) to degrees (3) and added a degree, Environmental Landscape Management Technology (ELMT). The ELMT Degree is a partnership with Biology and ESR and students will take classes from Biology, ESR and LAT. AT present, we have five degrees and one less-than-one-year certificate. In addition, the SAC developed three new courses - Permaculture, Grading and Drainage and Construction Practices II.

**4. Needs of Students and the Community**

**A. How is instruction informed by student demographics?**

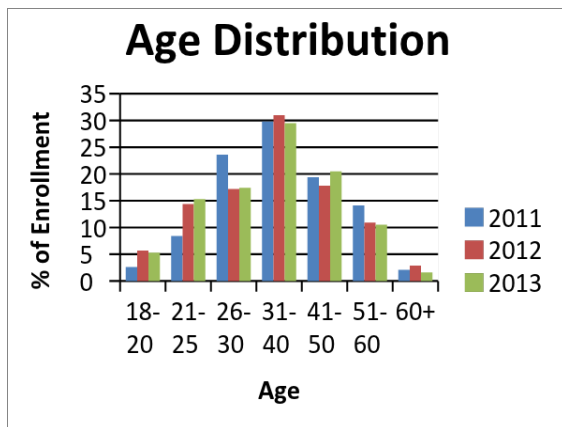
Gender Distribution:

The LAT student body continues to remain equally divided between males and females. While the landscape industry affords opportunities for both genders, distribution of gender within the industry remains segregated with women dominating landscape design and men performing the majority of landscape construction and maintenance. Degree completion and goal orientation of the LAT students follows a similar gender distribution. Encouragement of minority students, whether by gender or by race, to pursue opportunities in traditionally segregated fields has been informal and on a student-by-student basis. The requirement of construction-oriented classes and the hands-on approach of the LAT coursework prepares all students to readily cross-over into related fields within the industry.



Race Distribution:

The majority of Landscape Technology students continues to self-identify as White/Non-Hispanic (82-86%) and remains fairly consistent year-to year. While this distribution reflects similarly with other Rock Creek CTE Programs (i.e. Building Construction Technology, Aviation Technology, Welding), it does not reflect an industry standard of a greater percentage of Hispanic workers filling entry level job positions in landscape construction and maintenance. As indicated in previous LAT program reviews, it remains a challenge to get these students into the classroom. Contributing factors include language barriers, the economic burden of education and the societal barriers of culture and prevalence of undocumented workers.



Age Distribution:

The average age of LAT students continues to be over thirty-four years; an older demographic than other comparable CTE programs. This older student demographic is often working and raising a family in addition to pursuing an education and our current offering of an option for a night classes is beneficial to these students.

Degree Seeking/Goal Orientation Demographics:

Many LAT students are seasoned students; 30% come to the program with a previous college degree and an additional 35% have some college experience. These numbers support our observations that many of our students are returning to education to explore a different career option than the one in which they are currently working. A recent survey of current LAT students indicates that 38% are seeking degrees, 37% are exploring new career options and 18% are looking for new skills to apply in a current job in the landscape industry. These disparate student goals combined with an open enrollment program challenge instructors to facilitate in-depth knowledge in single classes without relying too heavily on building on concepts in a traditional class progression from a first to a second year.

Part-time /Full-time Demographics:

6 out of 10 students in the LAT department are part-time students. With such a high percentage of students of part time students who are working either part time or fulltime in the landscape field and juggling family responsibilities, the LAT Department has made every attempt to adjust the course and program offerings to accommodate working students. All of the first year classes are offered one day per week and are offered both mornings and nights. The majority of the second year classes are offered in during evening hours. These are also held one day per week to facilitate part time students.

**B. Have there been any notable changes in instruction due to changes in demographics since the last review?**

There have been no notable demographic-driven instructional changes in the past five years.

**C. Describe current and projected demand and enrollment patterns. Include discussion of any impact this will have on the program/discipline.**

Enrollment in the Landscape Technology Department has traditionally been strong and steady, with little fluctuation ( +/- 13 %) from year to year with a total number of students in the 170-190 range.

Future enrollment looks strong due to the improved economy as well. Historically, the landscaping industry closely follows the building construction and economic indicators suggest increased and continued consumer confidence of spending devoted to nonessential items such as home and yard improvements. Growth of both industries has cautiously improved from 2010 to present (See appendix A). The increased activity in the landscaping industry has strengthened demand for both entry level and managerial positions in the job market and the Landscape Technology Program consistently attracts individuals who are seeking training for these positions.

The landscaping industry is also experiencing a growing demand for specialty training. As environmental concerns are becoming more mainstream, businesses and governmental agencies are seeking trained individuals fill entry level positions in the areas of environmental restoration and maintenance. The Landscape Technology Department has answered this demand both in job opportunities and student interest by developing and bringing a new AAS degree in Environmental Landscape Management Technology (ELMT) in 2013. This degree has melded courses from the disciplines of Biology, Environmental Studies, and Landscape Technology to train individuals for hands-on opportunities in this emerging field.

**D. What strategies are used within the program/discipline to facilitate access and diversity?**

Open Enrollment:

LAT is one of the Career Technical Education programs with open enrollment and accepts all students who meet the requirements of PCC enrollment. This structure allows for students to enroll in LAT classes for career exploration, personal interest, and pursuit of specialty skills and knowledge in addition to the pursuit of a LAT degree.

Academic Support and Guidance:

LAT has the benefit of a federally supported Perkins staff member, Jessie Levine, who works one-on-one with the majority of students who enroll in the LAT program at least once during their time at PCC. Jessie is an invaluable resource to help students navigate course planning, degree completion and registration issues. Jessie also works closely with LAT faculty to provide assistance for struggling students with tutoring and additional remedial resources.

Financial Support:

Paying for college is a tremendous hurdle to many students. LAT students have multiple opportunities to apply for several industry-specific scholarships. In addition, the Landscape Technology department solicits and hires several part time students to assist in the upkeep of the departmental grounds on the Rock Creek Campus in an effort to help students with monetary responsibilities while gaining specific, industry-related job skills. The LAT department has just brought aboard its first work study student in an effort to support this federally-funded program as well. These generous scholarships and opportunities aid students who might otherwise be unable to continue their education.

**E. Describe the methods used to ensure that faculty are working with Disability Services to implement approved academic accommodations?**

The LAT program focuses on communication with students about Disability Services resources. Course syllabi contain Disability Services contact information and instructors review available resources at the outset of each course. In addition, progress of students is monitored closely by instructors and potential challenges are identified and addressed with the individual student in question. If appropriate, potential solutions are implemented and progress followed with communication between the student, the instructor, Disability Services and our learning skills specialist. This team approach gives students the opportunity of support they need to be successful.

**F. Has feedback from students, community groups, transfer institutions, business, industry or government been used to make curriculum or instructional changes (if this has not been addressed elsewhere in this document)? If so, describe.**

The LAT department continues to solicit feedback with regards to program and course objectives from students through tailored questionnaires and course evaluations. In addition, quarterly meetings with our industry advisory board provide industry advice and direction. Based upon feedback from our advisory committee and industry professional questionnaires, we have made the following changes in curriculum since the 2010 program review:

Focusing on Sustainability:

- The department implemented a Water Quality or storm water management course in 2012. Post course evaluation determined that too much overlap existed with the Sustainable Landscaping course and students' needs would be better met by restructuring the existing course.
- A Permaculture Course was trialed in 2012. The department hired an industry-certified instructor and credit hours were increased in 2013 to enable students to gain industry Permaculture Design Certification by the Permaculture Institute upon completion of the class. This class will be instated as a permanent class with the 2014-2015 academic year.
- A new AAS degree in Environmental Landscape Management Technology, combining courses from LAT and Biology was implemented with the 2013-2014 academic year.
- A new interdepartmental program in Sustainable Agriculture is under consideration.

Meeting the needs of students pursuing Landscape Construction:

- The new courses of Landscape Construction Practices II and Grading & Drainage were implemented in 2012-2013 to meet the needs of students who desire to work as landscape contractors and must pass the required Oregon Landscape Contractor's Board exam.

Meeting the needs of students pursuing Landscape Design:

- The software platform for Computer-Aided Landscape Design was changed from Dynascape to Vectorworks to align with industry trends.



**5. Faculty: reflect on the composition, qualifications and development of the faculty**

**A. Provide information on**

**i. Quantity and quality of the faculty needed to meet the needs of the program/discipline.**

There are currently three full time faculty and eleven part-time instructors for the LAT program. The level of quality ranges from degrees held, PhD to Bachelors in Horticulture, Landscape or related fields, and years of experience within a field of Horticulture and/or Landscape.

**ii. Extent of faculty turnover and changes anticipated in the next five years.**

We have always had very little turnover in the department in regards to full and part-time faculty members. Turnovers in fulltime and part-time faculty have occurred since our last program review (2009) due to one of three events; 1) retirement of one full-time and one part-time faculty member; 2) a sabbatical taken by one full-time faculty member; and 3) NSF Grant externships that have allowed all three full-time faculty to take a term off to work in industry or with government agencies to learn about sustainability issues impacting design, installation and management of the landscape. (Marilyn Alexander worked in industry with DeSantis Landscapes in Salem, OR spring 2012, Elizabeth Brewster finished her term with Bureau of Environmental Services, fall 2013, and David Sandrock worked with Clean Water Services in spring of 2014.

Anticipated changes that can be expected are the retirement of one full-time faculty (Marilyn Alexander - December 31, 2014). We are currently starting the process of hiring for her replacement.

**iii. Extent of the reliance upon part-time faculty and how they compare with full-time faculty in terms of educational and experiential backgrounds.**

The landscape technology program currently offers between 13-16 sections of classes each term except summers, which offer 3-4 sections of classes. With 10 sections normally assigned to full-time faculty each term, the remaining sections are filled in with part-time faculty; which means for any one term, we have 3-6 sections being taught by part-time faculty.

Landscape Technology is such a varied and rich industry that includes many areas of study that are represented within our program. In the program today, we have four separate degrees that have four very distinct pathways. Because of this diversity, it is only natural that our faculty come from various levels of experience in industry, education and teaching. Some of our part-time faculty come to us with several degrees in Horticulture/Landscape and years of experience, some come with degrees in associated areas and years of experience, and some come with incredible experience in the field. Our entire part-time faculty, without exception, has a great amount of recent experience in the field which provides students with a real-world understanding of the industry.

Many of our long term part-time instructors have had years of instructional experience in the classroom as well. Indeed, some have a cumulative teaching experience exceeding our full-time instructors (in years vs. hours). That being said, there are also some of our part-time instructors that have had some time to develop teaching skills in the classroom, to those that are relatively new to teaching. Instructors new to teaching are evaluated within the first or second quarter of teaching to help, encourage and validate those that are meeting the teaching requirements of the program. They are often encouraged after teaching one course, as a substitute or offered other teaching assignments as they come up. Those that do not meet the standards of the program are not rehired to teach for the department.

**iv. How the faculty composition reflects the diversity and cultural competency goals of the institution.**

While we have a diverse faculty in terms of expertise and experience our diversity as a whole for the department is slim at best. We do have a fair balance of male and female instructors (currently 1:2 fulltime, as opposed to 3:0 fulltime in 2002, currently 2:7 part-time faculty, as opposed to 1:2 in 2002), but there's where the diversity has stopped. After being on several hiring committees, the lack of diversity within the pool of applicants and our profession is noticeable and profound. Rarely have we had minority applicants despite our industry being dependent and founded on the Hispanic population. Management within our industry is predominantly of Caucasian race and that seems to be where we draw on our pool of applicants for full and part-time faculty.

**B. Report any changes the SAC has made to instructor qualifications since the last review and the reason for the changes. For instructions and form, go to:**

The last major revision was completed in 2/2013. Previous to that a major revision was in 1/20/2004, with a minor revision added in 5/2011. The current revision (2/2013) was made to streamline the listing of instructor qualifications so that it fit the current hiring form for part-time and fulltime faculty, and eased the process for hiring instructors, particularly part-time. It was also deemed that any instructor hired for the department, whether part-time or fulltime should have the same criteria applied. Since there was a discrepancy in hiring practices between full and part-time, it was reviewed and revised until it would satisfy both categories and further condensed into one document.

**C. How have professional development activities of the faculty contributed to the strength of the program/discipline? If such activities have resulted in instructional or curricular changes, please describe.**

Many faculty (part-time and fulltime) belong to industry organizations such as the Oregon Landscape Contractors Association (OLCA), International Society of Arborists (ISA), Association of Professional Landscape Designers (APLD), Association of Northwest Landscape Designers (ANLD), or have licensing governed by state agencies such as the Oregon Landscape Contractors Board or the Oregon Department of Agriculture. Because of membership or licensing requirements, each person is often required to take courses, attend seminars, etc. to keep their membership or licensing in good standing. Currently we have:

- OLCA – 3 faculty members
- ISA – 3 faculty members
- APLD – 2 faculty members
- ANLD – 1 member
- OLCB licensing – 6 faculty licensees
- ODA Pesticide licensing – 3 faculty licensees

Many of our faculty continue to improve their knowledge by taking additional courses, attending the Summer Sustainability Institute for Instructors, and/or speak at organizations (or related ones) listed above.

Also, many current part-time and fulltime faculty have their own businesses or work for landscape industries directly related to Horticulture, Landscape Contracting, Landscape Maintenance, and/or Landscape Architecture and Design.

- Landscape Architecture and Design – 5 faculty members
- Landscape Construction – 4 faculty members
- Landscape Maintenance – 2 faculty members

Given the breadth of industry involvement through memberships, licensing, and direct industry work in the field, each outside experience enriches and impacts the students within the classroom. While it's wonderful to provide anecdotes to connect students to the material and make it more meaningful to them, it extends much farther than that. It validates instructor knowledge directly, as it represents current, real time, industry experience and practice. Secondly, those connections made in the field become valuable resources for the classroom in the form of speakers, places of interest to visit, and even clients for real world design, construction and maintenance problems in the landscape.

For example: An industry representative was invited to speak to students about controlling pests in the landscape using their system of tree injection. After the talk, she was asked to identify and diagnose a suspected problem with an existing tree on the LAT grounds. After confirmation, she was invited back to the campus at a later date to treat the tree with a hands-on demonstration for students and faculty. Everyone benefitted from her instruction and demonstration of current, safe, and effective treatment for a serious landscape pest. This would have never happened without a concerted effort by the LAT department to foster industry partnerships and provide a place for them to come and connect with students.



## 6. Facilities and Support

### A. Describe how classroom space, classroom technology, laboratory space and equipment impact student success.

Our current classroom space is adequate for the program. We have a dedicated classroom in building 4 (103) with a computer, projector and printer, and we are upgrading to a new overhead projector. Because we are somewhat isolated from main campus, it would be helpful (both for students and instructors) to have a copier in building 4. In 2012, we did a significant remodel in the lab area adjacent to 103 and now have office space for our technician, a bit more working lab space and more organized, lockable storage. We do still need to get a projector, computer and screen for the new lab area. Outside of these rooms, we need more lockable storage space for big items and equipment (pole barn). We also need a heated shop area for our technician to work on equipment and other daily maintenance issues. As for equipment, we are OK, but need to consider a new sit-on-top deck mower for student use and competencies. We also share design studio space with BCT in 7/102. This is all hand-drafting space. It would be beneficial to have plan storage space/cabinet in a centralized location. In spring of 2014, we are moving to a new design software package (Vectorworks) and the division is purchasing a new scanner/printer. Where the scanner/printer will be housed and access is to be determined. There is shared computer space in 5/125 where we currently teach the CAD design course.

### B. Describe how students are using the library or other outside-the-classroom information resources.

Students in the Landscape program make use of resources outside the classroom in several ways. In several courses, they are required to do research papers and encouraged to use the library. They also routinely use the internet via campus computers, personal computers and hand held devices to seek information for projects. Many courses invite speakers to lecture on landscape business (several of whom are past students), new technologies, equipment use and techniques. Field trips to industry sites, businesses, arboretums, botanical gardens and nurseries are frequently utilized. Students are involved with industry seminars and service learning for the community, such as the Oregon Landscape Contractors Association and the Association of Professional Landscape Designers.

**C. Provide information on clerical, technical, administrative and/or tutoring support.**

The LAT program hired a new technician, Jenn Peters in 2013. During this process, we were able to upgrade the position to a tech IV. LAT also has a very valuable learning skills specialist, Jessie Levine, who advises students, helps them with scholarship and financial aid information and provides basic skills tutoring. This support is critical to the students. The clerical and administrative support staff is also extremely helpful in the smooth functioning of the program.

**D. Provide information on how Advising, Counseling, Disability Services and other student services impact students.**

Formal academic advising is now largely handled by our learning skills specialist and occasionally faculty and/or the chair. Our in house advising system is running smoothly.

Students also receive support through Nancy Pitzer and her Employment Services work. Nancy maintains a job announcement list and is available to help students with job-seeking skills such as resumes, cover letters and interviewing. However, Nancy and her department are spread very thin and need additional FTE to meet the needs of the programs that rely on them. Disability Services has a fairly easy to understand process for providing students with necessary accommodations, although students are not always clear on their role in the process. That said, the accommodations offered by Disability Services do make it possible for some students to get more from their education than they might otherwise.

**E. Describe current patterns of scheduling (such as modality, class size, duration, times, location, or other), address the pedagogy of the program/discipline and the needs of students.**

Most of the LAT classes are offered in large blocks (4 or 5 hours) either at night (e.g. 5:00 to 9:50) or in the morning (e.g. 8:00 to 12:50). This is done primarily to make it easy for our students to schedule school with busy work schedules. We schedule the courses so that students can take a full schedule of first or second year classes with minimal conflict. Class size ranges from 10 to 30 and depends on a number of variables. Many of our classes meet in Building 4 Room 103, but some meet in the design studio (7/102) and some meet in general rooms on campus when necessary. Most of our classes have a significant lab component because of the emphasis/necessity for developing hands-on job skills.

**7. Career and Technical Education (CTE) Programs only: to ensure that the curriculum keeps pace with changing employer needs and continues to successfully prepare students to enter a career field.**

**A. Evaluate the impact of the Advisory Committee on curriculum and instructional content methods, and/or outcomes. Please include minutes from the last three Advisory Committee meetings in the appendix.**

Our Advisory Board consists of landscape contractors, landscape designers, landscape managers, and representatives of government agencies like Clean Water Services and Tualatin Hills and Recreation District. This gives us a broad sample of the landscape industry and enables us to get feedback from a wide variety of voices within the industry. The Advisory Board has been invaluable in guiding our program, particularly in keeping us informed of changes in the industry to keep pace with employer needs. They play an active role in reviewing and recommending curriculum updates and in guiding the department to stay current with industry changes. The Advisory Board actively helped design our four new degrees.

**B. How are students selected and/or prepared (e.g., prerequisites) for program entry?**

Landscape Technology is an open program. There are no program pre-requisites, although several classes have individual pre-requisites.

LAT is fortunate to have a Perkins advisor, Jessie Levine, who meets with students and advises them on what degree to pursue, as well as guiding them to take the Compass placement test to ensure their success.

**C. Review job placement data for students over the last five years, including salary information where available. Forecast future employment opportunities for students, including national or state forecasts if appropriate.**

The outlook for employment in the landscape industry in the future is strong and growing. Although PCC does not track student job placement, we do have four sources of data for employment information. First, Nancy Pitzer, our Student Employment and Cooperative Education specialist, advertises jobs for landscape students through a listserv for employers who have contacted PCC in order to advertise open positions. The number of jobs advertised this way in the last five years has risen steadily from a low point of 37 in 2010, to 95 in 2014. Recently, employers have been calling back after the initial advertisement to say that the advertised positions are still open, indicating that the demand for workers is greater than the supply.

Second, the Office of Institutional Effectiveness surveyed former students and found that 83.4% of former students were employed. Of the remainder, 10% were not seeking employment, and 3.3% were looking for employment in the landscape industry. Another 3.3% were looking for employment outside the landscape industry.

Third, in a survey of our Advisory Board, 6 out of 8 members indicated that employment opportunities in the landscape industry would increase in the next year, while 2 members indicated that employment would hold steady. When asked about the outlook for the next 5 years, 8 out of 8 Advisory Board members indicated that employment opportunities would increase. Five out of eight members indicated that wages would increase over the next five years, with three indicating that they would hold steady.

Fourth, in 2013 the State of Oregon lists the average wage for Grounds Maintenance and Landscaping workers as \$38,050, and Supervisors and Managers of Groundskeeping and Landscape Maintenance workers as \$47,052. With a predicted rise in wages and available jobs, the outlook of the landscape industry is strong. <http://www.qualityinfo.org/pubs/owi/owi2013.pdf>

**D. Please present data on the number of students completing Degree(s) and/or Certificate (s) in your program. Analyze any barriers to degree or certificate completion that your students face, and identify common reasons that students may leave before completion.**

In the last 5 years, 131 degrees and certificates have been awarded in the LAT program. The Office of Institutional Effectiveness found no statistical difference between the completion rate of LAT students compared to other CTE programs. (See appendix).

The majority of our students are female (65%). LAT has a high rate of part-time students. In 2013, 23.5% of LAT students were part-time. Because part-time students are less likely to graduate, many of our students end up dropping out before completion. One reason that we have a high rate of part-time students is that many of our students are older than average, and may come into the program with a previous degree. They may not need another degree in order to get a job, but are looking to gain specific skills and knowledge. Some are already working in the industry and are just looking to update their skills with a few classes. Others find full-time employment in the industry before completion, and decide to pursue that opportunity. Still others are supporting families and working full or part-time, and find the stress and time commitment of pursuing a degree overwhelming.

**E. Describe opportunities that exist or are in development for graduates of this program to continue their education in this career area or profession.**

Currently there is no articulation agreement with a four-year university to move on from the landscape program. OSU does not accept many CTE classes. Nevertheless, some of our students have gone on to study at OSU and Oregon State, although many of their credits will not transfer.

**F. Describe and explain any additional changes that have been made to the program since the last program review.**

See section 1 B.



## 8. Recommendations

### A. What is the SAC planning to do to improve teaching and learning, student success, and degree or certificate completion?

We are currently in the process of revising our degrees to provide an updated curriculum that reflects industry changes, and provides students with more avenues to success. Because many of our students come in with previous degrees and may not want or need a full AAS degree before finding a career in the landscape industry, we are looking at creating new career pathways certificates that would provide a faster route to the job market. This would allow students who do not need an AAS degree to quickly get the training they need and move on to employment.

In addition we are making revisions to our curriculum to remove outdated classes and replace them with classes that are more in line with the needs of the industry and students. For example, we are looking at creating a new "Introduction to the Green Industry" class which students would take during their first term, which would function as an orientation to the wide diversity of the landscape industry. This would help students decide what area of the industry to focus on, while introducing potential jobs and avenues for employment that they might not have been aware of. The result will be students who have a better understanding of the breadth of the industry at the outset of their studies, who can then focus on the degree or certificate that would be the best fit for them.

We are also looking at shifting some of our second year classes to first year classes and vice-versa. For example, our Perkins advisor to the program, Jessie Levine, noted that the Basic Horticulture class was a very difficult class for first year students. This class is an intense introduction to plant physiology and anatomy, and a very difficult class for students to take as a first term class, when they are just adjusting to college-level classes and understanding what it takes to be successful in their studies. By shifting it into the second year, students will be better prepared to take on such a challenging class, and more likely to succeed.

We have recently changed our CAD software to Vectorworks, based on discussions with our Advisory Board and with industry. We sent out a questionnaire to members of the Association of Landscape Designers to find out what software program most designers are using and what program they would like to be using. Based on the results of the survey and consultation with the Advisory Board, we are now teaching Vectorworks. This program offers 3-D design and more robust capabilities. Based on this change we are also looking at the possibility of offering Vectorworks earlier in the program and incorporating the use of Vectorworks into more classes, so that students gain more experience with the program and leave with a working knowledge of Vectorworks.

We are consulting with our Advisory Board on all of these changes and hope to be able to take these changes to the Curriculum and Degree and Certificate Committees this winter term.

**B. What support do you need from administration in order to carry out your planned improvements (for recommendations asking for financial resources, please present them in priority order. Understand that resources are limited and asking is not an assurance of immediate forthcoming support, but making administration aware of your needs may help them look for outside resources or alternative strategies for support )**

- Assistance from the college in marketing our program. Currently we do not receive any help in marketing, and as faculty members we do not have the background to effectively market our program. In addition, we are all spread too thin with teaching, committee service and all of the other demands on our time to devote time to marketing.
- Air conditioning for building 4. Currently we have a small window unit in our classroom, which is woefully inadequate.
- A budget for maintenance of our greenhouse. In the past, FMS was responsible for the maintenance of our greenhouse. Out of the blue we were informed by FMS that they would no longer be responsible for any maintenance on the greenhouse and that they would not pay for any maintenance on our greenhouse. In addition, no budget was given to us for this maintenance.
- Heat in our maintenance shop. Currently the space used by our landscape technician for equipment repairs is unheated.

- Internal speakers in building 4 to stay informed of active shooters, fire emergencies, etc. There is currently no indoor speaker for building 4. Very often students and teachers who are in class in building 4 during drills and notification of evacuations have no knowledge of the event.
- A part-time non-casual assistant for our landscape technician. This position shoulders a tremendous load, from helping with classes and labs, to caring for the grounds and supervising casual help, to maintaining the greenhouse and other structures.
- Budget for software (Vectorworks) for our CAD classes
- A recognition by the administration of the increasing demands on SACs. The demands of learning assessments, dual credit programs, and the labyrinthine process of curriculum changes are overwhelming the limited time available for meaningful discussion and thoughtful planning in our program.



# Appendix

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II. Highlights of the Proposed LAT Curriculum Changes 2014.....	50

Landscape Technology Program Advisory Committee Meeting  
May 22<sup>nd</sup>. 2014  
Meeting called to order at 3:08 PM in RC LAT 4/103 LAB

Attendees

Luke Gilmer, Gilmer Landscape Construction LLC  
Abass Soltani, JB Instant Lawn  
Scott Picker, Aspen Creek Landscaping  
Rebecca Smith, Landscapes East & West  
Rick Christiansen, Member at large  
Elizabeth Brewster, LAT Faculty  
Vanessa Nagel, Seasons Garden Design  
Marilyn Alexander, LAT Faculty  
Jennifer Peters, LAT Technician  
Karen Sanders, BATCPL Division Dean  
Roger Whittaker, THPRD  
Sandra Fowler-Hill, RC Campus President  
David Sandrock, Department Chair  
Jessie Levine, Student Skills Specialist  
Sheryl Butler, Program Admin Assistant

Nancy Pitzer, Coop Ed/Student Employment

Regrets from: Jennifer Harrison, Paula Rosch, Michelle Vychodil, Kirsten Holstein, Izzy Baptista

Approval of Minutes:

Abass Soltani motioned to accept minutes as read, Rick Christiansen seconded, with unanimous committee approval.

**New Business:**

1. Marilyn Alexander announced she will be retiring from full time teaching at the end of this year. At this time she is willing to do part time instruction if invited to do so.
2. Marilyn Alexander presented Luke Gilmer (committee chair) with a Certificate of Appreciation in recognition of his contributions to the Vectorworks class (LAT 271). His work as a tutor was invaluable and went above and beyond the call of duty.

LAT Club and Plant Sale:

Students propagated and prepared all plants in the sale this year. \$4,100 was raised with \$2,000 going to scholarships at the foundation. The remainder goes back to the club and used as seed money for next year's sale and other projects. A similar amount was raised last year. This year there was coordination with THPRD. Propagated "Native" plants left over from the sale, go back to THPRD projects.

New Park Partnership Project:

Roger Whittaker mentioned there is a park restoration project plan in the works, which promotes a new partnership between Val Brenneis of the ESR program and THPRD. The initial design project upgrade has been funded to correct a major design restoration project.

Subject Area Committee (SAC):

The Subject Area Committee (SAC) approves curriculum and course changes. In particular, changes have been made to the LAT 272 Sustainable class, and what used to be a 3 hour per week class is now a 5 hours a week LEC/LAB class. 2 hours a week of lab time added to the class will let students gain hands-on experience such as installing a large donated cistern and irrigation system, building a composting system and installing a greenroof. The last minute collaboration between Jennifer Peters and BCT staff resulted in an eco-roof platform. The project created the sub-structure, and now both LAT and BCT classes can use it for planting. This planting format will be offered for summer term. The building construction class still has to install the membrane for it.

SAC also changed the order of design class offerings. The original order was:

1. HOR 290 (Intro to Landscape Design)
2. LAT 217 (Landscape Drafting)
3. LAT 271 (Computer Aided Design).

The new order is:

1. LAT 217 (Landscape Drafting)
2. LAT 271 (Computer Aided Design)
3. HOR 290 (Intro to Landscape Design).

The thought is that, computers and CAD are used as work tools, and they should be used by students developing design practices. , and therefore used in HOR 290.

Landscape Technology program review:

This will be coming up in November. Everything that goes into the student learning experience will go into that presentation.

Updated Enrollment:

Some program classes have low enrollment and perhaps the new degree options contributed to this change. With all 4 degrees Landscape Technology staff feels the program is being diluted. College enrollment has gone down across the board. Program wide we are looking at what classes can be consolidated into fewer LAT degrees.

In looking at a starting point for this discussion, we need to determine how to compare our numbers to the rest of the country. We realize individual classes need to have good enrollments and cannot be run at a loss. A completion agenda is being directed at us from both state, federal and PCC policy makers, but in our program, people are sometimes getting jobs before completing their degrees or certificates. As a strategy, we may want to insure that our students receive the one-year certificate as they move towards a degree.

When we do compare our LAT program to other PCC Career Technical Education (CTE) programs, we have a higher proportion of part time students. When we adjusted for the part time factor, then we are comparable to other PCC programs.

We value people getting jobs. Our problem is, we have not figured out a way to show “*that value*” to the state or federal government or PCC upper administration. Our students are being successful not in the traditional way by attaining a degree. As the economy was struggling, the need for retraining was high, but now there is a focus on furthering student education and having students complete a program degree.

Committee members wondered if the incentive to job placement services might be offered to people who complete their degrees. The approach is to find “carrots to dangle”. Currently students have access to all of those services, but it would be helpful to know how to track that information. If the employer who hires them likes the degree more than pertinent partial education, it would help us to know that. Many program students only take classes they really need, and if they have their degree already, then they just take classes they particularly want.

Presently resumes are considered passé and portfolios need to be taught as an online system rather than the traditional method. A blog set up could also be taught. What our PCC student needs is a way to partner with employers. Is that possible? The system already in place needs

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Rock Creek's new campus President, Dr. Sandra Fowler-Hill recently had a tour of the LAT program and facilities and a run-down of what the outcomes of the program are. She also recently attended the LAT Club Spring Plant sale. Dr. Fowler-Hill commented that campus management values advisory committees. They keep PCC relevant. We need the advisory committee to continue to hold our feet to the fire and keep us on track. She is pleased to see advisory committee members so committed to the success of the program and the students.

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There was continued discussion on the value of degrees versus the value of experience. Industry often posts jobs dependent on degrees with AAS or Bachelors being preferred. However, often it is experience that is more valuable with the most important criteria sometimes being how much can you lift?

Regardless of what degree students get, they have to understand that the degree alone will not make them successful. They still have to gain experience and network to be competitive.

Public sector versus private sector; Employees pay the dues and then they get to grow into the job. Experience versus degree; they both work. The degree was earned over a period of time. It was suggested that LAT have a survey type class that gives a broad overview of the many facets of the industry. This could be used to expose the students to the wealth of different types of jobs involved in the Landscape field, so that, people can start to decide what area they are most interested in. There was some discussion on whether or not this should be a required class. In general, it was agreed that it should be a required class. Then you will have students who taking appropriate coursework because they have knowledge of their direction.

Designers need to know what they face in terms of making a living. Vanessa Nagel got the degree, but when she was in the field, she discovered another whole side of it. Internships may be a way to expose students to the opportunities they have not thought about. In the past the LAT program did a "Meet Your Future" event. It went well and we even received notes from students telling us how great it was. Industry members volunteered and came to talk to students about the landscape industry. It was just like speed dating and after students listened to brief presentations there was a Q&A session. It was very valuable.

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**Industry Documentation:**

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skill set to the program. There will be a partnership between PCC and Clean Water Services to run a 6-module workshop or class addressing this. David Sandrock developed the training in partnership with CWS during his externship. Facility owners may benefit from the same training. Actual documentation needs to be in the contractor's hands as early as possible. The exam is being written, and all 6 modules are finished.

Questions: Is this just going to be an industry training only or is it an opportunity for our students? This could be a modular course so PCC students could sign up for 1 PCC credit. This could also be a certificate.

Can we use the phrase certificate? Dr. Fowler-Hill stated that the State of Oregon just authorized community colleges to award certificates/non-credit certificates, for workshops such as this.

Some of the NSF grants outcomes have proven valuable. The grant was part of a larger grant awarded to PCC. Some LAT program courses have changed because of the NSF grants.

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Workshops have potential to continue bringing industry professionals to campus. PCC LAT needs to check what workshops have been recently offered by other entities and groups to avoid overlapping. This will insure better attendance. For example, find out what John Deere has just offered and find alternative courses to what they are offering. This will broaden the scope of topics available to everyone.

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industry needs to reward participation and insure that if an employee completes a degree or certificate program, they will indeed receive greater pay/benefits.

Perhaps David Sandrock could come to an OLCA meeting in September to talk about it. The timing would be appropriate for winter hiring.

It was suggested that LAT offer classes in Spanish. Four or five years ago LAT had Spanish classes that did not fill up. HVAC and entry level accounting are teaching classes together (ESOL/BA) and they are teaching the language needed for that industry at the same time. It has been really successful in these other areas.

Currently, all LAT classes meet for 4 or 5 hours at a time. If LAT was to make modular classes with fewer days or fewer hours, employees may be more available to take classes broken out into sessions. For example, have a set fee, with a planned amount of the week and day and THPRD would send employees to that class in the winter. Have classes in the second part of the day which is a known schedulable quantity.

It was suggested that LAT use industry partners to sponsor classes so as to minimize competition with industry groups that do trainings.

#### Far West show:

The Far West show has a \$50 rate for students and teachers (if registered by July 31; otherwise rate increases to \$95). It's an All Access Pass, which includes entry to the show, all seminars and all pesticide recertification classes for the three days of the show, August 21-23. Regular rate is \$145 by July 31, so it's a significant savings. If there are students with an interested in design, they could help with show set up. ANLD designers volunteer, helping set up the New Varieties Showcase and Growers Showcase (this year we're featuring sculpted material). If there are Rock Creek students that would like to assist the designers, they will get a free pass to the show and seminars if they volunteer for at least 3 hours (it wouldn't include pesticide classes, however). David said the information would be forwarded to Staff to get the word out to students.

#### Calendars

For the October 2014 meeting a survey will be sent out to all advisory members to find a specific date for next meeting.

Meeting adjourned at 4:55PM

Landscape Technology Program Advisory Committee Meeting  
May 22<sup>nd</sup>. 2014  
Meeting called to order at 3:08 PM in RC LAT 4/103 LAB

Attendees

Luke Gilmer, Gilmer Landscape Construction LLC  
Abass Soltani, JB Instant Lawn  
Scott Picker, Aspen Creek Landscaping  
Rebecca Smith, Landscapes East & West  
Rick Christiansen, Member at large  
Elizabeth Brewster, LAT Faculty  
Vanessa Nagel, Seasons Garden Design  
Marilyn Alexander, LAT Faculty  
Jennifer Peters, LAT Technician  
Karen Sanders, BATCPL Division Dean  
Roger Whittaker, THPRD  
Sandra Fowler-Hill, RC Campus President  
David Sandrock, Department Chair  
Jessie Levine, Student Skills Specialist  
Sheryl Butler, Program Admin Assistant

Nancy Pitzer, Coop Ed/Student Employment

Regrets from: Jennifer Harrison, Paula Rosch, Michelle Vychodil, Kirsten Holstein, Izzy Baptista

Approval of Minutes:

Abass Soltani motioned to accept minutes as read, Rick Christiansen seconded, with unanimous committee approval.

**New Business:**

3. Marilyn Alexander announced she will be retiring from full time teaching at the end of this year. At this time she is willing to do part time instruction if invited to do so.
4. Marilyn Alexander presented Luke Gilmer (committee chair) with a Certificate of Appreciation in recognition of his contributions to the Vectorworks class (LAT 271). His work as a tutor was invaluable and went above and beyond the call of duty.

LAT Club and Plant Sale:

Students propagated and prepared all plants in the sale this year. \$4,100 was raised with \$2,000 going to scholarships at the foundation. The remainder goes back to the club and used as seed money for next year's sale and other projects. A similar amount was raised last year. This year there was coordination with THPRD. Propagated "Native" plants left over from the sale, go back to THPRD projects.

New Park Partnership Project:

Roger Whittaker mentioned there is a park restoration project plan in the works, which promotes a new partnership between Val Brenneis of the ESR program and THPRD. The initial design project upgrade has been funded to correct a major design restoration project.

Subject Area Committee (SAC):

The Subject Area Committee (SAC) approves curriculum and course changes. In particular, changes have been made to the LAT 272 Sustainable class, and what used to be a 3 hour per week class is now a 5 hours a week LEC/LAB class. 2 hours a week of lab time added to the class will let students gain hands-on experience such as installing a large donated cistern and irrigation system, building a composting system and installing a greenroof. The last minute collaboration between Jennifer Peters and BCT staff resulted in an eco-roof platform. The project created the sub-structure, and now both LAT and BCT classes can use it for planting. This planting format will be offered for summer term. The building construction class still has to install the membrane for it.

SAC also changed the order of design class offerings. The original order was:

4. HOR 290 (Intro to Landscape Design)
5. LAT 217 (Landscape Drafting)
6. LAT 271 (Computer Aided Design).

The new order is:

4. LAT 217 (Landscape Drafting)
5. LAT 271 (Computer Aided Design)
6. HOR 290 (Intro to Landscape Design).

The thought is that, computers and CAD are used as work tools, and they should be used by students developing design practices. , and therefore used in HOR 290.

Landscape Technology program review:

This will be coming up in November. Everything that goes into the student learning experience will go into that presentation.

Updated Enrollment:

Some program classes have low enrollment and perhaps the new degree options contributed to this change. With all 4 degrees Landscape Technology staff feels the program is being diluted. College enrollment has gone down across the board. Program wide we are looking at what classes can be consolidated into fewer LAT degrees.

In looking at a starting point for this discussion, we need to determine how to compare our numbers to the rest of the country. We realize individual classes need to have good enrollments and cannot be run at a loss. A completion agenda is being directed at us from both state, federal and PCC policy makers, but in our program, people are sometimes getting jobs before completing their degrees or certificates. As a strategy, we may want to insure that our students receive the one-year certificate as they move towards a degree.

When we do compare our LAT program to other PCC Career Technical Education (CTE) programs, we have a higher proportion of part time students. When we adjusted for the part time factor, then we are comparable to other PCC programs.

We value people getting jobs. Our problem is, we have not figured out a way to show “*that value*” to the state or federal government or PCC upper administration. Our students are being successful not in the traditional way by attaining a degree. As the economy was struggling, the need for retraining was high, but now there is a focus on furthering student education and having students complete a program degree.

Committee members wondered if the incentive to job placement services might be offered to people who complete their degrees. The approach is to find “carrots to dangle”. Currently students have access to all of those services, but it would be helpful to know how to track that information. If the employer who hires them likes the degree more than pertinent partial education, it would help us to know that. Many program students only take classes they really need, and if they have their degree already, then they just take classes they particularly want.

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Meeting adjourned at 4:55PM

## **Landscape Technology Advisory Meeting**

RC Campus Building 4 Room 103 LAB

Meeting called to order 4:03 PM

October, 16, 2013

### **Attendees:**

Nancy Pitzer, Student Employment Co-Op Ed.

David Sandrock, Department Chair

Elizabeth Brewster, PCC Faculty

Marilyn Alexander, PCC Faculty

Jennifer Peters, Department Technician

Karen Sanders, Division Dean

Jessie Levine, Learning Skills Specialist

Michelle Vychodil, Student Representative

Sheryl Butler, Instructional Support Admin

Abass Soltani, JB Instant Lawn

Luke Gilmer, Gilmer Landscape Construction

Roger Whittaker, Tualitin Valley Parks & Rec.

Izzy Baptista, Designer, APLD, ANLD

Regrets from:

Rick Christensen, Damon Reische, Corey Peterson and Scott Picker.

Luke Gilmer agreed to be Chair Pro Tem for this meeting.

**Approval of minutes:**

Approval of the previous minutes was made with the correction that “Izzy Baptista is not a member of OLCA but has attended OLCA meetings.”

**New Business:**

Election of a new chair:

Four attending industry people would be quorum enough, to vote on this issue. The advisory committee chair runs meetings and is responsible for working with the Program Administrative Assistant and Department Chair. PCC Advisory committee guidelines were shared by David Sandrock.

Abass Soltani motioned, Izzy Baptista seconded, and the vote result unanimous, to wait until next meeting to elect a chair for the committee, giving the five additional industry members opportunity to be in attendance for the vote.

Enrollment:

2<sup>nd</sup> year class numbers are down, but first year classes are at, and in some cases, above capacity. There is no concern regarding these numbers unless class enrollments drop further. Irrigation II was cancelled although it is required for all degrees. The thought is to offer it different term.

The question was raised as to the balance between design and construction courses? Presently enrollment numbers lean towards design coursework. The management course is changing student minds about where their focus could be. As reported by Jessie Levine, students have difficulty changing majors but at least a dozen students are interested in the construction classes. Luke Gilmer noted, there is a lot of work available in the construction field.

LAT Club Fall Plant Sale:

Thirteen hundred dollars were raised at the Fall Plant Sale. Of this amount, five hundred has been designated to go to the Foundation for scholarships. The rest will go back into the club fund to cover future sale costs.

Club members are deciding on a fun club activity. If you want to know what is happening with the club just check what is posted on the Facebook LAT Club webpage.

<https://www.facebook.com/PCCLandscapeClub>

Material for the sale comes from a combination of the plant propagation class and a purchased source. Spring is the primary sale. Fall is considered the secondary sale. Vegetable plant starts from seed, happen in the spring.

The LAT Club also donated plant materials to the community garden in the Garden Home area as a community service project. The club funded \$200 up front as a partnership in that garden.

Design Software Changes:

Marilyn Alexander reported that we did not receive a lot of feedback from APLD or from the list serv that Roger Whittaker sent the survey out to. The overwhelming response was to use Vectorworks in the LAT program. Spencer Hinkle (BCT Instructor) has a winter term class and uses the same program. Karen Sanders is tracking license information.

The question was raised, "Is there a small add on price?" This is being researched. Luke Gilmer is a Vectorworks user and highly recommends the 3D module. The library resource that comes with the program is extensive.

To students, the program is 100 percent free. Students do their own tech support with the company and they get a direct account, which means faculty don't have to do this for students. When the students graduate they will get a 50 percent discount for the commercial program. Students have the complete program and having access to tech support is incredible. Updates and answering of questions, occurs within hours. The commercial program does not have the student watermark.

Full 3D and rendering is available that actually supports the Landscape industry. Lighting design is amazing. The actual program resides on the computer but is web based. All students may have to have their own computers but the question was raised, "Does the free copy sit on an educational lab?" Computers must be beefy enough to run the program. Campus Lab computers need to be beefy enough. In the past there have been 5 copies in CRC if students did not have their own computers.

Marilyn will need to get up to speed in Vectorworks. This will be the 5<sup>th</sup> CADD program she has learned.

Landscape Technology Open House:

50 people attended the event. There were two goals, 1) connections and 2) participation. If students find themselves in trouble they are more likely to come for help because they know who can help them. Students close to graduation were on a panel which gave new students the chance to connect. This is an effort to promote retention. The event appears to be successful.

Izzy Baptista is chair of a program where students are designing for Habitat for Humanity. Informal coffees were successful hosted with the idea to keep students connected to professionals in the field. Industry construction groups need to be included in that same activity on campus.

There is the 2014 design competition to be promoted and information will be sent out by Nancy and Izzy. They will be sending out a save the date notice.

Workshops:

The focus idea is to promote our program in the community. We are looking for more ways to provide opportunities for our students. Initially a pruning class will be offered. Both Scott Picker of Aspen Creek Landscaping, and Roger Whittaker of Tualatin Valley Parks & Rec., will be sending students. This is a baby step into expanding present program offerings.

The first class is scheduled for Nov 13<sup>th</sup> and 14<sup>th</sup> afternoons. Classes are already full. We would need to offer a second section to open it up to program students. We need to negotiate our way through the PCC system of payment. This initial offering is geared for folks in industry only.

A lot of people are interested. **Masa Mizuno** wants to teach and it desired that we have him teach for the program more often. He teaches residential classes. When looking at logistics, who provides the tools? Masa gave the impression that he had the tools. If we look to increasing the capacity of the class, we will stretch the resources of our program. Masa may be doing more demonstrations rather than hands on.

Will there be CEU's issued? If so, this needs to happen through the Contractors Board. The program will submit the class outline, and they approve it. There is a certificate that OLCB awards showing students have completed the course. Enrollment is on an honor system where students sign in and sign out with a vetting process that the instructor is recognized as experienced. The vetting process is an instructor approval of the Landscape Contractors Board. These are baby steps towards building the connections and we are excited.

Izzy Baptista mentioned that when doing plantings sometimes crews from industry, do not wish to follow designer directions. Doing it right in the first place prevents problems with the plants down the road, and this idea needs to be addressed. Planting techniques would be an important pre-planting class and a great follow up class. The tweaking of failed design is an onsite activity. Sometimes designers do not survey the actual site and this can create design implementation problems. Crew members must follow ISA Standards. Having the designer there before planting is critical. The designer has to approve placement before planting.

#### OTHER BUSINESS.

Abass Soltani informed the committee that the American Society of Landscape Architects (ASLA) is having an event NOV 1<sup>st</sup> 2013. The project is a house in the Gorge. All approvals for the project go through the Gorge Commission. This would be worthwhile program exposure for someone representing PCC. The cost is \$65. Abass will send information to David Sandrock. It will be at the Multnomah Athletic Club. It would be worthwhile to send to the LAT Club too.

Izzy Baptista reported that the Landscape Contractors Board of Oregon has approved the new "Planting License". Taking a test is required. This licensing will not be a rule until 2014. The licensure has to go through the legislature. Attachment included.

Next meeting date:

Wednesday, JAN 22<sup>nd</sup> 2014 was suggested.

Could the meeting start at 3:00 PM?

Send out a survey as to whether Tuesday, the 21<sup>st</sup>. Wednesday the 22<sup>nd</sup>. or Thursday the 23<sup>rd</sup> works for committee members.

Meeting adjourned at 4:58PM

## II. Highlights of the Proposed LAT Curriculum Changes -2014

### Background

Over the summer of 2014, members of the LAT faculty (Marilyn Alexander, Elizabeth Brewster, David Sandrock, Jenn Peters) and the BATCPL Division Dean, Karen Sanders, met over two days for 12 hours to evaluate and reorganize the LAT Curriculum. The following are highlights from that work.

### Proposed Degree and Certificates Changes

LAT faculty are proposing the organization of the LAT curriculum into a series of certificates and degrees (career pathways) that build as the student takes classes (e.g. 18 hrs, 34 hrs, 92 hrs). Each certificate/degree will be associated with industry positions for the respective skill level.

- Development of an ~18hr Career Pathways Certificate
- Remodel the existing Less-than-one-year Certificate
- Consolidate the existing Landscape Management, Landscape Construction and LAT AAS degrees into a single Landscape Professional Degree
- Reorganize the Landscape Design Degree
- The ELMT degree will change two classes – Grounds Maintenance and Capstone

### Proposed Course Changes

- Develop a new Intro to the Green Industry class to be taken the first term – required by all degrees and certificates.
- Develop a new Plant Establishment and Management class – required by all degrees and certificates.
- Develop a new Tools and Equipment Operation and Management class – required by the Landscape Professional Degree.
- Develop a Capstone class to be taken by all LAT degrees – associated with career seeking skills, job placement, Co-op Ed etc.
- Consolidate Irrigation I and II into one class – required by all degrees.
- Consolidate Tree Care I and II into one class – required by the Landscape Professional Degree.
- Standardize all “ID type” course with respect to workload and credit hours (3 or 4)
- Remove Drafting from the curriculum. Students in the design degree will take a series of course their first year: Intro to Landscape Design – Computer Aided Landscape Design 1 – Computer Aided Landscape Design 2.
- Remove Summer Annuals and Perennials from the curriculum. Spring Annuals and Perennials will remain.
- Remove Grounds Maintenance from the curriculum. To be replaced by the Plant Establishment and Management class and the Tools and Equipment Operation and Management class.
- For the time being, no longer offer Turfgrass, Landscape Construction II and LCP exam prep.

- Will offer the following electives: Plant propagation (every year), Landscape Illustration (every other year), Permaculture (every year)
- Work towards developing 1-2 credit modules for topics in Watergardens, Construction I and II, Landscape Lighting etc. that would be easier for industry professionals to take.
- To the extent possible, align course prefixes and numbers with the year the class is offered e.g. first year classes are 100's second year classes are 200's.