LANDSCAPE TECHNOLOGY

PROGRAM REVIEW

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Landscape Technology Program Review Committee:

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LANDSCAPE TECHNOLOGY INTRODUCTION:

The Landscape Technology Department has been an active and growing department at Portland Community College for over 40 years. Currently, the program offers over 32 separate classes with an Associate of Applied Science Degree in Landscape Technology and four certificate programs; One Year Landscape Services Technician, Two Year Landscape Management, Two Year Landscape Construction, and Two Year Landscape Design.

The Landscape Technology industry is at the forefront of the global change in environmental practices. Sustainability has been taught by the Landscape Technology Department for many years, and we are now sharpening our focus to increase our course offerings in this area. As the industry is changing, so, too, is the focus of the Landscape Technology Department. Sustainability in the landscape encompasses a broad range of topics: water quality, water conservation, soil conservation, integrated pest management, urban food production, and much more. Educating the work force to meet the demands of this new era of environmental stewardship will be an exciting challenge. The new technologies that will be in demand in the future of landscape technology will include bioswales, greenroofs, greenwalls, rain gardens, drip irrigation and xeriscaping, and innovative approaches to stormwater management. The Landscape Technology Department is keeping pace with these changes and looking ahead to provide students with skills and knowledge that are at the cutting edge of an evolving industry.

1. Program Goals

A. What are the educational goals/objectives of the program?

The Landscape Technology Program prepares students for entry and supervisory work in landscape construction, landscape management, landscape design, or nursery production. 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. Upon application to the Landscape Contractors Board and presentation of transcripts and diploma, students completing the Associate of Applied Science Degree in Landscape Technology or one of the two-year certificates with a minimum 2.5 GPA will be eligible to sit for the Landscape Contractors licensing exam.

B. Place the Program/Discipline within the context of the institution. Describe how the college's Mission, Values and Goals are addressed.

The Landscape program contributes directly to the college mission by training students at multiple levels from one class professional upgrades to a full two-year Associate Degree with general education, as well as professional technical courses. The core of the landscape curriculum is critical thinking applied to real world physical tasks. As a service industry, landscaping requires good communication skills including oral, graphic and written. As witnessed in the outcomes for the CCOG's, in the landscape curriculum students are exposed to, and have to apply and master, mathematical, mechanical and verbal skills. Environmental issues are dealt with in multiple levels in design, construction and maintenance of landscapes. Student success in the industry is a good marker of student's professional competence upon leaving the program.

2. Curriculum: reflect on the learning outcomes and assessment, teaching methodologies, and content in order to improve the quality of teaching, learning, and student success.

A. Evaluate the curriculum using national and or professional discipline/program guidelines where available.

The Landscape Technology Department has developed its courses so that they exceed the requirements of national/state industry guidelines. The strength of the program has been in the practical application of concepts and skills required to succeed in industry. The certificate and degree programs in design, construction and maintenance exceed the standards established by the Professional Landcare Network and by the Association of Professional Landscape Designers. The program would have been certified by PLANET except for lack of budget dollars. The Oregon Landscape Contractors board accepts our two year certificates and degree as qualification to sit for the Landscape Contractor's licensing exam. The Landscape Technology Advisory Committee has reviewed course offerings on a regular basis to help insure industry standards are met. (see Appendix A – International, National, and State Professional Certification Requirements, and Oregon State Licensing Requirements)

B. Identify and explain changes that have been made to course content and/or course outcomes since the last review.

Many of our CCOG's from the last review were evaluated and updated as we went from the old intranet posting to the new online access. Prerequisites were changed, added or dropped from courses to ensure student success in the classroom.

C. Assessment of Course Outcomes:

i. Are assessments that address the course outcomes described in the Course Content and Outcome Guides (CCOGs)?

ii. Describe evidence that students are meeting course outcomes.

iii. Identify/give examples of assessment-driven changes made towards improving attainment of course-level outcomes

Assessments that address the course outcomes are described in the CCOG's. As a CTE program, LAT instructors often spend time individually with each student assessing competency in hands-on skills. Evaluations can range from written assignments from laboratory experiences that deal with scientific observation and data gathering, to written reports or oral presentations, written tests, and competency evaluations based on the instructor's evaluation of a student's ability to perform a specific task. In the design classes, student work is evaluated based on drafting technique and quality, creativity in drawing, completion of work by assigned deadlines and drafting improvement.

D. Assessment of College Core Outcomes

i. Describe how courses in the program/discipline address the College Core Outcomes. http://www.pcc.edu/resources/academic/core outcomes/index.html

iii. What strategies are used to determine how well students are meeting the College Core outcomes?

iv. Describe evidence that students are meeting the Core outcomes.

v. Describe changes made towards improving attainment of the Core outcomes.

Communication

Graduates of Portland Community College should be able to communicate effectively by determining the purpose of communication; analyzing audience and context to use appropriate language and modality; and by responding to feedback to achieve clarity, coherence, and effectiveness.

Students are asked through a variety of courses to write reports with supporting references for a subject pertaining to the course. They also prepare reports as if presenting information to a client either in written or verbal form. They are asked to do presentations in front of classes for practice, again as if presenting to a client or a board their ideas and proposals. They prepare notebooks that they can use in design for the purpose of presenting information and photo's to the client.

Community and Environmental Responsibility

Graduates of Portland Community College should be able to apply scientific, cultural, and political perspectives in understanding the natural and social world and in addressing the consequences of human activity both globally and locally by demonstrating an understanding of social change and social action.

Landscape Technology is by its very nature connected in a profound way to the environment. Therefore, in most of our classes students are nudged in their thinking to consider their impact on the earth, sustainability of their practices, and their responsibility as future leaders in their industry to educate the public as they interact with them.

See below for the Sustainability matrix, showing the specific classes that discuss sustainability in the curriculum.

		PCC LANDSCAPE TECHNOLOGY SUSTAINABILITY MATRIX (5/2008)												
LANDSCAPE TECH COURSES	Waterwise irrigation	Integrated Pest Mgmt.	Sustainable Landscape Design	Soil Conservation	Materials Selection, Storage,and Recycling	Environmental Regulations	Sustainable Landscape Maint.	Landscape Construction - BMP	Sustainable Equipment Selection & Maint.	Stormwwater Mgmt.	Mitigation Landscaping	Plant ID & Selection	Ecological Principles	Business Practices
LAT 104		X			X	X	X						X	
LAT 106													X	
LAT 108	X					X								
LAT 109		X												
LAT 110		X			?		*		*					
LAT 111					*			*						
LAT 214														
LAT 217														
LAT 219														
LAT 223														
LAT 225					?							X		
LAT 232	X													
LAT 235		X				X	X					X	X	
LAT 236														
LAT 240					X	X	X							
LAT 241					?				?					X
LAT 243	X						X		X				X	
LAT 250		X					X						X	
LAT 262													X	X
LAT 264						*								
LAT 268				X						X	X	X	X	
LAT 271														
LAT 272	x	*	*	X			*		?	x		*	*	
LAT 275					?			?						X
LAT 280A														
LAT 280C														
CSS 200				X				X						X
HOR 226		*										X		
HOR 227		*										X		
HOR 228		*										X		
HOR 255												x		
HOR 272														
HOR 290	*		X				*			X				
HOR 291														
LEGEND:	X = Covers adequately for course topic													
	* = Limited coverage, could use more								? = Do not cover and should in course					

Critical Thinking and Problem Solving

Graduates of Portland Community College should be able to think critically and creatively solve problems by understanding and using various methods of reasoning and evaluating information.

In all our classes we strive to present students with real world problems that challenge the student to not only master the necessary skills involved in Landscape Technology, but lead them to make broader and creative connections. Our classes not only test their skills but ask them to apply that information toward projects so that they can deepen their understanding and come to "know" their subject and "see" new possibilities.

Cultural Awareness

Graduates of Portland Community College should be able to demonstrate an understanding of the varieties of human cultures, perspectives, and forms of expressions as well as their own culture's complexities.

We have many different cultures exemplified in our student population. Most of our classes involve group projects to build team effort and break down barriers that might exist in a standard classroom.

Professional Competence

Graduates of Portland Community College should demonstrate mastery in a discipline or profession at a level appropriate to program and transfer requirements through the application of concepts, skills, processes, and technology in the performance of authentic tasks that enhance community involvement and employability.

Our motto at the Landscape Technology Department is to "learn by doing". We continue to evaluate our classes as to their strengths in competencies on skills, and the suitability of our students to the skills needed by the industry. Our advisory committee keeps us in touch with those requirements.

Self-Reflection

Graduates of Portland Community College should be self-appraising in applying the knowledge and skills they have learned, examining and evaluating personal beliefs, and comparing them with the beliefs of others.

Through classes such as Landscape Business Operations and Estimating and Bidding, students discuss business ethics. As they approach graduation, students through the guidance of department advisors, assess their personal strengths and interests as they approach impending employment.

ii. Please revisit the Core Outcomes Mapping Matrix for your SAC and update as appropriate. http://www.pcc.edu/resources/academic/core-outcomes/mapping-index.html.

(See below)

CORE OUTCOMES MAPPING SAC Landscape Technology

Mapping Level Indicators:	Core Outcomes:
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 skills.	1- Communication 2- Community and Environmental Responsibility 3- Critical Thinking and Problem Solving 4- Cultural Awareness 5- Professional Competence 6- Self-Reflection

Course #	Course Name	CO1	CO2	CO3	CO4	CO5	CO6
CSS 200	Soils and Plant Nutrition	3	3	3	1		1
HOR 226	Plant Materials - Deciduous	4	3	4	1		2
HOR 227	Plant Materials – Evergreens	4	3	4	1		2
HOR 228	Plant Materials – Flowering	4	3	4	1		2
HOR 255	Spring Annuals and Perennials	4	3	4	1		2
HOR 272	Summer Annuals and Perennials	4	3	4	1		2
HOR 290	Intro to Landscape Design	4	4	4	3		3
LAT 104	Pesticides	2	4	4	1		3

LAT 106	Basic Horticulture	3	3	4	2		3
LAT 108	Landscape Irrigation I	3	3	4	2		2
LAT 109	Plant Propagation	2	2	4	1		2
LAT 110	Grounds Maintenance	3	3	4	2		2
LAT 111	Landscape Construction	3	3	4	3		2
LAT 214	Plant Composition	4	3	4	4		4
LAT 217	Landscape Drafting	3	3	4	2		3

CORE OUTCOMES MAPPING SAC Landscape Technology

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Course #	Course Name	CO1	CO2	CO3	CO4	CO5	CO6
LAT 219	Landscape Illustration	4	2	2	2		4
LAT 221	Landscape Design Problems	4	4	4	4		4
LAT 223	Site Survey and Analysis	2	2	4	1		2
LAT 225	Water Gardens	2	2	4	2		2
LAT 232	Landscape Irrigation II	3	2	4	0		2
LAT 235	Tree Care Fall	3	4	4	2		2
LAT 236	Landscape Math	3	1	4	1		2
LAT 240	Tree Care Spring	3	4	4	2		2
LAT 241	Turf Grass Cultural Practices	2	3	3	1		2
LAT 243	Landscape Business	4	4	4	3		4
LAT 250	Plant Diseases, Insects and Weeds	2	4	4	2		2
LAT 262	Native Plant of Oregon	2	3	4	2		2
LAT 263	Bonsai-Saikei	2	2	2	4		4
LAT 264	Landscaping Estimating and Bidding	4	1	4	2		3
LAT 268	Wetlands	3	4	4	2		2

CORE OUTCOMES MAPPING SAC Landscape Technology

Mapping Level Indicators:	Core Outcomes:
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Course #	Course Name	CO1	CO2	CO3	CO4	CO5	CO6
LAT 271	Computer Aided Landscape Design	4	2	4	2		2
LAT 272	Sustainable Landscaping	4	4	3	2		4
LAT 280	Landscape Co-op Work Experience	4	3	3	3		4

E. To what degree are courses offered in a Distance Modality?

The department is planning to offer the first online class in the fall of 2010. If that course goes well, we plan to add another course the following spring. Because many of the Landscape Technology classes are by their very nature hands-on courses, only a few of our course offerings are suitable to distance learning. However, increasing our accessibility to students is important and we will continue to evaluate ways to improve our course offerings.

F. Has the SAC made any curricular changes as a result of exploring/adopting innovative educational practices (e.g. Service Learning, Internationalization of the Curriculum, Inquiry-Based Learning)?

Technology changes with the times. Although content is important, it is more important to help students develop the ability to reason, the skills to solve problems, and the competence to successfully navigate a changing workplace. The Landscape Technology Department has always nurtured these skills through hands-on education, through inquiry-based learning, and the development of critical thinking above the memorization of facts.

3) Needs of Students and the Community: Are they Changing?

A) What is the effect of student demographics on instruction, and have there been any notable changes since the last review?

The Landscape program has a diverse student population. With an average age over thirty-four years, many of the students have prior college education and degrees upon entry into the program and are often seeking a career change. These students usually are not interested in another degree, but instead are looking for the concentrated curriculum in one of the concentrated two-year certificates.

In the 2008-2009 Academic year the program was 50% male and 50% female.

Within the LAT student body there is a mixed minority population of about 12%. This includes students of Hispanic (8%), Asian (4%), and African American (1%)

descent. In the industry, the biggest change has been at the entry level with large numbers of Hispanic workers filling job positions. Getting these students to the classroom has proved difficult because of cultural barriers, lack of support from the administrative level, and because of the use of undocumented workers by the industry which causes problems with registration. Many of the Hispanic population in the industry need developmental education both in their language and in English and employers are not willing to allow for the time needed to bring them to college level to insure success in the classroom.

B. Has feedback from students, community groups, transfer institutions, business and industry or government been used to make curriculum or instructional changes?

Feed back from students and student evaluations have always been a way of garnering student input and the instructor making changes in their course, whether small or large. In addition, quarterly meetings with our industry advisory board provide industry advice and direction. Based upon feedback from our advisory committee, we have focused the direction of the program in Sustainability. The committee recommended a new focus in the following areas:

-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
-Using the Sustainable Sites Initiative (an interdisciplinary effort by the American Society of Landscape Architects, the Lady Bird Johnson Wildflower Center and the US Botanic Garden to create national guidelines for sustainable land design and construction) as the basis of new courses and to change the focus of existing courses.

A new AAS degree in Sustainable Natural Resource Management, which would combine courses from LAT and Biology, is also under consideration.

C. Describe current and projected demand and enrollment pattern. Include discussion of any impact this will have on the program.

Our enrollment has traditionally been strong and steady, with little fluctuation from year to year. With the economic downturn, our numbers continue to remain strong and look to remain so for the future.

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

As a program we welcome students of all ages, races, cultures, economic levels, and previous educational experiences. The majority of Landscape students are working part or full time while attending classes. The Landscape Department has made every attempt to adjust the course and program offerings to working students. All of the first year classes are offered one day per week and are offered both mornings and nights. All of the second year classes are offered at night with the exception of two or three that require daylight to perform the tasks for the class. These are also held one day per week to facilitate part time students. In addition, with our plans to add online classes, we hope to make it easier for students who commute from long distances or who must balance caring for family or working. We also have a learning skills specialist who works one-on-one with students who need extra help.

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

A. Provide information:

i. Rationale for the size, distribution and composition of the faculty in the subject area.

ii. Quantity and quality of the faculty needed to meet the needs for the program/discipline.

iii. Extent of faulty turnover and changes anticipated in the future.

iv. Extent of the reliance upon adjunct faculty and how they compare with fulltime faculty in terms of educational and experiential backgrounds.

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

The Landscape Technology Department has three fulltime faculty members. Elizabeth Brewster has a education in Horticulture, with a strong background in Grounds Maintenance and Landscape Design. Marilyn Alexander has a strong education in Horticulture, and Landscape Design and many years of field experience in the Landscape industry. Loren Radford has a Vocational Agriculture education with an emphasis in Landscape Contracting and Arboriculture and will be retiring at the end of 2010. Because of the diversity of classes that we offer, from Landscape Construction to Landscape Design, Horticulture, Irrigation, Soil Science, etc., we need faculty members who have a hands-on background, flexibility in teaching a wide range of subjects, as well as a talent and passion for teaching. Our current search for a replacement will focus on finding a candidate with a strong landscape construction background.

With only three fulltime faculty, the department does not have a lot of flexibility for growth. It will be difficult to increase our course offerings in Sustainable landscaping while keeping our core classes running. Growth will be dependent on faculty using their personal time to develop new course offerings. Nevertheless we feel that it is important to expand our offerings in the direction of Sustainability due to the demand from both the students and the industry itself, as expressed by our advisory board.

Part-time faculty usually have Associate degrees or better in higher education, but the strength they give to the department is in their strong industry experience. If the program continues to grow and expand with the addition of sustainable courses, we will expect to continue our reliance on part-time faculty in order to grow.

B. Report changes the SAC has made to instructor qualifications and the reason for the changes.

Instructor qualifications for the Landscape Technology Program include a sound education in combination with good work experience in the field, and if possible, in the classroom. Most importantly, instructors need good background in the actual competencies and practical everyday landscape tasks required and used in the industry. With part time instructors, qualifications are focused on the set of skills for the class being taught with emphasis on job experience and the ability to teach the subject area.
(see Appendix E - Full Time and Part Time Faculty Requirements)

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

The professional development of the Landscape Faculty is ongoing and quite varied. It includes certification with the Associated Professional Landscape Designers, pesticide licensing certification with the Agriculture Department of the State of Oregon, contractor licensing with the Oregon Landscape Contractors Board, and certification with the International Society of Arboriculture. They have served on the committee that reviews and writes the state licensing exam for the Oregon Landscape Contractors' Board for ten years and one staff member wrote Landscape Standards for the Oregon Landscape Contractors Association to establish statewide minimum standards for landscaping. The landscape staff has served as speakers for many industry events and attends industry wide seminars and trade shows on a regular basis.

The professional development activities of the staff have led directly to many of the skill and competencies that are developed to teach the core outcomes of the courses and program. Looking toward the future in Sustainability, faculty have attended seminars with the City of Portland and Environmental Services on Water Quality/Storm Water Management, and the Sprout workshop at the Oregon Garden, also on water quality.

These seminars are a part of our ongoing effort to make Sustainability a more integral part of the LAT program, as explained in section 3B above.

As a result of attending the Association of Professional Landscape Designers convention in 2009, more work was added in the drafting class to include more emphasis on Line Hierarchy, since it is a factor in what they want designers to show in their portfolio for certification. Marilyn is also working on getting her APLD certification.

In addition to certification by the Oregon Landscape Contractor's Board, the Oregon Landscape Construction Professional Exam review class was developed to prepare students to take the contractor's license exam.

5. Facilities and Support

A. If classroom space, computers/technology and library/media, laboratory space, and equipment impact success, please describe.

With classroom space at a premium, we are doing all we can to schedule our two dedicated classrooms (7/102 and 4/103) as much as possible. Despite that, we have yet to find a dedicated classroom for our computer class, and there is continued pressure to offer more design classes in 7/102. Upgrading the drafting lab to hold more tables and students and adding a podium would increase our accessibility to our program, as well as BCT and ARCH.

Equipment is essential to the student's education in landscape technology. Like most industries, the Landscape field is constantly being changed through new technologies, especially in the area of equipment. The biggest operational difficulty lies in the lack of budget to have the newest technologies in adequate numbers to allow hands on training of 20-30 students per class. Also lack of time and/or monies to provide instructors with the training and instructional technology to upgrade classroom performance are a factor. The Landscape Technology program has had a history of "making do".

In addition to the lack of equipment, there is a steadily declining number of plants on campus for the teaching of plant care and identification. Trees die and are not replaced, or they are removed to make maintenance more efficient. With the new campus-wide

focus on Sustainability, one of the priorities should be guaranteeing a truly "Green" campus. A campus Master Plan would help ensure that plants are not placed in areas that will become construction zones. Also, a plant budget and input by the LAT department on any planting plans is vital to the ongoing success of the program.

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 Basic Horticulture and Landscape Design Process they are required to do research papers and encouraged to use the library. They also use the internet to develop plant notebooks, seek soils information, to get class information, and to gather information to support design concepts. Speakers are brought in 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 Association of Nurserymen's Far West Show and Yard Garden and Patio Show.

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

The program has a learning skills specialist who helps to tutor students in a range of topics, in addition to department advising and navigating PCC. This support is invaluable 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, the Office for Students with Disabilities and other student services impacts students.

The overall system for guiding students from the point of entry into the system through completion is confusing and bureaucratic. There is no streamlined system, and many students are confused about what to do. In addition, the rules and systems change so often that faculty don't know always know what the rules are, much less the students.

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

Most of the LAT classes have labs. As such a low student/teacher ratio is important to ensure that every student is able to practice the hands-on skills that are required. Often in our classes students must learn to use equipment that must be individually supervised by the instructor for safety reasons.

As mentioned before, all of our first year classes are offered as day or evening sections in 4-5 hour blocks of time in order to enable working students to attend. We schedule the courses so that students can take a full schedule of first or second year classes without conflict.

6. CTE Programs: 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.

The Landscape Technology advisory committee has representatives from all phases of the industry including small contractors, large contractors, nursery, related sales, design, and maintenance both public and private. The committee includes past and present students as well. All program progress, changes and curriculum materials are shared with

the advisory committee for their response. One area of improvement would be to include the advice of the advisory committee in establishing qualifications and interview questions for new faculty.

B. Degree or Certificate Outcomes:

i.. Identify and explain any changes that have been made to degree and certificate learning outcomes since the last program review

ii. What strategies are in place to assess degree and certificate outcomes?

iii. Give evidence that students are meeting these outcomes.

iv. Describe any changes made towards improving attainment of the degree and/or certificate outcomes

Oregon Landscape Contractors Board accepts the AAS degree and any of our Two-Year Certificates to sit for the landscape contractor's exam. In addition, our program has been setup to follow the guidelines of PLANET (see Appendix F – PLANET Landscape Contracting Accreditation) for curriculum development.

Our evidence that program outcomes are met by students comes from the student survey, student success in industry and acceptance of students' training/education by licensing and professional organizations and agencies. In the future, we will change the questions that we ask on the student survey to better assess degree and certificate outcomes, specifically:

-What licenses have you obtained as a result of your education at PCC?
-What position do you hold, where do you work now, and how has your position or income level changed as a result of your education?

The current survey does not ask these questions. However, from the student survey, we do know that 78% of students felt that they accomplished their goal in attending the LAT program. 73% of students were satisfied or very satisfied with the preparation PCC gave them in transferring to another school or in preparing them for the job market. And 74%

of students felt that their employment situation had improved as a result of their studies at PCC.

In the regional landscape industry, PCC Landscape students have highly successful businesses in Landscape Contracting, Design and Maintenance. In landscape contracting, several PCC students are serving leadership roles with the Oregon Landscape Contractors Association and on the Oregon Landscape Contractors Board. Students graduating from the Landscape Design Certificate program form the core of the Association of Northwest Landscape Designers and have played a prominent role in the development of the Associated Professional Landscape Designers and its new Oregon Chapter.

Students' success in the landscape industry, and the Landscape Technology Program content, have led to the acceptance of our curriculum as preparation for licensing as Oregon Landscape Contractors, licensing for pesticide certification with the State of Oregon Agricultural board, certification for the Certified Landscape Technician program in irrigation, construction and maintenance through the Professional Landcare Network and certification by the Associated Professional Landscape Designers. The curriculum in the Landscape Design Certificate can also be used in articulation with the University of Idaho's Landscape Architecture program. (see Appendix C – Portland Community College – Landscape Technology Survey of Graduates and Students)

C. Review job placement data for students over the last 5 years, including salary information where available.

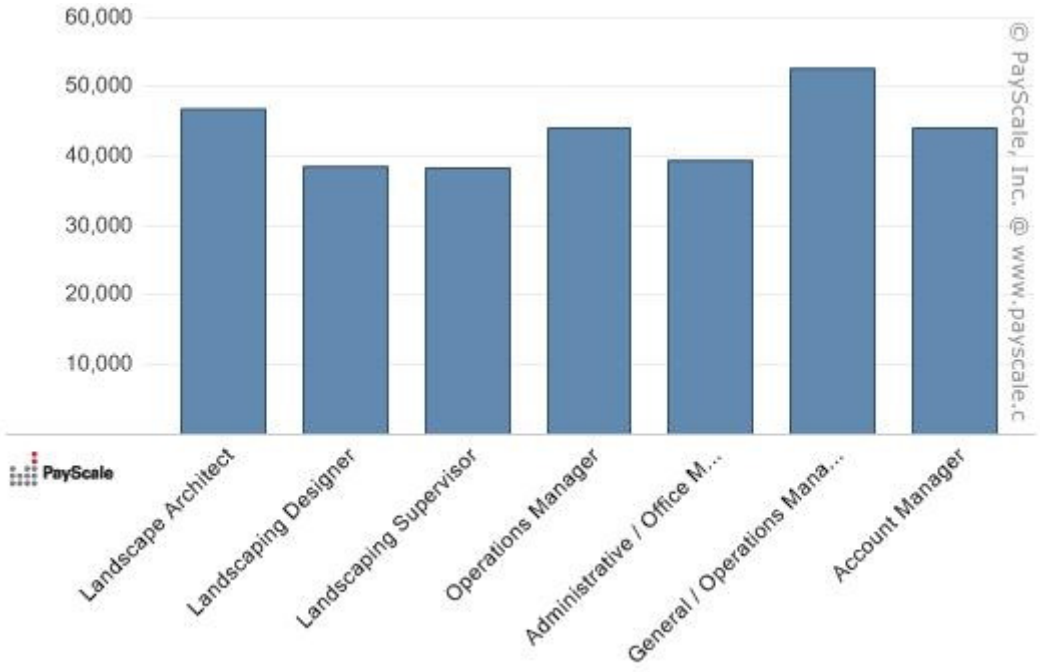
The LAT department does not provide job placement services. Exact statistics on job placement are not available, but in the future we will include questions about job attainment and salary on the Alumni survey.

D. Forecast future employment opportunities for students.

According to the Bureau of Labor Statistics, the annual mean salary of Supervisors of Landscaping and Groundskeeping workers in Oregon was $44,490 in 2008. In Washington, the annual mean salary was $48,230.

The annual mean salary for Groundskeeping and Landscaping workers in Oregon in 2008 was $24,860, and in Washington it was $29,590.

The following chart shows the relative salaries of various jobs in the landscape industry in the U.S., from the Pay Scale website, http://www.payscale.com/research/US/Industry=Landscaping/Salary



Like all businesses, the landscape industry has had a downturn over the last few years. With students competing more for supervisory and management level jobs, additional education and degrees and certificates have become more important. Licensing exams in pesticides and landscape contracting have become more comprehensive and difficult,

requiring more education as well. Enrollment numbers for the program have remained strong. The landscape field is one of the areas where students can look to form their own businesses and to advance if employed by a landscape firm.

6E. Analyze any barriers to degree or certificate completion that your students face, and consider the reason that students may leave before completion.

(See below from the student survey. Also see student survey, Appendix C)

Q14. Please rate the quality of your PCC experience in the following areas. If you did not use the service; answer NA.

Answer Options	5 = Excellent	4	3 = Adequate	2	1 = Poor	NA	Response Count
Availability of classes when needed	12	8	6	2	1	0	29
Range of subject matter	8	13	6	1	0	0	28
Class size	10	9	10	0	0	0	29
Availability of tutors	6	5	3	3	1	11	29
Competence of instruction	8	11	5	3	2	0	29
Availability of instructors outside of class	12	7	7	0	0	3	29
Facilities	11	9	9	0	0	0	29
Equipment availability	9	11	6	2	0	1	29
Equipment quality	9	11	8	1	0	0	29
Advising by Admissions/Counseling	6	10	5	4	1	3	29
Advising by Program Instructors	7	15	4	2	0	1	29
Vocational career planning	4	5	8	6	2	4	29
Cooperative Work Experience program	6	8	3	5	2	5	29
Job placement services	3	4	11	4	2	5	29
Job preparation in your area of study	5	10	6	5	2	1	29
Comments							6
						answered question	29
						skipped question	4

According to feedback from the student survey, students see a need for improving advising at the campus level. One student recommended mandatory, regular meetings with a college advisor to help track their progress and assist them in their goals. Also, students indicated a need for improving the job placement portion of the campus. The job placement service as structured is too cumbersome for both industry and students to take advantage of it.

Other issues that the SAC has noted include the wide range of skill sets required for the degree, from drafting to science and math and hands-on construction skills. If a student is weak in one of the areas required for a degree or certificate, that could prevent them from completing their goal. Also, the fact that classes are only offered once a year can be a problem for students, especially if they are going to school part time. The second year classes are offered only at night, which can be an issue for students with families. And lastly, the student's expectations of the industry are often different from the reality.

7. Recommendations for improvement

A. Assess the strengths in your program.

1) Longevity: We have been focused on landscape education (and nothing else) since 1970. That longevity and its specific focus has developed us a reputation in the area. We have had students come to us from throughout the Pacific Northwest, often commuting long distances.

2) An emphasis on hands-on education: Most of our courses are project based or competency based. Students learn by lab as well as in the classroom. The ability to do is an important factor to both students and industry.

3) Our Associates Degree and our Two-Year Certificates enable students to sit for the Oregon Landscape Contractors Exam.

4) Our facilities: Both a strength and a weakness (as addressed below); our greenhouse, classroom shop and pole barn have made it possible to do more in applying hands-on application of classroom work.

5) At 59 FTE the program enrollment is very strong.

7B. Identify areas in need of improvement.

1) New Course Offerings: To enhance a program's reputation to industry and the community at large, it is important to be able to offer new courses focusing on what is new and innovative in the industry. It makes the program a leader and brings alumni coming back. To date, we have been able to offer new courses on an experimental, margin basis. In order to expand into Sustainability, we will need the resources and flexibility to add new courses.

2) Equipment Budget: In the next five years we anticipate some large capital expenditures needed for the maintenance of existing equipment and facilities. To be precise, that would be the re-glazing of our greenhouse (at a cost of $25,000 - $30,000). Our supply budget of about $9,700/year will not be able to cope with these when they arise.

3) Our facilities: Our land lab and building facilities are adequate, but often the labor to maintain them is not. We have one full-time technician and a casual labor budget to hire two, 599 hour/year employees. One to maintain our greenhouse, hoop house and one for the grounds. Sometimes we're lucky and have a cooperative education student that works a semester for us. With what we have we can just maintain what we have, but there's little left for improvement and expansions such as rebuilding the campus arboretum and replacing plant materials lost in construction.

4) Professional development: workloads permit little time and energy to pursue professional development by the existing full-time faculty. Time to attend seminars (even local ones) are only possible if it doesn't interfere with one's own class schedule as there are not

enough faculty to cover a missed class. This severely limits participation by faculty. In addition, there is no budget for professional development within the department.

7C. Given the above analysis and other findings of the SAC, prepare a set of recommendations relevant to areas such as curriculum and professional development, access and success for students, obtaining needed resources, and being responsive to community needs.

Recommendations:

1) Technical assistance in the area of public relations/ recruitment. Meryl Lipman has been doing an excellent job, and we would like to keep building on what she has done.

2) A five year budget plan on replacing major equipment and facilities maintenance.

3) If we are to continue to move in the direction of sustainable landscaping, to expand our course offerings towards those that focus on sustainability, we need the faculty and facilities to support our mission. Specifically upgrade 7/102 to have a podium and room for more tables, or a larger room with drafting tables to support larger design classes. Future expansions could include an additional classroom/lab space for building 4, and upgrading the greenhouse to current industry standards.

4) A budget for faculty development.

5)A budget for new trees and shrubs as well as input on what is removed and installed on campus, particularly in light of the upcoming bond construction.

LANDSCAPE TECHNOLOGY

PROGRAM REVIEW

Appendix A

International, National, and State
Professional Certification Requirements,
&
Oregon State Licensing Requirements

TABLE OF CONTENTS

Oregon Landscape Contractors Association

Certified Landscape Technician (CLT)

Be Recognized.
Be Certified.
Be a CLT.

What is Certification?

Certification is a national hands-on testing program administered by the Oregon Landscape Contractors Association that seeks to recognize proficiency in the landscape workforce, upgrade the status of the landscape professional, and provide the public with a means of identifying qualified landscape professionals.

The Oregon Landscape Contractors Association has joined forces with the Professional Landcare Network (PLANET) to offer five module tests in Installation, Maintenance, and Irrigation.

To become a Certified Landscape Technician, an applicant must pass one of the five module Test.
Passing the Installation test demonstrates that an individual has the skills to review a landscape blueprint and implement the design in the field.

Passing the Irrigation test demonstrates that a person has the skills to install and maintain an irrigation system and understands the fundamentals of water management.

Passing the Maintenance test shows that a person has the skills to maintain a landscape project in a professional manner.

Developed and organized by the California Landscape Contractors Association's Certification Committee, the exam was first administered in 1983. In 1994, PLANET purchased rights to the exam and began to offer it to state associations for their members. Since 1993, over 300 Oregon Landscapers have been certified.

What Are The Benefits of Certification?

• Promotes professionalism within the landscape industry.
• Provides local, state and national recognition.
• Enhances landscape companies.
• Validates landscape skills.
• Creates opportunities for career advancement in the industry.

What is the Recognition for Certification?

• Your company is registered as an employer of Certified Landscape Technicians.
• Individuals who pass each test will become Certified Landscape Technicians. (The distinction between installation, maintenance and irrigation will be made on all official documents.)
• Individuals passing a Certification Test will receive a numbered certificate and identification card.
• Employers are encouraged to advertise that they have Certified employees on their staff.

Who is Eligible for Testing?

Anyone is eligible to take the exam, but it is recommended that applicants have a combination of one of the following:

• Two years of experience in the landscape industry.
• One year of experience in the landscape industry plus the successful completion of a two-year or four-year curriculum in the landscape field.
• One half of a year of experience in the landscape industry plus the successful completion of a two-year or four-year curriculum in the landscape field plus the completion of an approved internship program.

CLT Testing

Testing is available in 5 sections, Softscape Installation, Hardscape Installation, Turf Maintenance, Ornamental Maintenance. and Irrigation. To become a CLT, candidates must pass one of the specialty sections. Whichever specialty section is passed denotes the applicant's CLT designation (example: CLT-Irrigation means an applicant has successfully passed the Common Core and Irrigation sections of the exam). The full exam, the Common Core section plus a specialty section, is 6-8 hours total testing time. Field and written testing is conducted at OLCA's permanent test site at Clackamas Community College.

Softscape Installation
1.01 Common Core* - Written 5.02 Softscape Plan Reading - Written 5.03 Softscape Horticulture Principles - Written 5.04 Irrigation Components - Written 5.21 Plant ID* 5.22 Basic Program Controller* 5.23 Lateral Repair & Head Adjustment* 5.24 Tree Planting & Staking* 5.51 Sod Installation 5.52 Plant Layout 5.53 Rototiller

Hardscape Installation
1.01 Common Core* - Written 6.05 Hardscape Plan Reading - Written 6.06 Hardscape Principles & Calculations - Written 6.25 Chainsaw* 6.61 Grading & Drainage 6.62 Instrument 6.63 Paver Installation 6.64 Skid-steer Operations

Turf Maintenance
1.01 Common Core* - Written 8.07 Irrigation Components & Principles* - Written 8.08 Turfgrass Maintenance Principles - Written 8.09 Turfgrass Maintenance Calculations - Written 8.22 Basic Program Controller* 8.23 Lateral Repair & Head Adjustment* 8.26 Power Blower* 8.81 21" Mower 8.82 Intermediate Walk-behind Mower 8.83 Riding Mower 8.84 Edger and Trimmer 8.85 Aerator 8.86 Turf Fertilizer

Ornamental Maintenance
1.01 Common Core* - Written 9.07 Irrigation Components & Principles* 9.12 Ornamental Maintenance Horticulture Principles - Written 9.14 Ornamental Maintenance Calculations - Written 9.03 Irrigation Components 9.21 Plant ID* 9.22 Basic Program Controller* 9.23 Lateral Repair & Head Adjustment* 9.24 Tree Planting & Staking* 9.25 Chainsaw* 9.26 Power Blower* 9.91 Pruning

Irrigation
1.01 Common Core* - Written 7.15 Advanced Irrigation Components & Principles - Written 7.16 Irrigation Plan Reading - Written 7.17 Basic Horticultural Principles - Written

7.23 Lateral Repair & Head Adjustment*
7.71 Advanced Program Controller
7.72 Lateral Installation
7.73 Mainline Installation
7.74 Valve Repair
7.75 Valve Wiring
7.76 Pipe Installation Equipment

*Indicates the section is included in more than one module. Applicants only need to pass this section once in order to be credited in all of the modules.

Test Procedures

Testing includes a written test for each section. Candidates then begin a series of timed tasks supervised by one or more judges. Most tasks require candidates to install or maintain sample landscape projects.

At the end of each timed session, the applicants rotate to another work station. This process continues until the end of the testing. Applicants must pass every task in order to become Certified Landscape Technicians. Those who do not pass may retake the unsuccessful portions during the next test date.

Retakes

If you are a retake applicant and are unsure of which section(s) you have remaining to pass, call the OLCA office at 503.253.9091 or 800.505.8105 - we will be happy to assist you.

Preparing for the tests

To allow sufficient time for study, persons should apply for the examination well in advance of the test date.

Study Guides

The CLT Committee strongly recommends reviewing the appropriate study guides to prepare for the test. There are Study Guides for each section - Installation, Irrigation and Maintenance. Study Guides are $65.00 each. Study Guides are also available in Spanish. This is a great way to prepare for the CLT test if English is your second language.

Employers take note: The Study Guides are a great tool for every day use in your business! You can now purchase them in both English and Spanish to use as an employee guide.

Spanish Interpretors

Interpretors will be at the test site to assist those individuals whose primary language is Spanish.

Study Groups

You might be asking yourself “How do I prepare for CLT?” An important component is to form STUDY GROUPS. Ask around in your area and see who else is interested in taking the test, set-up times and review the material with each other! You will be surprised at how much you and other members of your STUDY GROUPS will be able to share, and then when you take the test you will be prepared. (Another great benefit, when you take the test you will already know someone there.) And, afterwards you will have someone to celebrate your hard work and success!

Scholarships

OLCA has a limited amount of scholarship funding for employees of member companies. The Scholarship Committee will be offering scholarships for CLT testing. Listed below are the details:

- Amount of scholarship - $125.
- This must be the first time you have taken the CLT test.
- Available on a first come, first served basis.
- Limit of two (2) per company.
- Must be a full time employee and have 1 year of employment.

If you need additional information, please contact the OLCA office at 503.253.9091 or 800.505.8105.

147 SE 102nd Ave.
Portland, OR 97216
Telephone: 503.253.9091/800.505.8105
Fax: 503.253.9172
Email: info@oregonlandscape.org

APLD - Landscape Designer Certification

APLD Eligibility and Requirements for Certification

Eligibility

Applicants for Certified Membership in APLD must be current Associate Members and have a minimum of four years of professional landscape design experience. The education requirement generally equates to at least one year of the study of landscape design. Please see the Criteria page for more information on acceptable educational backgrounds. Course material covered should include residential landscape design,
landscape drawing, plant materials and landscape construction and maintenance with an emphasis on the design process.

Submission Requirements

Three installed projects are required, a primary project and two additional projects. **For all three a planting**
plan, design intent statement, plant list and before and after photographs are required. The primary project should represent the designer's skills most completely. The two additional projects should complement the primary submission by giving the review panel a greater view of the designer's abilities.

These two additional plans may be reduced in size to lessen the bulk of the submission. Fold all drawings. The whole submission packet should fit into one standard three-ring binder (11 x 12 Inches). Plastic sleeves or pockets can be used for the folded drawings.

Include all of the following items. Please read all of the materials on certification in the "Members
Only" section on the website (www.apld.org) prior to preparing your submission. Use boxes to check
off when complete.

 Complete application form.

 Educational records. Include copies of transcripts and/or supporting documents and certificates showing courses and contact hours.

 Three installed projects. These may be for a residence, business or commercial establishment, industrial or governmental project or other suitable project that demonstrate the applicant's professional capabilities. This should include circulation patterns, a mixture of trees, shrubs, groundcovers and perennials and the use of hardscape materials. They may include water features and landscape lighting. Keep in mind that your projects must meet the criteria listed in the application materials and on the score sheet (available at www.apld.org). A front yard in a modest sized yard may not do this.

 A planting plan drawn to scale for each project (3) along with site, concept, hardscape and lighting plans and construction drawings where needed to fully describe the project.

 A design intent statement for each project (3) that include how the designs meet the clients' functional
and aesthetic needs; zoning, governmental and budget restrictions; existing site conditions and problems; off-site conditions, hardiness zones and arrangements for installation.

 A complete plant list for each project (3) (botanical name, common name, quantity, size to be installed
and remarks). Include a separate plant list for each project in addition to the plant lists on the plans.

 Before and after photos of each project with no more than two photos per page. Send as many photos as you can.

 Bids for installation, if appropriate.

 Business statement. Briefly describe how you operate your business. What is your typical program with a client? How many designs do you complete in a year? What is your client base? Are you the sole owner, employee or partner?

 A nonrefundable fee of $100 or $125, if submission return is desired. Submissions will be held for five
years if certified, seven years if denied. At the end of that time we can return your submission to you, destroy it or use it for educational purposes.

SEND COMPLETED APPLICATION AND SUBMISSION TO:
Marti Neely, APLD, Chair, Certification Committee
9811 Sprague St., Omaha, NE 68134-3712
Tel: 402-963-0763, mneely@mulhalls.com

The APLD Certification Review Panels convene four times a year. Deadlines are January 1, March 1, August 1
and November 1.

ISA - Certified Arborist

Certification Credentials

ISA Certified Arborist

ISA Certified Arborist/ Utility Specialist

ISA Certified Arborist/ Municipal Specialist

ISA Certified Tree Worker/Climber Specialists

ISA Certified Tree Worker/Aerial Lift Specialists

ISA Board-Certified Master Arborist

I. THE PROGRAM

Certification is a voluntary program providing recognition of one's professional knowledge by one's peers. INTERNATIONAL SOCIETY OF ARBORICULTURE (ISA) Certified Arborist recognition is given by ISA to those who (1) meet the eligibility requirements for admission to the examination as set forth in this application, (2) successfully complete the examination, (3) maintain the necessary number of continuing education units (CEUs) to recertify after three years, and (4) pay the necessary recertification

fees every three years.

The objectives of the Certification Program are

• to be an educational program that will improve technical competency of personnel in the tree care industry.

• to create incentives for these individuals to continue their professional development.

• to provide the public and those in government with a means to identify those professionals who have demonstrated, through a professionally developed exam and education program, that they have a thorough knowledge of tree care practices.

The benefits of the Certification Program include the following:

• Certification builds an individual's self-image. By studying for and passing the exam, individuals reaffirm to themselves and their peers a thorough knowledge and dedication to arboriculture.

• Certification affords the public and those in government the opportunity to make an informed selection of services based on the knowledge that is represented by the certification designation.

• The process of becoming certified and maintaining the designation provides incentives to the individual to continue his or her ongoing professional development.

• Certification is a tool to help employers both in training their personnel and selecting new employees.

II. THE CONTENT OF THE CERTIFICATION EXAMINATION

The certification examination is weighted in the following manner:

I. Soil Management……9.0%
II. Identification and Selection……11.0%
III. Installation and Establishment……..8.0%
IV. Safe Work Practices…….11.0%
V. Tree Biology……11.0%
VI. Pruning……12.0%
VII. Diagnosis and Treatment……9.0%
VIII. Urban Forestry……7.0%
IX. Tree Protection……..11.0%
X. Tree Risk Management……..11.0%

3

Recommended Study Materials

The *Arborists' Certification Study Guide* is intended to serve as a recommended program of study. Each chapter in the study guide lists additional references that should be considered for review, such as: *ANSI Z133.1 Safety Standard for Tree Care Operations and other resources.*

The *Arborists' Certification Study Guide*, published by ISA, should NOT be considered the sole source of information for preparing for the certification examination.

How the Examination Was Developed

The certification examination was developed by a panel of industry experts representing all aspects of arboriculture. Questions were derived from a job analysis survey filled out by arborists from around the United States and Canada. Questions are constantly analyzed by the Certification Test Committee using the latest test statistics, and new questions are always being developed. Questions that do not perform satisfactorily are removed from the question bank. New examinations are created on a regular basis.

The Format of the Examination

The certification examination consists of 200 multiple-choice questions. One-hundred-ninety questions

are drawn from the question bank, and ten digital photos are used for the tree ID. Each question has four choices listed, only one of which is correct. The answer to each question can be derived independently of the answer to any other question.

Whenever trees are referred to on the exam, both scientific and common names are given.

You will have 3-1/2 hours to complete the examination. It is always advisable to first answer the questions that are easy for you, skipping over those questions to which you will need to return to and give more thought. Working in such a manner, you should feel no time pressure because 3-1/2 hours will be more than enough time to complete the examination.

Attainment of Certification

If you achieve the overall passing score of 72%, you will receive the designation of ISA Certified Arborist and will be sent a certificate, an ID card, an advertising logo sheet, a hard-hat decal, and a patch.

When you receive your results, please remember that the domains are weighted and the average of the ten domains **WILL NOT** be equal to the overall score.

If you do **NOT** achieve an overall passing score, you must retake the entire exam. You will be allowed to retake the exam **one time for free within one year**. If you do not show up for the scheduled retake exam, **you will forfeit your free retake**. After that, each time you retake for up to one year, there will be a charge of $75 USD. If you do not attain certification within one year from the original test date, you will be required to pay the full amount. A $100 administrative fee applies each time you take a computer based exam.

ODA Pesticide License

Commercial applicator license

- Allows you to use pesticides (general or restricted-use) on someone else's property if employed by a company with the commercial operator license.
- Allows you to use restricted-use pesticides on your own (or your employer's) non-agricultural land.
- Allows you to supervise a licensed commercial pesticide trainee.
- Allows you to tell someone how to use a restricted-use pesticide or which restricted-use pesticide will work best (limited to categories on your license).
- Tests required - Laws & safety and at least one category

Commercial operator license

- Allows a business to use pesticides on someone else's property.
- For corporations, at least one employee must be licensed as a commercial pesticide applicator.
- For sole proprietors or partnerships, the owner or at least one partner must be licensed as a commercial pesticide applicator.
- Categories must match the type of pesticide work that will be done.
- The business must show proof of insurance for pesticide applications.
- This license cannot be issued to a public agency.
- Test required - None.

Consultant license

- Allows you to tell someone how to use a restricted-use pesticide or which restricted-use pesticide will work best.
- The demonstration and research option allows you to create demonstration plots or do research on pesticides.
- If you have a pesticide consultant license, you may obtain the private pesticide applicator license without passing the private pesticide applicator test.

- Test required - Consultant.

Dealer license

- Allows a business to sell restricted-use pesticides to licensed pesticide users.
- Test required - None.

Private applicator license

- Allows you to use restricted-use pesticides on agricultural land, including farmland, ranches, forestland, nurseries, and orchards.
- Allows you to supervise a co-worker or employee applying a restricted-use pesticide.
- One license covers all agricultural use (no categories).
- Test required - Private pesticide applicator.

Public applicator license

- You must work for a state or federal agency, county, city, municipality, irrigation district, railroad, public utility, telephone company, school, or other public employer.
- Allows you to use restricted-use pesticides for your public employer.
- Allows you to use fuel or electric-powered sprayers or spreaders.
- Categories must match the type of pesticide work that will be done.
- Allows you to tell someone how to use restricted-use pesticide or which restricted-use pesticide will work best (limited to categories on your license).
- May supervise a licensed public pesticide trainee.
- Tests required - Laws & safety and at least one category.

Trainee license

Immediately supervised pesticide trainee license

- Can be a public or commercial license.
- Allows you to use pesticides while supervised by a licensed commercial or public

pesticide applicator.

- Supervisor must be on site at all times during spraying and within five minutes travel time from trainee.
- Trainee and supervisor categories must match the type of pesticide work that will be done.
- Test required - None.

Directly supervised pesticide trainee license

- Can be a public or commercial trainee license.
- Allows you to use pesticides while supervised by a licensed commercial or public pesticide applicator.
- Supervisor must be able to help the trainee by phone or radio during the application.
- Supervisor does not need to be on site.
- Trainee and supervisor categories must match the type of pesticide work that will be done.
- Test required - Directly supervised trainee.

OLCB – Oregon Landscape Contractors Licensing

Individual License

A landscape construction professional who owns or is employed by a landscape contracting business plans and installs lawns, shrubs, vines, trees or nursery stock including the preparation of the property on which the vegetation is to be installed. A landscape construction professional also constructs or repairs ornamental water features, drainage systems and irrigation systems, plans and/or installs fences, decks, arbors, patios, landscape edging, driveways, walkways or retaining walls.

State Seal

There are two licenses required with the LCB:

1. A landscape construction professional license:
   Must pay a $100 application fee and qualify to sit for a comprehensive exam (The Probationary landscape construction professional license application fee is $75).

2. A landscape contracting business license:

   Must pay a $150 application fee and meet the requirements of the board.

To download the application forms and other forms, click on "Forms" on the left menu bar.

LICENSE CATEGORIES: There are four license categories you may apply for.
All Phase: all areas of landscape contracting, including the installation of backflow assemblies.
Standard: all areas of landscape contracting except irrigation and the installation of backflow assemblies
Irrigation, Plus Backflow: irrigation and the installation of backflow assemblies
Probationary All Phase plus Backflow: all areas of landscape contracting, including the installation of backflow assemblies with a the maximum bond amount

CHANGE TO LICENSE CATEGORIES: A landscape construction professional may add to the license category they currently hold by taking and passing additional sections of the exam. For more information, contact the LCB office at (503) 378-5909 ext. 221.

SUPERVISORY RESPONSIBILITIES: A licensed landscape construction professional whose phase of license is the basis of the landscape contracting business license must perform the following supervisory services:

1. Review and initial the landscape plan and written contract for each job;

2. Attend all on-site meetings and appear at any hearings that are a consequence of any claims filed against the landscape contracting business that relate to the landscape construction professional's phase of license; and

3. Directly supervise all non-licensed employees employed by the landscape contracting business.

Business License

A landscape contracting businesss license is granted to an entity that meets the requirements (see below) of law to contract for landscape work in the State of Oregon. This entity is considered "the contractor" and has the ability to enter into contracts with the public. This license is required for all landscape contracting businesses even if the business is a sole proprietor.

Each landscape contracting business must employ at least one indivual landscape construction professional to supervise the activities of the business and directly supervise all unlicensed employees of the business that are performing landscape work for the business. The landscape contracting business may offer and/or perform those phases of landscape work for which its employed landscape construction professionals are licensed.

Requirements for a Landscape Contracting Business License:

Submit completed, signed application and appropriate application fee ($150) which includes but is not limited to:

- ***License Fee: $260***
- ***Business name*** *that is registered with the State Corporation Division including ABN's if applicable. [the only exception to this requirement is a sole proprietorship that is named exactly in the name of the business owner, e.g. John P. Smith Landscaping owned by John P. Smith].*
- ***List of all owners*** *including percentage of ownership. [Sole proprietorships can only have one owner in Oregon (non-community state)]*
- ***The list of licensed landscape construction professionals*** *(including yourself if applicable) who are supervising the activities of the landscape contracting business and are directly supervising any unlicensed employees of the business performing landscape work.*
- ***Tax identification numbers*** *such as: Employer Identification Number, State Identification Number, Corporate Registry Number, Federal Identification Number, etc.*
- ***Certificate of Liability Insurance*** *for a minimum of $100,000.*
- ***Surety Bond*** *(or other accepted surety) in the amount that corresponds to the project size (contract(s) amount on the same project for the same owner within a 12 month period).* ***$3000 surety*** *if performing projects $10,000 or less;* ***$10,000 surety*** *if projects are more than $10,000 and less than $25,000 or if the business installs fences, decks, arbors, patios, driveways, walkways, retaining walls or landscape edging without performing other landscape work;* ***$15,000 surety*** *if the projects are more than $25,000 or the business is a probationary business.*
- ***Workers Compensation*** *if the business has employees*
- ***Independent Contractor Verification*** *stating the business meets the independent contractor requirements of ORS 670.600.*
- ***Licensing and litigation history*** *which provides information about previous licenses and any outstanding orders, unpaid judgments or penalties in Oregon or other states.*

- ***Criminal Background*** *indicating any felony convictions of the owners.*
- ***Employee Verification form*** *which verifies the licensed landscape construction professional understands the supervisory requirements for this individual.*
- ***Managing employee*** *designation for the business. This is the person that is either an owner or a full time designated employee who is either a licensed landscape construction professional or has taken the course and passed the examination for an owner/managing employee.*
- ***Signature***

Business Owner/Managing Employee
If the owner IS NOT a licensed landscape construction professional then the business must have either an owner or a designated full time employee who is actively involved in the day to day operations of the business take a course and pass an examination on the Laws, Rules and Business Practices for a landscape contracting business.

FAQs RE: Licensing

What is a licensed landscape construction professional?
A landscape construction professional is an individual who plans and installs lawns, trees, shrubs, vines or nursery stock including the preparation of the property on which the plantings are be installed. A landscape construction professional also constructs and repairs ornamental water features, drainage systems and irrigation systems; plans and installs fences, decks, arbors driveways, walkways, patios, landscape edging and retaining walls. This individual must be licensed pursuant to ORS 671.530 and an owner or employee of a licensed landscape contracting business before this person can perform landscaping work in Oregon.

Do I need a license to do yard/landscape maintenance?
No, landscape maintenance is currently not a state regulated industry. However, you should check with your city or county for local licensing requirements. Landscape maintenance is work performed in the upkeep of existing landscape projects and includes work such as mowing, pruning, edging, applying bark dust, trimming, and the planting of annuals, perennials and bulbs in an existing bed (to a limited degree).

How do I know if I'm doing landscape maintenance or landscape contracting?
Landscape maintenance involves the care of plants and the general upkeep of an already installed project. Landscaping work is the preparation, construction and/or installation of the landscape project or any part of it.

Who needs to be licensed?
Any individual who performs landscaping work as defined in ORS 671.520 ***and*** *any business that advertises or contracts to perform landscaping work in Oregon. The individual needs to own or be employed by a licensed landscape contracting business before the individual can perform landscaping work work in Oregon.*

What types of licenses are there?
There are three types of landscape construction professional licenses currently offered:

- *All Phases plus Backflow - all aspects of landscaping work including irrigation and backflow installation.*
- *Standard - all aspects of landscaping work **except** irrigation and backflow.*
- *Irrigation plus Backflow - irrigation and backflow only.*
- *Probationary All Phase plus Backflow - all aspects of landscaping work including irrigation and backflow installation **but with restrictions** (see below)*

What is a probationary landscape construction professional license and its limitations?
In 2007 the Oregon Legislature passed legislation that allows an individual who does not meet the education and experience requirements that currently exist to qualify to sit for the LCB exam to apply and sit for the All phase plus backflow exam without this experience but the person must pass all the sections of the exam within one year of the first sitting of the exam. The individual then will receive a probationary license where the individual will be subject to 24 months of probation where the maximum project size is $15,000 and the landscape contracting business must carry a $15,000 bond or 24 months of employment (not allowed to supervise) by a non-probationary landscape contracting business under the direct supervision of a non-probationary licensed landscape construction professional; or be licensed as a construction contractor under ORS 701 for a period of two years after obtaining the probationary license. After this 24 month period the probation will be removed.

What if a landscape construction professional holds a license from another state?
Oregon does not have reciprocity agreements with other states. However, by providing this information with your application, it may qualify you to take the examination since it can provide proof of experience in the landscape industry to the Board.

How much is the application fee?
The application fee for the individual landscape construction professional is $100. This fee must accompany the application and documentation of your qualifications for sitting for the exam.

After I pass the sections I am required to pass for my license what are my fees?
The initial landscape construction professional license fee is $95 and the renewal fee is $95 each year. Your individual landscape construction professional license will show an expiration date and the renewal form and renewal fee must be postmarked on or before that date each year. A late fee of $35 is charged as a penalty if you renew after the expiration date of the license.

Once I obtain my individual license can I start working?
No! Passing the exam and obtaining an individual landscape construction professional license does not allow you work. You must own or be employed by a licensed landscape contracting business before you can operate as a landscape construction professional in Oregon. [See the business application packet]

What is the backflow portion of the Landscape Construction Professional license and what does it include?
A licensed landscape construction professional that owns or is employed by a licensed landscape

contracting business and holds an individual license that includes backflow may install a backflow assembly on a potable water supply for irrigation systems or water features. This ability is provided as an exemption from the plumbing laws in the state of Oregon and is only provided to those individual landscape construction professionals that have the backflow portion of the license and own or are employed by a properly licensed landscape contracting business. The exemption does not apply to unlicensed employees nor to licensed employees that do not have the backflow portion appended to their license.

As of January 2008 a licensed landscape construction professional that owns or is employed by a licensed landscape contracting business and holds an individual license that includes backflow and who also holds the tester certification from the Oregon Health Department may repair backflow assemblies installed for irrigation systems or water features only.

How about low-voltage wire installations?
Licensed Landscape Contracting Businesses may install low voltage outdoor lighting and irrigation control wiring without having an electrician's license for a Class II or Class III system that does not exceed 30 volts and 750 volt-amperes. All employees of the landscape contracting business must carry an identification card (found on the LCB website) when they are performing this type of electrical work.

What other licenses do I need?
In order to perform landscape work in Oregon you are required by the State to have two licenses: a landscape contracting business license and the business must either be owned by or employ a licensed landscape construction professional. On top of that you will need to contact your local city or county to see if there are additional requirements to operate in the city or county the business desires to work in.

What about renewal of the Landscape Construction Professional License?
The landscape construction professional license needs to be renewed every year on the anniversary date of the issuance of the license. The licensee must fill out, sign and return the renewal form and submit the required fee. ***However, as of January 1, 2009*** *every licensed landscape construction professional must obtain Continued Education Hours (CEH) to renew their license.* ***This requirement will first affect those individuals that renew in 2010 that have an individual landscape construction professional license number that is an even number.*** *Odd numbered licensees will be affected in 2011. See the continued education info section on our website for further information about the requirements and the courses that have been preapproved.*

What do I do to make a landscape construction professional license or a landscape contracting business license "inactive"?
A landscape construction professional (LCP) license and a landscape contracting business may be changed to "inactive status" by requesting this change on the forms provided under the "forms" link on the LCB website. Though the CEH requirments are suspended during inactive status for the LCP license the annual license fee must be paid to maintain the inactive status. If a change to active status is requested the CEH requirement for the previous two years must be met.
For the landscape contracting business in inactive staus the bonding and insurance requirments do not need to be continued until active status is requested. The annual license fee is required each year to maintain the inactive status.

Exam Qualifications

How can I qualify to take the exam?
To qualify to sit for the exam your experience must be within 10 years of the date of application and you must meet one of the following requirements:

1. Employed by a licensed landscape contracting business(es) for two years (total of 24 months).

2. Self-employed as, or worked for, a landscape maintenance business or in another landscape industry related field for four years (total of 48 months).

3. Employed by a licensed landscape contracting business(es) for one year (12 months) **and** worked as a landscape maintenance business for two years (24 months).

4. Employed by a licensed landscape contracting business(es) for one year (12 months) and have one year of education in the landscape or related field (total of 36 credit hours).

5. Self-employed or worked for a landscape maintenance business for two years (24 months) **and** have one year of education in the landscape or related field (36 credit hours).

6. Have completed the Certified Landscape Technician (CLT) program administered by OLCA or another entity licensed to the Professional Landscape Network.

7. Have obtained Associates, Bachelors or Masters Degree in horticulture or related field which includes cooperative work experience.

8. Hold a current certification with the International Society of Arboriculture (ISA) as a Certified Arborist and be licensed with the Construction Contractor Board (CCB).

9. Hold a certificate in horticulture or other related field from an accredited school or college that requires a minimum of 72 credit hours, which includes cooperative work experience in landscaping.

To verify your employment with a licensed landscape contracting business, please have your employer(s) complete the Employer Verification Statement. This form must be submitted with your exam and license application. (NOTE: out-of-state landscape maintenance and private business employers can also use this form.)

To verify an Associates, Bachelors, or Masters Degree you will need to submit a certified copy of your transcripts.

To verify one year of education in the landscape field, you will need to submit a certified copy of your college transcripts showing at least 36 credit hours of classes relating to landscape.

To verify your CLT, you need to submit a copy of your signed certificate.

To verify experience gained in landscape maintenance* work, you will need to complete the Landscape Maintenance Project Description form (page 11). You may photocopy this form as many times as you

need. These forms must be submitted with your application.
a) To show **four years** of maintenance* work you will need to submit six Landscape Maintenance Project Descriptions per year for a total of 24 in a 48 month period.
b) To show **two years** of maintenance* work you will need to submit six Landscape Maintenance Project Descriptions per year for a total of 12 in a 24 month period.

*Landscape maintenance means work done on an already existing landscape (mowing; pruning [up to 15']; edging; applying bark dust; trimming; planting of annuals, perennials and bulbs in existing beds; and general upkeep.)

It is **important** that you fill out the Landscape Maintenance Project Descriptions completely and legibly. The form must list the full name of the customer, address, city, state, and zip code or it will be returned to you for completion. You need to have the customer sign, date and insert their telephone number for our verification process.

How do I qualify for the Probationary Landscape Construction Professional License?
There are no qualifications required to sit for the examination for this license. The probationary license is an All Phase plus Backflow license (seven sections of the exam) and an applicant has one year from the date of the first sitting of the examination to pass all the sections (7) of the exam. Failure to pass all the sections within one year results in no license and that individual must apply for a non-probationary license if they want to become licensed. The probationary license is a "one shot" opportunity.

LANDSCAPE TECHNOLOGY

PROGRAM REVIEW

Appendix B

Learning outcomes for the Landscape Technology Department, Certificates and Degrees

PROGRAM OUTCOMES

LANDSCAPE SERVICES TECHNICIAN - ONE YEAR CERTIFICATE

- Acquire the basic computational, technical, and critical thinking skills to enter the landscaping industry and function as a competent worker in their chosen area whether it's landscape construction, maintenance, or design.
- 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.

LANDSCAPE TECHNOLOGY – TWO YEAR AAS DEGREE

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

LANDSCAPE CONSTRUCTION - TWO YEAR CERTIFICATE

- Acquire the computational, technical, and critical thinking skills required to install and repair landscapes, including plantings, hardscapes, irrigation and drainage in a competent, safe and legal manner for residential, commercial, industrial, and municipal sites.
- Demonstrate knowledge to obtain and maintain certification and/or licensing required for landscape contracting as prescribed by their State Landscape Contractors Board and/or state and national organizations or associations.
- Communicate effectively using verbal, written and 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.

LANDSCAPE DESIGN - TWO YEAR CERTIFICATE

- Acquire the computational, technical, and critical thinking skills to collect, analyze, synthesize and summarize data for application toward landscape design, including plantings and hardscapes and in a competent and legal manner for residential sites.
- Demonstrate knowledge to obtain and maintain certification and/or licensing required for landscape design as prescribed by local, state and/or national organizations or associations.
- Communicate effectively using verbal, written and 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.

LANDSCAPE MANAGEMENT - TWO YEAR CERTIFICATE

- Acquire the computational, technical, and critical thinking skills to maintain landscapes including plantings, hardscapes, irrigation and drainage in a competent, safe and legal manner for residential, commercial, industrial, and municipal sites.
- Demonstrate knowledge to obtain and maintain certification and/or licensing required for landscape maintenance as prescribed by local, state and/or national organizations or associations.
- Communicate effectively using verbal and written 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.

LANDSCAPE TECHNOLOGY

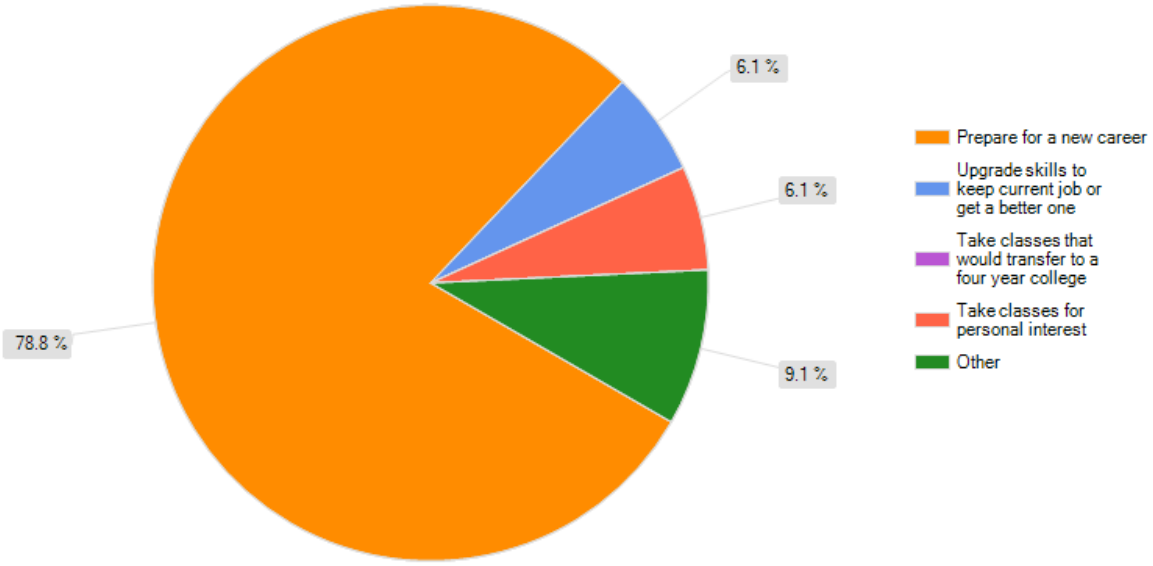
PROGRAM REVIEW

Appendix C

Portland Community College – Landscape Technology
Survey of Graduates and Students

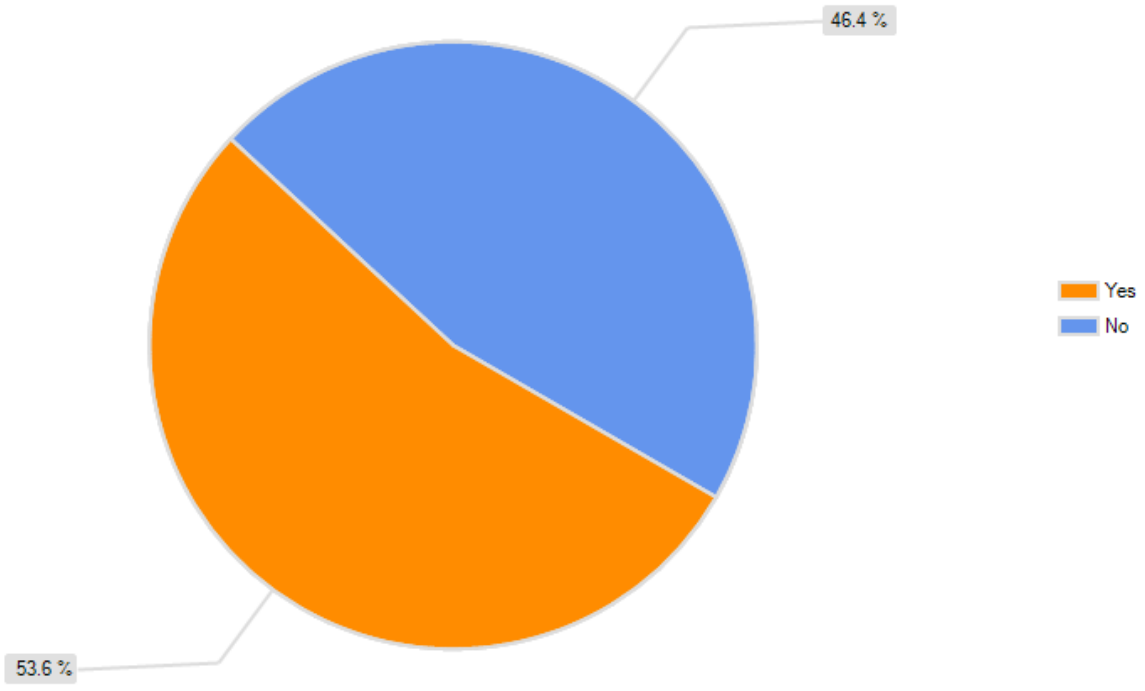
Question 1

What was your primary reason for attending PCC?



Question 2

Do you feel you accomplished your goal?

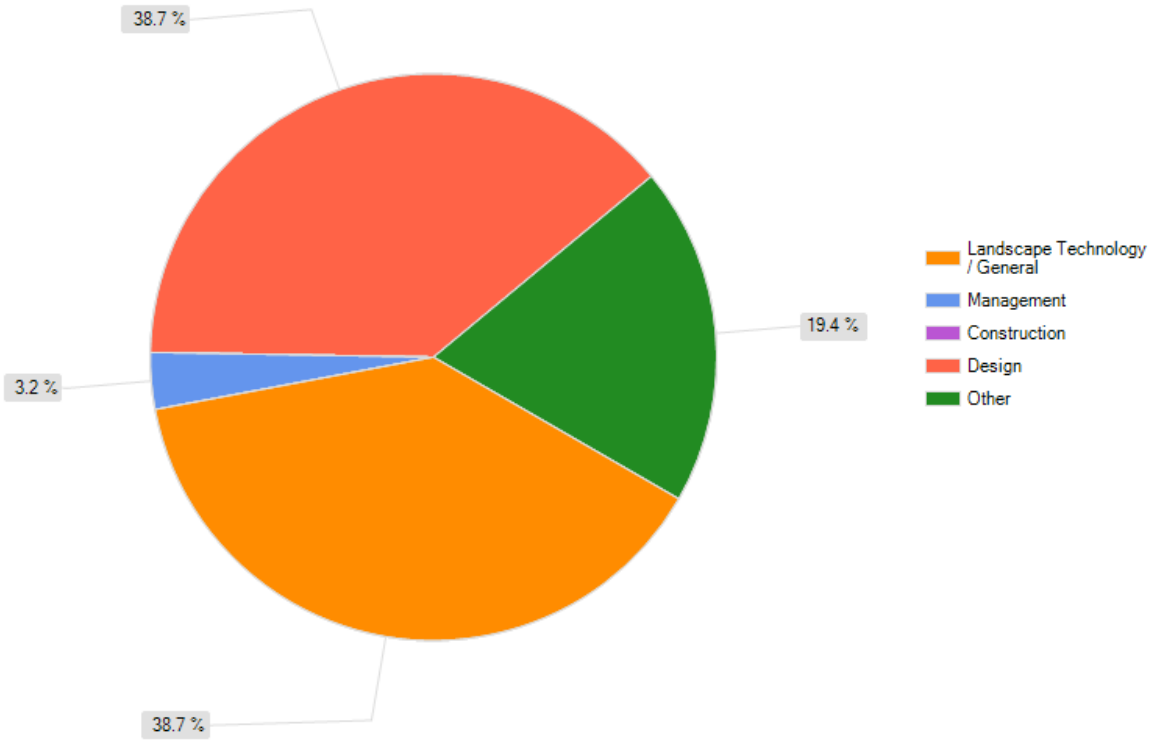


Q2 REPLIES - Do you feel you accomplished your goal? (If not why not?)

1. I still want to complete some business courses.
2. Not done yet!
3. not yet
4. I still have 2 years to go as I am a half time student but yes I believe I am...I have not started my new career however. I will try to make the transition next year when I am in my last year.
5. Haven't finished
   Also, want more up-to-date organic/sustainable course options and having to go outside the college for them
6. Instead of turning to Landscape contracting I decided to continue my education at a 4 year.
7. The job field is significantly less populated.
8. well I'm not done yet but ask me in another year and the answer would be yes.
9. I'm attending part time and will have completed 4 classes at the end of summer quarter.
10. not yet, still working on transfer
11. The required second year classes are only offered at times that are very inconvenient for me.
12. I have not finished my courses yet.
13. I am going into my second year and still need complete the course. Otherwise yes.
14. Not yet, have not taken the Landscape contractors exam yet. Would like to see how the course prepared me for this test.
15. just starting my journey
16. I'm only halfway through, so I can't say. The question should ask "Do you feel you have accomplished/are accomplishing your goal? Or, have the option to answer, I have not yet completed my program.

Question 3

While attending PCC what was your major field of study?

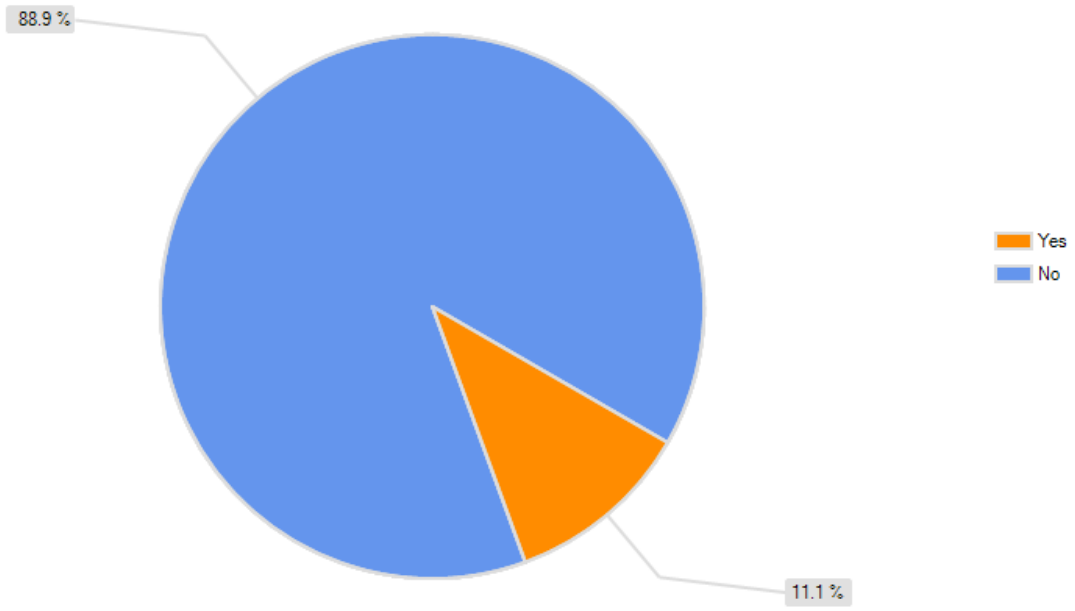


Q3 REPLIES – While attending PCC what was your major field of study?

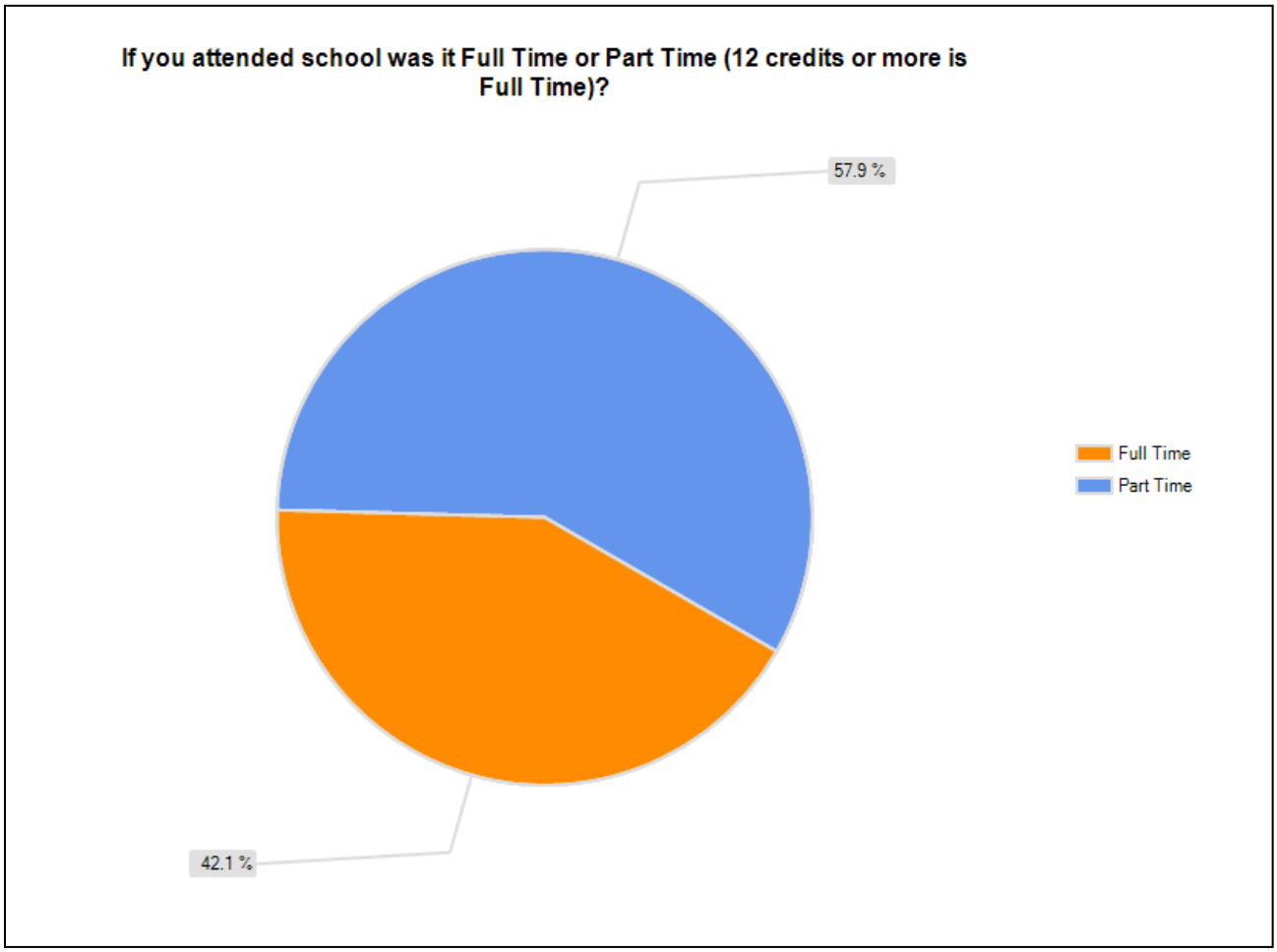
- General Studies
- Took primarily landscape courses but missed a few requirements so I'm going with the AGS instead.
- It was broad with Landscape Tech, Construction and Design as that is what the industry really requires.
- Both Construction and Design
- landscape design/ environmental studies
- Working on assoc of arts for psych and utilizing LAT program for my business
- Gerontology, Horticultural Therapy

Question 4

Since leaving/graduating from PCC, have you attended another college or trade school?



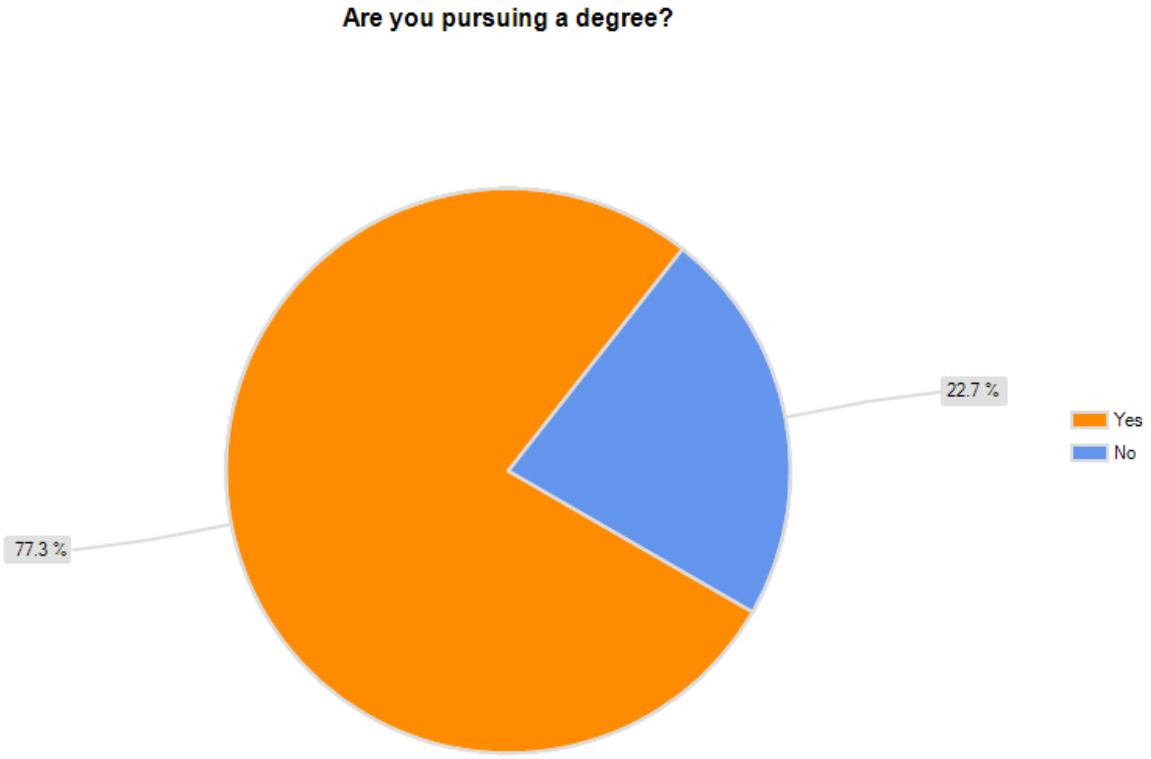
Question 5


If you attended school was it Full Time or Part Time (12 credits or more is Full Time)?
57.9 %
42.1 %
Full Time
Part Time

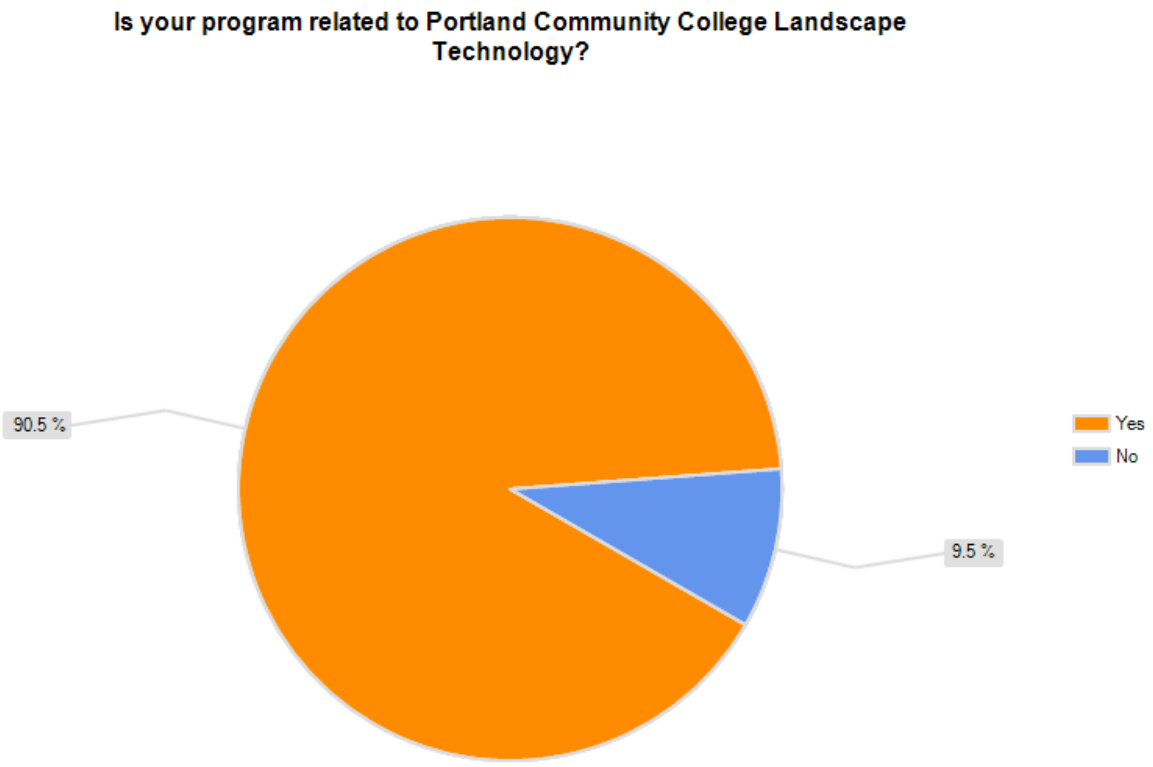
Q5 REPLIES – If you attended school was it Full Time or Part Time (12 credits or more is Full Time)?

- Rock Crk.C.
- Rock Creek
- PCC
- Still attending PCC
- PCC Rock Creek
- PCC

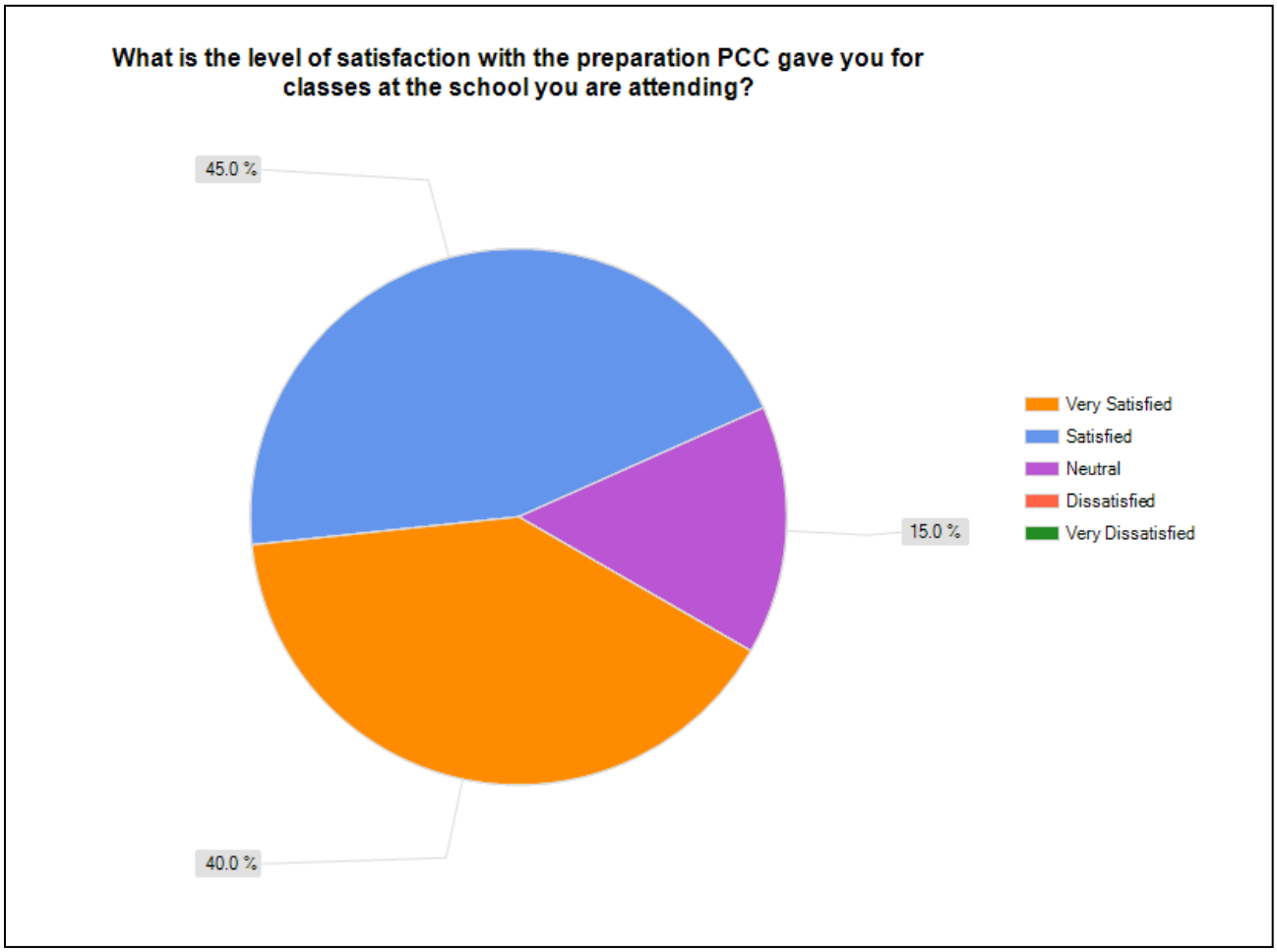
Question 6

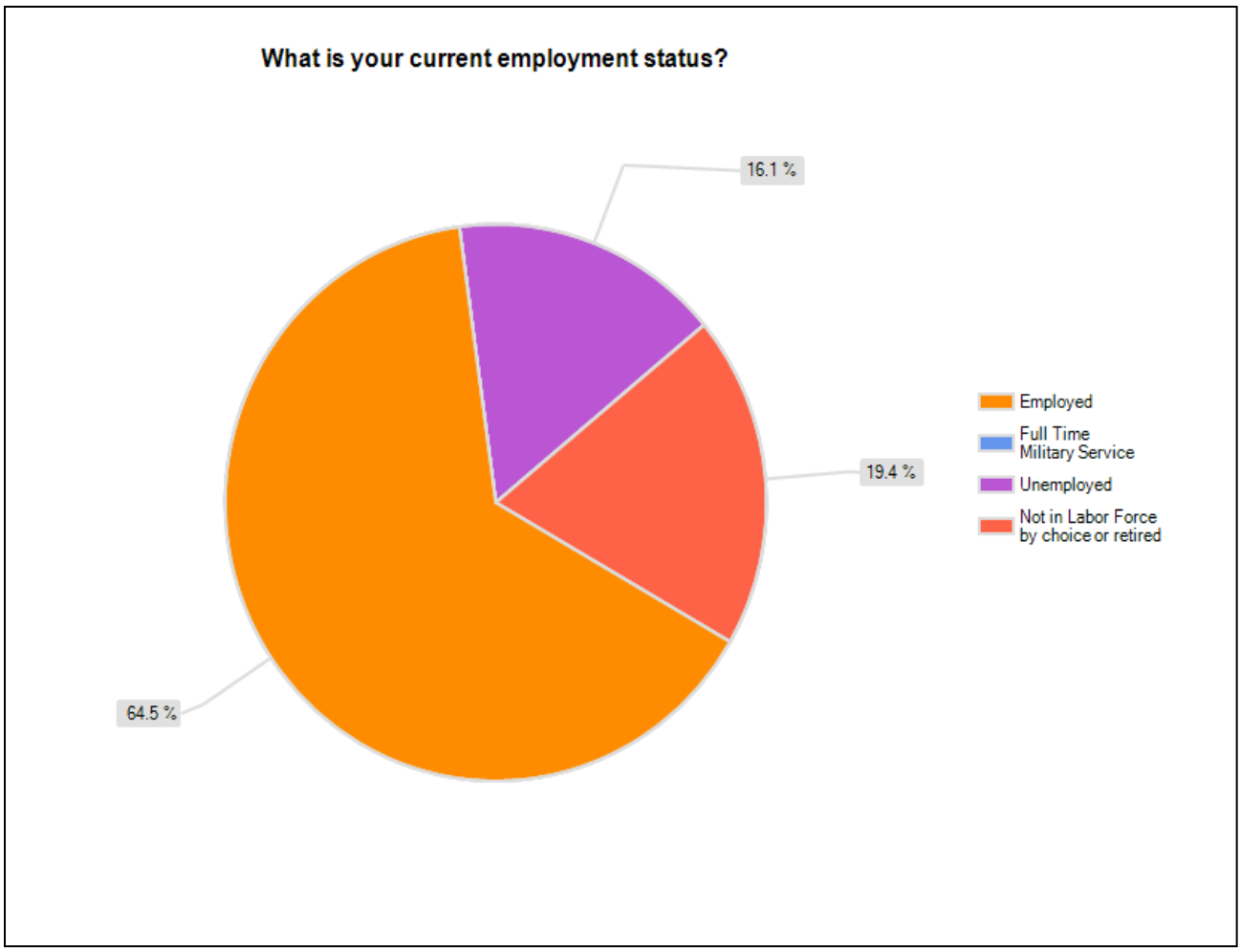


Question 7

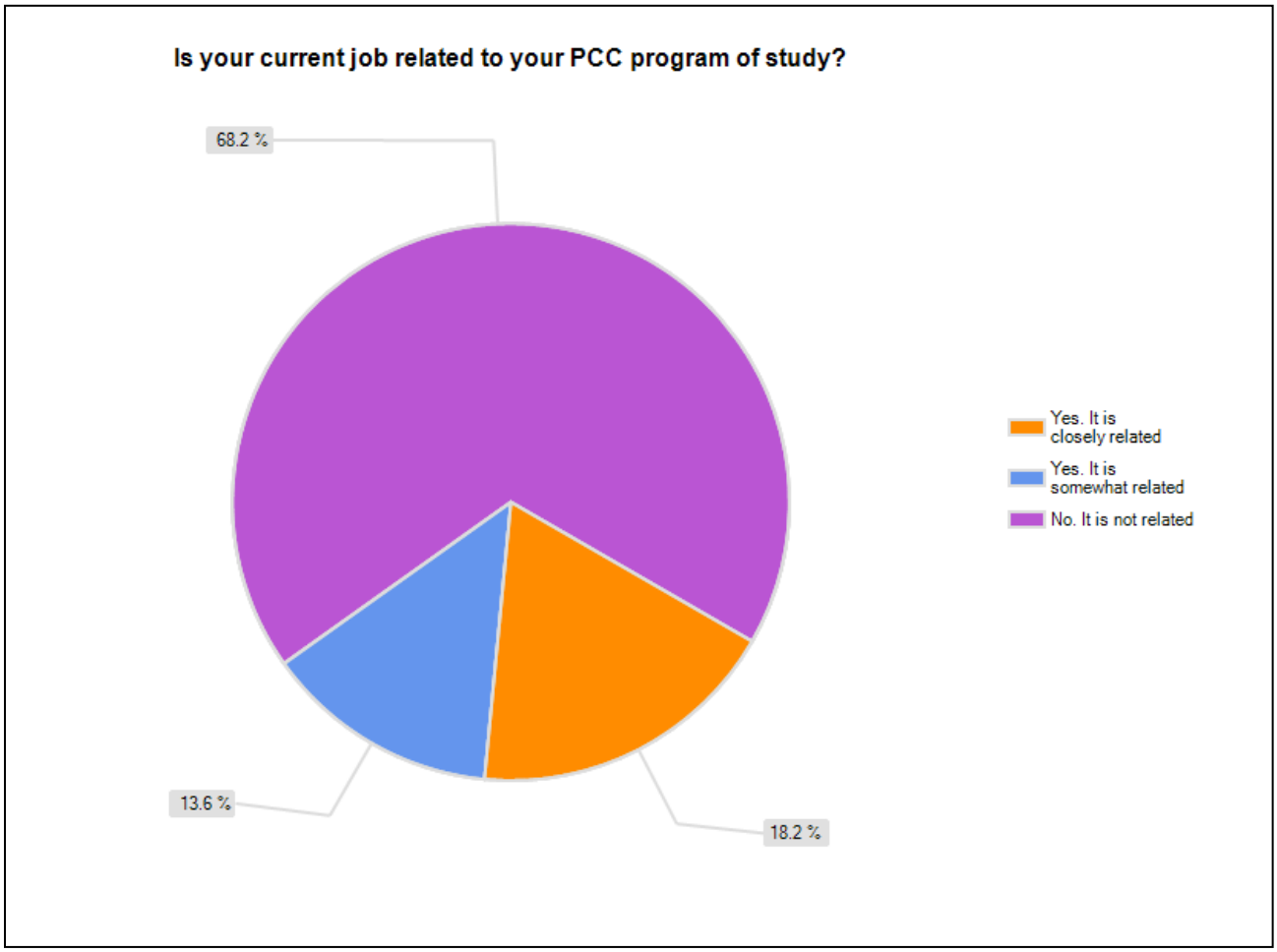

Is your program related to Portland Community College Landscape Technology?
90.5 %
9.5 %
Yes
No

Question 8


What is the level of satisfaction with the preparation PCC gave you for classes at the school you are attending?
45.0 %
15.0 %
40.0 %
Very Satisfied
Satisfied
Neutral
Dissatisfied
Very Dissatisfied

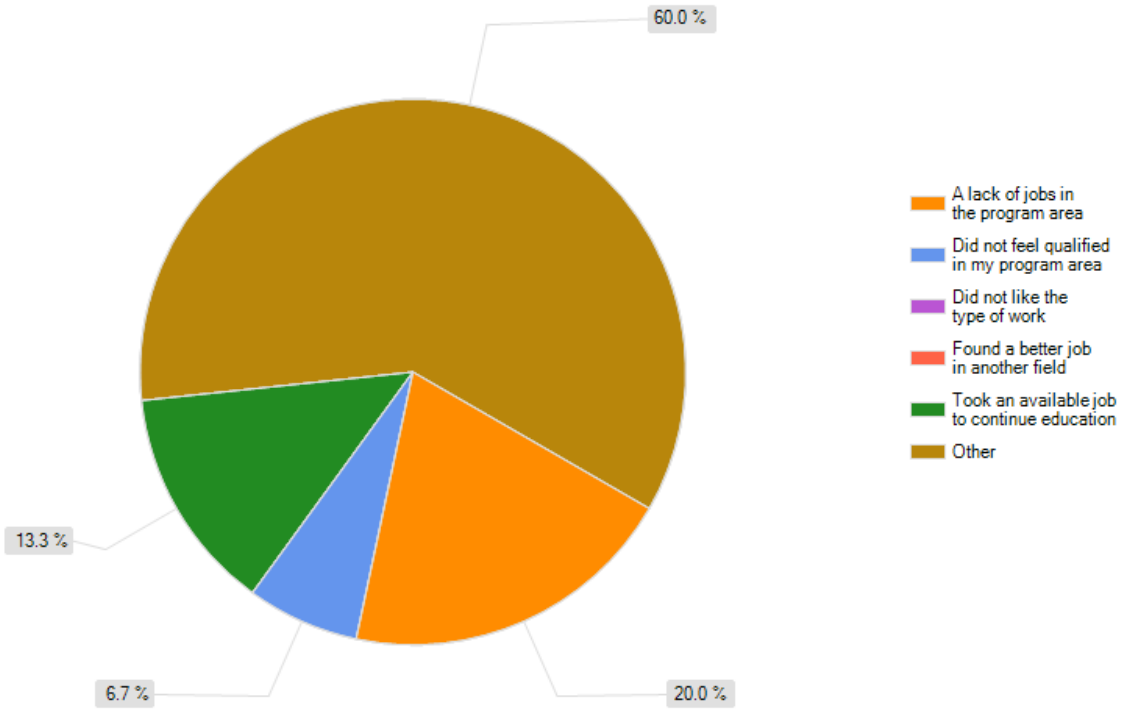

What is your current employment status?
16.1 %
19.4 %
64.5 %
Employed
Full Time Military Service
Unemployed
Not in Labor Force by choice or retired

Question 10


Is your current job related to your PCC program of study?
68.2 %
13.6 %
18.2 %
Yes. It is closely related
Yes. It is somewhat related
No. It is not related

Question 11

If your job is not related to your PCC program of study, which of the following best describes the reason for this?

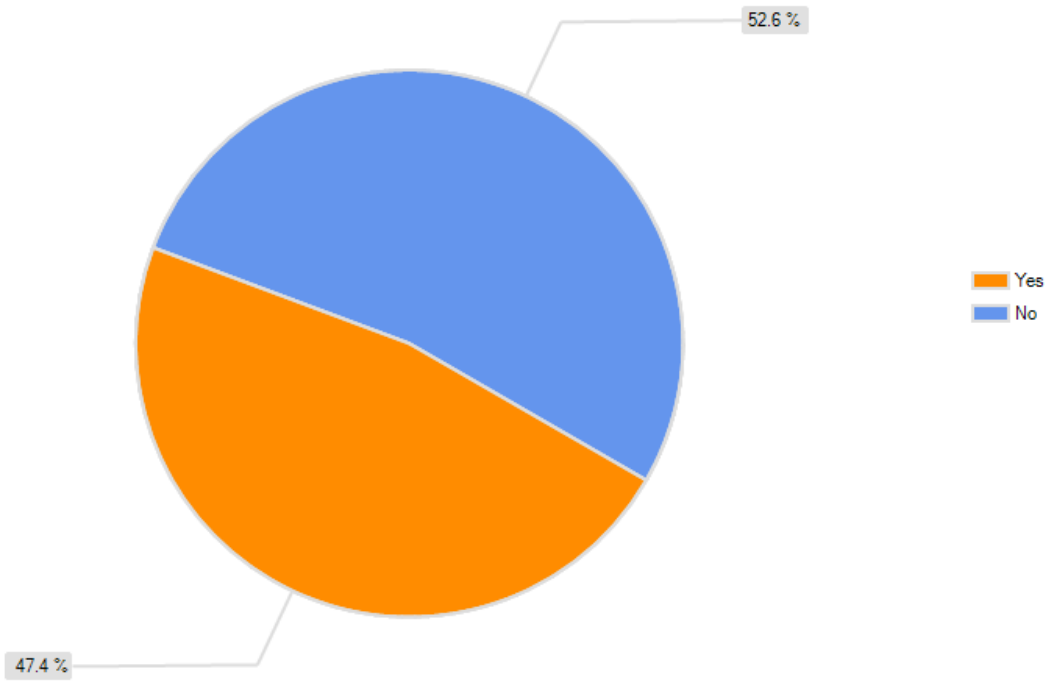


Q11 REPLIES – If you attended school was it Full Time or Part Time (12 credits or more is Full Time)?

- I am currently working, but anticipating a career change.
- I have not yet graduated so it will be a career change when I do!
- I have not finished the program at PCC yet
- This job allows me to look for a job in my related field.
- Entry level positions in the field offer inadequate compensation and my current position offers full benefits.
- I haven't finished school
- I have to complete state testing and come up with enough income to move forward with a self-employment status in my area.
- Not yet finished with program
- Haven't completed my field of study yet.
- I see a psychology practice later in my life when doing tree work will be not as practical.
- As I haven't completed the courses I am still working as a bartender but I am looking for jobs at local nurseries.
- I work in retail as a "Big box Manager" and want to change that with the degree I am seeking at PCC and do what I love to do.

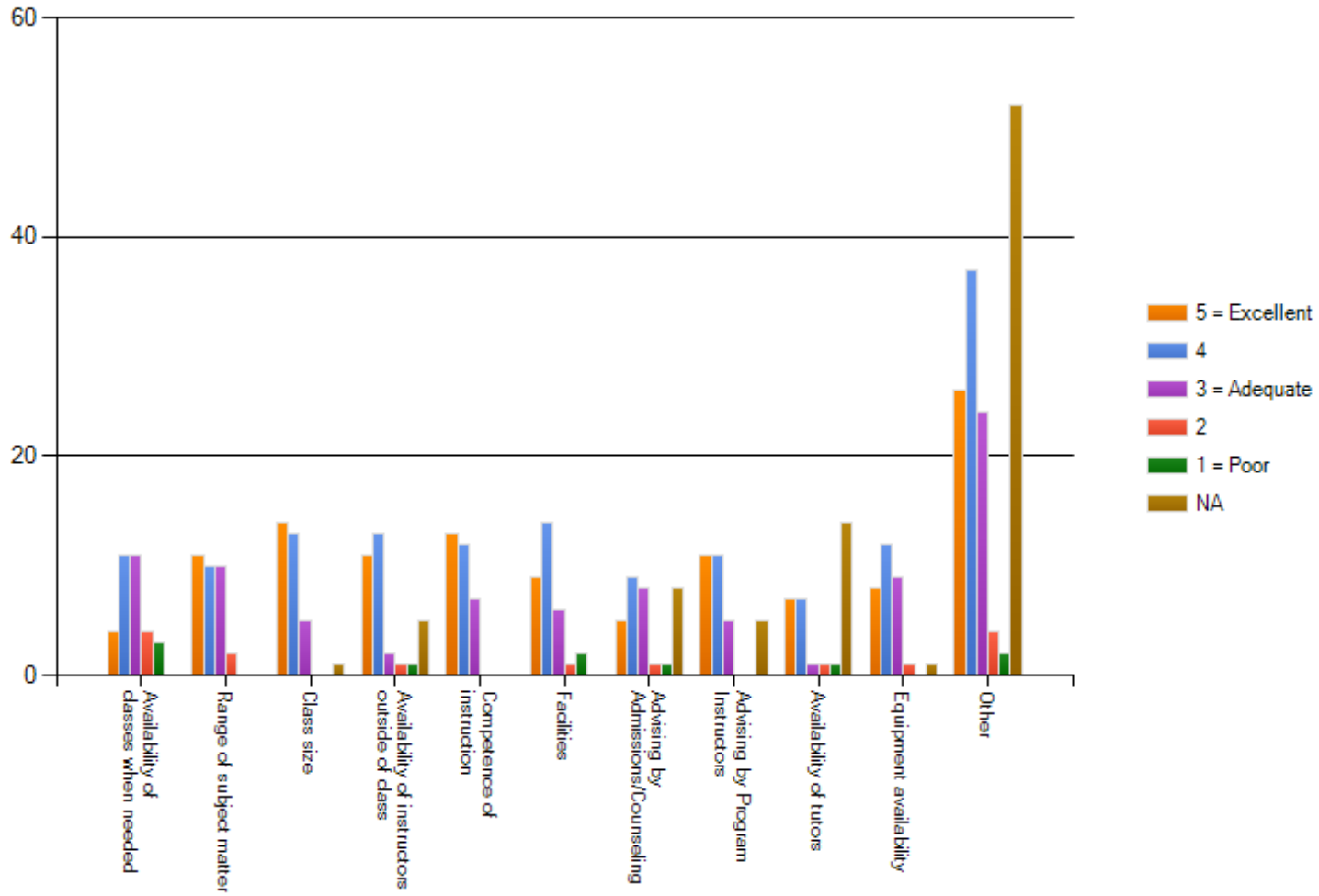
Question 12

As a result of your studies at PCC, has your employment situation improved (either by obtaining new employment or enhancing your current employment)?



Question 13

Please rate the quality of your PCC experience in the following areas. If you did not use the service; answer NA.



QUESTION FOURTEEN

QUESTION 14 REPLIES – In looking back, what additional education experiences could PCC have provided to better assist you to reach your educational or career goal

- I thought the Career day event met this need very well
- Still taking classes at PCC.
- I have 5 classes left. My educational experience at PCC has been wonderful. I have enjoyed the "community college" atmosphere and absolute know that it has been the reason that I have excelled in this program.
  Additional education experience suggestion: ANLD or APLD free membership as long as registered student. Perhaps a "field trip" to one of their meetings?
- the future of the industry: ecological landscaping
- There are a few gaps in the education provided. Most of the core professors are very good, where-as most of the periphery professors lack teaching skills and/or adequate knowledge to round out a class at the necessary level.
- Some program courses are understandably offered only once a year, it is very difficult to remain on course if you are unable to add one of these courses. For example, landscape drafting is only offer in fall term and there are only 20-22 drafting tables available on the campus. if this is to be a required course there has to be a way to fit more students into the classroom, perhaps more drafting tables.

Q14 REPLIES Continued – In looking back, what additional education experiences could PCC have provided to better assist you to reach your educational or career goal

- Another concern has to do with technology fee supplies. I took landscape turfgrass in Spring which was fantastic. The instructor was well educated on the topic and it was very field specific however an issue arose when it came time to install turf to a graded area near building four. Once the soil was prepped and when it came time to learn how to lay sod properly we ended up with only 4 rolls of sod to work with. It was almost laughable, the only thing the class learned was how not to lay sod. Being a hands on program there should have been a bit more turf for us to work with.
- More computer aided design classes
- More 'reality check' information about what kinds of jobs are feasible other than self-employment. Inclusion of options in parallel sectors such as public works.
- I think I have already addressed this above. I am really pretty content with my education but there is always room for improvement.
- Continuing Ed experiences: when new or not-regularly-scheduled classes are offered, maybe alumni could be notified. The Houseplant ID course this summer is one I would have signed up for, had I known it was offered.

Q14 REPLIES Continued – In looking back, what additional education experiences could PCC have provided to better assist you to reach your educational or career goal

- The design classes are a good introduction, but don't provide a complete framework for solid design. I would like to see more analysis of designs according to aesthetics, practical considerations and client needs. It would be nice to have a full class on this that looks at both good and bad design. This would enable new designers to head out into the world with more marketable skills and not make all the same newbie mistakes.

  As for communication, most successful businesses live and die by it. If a new designer joins an existing company, this new company may teach these skills. If a new designer wishes to have a private business (and that seems to be the majority), that person will need to expand their skills beyond what I've observed in my classmates. Key skills would be the ability to make a persuasive presentation, ability to create trust, and an understanding of the amount and style of communication that is effective.

  Technically, it would be helpful to have training on drainage issues and solutions. This seems to be one of the biggest installation realities not covered by the program. Also, it is very specific to installation and design, where some of the certificate requirements are not. For instance propagation.
- Thanks!

QUESTION FIFTEEN

In looking back, what additional student services could PCC have provided to better assist you to reach your educational or career goal?

- Occasional forums on employment in the field - both during the day and during the early evening hours for those of us who cannot get to the campus during the day.
- Help to find a job in this new field
- I'm hoping that PCC job placement services can find me an exciting job opportunity. An actual placement service and not just a referral service. My education has cost me more than I thought, yet I know that PCC has educated me so that I am very qualified to a future employer. We'll see :-)
- The financial aid adviser is fantastic but there is only one of her. I had so many financial aid concerns that the Rock Creek campus could not address and I'm only one student. Thankfully Lois and the staff at Sylvania came to my rescue on multiple occasions. There needs to be more than one financial aid adviser on the campus.
- More focused and realistic career services/counseling.

Q15 Continued: In looking back, what additional student services could PCC have provided to better assist you to reach your educational or career goal?

- More availability of a drafting table outside of the class. The only ones on campus are in use with a class and that may not work with your personal schedule. Can the school not offer two or three of them in the Library or elsewhere? With Design, Irrigation, and Site Survey they are necessary. During certain times of the year all three classes are using the space. Drafting tables are a big expense for the average student and if you are traveling from a distance having one at home may not be what you need when you need it.
  A Math Tutor or two, that knows and understands the areas and applications needed for this area of study. There were so many of us struggling with the math knowledge areas in this program.
- Nada. I (heart) Nancy Pitzer.
- Offer more classes that are required so a degree seeking student can achieve their goals within the time frame that the course completion is estimated to be. (i.e.) A.A.S in Landscape Technology.
  Offer more prerequisite courses so a student does not experience a "pause" of a specific subject such as math or writing.
- Thanks!

LANDSCAPE TECHNOLOGY

PROGRAM REVIEW

Appendix D

Landscape Technology Course and College Core Outcomes (2003)

CORE OUTCOMES MAPPING

SAC Landscape Technology

Mapping Level Indicators:	**Core Outcomes:**
0- Not Applicable 5- Limited demonstration or application of knowledge and skills. 6- Basic demonstration and application of knowledge and skills. 7- Demonstrated comprehension and is able to apply essential knowledge and skills 8- Demonstrates thorough, effective and/or sophisticated application of knowledge and skills.	7- Communication 8- Community and Environmental Responsibility 9- Critical Thinking and Problem Solving 10- Cultural Awareness 11- Professional Competence 12- Self-Reflection

Course #	Course Name	CO1	CO2	CO3	CO4	CO5	CO6
CSS 200	Soils and Plant Nutrition	3	3	3	1		1
HOR 226	Plant Materials - Deciduous	4	3	4	1		2
HOR 227	Plant Materials – Evergreens	4	3	4	1		2
HOR 228	Plant Materials – Flowering	4	3	4	1		2
HOR 255	Spring Annuals and Perennials	4	3	4	1		2
HOR 272	Summer Annuals and Perennials	4	3	4	1		2
HOR 290	Intro to Landscape Design	4	4	4	3		3
LAT 104	Pesticides	2	4	4	1		3
LAT 106	Basic Horticulture	3	3	4	2		3
LAT 108	Landscape Irrigation I	3	3	4	2		2
LAT 109	Plant Propagation	2	2	4	1		2
LAT 110	Grounds Maintenance	3	3	4	2		2
LAT 111	Landscape Construction	3	3	4	3		2
LAT 214	Plant Composition	4	3	4	4		4
LAT 217	Landscape Drafting	3	3	4	2		3
LAT 219	Landscape Illustration	4	2	2	2		4
LAT 221	Landscape Design Problems	4	4	4	4		4

LAT 223	Site Survey and Analysis	2	2	4	1		2
LAT 225	Water Gardens	2	2	4	2		2
LAT 232	Landscape Irrigation II	3	2	4	0		2

CORE OUTCOMES MAPPING

SAC Landscape Technology

Mapping Level Indicators:	**Core Outcomes:**
0- Not Applicable 5- Limited demonstration or application of knowledge and skills. 6- Basic demonstration and application of knowledge and skills. 7- Demonstrated comprehension and is able to apply essential knowledge and skills 8- Demonstrates thorough, effective and/or sophisticated application of knowledge and skills.	7- Communication 8- Community and Environmental Responsibility 9- Critical Thinking and Problem Solving 10- Cultural Awareness 11- Professional Competence 12- Self-Reflection

Course #	**Course Name**	**CO1**	**CO2**	**CO3**	**CO4**	**CO5**	**CO6**
LAT 219	Landscape Illustration	4	2	2	2		4
LAT 221	Landscape Design Problems	4	4	4	4		4
LAT 223	Site Survey and Analysis	2	2	4	1		2
LAT 225	Water Gardens	2	2	4	2		2
LAT 232	Landscape Irrigation II	3	2	4	0		2
LAT 235	Tree Care Fall	3	4	4	2		2
LAT 236	Landscape Math	3	1	4	1		2
LAT 240	Tree Care Spring	3	4	4	2		2
LAT 241	Turf Grass Cultural Practices	2	3	3	1		2
LAT 243	Landscape Business	4	4	4	3		4
LAT 250	Plant Diseases, Insects and Weeds	2	4	4	2		2
LAT 262	Native Plant of Oregon	2	3	4	2		2
LAT 263	Bonsai-Saikei	2	2	2	4		4
LAT 264	Landscaping Estimating and Bidding	4	1	4	2		3
LAT 268	Wetlands	3	4	4	2		2
LAT 271	Computer Aided Landscape Design	4	2	4	2		2
LAT 272	Sustainable Landscaping	4	4	3	2		4

LAT 280	Landscape Co-op Work Experience	4	3	3	3		4

LANDSCAPE TECHNOLOGY

PROGRAM REVIEW

Appendix E

Full Time and Part Time Faculty Requirements
(2004)

LAT Instructor Requirements:

Landscape Instructor Preferred qualifications as determined by the SAC and the Advisory Board:

Education & Experience:

- Bachelor's degree in Landscape Architecture, Landscape Construction, Landscape Management (maintenance), Horticulture (with a landscape emphasis), Vocational Agriculture, Vocational Education/Horticulture, or Turf Management; and 4 years of work experience in the field required, with a preference for 2 years teaching and 3 years of work experience.
- Internships and cooperative work experience will substitute for one year of the required experience;

  OR
- a Bachelor's in a related area such as Biology, Geology, Geography, Urban Planning, Environmental Science, Architecture, etc. with 30-quarter credit hours in upper division landscape courses including maintenance and pesticides; and 8 years of work experience in the field required, with a preference for 3 years teaching and 4 years of work experience. Internships and cooperative work experience will substitute for one year of the required experience;

Revised Date: 03/05/2004

LAT Instructor Requirements:

Faculty Hiring Recommendations for LAT Courses:

- **CSS 200 Soils and Plant Nutrition**
  BS in Horticulture, Agronomy, Soil Science, or related agriculture field with at least one soils course.

- **HOR 226, 227, 228, 225, 272 Landscape Plant Materials Courses**
  Relevant college level coursework in plant materials or 3 years of green industry experience.

- **HOR 290 Intro to Landscape Design**
  BS in Horticulture, Landscape Architecture, Ag Education with minor in Horticulture and one year's experience doing landscape design, or five year's experience as a landscape designer.

- **HOR 291 Landscape Design Process**
  BS in Horticulture, Landscape Architecture, Ag Education with minor in Horticulture and one year's experience doing landscape design, or five year's experience as a landscape designer.

- **LAT 104 Pesticides**
  Current or past Commercial or Private Applicators License.

- **LAT 106 Basic Horticulture**
  College level Botany coursework and 1 year of experience in the green industry.

- **LAT 108 Landscape Irrigation I**
  AAS in Horticulture, Landscape Technology, with one year's work experience in irrigation installation.

- **LAT 109 Plant Propagation**
  AAS in Horticulture, Landscape Technology, Greenhouse Management, or Floriculture with one year experience in the field of commercial propagation, or two years work experience in commercial propagation.

- **LAT 110 Grounds Maintenance**
  AAS in Horticulture, Landscape Technology, with two year's work experience in grounds maintenance.

- **LAT 111 Landscape Construction Practices**
  2 years work experience in the landscape construction field and submission of a portfolio of work examples or two years in vocational education teaching building related courses.

- **LAT 214 Plant Composition**
  AAS in Horticulture, Landscape Technology and one year's experience doing landscape design, or five year's experience as a landscape designer and submission of portfolio of work.

- **LAT 217 Landscape Drafting**
  AAS in Horticulture, Landscape Technology and one year's experience doing landscape design, or five year's experience as a landscape designer and submission of portfolio of work.

- **LAT 219 Landscape Illustration**
  AAS in Horticulture, Landscape Technology and one year's experience doing landscape design, or five year's experience as a landscape designer and submission of portfolio of work.

- **LAT 223 Site Survey and Analysis**
  AAS in Horticulture, Landscape Technology, or Building Construction with at least one course in surveying or site measurement, or two years work experience in Landscape Design, Landscape Architecture or surveying.

- **LAT 225 Water Gardens**
  AAS in Horticulture, Landscape Technology and one year's experience designing, installing or maintaining water features, or three year's experience designing, installing or maintaining water features.

- **LAT 232 Landscape Irrigation II**
  AAS in Horticulture or Landscape Technology, with two years work experience in irrigation design and irrigation portfolio, or Irrigation Association Certification in Irrigation Design, or three years work experience in irrigation design and installation.

- **LAT 235 Tree Care Fall, LAT 240 Tree Care Spring**
  International Society of Arboriculture Arborist's Certification.

- **LAT 236 Landscape Math**
  College coursework in algebra and basic trigonometry and demonstrable competency in application of math in the green industry.

- **LAT 241 Turfgrass Cultural Practices**
  AAS in Horticulture, Landscape Technology, Agronomy, Turf Management, or Golf Course Management, with two year's work experience in turf management, or three years work experience in turf or golf course industry.

- **LAT 243 Landscape Business Operations**
  Five years experience as a manager or owner of a landscaping business, or Landscape Contractors Business License.

- **LAT 250 Plant Diseases, Insects and Weeds**
  AAS or BS in Horticulture, Agronomy, Plant Pathology, Entomology, Weed Science, Botany, or related agriculture field with coursework in pathology, entomology, or weed science.

- **LAT 262 Native Plants of Oregon**
  AAS in Horticulture, Landscape Technology, or BS in Botany.

- **LAT 264 Landscape Estimating and Bidding**
  AAS in Landscape Technology, Horticulture, or two years experience in estimating and bidding in the landscape industry.

- **LAT 271 Computer Aided Landscape Design**
  One year experience in CAD and one year experience in Landscape Design.

- **LAT 272 Sustainable Landscaping**
  An equivalency of one year's coursework, seminars, on sustainability issues.

- **LAT 280 A & C - Landscape Cooperative Work Experience**
  Instructors selected from part-time and fulltime faculty who are qualified to teach for the department and have experience in the field related to the cooperative education experience.

Revised Date: 1/21/2010

LANDSCAPE TECHNOLOGY

PROGRAM REVIEW

Appendix F

PLANET

Landscape Contracting Accreditation
&
PLANET Accreditation Criteria
for
Two-Year Degree Program

Section I

General Standards

Accrediting Organization
Professional Landcare Network appointed board, called Landscape Contracting Accreditation Board (LCAB).

Program Mission and Planning
The program shall have a clearly defined mission supported by educational objectives appropriate to the Landscape Contracting business community. The planning process shall demonstrate progress towards the attainment of the objectives.
Indicators -

1. Mission reflects a broad perspective of the industry
2. Mission is stated in terms of what students should be able to do when they graduate.
3. Mission should address ethics, critical thinking and professionalism.
4. Program is engaged in a continuous planning process to improve instruction.
5. Academic mission, program objectives and continuous planning relate to the larger institutional mission, strengths and character.

Governance/Administration
The program shall have the authority and resources to achieve its educational goal.
Indicators -

1. The number of faculty is adequate to achieve the program's mission and objectives.

2. Funding is adequate to meet program objectives and provide for faculty development and student support such as conference attendance, computing equipment and technical support.

3. The program has adequate personnel and support staff to accomplish its mission and objectives.

Faculty
The qualifications, academic position and professional activities of faculty and instructional personnel shall promote and enhance the academic mission and objectives of the program.
Indicators -

1. Qualifications of the faculty and instructional personnel are appropriate to their roles.

2. Faculty is continuously engaged in activities leading to their professional growth, the advancement of the contracting industry and the effectiveness of the program.

3. Faculty is active in local, state, or national trade or professional organizations.

4. Faculty pursues licensing or certification as is relevant to the program.

5. Faculty engages in continuing education.

6. Faculty produces appropriate peer-reviewed creative, scholarly or professional work.

7. Those teaching design courses shall be Landscape Architects or credentialed landscape design professionals.

Students
Program shall demonstrate that students are being adequately prepared to pursue a career in the landscape contracting industry.
Indicators -

1. Student work is evaluated by criteria related to program objectives, and the information gained from such evaluation is used to enhance curriculum, instruction and other program aspects.

2. Students are encouraged to engage in activities that relate to the contracting industry and to participate in the enrichment of the larger community. Examples include membership in state and national organizations, student club activities, community service and outreach projects.

3. Successful job placement.

4. Positive internship evaluations by cooperating businesses.

Alumni
Program shall provide evidence of alumni's accomplishments and their involvement in advancing the program.
Indicators -

1. Accomplishments include positions of responsibility in and service to the industry, professional awards, licensing, certification, etc.

2. Program uses alumni as speakers, evaluators or advisory committee members.

Industry
Program shall provide evidence of interaction with industry representatives from a variety of businesses

associated with landscape contracting.
Indicators -

1. Career fairs for internships and employment.
2. Lectures and presentations from industry representatives.
3. Program receives support from regional or national organizations and businesses.

Advisory Committee
A fully functioning advisory committee made up of faculty, industry and student representatives shall be in place.

Relationship to the Overall Academic Institution and the Community
Program shall promote positive relationships with the overall academic institution and the community.
Indicators -

1. Interdepartmental cooperation.
2. Community service projects.
3. Lectures and seminars by non-industry professionals.
4. Outreach efforts for recruiting and enhancing the program's image.

Facilities, Equipment and Information Systems
Faculty, students and staff shall have access to facilities, equipment, library and other information systems necessary for a positive learning environment.

Section II Curriculum Standards

Section III

Curriculum Standards

2 Year Degree Program

Accrediting Organization
Professional Landcare Network's appointed board, called Landscape Contracting Accreditation Board (LCAB).

Objectives

1. Define the academic standards for programs in landscape contracting at two-year academic institutions. These standards establish expected areas of learning deemed relevant to the landscape contracting business community.

2. Allow flexibility to accommodate a variety of emphases in two-year academic programs.

Degree - Associate degree from an accredited academic institution.

Program Identification
Program title shall reflect the mission of the program. It is strongly suggested that the word “landscape” be incorporated into the title.

Areas of Competency

CREDIT NUMBERS GIVEN ARE SEMESTER HOURS. EQUIVALENT QUARTER CREDITS ARE REQUIRED FOR SCHOOLS USING THE QUARTER SYSTEM.

Business and Communication - minimum 15 credits

Suggested topic areas:
Composition
Business or technical writing
Public Speaking
Interpersonal Communications
Language (Spanish recommended)
Economics
Accounting
Marketing and Sales
Estimating and Bidding (both landscape construction and maintenance)
Small Business Management
Personnel Management
Business and Government Regulations

Horticulture and Related Sciences - minimum 15 credits

Suggested topic areas:

Chemistry
Soil Science and Soil Fertility
Horticulture, Botany or Plant Science
Woody Plant Material
Herbaceous Plant Material
Turf Grasses and Weeds
Interior Plant Material
Plant Propagation

Computing and Technology Applications - minimum 6 credits
Some, or all, credits may be satisfied within courses counted in other categories. For example, a 3 credit estimating class with one third of the course dedicated to a computer estimating software program would satisfy 3 credits in business and 1 credit in computing applications.

Suggested topic areas:

Introduction to computers or basic computing concepts
Business computing applications
Computer estimating
Computer-aided design and drafting
Digital imaging techniques
Other technology

Internship - minimum 3 credits; maximum 9 credits
Formalized practical work experience, preferably within an established landscape company. An internship may be called a co-op or practicum, but should include documented work experience, which is relevant to the landscape contracting business community. Typically, 10 - 12 weeks of monitored, full-time work experience counts for 3 academic credits. Practical work experience programs must have some formal mechanism in place for evaluation and monitoring by both the cooperating business and the academic institution. Refer to the PLANET Internship Guidelines found on the PLANET website, www.landcarenetwork.org.

Landscape Contracting Specialty Credits
A minimum of 20 credits in any combination of A, B, C and D.
At least 3 credits are required from each of Emphasis A, B, and C.

Defined emphases

A. Landscape Design – minimum 3 credits

Suggested topic areas:

Basic principles of design or design appreciation
Graphic communication
Computer aided design and drafting
Planting design
Grading and drainage design
Interior Landscape design
Irrigation design
Advanced design issues (design sales, client relations, site inventory techniques, complex site design problems, health and safety etc.)

B. Landscape Installation and Implementation – minimum 3 credits

Suggested topic areas:

Land surveying
Landscape structures
Construction materials and methods
Equipment use and safety
Scheduling and project management
Plant material installation
Interior Plantscaping
Irrigation installation techniques
Safety in the landscape

C. Landscape Management – minimum 3 credits

Suggested topic areas:

Turf grass management
Arboriculture and urban plant management
Landscape management principles
Entomology
Plant pathology.
Integrated pest management
Interior plantscape management
Irrigation trouble shooting and repair
Small engine repair and maintenance
Maintenance equipment use and safety

D. Institution defined emphasis

Landscape contracting may have special expressions beyond the previous defined emphases. Category D allows and encourages academic institutions to initiate and respond to changes in the landscape contracting industry by offering courses to suit these specialized needs.

For example, a defined emphasis in, “Environmental Contracting” with possible topic areas of:

Ecology
Re-vegetation of disturbed lands
Erosion control systems
Wetland construction and restoration
Permaculture and sustainable development
Landscaping for energy and water conservation
Landscape waste management and recycling

Continue to Section IV - Accreditation Procedures
Return to Accreditation

Section III Accreditation Procedures

Submit the following to LCAB:

a. Accreditation application
b. Catalog and course descriptions

Unless directed otherwise, documents should go to
Accreditation Coordinator
ALCA
150 Elden Street – Suite 270
Herndon VA 20170

Sixty (60) days prior to Site Visit

Submit the current application fee (contact ALCA for the amount and an invoice if needed) and Self-Study Documents to LCAB. (Number of copies dependent on the size of the site team.)

a. College catalog containing course descriptions
b. Organization of school with names of administration and organizational chart
c. History of program
d. List of program faculty with qualifications and course responsibilities
e. Names and businesses of advisory committee members
f. Mission statement of program
g. Program activities and accomplishments
h. Profile of students
i. Course outlines relevant to the standards excluding General Education
j. Textbook lists and teaching resources relevant to the standards excluding General Education
k. Other patterns of evidence of general standards

LCAB will appoint a Site Team to conduct an on-site evaluation. The team is generally composed of a local landscape contractor, a non-local landscape contractor, an administrator or professor from an accredited school and the site team chair. Date to be mutually agreed on.

Site Visit Agenda

a. Meet with president of college

b. Meet with the college dean and department chairman
c. Meet with key faculty
d. Meet with students
e. Meet with alumni and employers
f. Meet members of advisory committee
g. Tour campus and facilities
h. Observe classes
i. Review current student project samples
j. Concluding Review and Assessment Meeting

Notification Procedure

The school administration and program coordinator will be notified of accreditation status by the LCAB within sixty days after the site visit.

LCAB Actions

LCAB can take the following actions after the initial site visit:

a. **Initial Accreditation** - Granted on a first review when the standards are met with deficiencies. Requirements to satisfy deficiencies will be listed. Granted for three years. "Initial" status does not signify non-accreditation.
b. **Full Accreditation** - Granted when all standards are met. Granted for seven (7) years inclusive of Initial term.
c. **Accreditation Denied** - The result of standards not met.

Additional Accreditation Requirements

a. Upon receiving Initial and/or Full Accreditation status, the program coordinator or other designated faculty will join ALCA as an affiliate member and the program will maintain an ALCA student chapter membership.
b. Within first year of receiving Initial and/or Full Accreditation status, a faculty member shall attend at least one state, regional, or national ALCA workshop, seminar, symposium or annual meeting.
c. Regardless of Accreditation status (Initial, Full or Provisional), the Annual Report will be submitted to LCAB. Form will be provided upon request.
d. For at least 5 out of the 7 years prior to re-evaluation, the faculty shall lead a student delegation to the ALCA Student Career Days or ALCA-affiliated Student Career Days event.

Section IV Reaccreditation Procedures

At the end of the 7-year accreditation term, schools must apply to be reaccredited. The submission requirements and procedure followed is identical to the procedures outlined in **Section III** beginning on page 9.

LCAB Actions

LCAB can take the following actions after a reaccreditation visit:

a. **Full Accreditation** - Granted when all standards are met. Granted for seven (7) years inclusive of Provisional term.

b. **Provisional Accreditation** - Granted when a previously accredited program applies for reaccreditation and the standards are met with deficiencies. Requirements to satisfy deficiencies will be listed. Granted for three years. "Provisional" status does not signify suspension or withdrawal of accreditation.

c. **Accreditation Denied** - The result of standards not met.

For additional information about ALCA's Accreditation program, call 1-800-395-2522

Section IV

Accreditation Procedure

Accrediting Organization
Professional Landcare Network's appointed board, called Landscape Contracting Accreditation Board (LCAB).

1**. Preliminary Review**. It is recommended to have the catalog and course descriptions reviewed by the Site Team Coordinators prior to making an official application to PLANET for a Site Visit. There is no charge for this preliminary review. The information should go to:

Kent Hammond
2660 Graustark Path
Wooster OH 44691
(330) 287-1249 or (330) 345-5648
hammond.4@osu.edu

Ed Plaster
6009 Porter Lane
Edina, MN 55436
Edward.Plaster@dctc.edu

Greg Jolley, RLA
Professor of Landscape Management

Brigham Young University
297 WIDB
Provo, UT 84602
greg_jolley@byu.edu

2. Application. After a favorable Preliminary Review, submit the application to:

Anna Walraven, Accreditation Liaison
PLANET
950 Herndon Parkway Suite 450
Herndon VA 20170

PLANET will invoice for the $2,500.00 fee.

3. Self Study. Thirty (30) days prior to Site Visit (date mutually agreed on by Site Team Coordinator and School), distribute the Self-Study documents to Site Team members.

1. College catalog containing course descriptions
2. Organization of school with names of administration and organizational chart
3. History of program
4. List of program faculty with qualifications and course responsibilities
5. Names and businesses of advisory committee members
6. Mission statement of program
7. Program activities and accomplishments
8. Profile of students
9. Course outlines relevant to the standards excluding General Education
10. Textbook lists and teaching resources relevant to the standards excluding General Education
11. Other patterns of evidence of general standards

LCAB will appoint a Site Team to conduct an on-site evaluation. The team is generally composed of a local landscape contractor, a non-local landscape contractor, an administrator or professor from an accredited school and the site team chair.

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1. Meet with president of college
2. Meet with the college dean and department chairman
3. Meet with key faculty
4. Meet with students

5. Meet with alumni and employers
6. Meet members of advisory committee
7. Tour campus and facilities
8. Observe classes
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10. Concluding Review and Assessment Meeting

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2. Full Accreditation - Granted when all standards are met. Granted for seven (7) years inclusive of Initial term.
3. Accreditation Denied - The result of standards not met.

Additional Accreditation Requirements

1. Upon receiving Initial and/or Full Accreditation status, the program coordinator or other designated faculty will join PLANET as an affiliate member and the program will maintain an PLANET student chapter membership.
2. Within first year of receiving Initial and/or Full Accreditation status, a faculty member shall attend at least one state, regional, or national PLANET workshop, seminar, symposium or annual meeting.
3. Regardless of Accreditation status (Initial, Full or Provisional), the Annual Report will be submitted to LCAB. Form will be provided upon request.
4. For at least 5 out of the 7 years prior to re-evaluation, the faculty shall lead a student delegation to the PLANET Student Career Days or PLANET-affiliated Student Career Days event.

Continue to Section V - Reaccreditation Procedures
Return to Accreditation