Landscape Management Student Competency Matrix* Brigham Young University

INTRODUCTION

The BYU Landscape Management degree aims to offer the best education possible. We have developed this student competency matrix to help you identify knowledge and skills that are relevant to various specializations within the Green Industry, and self-assess your progress toward expertise in these targeted areas. Our goal is to include the knowledge, skills and abilities of value to Green Industry employers. Lists of competencies were obtained from employee evaluation documents of several PLANET-member companies, as well as a review of PLANET Certification manuals. The BYU Landscape Management competency matrix is a tool that will help you:

- Select classes, extracurricular activities, work experiences and internships that will maximize your worth to employers upon graduation;
- Increase the value of your internships (i.e., by providing you with a knowledgeable basis upon which to negotiate for specific experiences that will produce the additional skills you need);
- Allow you to more effectively market your knowledge and experience;
- Provide a basis for more meaningful counseling with your faculty advisor.

When you declare a major or minor in Landscape Management, please complete the competency matrix and file a copy with your faculty advisor. Upon graduation, you will file a second copy with your advisor. You will be amazed at what you have learned during your time at BYU!

The following spreadsheets are included: Areas of Employment, Arboriculture, Construction, Design, Irrigation, Maintenance, Management, and Turf. Obviously, personal interest will lead you to pursue expertise in some areas more than in others. However, keep in mind that the best landscape professionals have a basic understanding of all these areas. As just one example, it is impossible to become a great designer without also understanding landscape construction, irrigation and maintenance.

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Common Areas of Employment

Account Manager Arborist Branch Manager Color Coordinator Construction Foreman Development Manager Enhancements Manager Estimator Golf Course Superintendent Greenhouse Manager

Greenhouse Superintendent Greenhouse Manager Greenhouse Technician Human Resources Director Interior Plant Technician Irrigation Technician Landscape Architect Landscape Architect Landscape Designer Maintenance Foreman Nursery Manager Office Manager Operations Manager Plant Health Care Specialist Production Manager Project Manager

Sales Manager

Sports Turf Manager

Spray Technician

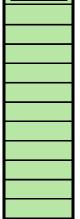
NO	Skill Expe	Sure Appr	entice Ext	pert
				ſ

<u>No Skill:</u>	No exposure to this employment position
<u>Exposure:</u>	Either listened to a seminar or interviewed a professional in this position about what the job involves
<u>Apprentice:</u>	Worked under the supervision of a competent professional in this position
<u>Expert:</u>	Qualified to be hired in this position

Important Certifications

Association of Professional Landscape Designers (APLD) Certified Irrigation Designer (CID) Certified Landscape Irrigation Auditor (CIA) Commercial Driver's License-CDL (for state) Contractor's License (for state) ISA Certified Arborist ISA Certified Tree Worker Landscape Industry Certified Manager (PLANET CLP) Landscape Industry Certified Technician (PLANET CLT) Pesticide Applicator License (for state) RLA (Registered Landscape Architect)





Arl	boriculture		
	NO SHILL EXPOSURE APP	penice spert	
Bidding Tree Work			
Climbing and Working In Trees			
Climbing Techniques		No Skill:	No previous skill in the target of competency
Inspecting Trees			
Knots		Exposure:	Observed a competent professional
Irrigation and Soil Water Management			demonstrating the skill
Minimizing Construction Damage			Ŭ
Plant Health Care		Apprentic	e: Completed relevant activity under
IPM			supervision of a competent professional
Calibrating Sprayers			
Chemical Application		Expert:	Qualified to supervise other individuals in
Diagnosing Disease and Insect Problems			competency area
Diagnosing Soil Problems			
Soil Compaction (prevention, correction)			
Soil Fertility			northunt Contifications
Plant Selection		im,	portant Certifications
Planting Trees and Shrubs			
Pruning	· · ·		Certified Arborist
Deciduous Shrubs		ISA C	Certified Tree Worker
Evergreen Trees and Shrubs		TCIA	Certified Tree Care Safety Professional
Fruit trees		TCIA	Accreditation
Large Trees			
Ornamental Trees		100	nortant Liconcoc
Roses			portant Licenses
Small Fruits		Com	mercial Driver's License
Vines		Pesti	cide Applicator License
(CONTINUED PAGE 2)			

Arbori	culture	(Page	2)			
	WC	Skill Ext	APP	tentice type	r	
Safety	1					
, Aerial Rescue						
Basic First Aid					No Skill:	No previous skill in the target of competency
Chain Saw Safety						
Chipper Safety					Exposure:	Observed a competent professional
Climbing Safety						demonstrating the skill
CPR						
PPE					Apprentice:	Completed relevant activity under
Spanish						supervision of a competent professional
Spraying						
Staking					Expert:	Qualified to supervise other individuals in
Tree Appraisal						competency area
Tree Biology						
Tree Nutrition and Fertilization						
Tree Support			•			
Cabling						
Bracing						
Guying						
Woody Plant ID and Requirements						
Shrubs						
Trees						
Vines						

C	onstruction			
	NOSKII	Appentice Appentice	Expert	
Edging Installation			No Chille	N
Estimating/Quantity Takeoffs			No Skill:	No previous skill in the target of competency
Calculating areas and volumes				
Grading & Drainage			Exposure:	Observed a competent professional
Hardscapes			_	demonstrating the skill
Concrete				
Paver/Flagstone Installation			Apprentice	Completed relevant activity under
Retaining Walls				supervision of a competent professional
Wood (decks, patios, benches, etc.)			_	
(Safely Operate) Heavy Equipment			Expert:	Qualified to supervise other individuals in
Backhoe				competency area
Boom Truck				
CDL				
Compact Utility Loader				
Front End Loader				
Mini Excavator			Imn	oortant License
Skidsteer			mp	
Tractor				
Tree Spade			Comm	nercial Driver's License
Trencher				
Truck & Trailer				
Lighting				
Mulch				
Plant Installation				
Plan Reading				
Surveying				
(CONTINUED PAGE 2)				

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Constr	uction		_	entice Expe	N.	
Soils		-	-			
Interpretation of Soil Test Results					No Skill:	No previous skill in the target of competency
Minimizing Soil Erosion						
Soil Amendments					Exposure:	Observed a competent professional
Soil Compaction						demonstrating the skill
Soil Management During Construction						
Soil Salinity					Apprentice:	Completed relevant activity under
Soil Specification						supervision of a competent professional
Topsoil Evaluation						
Spanish					Expert:	Qualified to supervise other individuals in
Turf Establishment						competency area
Water Features						
Written Specifications						

	Design		.2		
	NOSHI	ENPOSURE AP	pentice super		
Computer Aided Landscape Design					
Adobe Illustrator				No Skill:	No previous skill in the target of competency
AutoCad				· · · · · · · · · · · · · · · · · · ·	
Dynascape				Exposure:	Observed a competent professional
Landscape Pro					demonstrating the skill
Photoshop					-
Real Time Landscape Architect				Apprentice:	Completed relevant activity under
Vectorworks					supervision of a competent professional
Construction Techniques					
Design Sales				Expert:	Qualified to supervise other individuals in
Ecological Principles					competency area
Elevation					
Enhancements (Class A & Class B Properties)					
Graphics					
Floral Design					lange anterest Constiliantic a
Form Composition					Important Certification
unctional Analysis					APLD
Garden Design Styles					
Chinese					
English Cottage Garden					
Formal					
Italian					
Japanese					
Native					
Xeriscape					
CONTINUED PAGE 2)					

Design (Pa	ge 2)			
	NO SHIT EX	posure Apprentice Expert		
Garden History			No Skill:	No previous skill in the target of competency
Great Landscape Designers				
Beatrix Farrand			Exposure:	Observed a competent professional
Frederick Law Olmstead				demonstrating the skill
Garrett Eckbo				
Gertrude Jeckyll			Apprentice:	Completed relevant activity under
Humphrey Repton				supervision of a competent professional
Jens Jenson				
Peter Lassig			Expert:	Qualified to supervise other individuals in
Thomas Church				competency area
Garden Sculpture				
Hardscape Design				
Interiorscape				
Interpretation of Soil Test Results		ļ ļ		
Soil Amendments				
Soil Compaction				
Soil pH				
Topsoil Evaluation				
Irrigation Design		· · · · · ·		
Commercial				
Drip				
Residential				
LEED				
Outdoor Lighting (nightscaping)				
Plan View				
(CONTINUED PAGE 3)				

Design (Pag	_	Shill Exp	osure App	entice Exp	st	
Plant Frequetorie						
Plant Ecosystems						
Alpine					<u>No Skill:</u>	No previous skill in the target of competency
Desert					_	
Montane					Exposure:	Observed a competent professional
Prairie						demonstrating the skill
Rain Forest						
Riparian					Apprentice:	Completed relevant activity under
Savanna	-					supervision of a competent professional
Wetland						
Plant Materials			-		Expert:	Qualified to supervise other individuals in
Ground Covers						competency area
Herbaceous Plant ID and use						
Interior Plant ID and use						
Ornamental Grasses						
Turf ID and use						
Woody Plant ID and use						
Planting Design						
Professional Portfolio						
Rain Gardens						
Resident Inventory						
Rock Gardens/Stone						
Rooftop Gardens/Green Roofs						
Soil Specification						
Soil Management During Construction						
Sustainable Design						
Sustainable Sites Initiative						
(CONTINUED PAGE 4)						

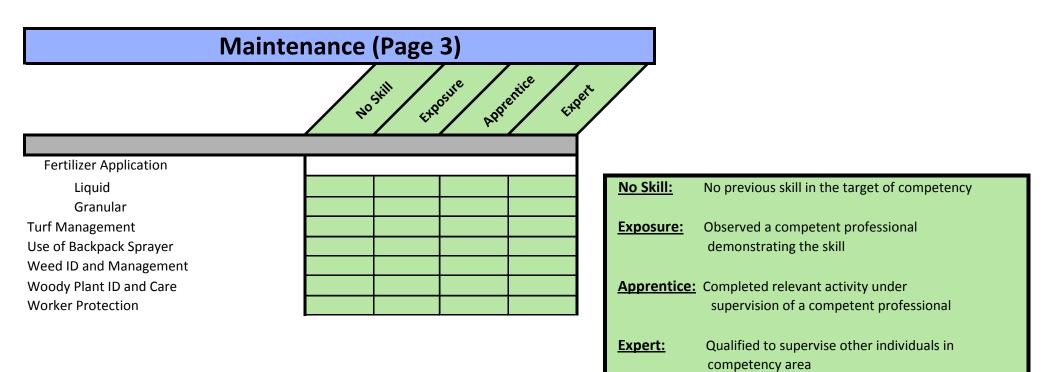
Design (Pag	ge 4)		
Water Features			
Aquatic plants		No Skill:	No previous skill in the target of competency
Filter Systems			
Fish		Exposure:	Observed a competent professional
Fountains			demonstrating the skill
Liners			
Pools		Apprentice	Completed relevant activity under
Pump Systems			supervision of a competent professional
		Expert:	Qualified to supervise other individuals in

competency area

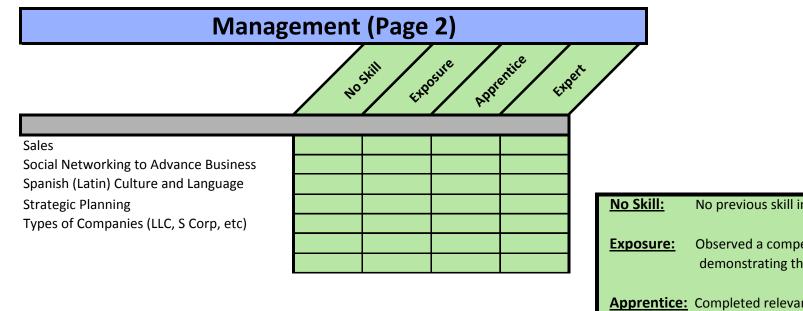
Irri	gation						
	NO	Skill Ext	APT APT	pentice Exp	ert		
Adjust Watering Days							
Approaches to Water Conservation						No Skill:	No previous skill in the target of competency
Components							
Controllers						Exposure:	Observed a competent professional
Scheduling (Water days, start times, run times)							demonstrating the skill
Types (Makes, models, ET-based vs standard)							
Installation						Apprentice:	Completed relevant activity under
Back Flow							supervision of a competent professional
Controller							
Drip (inline vs point source)						Expert:	Qualified to supervise other individuals in
Fittings (joints)							competency area
Heads (Rotors and Spray)					_		
Pipe Material (PE vs PVC)							
Pump							
Valve							
Wiring (120 VAC and 24 VAC)							Important Certifications
Irrigation Design							Important certifications
LEED							Certified Irrigation Designer (CID)
Plan reading							Certified Landscape Irrigation Auditor (CIA)
Programming a controller							
Spanish							
Sustainable Sites Initiative							
Trouble Shooting & Maintenance							
Xerisccaping							

Ma	nintenance No ^{skill}	 rentice Expert		
Annual ID and Care				
				At a second still in the target of experiences
Calibration of Chemical/Fertilizer Equipment			<u>No Skill:</u>	No previous skill in the target of competency
Concepts of Sustainable Management			Exposuro	Observed a competent professional
Diagnosing Landscape Problems Documentation of Safety Training			Exposure:	Observed a competent professional demonstrating the skill
Ecological Principles				
Equipment Safety and Operation			Apprentice:	Completed relevant activity under
Aerator			<u>Apprentice.</u>	supervision of a competent professional
Blower				
Chainsaw			Expert:	Qualified to supervise other individuals in
Edger				competency area
General Equipment Safety				
Hedger			,	
Ladder			Impo	ortant Certification
Pruners			PLANET	T Landscape Industry Certified Technician
Push Mower				(formerly CLT)
Riding Mower				
Trimmer				
Foliar Application				
First Aid				
Insect ID and Management				
Integrated Pest Management (IPM)			Imn	ortant License
Observing and Recording Nature			Inpo	
Pathogen ID and Management			Pesticio	de Applicator License
Perennial ID and Care				
Pesticide Application				
(CONTINUED PAGE 2)				

Mainte	nance	(Page	2)			
	No	Skill EX	posure App	entice Exp	et	
				<u> </u>	·	
Pruning						
Natural Target Pruning of trees					No Skill:	No previous skill in the target of competency
Use and Care of Hand Pruners						
Use and Care of Loppers					Exposure:	Observed a competent professional
Berries						demonstrating the skill
Fruit trees						-
Shrubs			•		Apprentice:	Completed relevant activity under
Evergreens						supervision of a competent professional
Spring Flowering Deciduous						
Summer/Fall Flowering Deciduous					Expert:	Qualified to supervise other individuals in
Roses						competency area
Vines						
Recycling Green Waste						
Required Records						
Snow Removal						
Deicing Salts						
Plow types and use						
Safety						
Snow Blower						
Spanish						
Trunk Injection						
Turf ID and Care						
Cool Season						
Warm Season						
Turf ID						
Calculation of Fertilizer Rates						
(CONTINUED PAGE 3)						



	Manage	/ /			
	M	ostill Exposure	Apprentice type	r /	
Accounting Principles					
Business Management				No Skill:	No previous skill in the target of competency
Client Relations					to previous skin in the target of competency
Communication				Exposure:	Observed a competent professional
Verbal				<u></u>	demonstrating the skill
Written					
Computer Skills				Apprentice	Completed relevant activity under
Excel					supervision of a competent professional
Outlook					
Power Point				Expert:	Qualified to supervise other individuals in
QuickBooks					competency area
Word					
Ethics					
Human Resources					
Leadership					
Marketing					Important Certification
Organizational Skills					PLANET Landscape Industry Certified Manager
Systems					(formerly CLP)
Performance Evaluations					
Scheduling Crews					
Supervising Employees					
Time Management					
Production					
Professional Resume					
Public Speaking					
Risk, Laws, and Contracts					
CONTINUED PAGE 2)					



<u>No Skill:</u>	No previous skill in the target of competency
<u>Exposure:</u>	Observed a competent professional demonstrating the skill
<u>Apprentice:</u>	Completed relevant activity under supervision of a competent professional
<u>Expert:</u>	Qualified to supervise other individuals in competency area

	Turf	
Desig Maryhala sigal Characteristics		
Basic Morphological Characteristics		
Equipment Safety and Operation	No p	previous skill in the target of competency
Aerator		
Blower De-thatcher		served a competent professional
Edger		monstrating the skill
Riding Mower	Approntice: Con	npleted relevant activity under
Walk-behind Mower		pervision of a competent professional
Trimmer	Su Su	pervision of a competent professional
Fertilizer Application	Expert: Qua	alified to supervise other individuals in
Calculating Rates		npetency area
Equipment Calibration		
Granular & Liquid Application		
Irrigation Systems		
Design		
Installation		ant License
Scheduling	Pesticide Ar	pplicator Licence
System Maintenance		
Pest Identification and Management		
Abiotic Problems		
Diseases		
Insects		
Weeds		
Pesticide Application		
Calculating Rates		
Equipment Calibration		
Granular & Liquid Application		(CONTINUED PAGE 2)

Tu	rf (Pag	posure por	pentice Exp	ert	
Soil Management					
Ammendments				<u>No Skill:</u>	No previous skill in the target of competency
Interpretation of Soil Tests					
Compaction (avoiding and remedying)				Exposure:	Observed a competent professional
Soil Specification					demonstrating the skill
Topdressing					
Topsoil Evaluation				Apprentice:	Completed relevant activity under
Water Inflitration Rates					supervision of a competent professional
Spanish					
Turf Establishment				Expert:	Qualified to supervise other individuals in
Grading and Drainage					competency area
Sod					
Seed					
Overseeding					,
Plugs/Sprigs Turf ID and Cultural Requirements					
Cool Season					
Warm Season					
Turf Management Principles					