

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.

***Version 2, © 2010 by Phil Allen, Ph.D., Landscape Industry Certified Professional.**

This competency matrix is provided courtesy of the BYU Landscape Management degree program, and may be copied or adapted for incidental use. Please acknowledge BYU Landscape Management in all use of this work.

Arboriculture

No Skill
Exposure
Apprentice
Expert

Bidding Tree Work				
Climbing and Working In Trees				
Climbing Techniques				
Inspecting Trees				
Knots				
Irrigation and Soil Water Management				
Minimizing Construction Damage				
Plant Health Care				
IPM				
Calibrating Sprayers				
Chemical Application				
Diagnosing Disease and Insect Problems				
Diagnosing Soil Problems				
Soil Compaction (prevention, correction)				
Soil Fertility				
Plant Selection				
Planting Trees and Shrubs				
Pruning				
Deciduous Shrubs				
Evergreen Trees and Shrubs				
Fruit trees				
Large Trees				
Ornamental Trees				
Roses				
Small Fruits				
Vines				

No Skill: No previous skill in the target of competency

Exposure: Observed a competent professional demonstrating the skill

Apprentice: Completed relevant activity under supervision of a competent professional

Expert: Qualified to supervise other individuals in competency area

Important Certifications

- ISA Certified Arborist
- ISA Certified Tree Worker
- TCIA Certified Tree Care Safety Professional
- TCIA Accreditation

Important Licenses

- Commercial Driver's License
- Pesticide Applicator License

(CONTINUED PAGE 2)

Arboriculture (Page 2)

	No Skill	Exposure	Apprentice	Expert
Safety				
Aerial Rescue				
Basic First Aid				
Chain Saw Safety				
Chipper Safety				
Climbing Safety				
CPR				
PPE				
Spanish				
Spraying				
Staking				
Tree Appraisal				
Tree Biology				
Tree Nutrition and Fertilization				
Tree Support				
Cabling				
Bracing				
Guying				
Woody Plant ID and Requirements				
Shrubs				
Trees				
Vines				

No Skill: No previous skill in the target of competency

Exposure: Observed a competent professional demonstrating the skill

Apprentice: Completed relevant activity under supervision of a competent professional

Expert: Qualified to supervise other individuals in competency area

Construction

No Skill
Exposure
Apprentice
Expert

Edging Installation				
Estimating/Quantity Takeoffs				
Calculating areas and volumes				
Grading & Drainage				
Hardscapes				
Concrete				
Paver/Flagstone Installation				
Retaining Walls				
Wood (decks, patios, benches, etc.)				
(Safely Operate) Heavy Equipment				
Backhoe				
Boom Truck				
CDL				
Compact Utility Loader				
Front End Loader				
Mini Excavator				
Skidsteer				
Tractor				
Tree Spade				
Trencher				
Truck & Trailer				
Lighting				
Mulch				
Plant Installation				
Plan Reading				
Surveying				
<i>(CONTINUED PAGE 2)</i>				

No Skill: No previous skill in the target of competency

Exposure: Observed a competent professional demonstrating the skill

Apprentice: Completed relevant activity under supervision of a competent professional

Expert: Qualified to supervise other individuals in competency area

Important License

Commercial Driver's License

Construction (Page 2)

	No Skill	Exposure	Apprentice	Expert
Soils				
Interpretation of Soil Test Results				
Minimizing Soil Erosion				
Soil Amendments				
Soil Compaction				
Soil Management During Construction				
Soil Salinity				
Soil Specification				
Topsoil Evaluation				
Spanish				
Turf Establishment				
Water Features				
Written Specifications				

No Skill: No previous skill in the target of competency

Exposure: Observed a competent professional demonstrating the skill

Apprentice: Completed relevant activity under supervision of a competent professional

Expert: Qualified to supervise other individuals in competency area

Design (Page 2)

	No Skill	Exposure	Apprentice	Expert
--	----------	----------	------------	--------

Garden History				
Great Landscape Designers				
Beatrix Farrand				
Frederick Law Olmstead				
Garrett Eckbo				
Gertrude Jeckyll				
Humphrey Repton				
Jens Jenson				
Peter Lassig				
Thomas Church				
Garden Sculpture				
Hardscape Design				
Interiorscape				
Interpretation of Soil Test Results				
Soil Amendments				
Soil Compaction				
Soil pH				
Topsoil Evaluation				
Irrigation Design				
Commercial				
Drip				
Residential				
LEED				
Outdoor Lighting (nightscaping)				
Plan View				
<i>(CONTINUED PAGE 3)</i>				

No Skill: No previous skill in the target of competency

Exposure: Observed a competent professional demonstrating the skill

Apprentice: Completed relevant activity under supervision of a competent professional

Expert: Qualified to supervise other individuals in competency area

Design (Page 3)

	No Skill	Exposure	Apprentice	Expert
Plant Ecosystems				
Alpine				
Desert				
Montane				
Prairie				
Rain Forest				
Riparian				
Savanna				
Wetland				
Plant Materials				
Ground Covers				
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				
<i>(CONTINUED PAGE 4)</i>				

No Skill: No previous skill in the target of competency

Exposure: Observed a competent professional demonstrating the skill

Apprentice: Completed relevant activity under supervision of a competent professional

Expert: Qualified to supervise other individuals in competency area

Design (Page 4)

	No Skill	Exposure	Apprentice	Expert
Water Features				
Aquatic plants				
Filter Systems				
Fish				
Fountains				
Liners				
Pools				
Pump Systems				

No Skill: No previous skill in the target of competency

Exposure: Observed a competent professional demonstrating the skill

Apprentice: Completed relevant activity under supervision of a competent professional

Expert: Qualified to supervise other individuals in competency area

Maintenance

No Skill

Exposure

Apprentice

Expert

	No Skill	Exposure	Apprentice	Expert
Annual ID and Care				
Calibration of Chemical/Fertilizer Equipment				
Concepts of Sustainable Management				
Diagnosing Landscape Problems				
Documentation of Safety Training				
Ecological Principles				
Equipment Safety and Operation				
Aerator				
Blower				
Chainsaw				
Edger				
General Equipment Safety				
Hedger				
Ladder				
Pruners				
Push Mower				
Riding Mower				
Trimmer				
Foliar Application				
First Aid				
Insect ID and Management				
Integrated Pest Management (IPM)				
Observing and Recording Nature				
Pathogen ID and Management				
Perennial ID and Care				
Pesticide Application				
(CONTINUED PAGE 2)				

No Skill: No previous skill in the target of competency

Exposure: Observed a competent professional demonstrating the skill

Apprentice: Completed relevant activity under supervision of a competent professional

Expert: Qualified to supervise other individuals in competency area

Important Certification

PLANET Landscape Industry Certified Technician
(formerly CLT)

Important License

Pesticide Applicator License

Maintenance (Page 2)

	No Skill	Exposure	Apprentice	Expert
Pruning				
Natural Target Pruning of trees				
Use and Care of Hand Pruners				
Use and Care of Loppers				
Berries				
Fruit trees				
Shrubs				
Evergreens				
Spring Flowering Deciduous				
Summer/Fall Flowering Deciduous				
Roses				
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)				

No Skill: No previous skill in the target of competency

Exposure: Observed a competent professional demonstrating the skill

Apprentice: Completed relevant activity under supervision of a competent professional

Expert: Qualified to supervise other individuals in competency area

Maintenance (Page 3)

	No Skill	Exposure	Apprentice	Expert
Fertilizer Application				
Liquid				
Granular				
Turf Management				
Use of Backpack Sprayer				
Weed ID and Management				
Woody Plant ID and Care				
Worker Protection				

No Skill: No previous skill in the target of competency

Exposure: Observed a competent professional demonstrating the skill

Apprentice: Completed relevant activity under supervision of a competent professional

Expert: Qualified to supervise other individuals in competency area

Management

	No Skill	Exposure	Apprentice	Expert
Accounting Principles				
Business Management				
Client Relations				
Communication				
Verbal				
Written				
Computer Skills				
Excel				
Outlook				
Power Point				
QuickBooks				
Word				
Ethics				
Human Resources				
Leadership				
Marketing				
Organizational Skills				
Systems				
Performance Evaluations				
Scheduling Crews				
Supervising Employees				
Time Management				
Production				
Professional Resume				
Public Speaking				
Risk, Laws, and Contracts				
(CONTINUED PAGE 2)				

No Skill: No previous skill in the target of competency

Exposure: Observed a competent professional demonstrating the skill

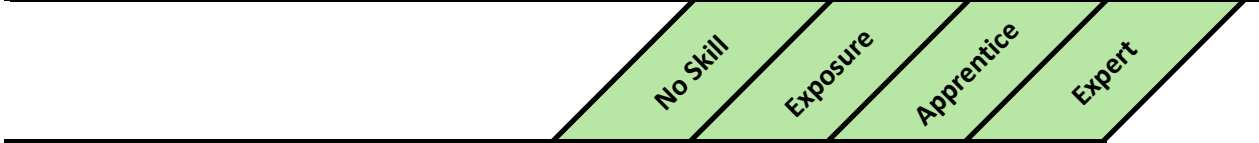
Apprentice: Completed relevant activity under supervision of a competent professional

Expert: Qualified to supervise other individuals in competency area

Important Certification

PLANET Landscape Industry Certified Manager
(formerly CLP)

Management (Page 2)



Sales				
Social Networking to Advance Business				
Spanish (Latin) Culture and Language				
Strategic Planning				
Types of Companies (LLC, S Corp, etc)				

No Skill: No previous skill in the target of competency

Exposure: Observed a competent professional demonstrating the skill

Apprentice: Completed relevant activity under supervision of a competent professional

Expert: Qualified to supervise other individuals in competency area

Turf

No Skill

Exposure

Apprentice

Expert

Basic Morphological Characteristics

Equipment Safety and Operation

Aerator

Blower

De-thatcher

Edger

Riding Mower

Walk-behind Mower

Trimmer

Fertilizer Application

Calculating Rates

Equipment Calibration

Granular & Liquid Application

Irrigation Systems

Design

Installation

Scheduling

System Maintenance

Pest Identification and Management

Abiotic Problems

Diseases

Insects

Weeds

Pesticide Application

Calculating Rates

Equipment Calibration

Granular & Liquid Application

No Skill: No previous skill in the target of competency

Exposure: Observed a competent professional demonstrating the skill

Apprentice: Completed relevant activity under supervision of a competent professional

Expert: Qualified to supervise other individuals in competency area

Important License

Pesticide Applicator Licence

(CONTINUED PAGE 2)

Turf (Page 2)

No Skill	Exposure	Apprentice	Expert
----------	----------	------------	--------

Soil Management				
Ammendments				
Interpretation of Soil Tests				
Compaction (avoiding and remedying)				
Soil Specification				
Topdressing				
Topsoil Evaluation				
Water Infiltration Rates				
Spanish				
Turf Establishment				
Grading and Drainage				
Sod				
Seed				
Overseeding				
Plugs/Sprigs				
Turf ID and Cultural Requirements				
Cool Season				
Warm Season				
Turf Management Principles				

No Skill: No previous skill in the target of competency

Exposure: Observed a competent professional demonstrating the skill

Apprentice: Completed relevant activity under supervision of a competent professional

Expert: Qualified to supervise other individuals in competency area