

ILLINOIS OCCUPATIONAL SKILL STANDARDS

LANDSCAPE TECHNICIAN CLUSTER

**Endorsed for Illinois
by the
Illinois Occupational Skill Standards and
Credentialing Council**

MESSAGE TO ILLINOIS CITIZENS

Dear Citizens of Illinois:

Preparing youth and adults for entry into the workforce and the ability of individuals to contribute to society throughout their lives are critical to the economy of Illinois. Public and private interest in establishing national and state systems of industry-driven skill standards and credentials is growing in the United States, especially for occupations that require less than a four-year college degree. This interest stems from the understanding that the United States will increasingly compete internationally by increasing the skills and productivity of the front-line workforce. The major purpose of skill standards and credentialing systems is to promote education and training investment and ensure that this education and training enables students and workers to meet industry standards that are benchmarked to our major international competitors.

The Illinois Occupational Skill Standards and Credentialing Council (IOSSCC) has been working with industry subcouncils, the Illinois State Board of Education and other partnering agencies to adopt, adapt and/or develop skill standards for high-demand occupations. This document represents the work of the Agriculture and Natural Resources Subcouncil and the associated standards development committee. Through this collaborative effort, skill standards products are being developed for a myriad of industries, occupational clusters and occupations. Upon completion of these products, there will be a period of feedback and comment from business, industry and labor representatives as well as educators.

These documents will serve as a guide to workforce preparation program providers in defining content for their programs and to employers to establish the skills and standards necessary for job acquisition. These standards will also serve as a mechanism for communication among education, business, industry and labor.

We encourage you to review these standards and share your comments. This effort has involved a great many people from business, industry and labor. Comments regarding their usefulness in curriculum and assessment design as well as needs for inservice and technical assistance in their implementation are critical to our efforts to move forward and improve the documents. A feedback instrument is included with this document.

Questions concerning this document may be directed to:

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We look forward to your comments.

Sincerely,

The Members of the IOSSCC

The Illinois Occupational Skill Standards and Credentialing Council (IOSSCC) endorses occupational skill standards and credentialing systems for occupations that (a) require basic workplace skills and technical training, (b) provide a large number of jobs with either moderate or high earnings, and (c) provide career advancement opportunities to related occupations with moderate or high earnings. The nine-member Council was established by the Occupational Skill Standards Act (PA 87-1210). The council, representing business, industry and labor and working with the Illinois State Board of Education in partnership with the Illinois Community College Board, Illinois Board of Higher Education, Illinois Department of Employment Security and Illinois Department of Commerce and Community Affairs, has created a common vision for workforce development in Illinois.

Vision

It is the vision of the IOSSCC to develop a statewide system of industry-defined and recognized skill standards and credentials for all major skilled occupations providing strong employment and earnings opportunities in Illinois. Information related to occupational employment and earning opportunities is determined by the Illinois Occupational Information Coordinating Committee (IOICC) in cooperation with business and industry.

Subcouncils and Standards Development Committees

The Council developed industry subcouncils (representing all major industries in Illinois) to review, approve and promote occupational skill standards and credentialing systems. In cooperation with organizations such as the Illinois State Chamber of Commerce, the Illinois AFL-CIO, the Illinois Manufacturers' Association and others, the Council established the first five subcouncils in 1995—Agriculture and Natural Resources, Manufacturing, Health and Social Services, Hospitality and Business and Administrative/Information Services.

The remaining subcouncils include Applied Science and Engineering Services, Legal and Protective Services, Transportation and Distribution, Educational Services, Financial Services, Marketing and Retail Trade, Communications, Construction and Energy and Utilities.

The Standards Development Committees, composed of business, labor and education representatives, are experts in the related occupational cluster and work with the product developer to

- develop or validate occupational skill standards,
- identify related academic skills,
- develop or review assessment or credentialing approaches, and
- recommend endorsement of the standards and credentialing system to the industry subcouncil.

Expected Benefits for Employers, Educators, Students and Workers

Occupational skill standards and credentialing systems are being developed and promoted by the IOSSCC to improve Illinois' competitiveness. Such standards and credentialing systems provide a common language for employers, workers, students and education and training providers to communicate skill requirements and quality expectations for all major industry and occupational areas.

For Employers, skill standards will

- Improve employee recruitment and retention by more clearly identifying skill requirements,
- Encourage improved responsiveness and performance of education and training providers,
- Enlarge the pool of skilled workers,
- Focus attention on the importance of training investment.

For Education and Training Providers, skill standards will

- Provide information to all major industries and occupations,
- Contribute to program and curriculum development,
- Strengthen relationships between education and training providers,
- Improve career planning.

For Students and Workers, skill standards will

- Foster better decision making concerning careers and the training necessary to acquire well-paying job,
- Allow more effective communication with employers about what they know and can do,
- Allow more effective work with employers in career development and skill upgrading.

IOSSCC Requirements for Occupational Skill Standards

Any occupational skill standards and credentialing system seeking IOSSCC endorsement must

- represent an occupation or occupational cluster which meets the criteria for IOSSCC endorsement;
- address both content and performance standards for critical work functions and activities for an occupation or occupational area;
- ensure formal validation and endorsement by a representative group of employers and workers within an industry;
- provide for review, modification and revalidation by an industry group a minimum of once every five years;
- award credentials based on assessment approaches that are supported and endorsed by the industry and consistent with nationally recognized guide lines for validity and reliability;
- provide widespread access and information to the general public in Illinois;
- include marketing and promotion by the industry in cooperation with the partner state agencies.

Definitions and Endorsement Criteria

The definitions and endorsement criteria are designed to promote the integration of existing and future industry-recognized standards, as well as the integration of the Illinois academic and occupational skill standards. Because all skill standards must address the critical work functions and activities for an occupation or industry/occupational area, the Council further defined three major components:

- ***Conditions of Performance:*** The information, tools, equipment and other resources provided to a person for a work performance.
- ***Work to Be Performed:*** A description of the work to be performed by a person.
- ***Performance Criteria:*** The criteria used to determine the required level of performance. These criteria could include product characteristics (e.g., accuracy levels, appearance), process or procedural requirements (e.g., safety, standard professional procedures) and time and resource requirements. The IOSSCC also requires performance criteria to be further specified by detailed individual performance elements and assessment criteria.

The IOSSCC is currently working with the Illinois State Board of Education and other state agencies to integrate the occupational standards with the Illinois academic standards which describe what students should know and be able to do as a result of their education. The Council is also working to integrate workplace skills—problem solving, critical thinking, teamwork, etc.—with both the academic and occupational skill standards.

The Illinois Model

Illinois Occupational Skill Standards describe what people should know and be able to do and how well these skills and knowledge will be demonstrated in an occupational setting. They focus on the most critical work performances for an occupation or occupational area. As seen in the following model, Illinois Occupational Skill Standards contain at least these three areas:

- Performance Skill
- Skill Standard
- Performance Elements and Assessment Criteria

The following sections may also be included at the discretion of the specific standards development committee:

- Performance Area
- Assessment and Credentialing Approach

Illinois Occupational Skill Standards carry a coding at the top of each page identifying the state, fiscal year in which standards were endorsed, subcouncil abbreviation, cluster abbreviation and standard number. For example, the tenth skill standard for the Landscape Technician Cluster, which has been developed by the Agriculture and Natural Resources Subcouncil, would carry the following coding: IL.96.ANR.LT.10.

A model for Illinois Occupational Skill Standards showing the placement of the coding and providing a description of each area within a standard is contained on the following page.

SUMMARY OF WORK TO BE PERFORMED. SUMMARY IS BRIEF AND BEGINS WITH AN ACTION VERB.

IL. FY. SUBCOUNCIL. CLUSTER. STANDARD NO.

Performance Area

SKILL STANDARD

CONDITIONS OF PERFORMANCE

Includes all information, tools, equipment and other resources provided to the learner for performing the work.

WORK TO BE PERFORMED

Provides an overview of the performance with the major elements or steps being described under Performance Elements and Assessment Criteria.

PERFORMANCE CRITERIA

Includes product characteristics (e.g., accuracy levels, appearance) and/or process or procedure requirements (e.g., safety requirements). Time limits are specified whenever possible.

PERFORMANCE ELEMENTS AND ASSESSMENT CRITERIA

Statement of the major elements, components or steps of the overall performance and the assessment criteria for determining successful performance. Includes all major tasks, the knowledge to be demonstrated and specific assessment criteria.

ASSESSMENT AND CREDENTIALING APPROACH

Optional statement of suggested assessment approaches for the performance which also refers to existing assessment and credentialing systems.

DEVELOPMENTAL PROCESS

After studying current labor market information and taking into consideration that the landscape industry currently has a certification program in place, the Agriculture and Natural Resources Subcouncil recommended the landscape industry to be the first occupational area for which performance skill standards would be developed. This cluster meets the criteria established by the Illinois Occupational Skill Standards and Credentialing Council (IOSSCC) for performance skill standards development: education and training requirements, employment opportunities, earnings potential and/or career opportunities. The careers identified in the landscape cluster include cemetery worker, horticulture worker, gardener, landscape technician, landscape designer, landscape specialist (botanic gardener) and landscape supervisor.

A product developer knowledgeable about the landscape cluster occupations began the process of performance skill identification. Given the range within the several occupations and scope of a business, the initial charge for the product developer was to prepare an organizational framework that would address the major work performances in the workplace. This framework set the parameters for addressing the skill performances desired by the landscape industry.

Resources included job descriptions from The Dictionary of Occupational Titles and the landscape industry; competencies addressed in postsecondary educational programs; V-TECS materials; and Illinois task lists developed to form the basis of instructional content for secondary, postsecondary and adult occupational training programs. Certification tests, training manuals and teaching materials from the Illinois Landscape Contractors Association provided reinforcement for the direction given in the framework. The National Vocational Qualification Skill Performance Standards and Examinations for Horticulture from the United Kingdom were also used in determining framework and direction.

A standards development committee composed of workers at all levels within the landscape cluster was convened. The framework and initial outline of performance skill standards were developed, reviewed, revised and validated. During a two-day meeting, the framework was accepted and the outline of skill standards finalized. Work was also completed on assessment criteria and credentialing in accordance with the direction established by the IOSSCC. The product developer submitted the draft performance skill standards to the standards development committee for review and revision. The standards development committee met to review and approve the skill standards.

Performance elements and assessment criteria were developed using industry standards. The skill standards outline the specific criteria expected for evaluation in the workplace. Criteria are behavioral statements of performance skill standards. As such, they serve as an evaluation tool and workplace guide.

A set of performance skill standards was provided to the Agriculture and Natural Resources Subcouncil. Comments submitted by members of the Subcouncil and those requested from other reviewers have been integrated into the final product. After approval copies were distributed for further review by the landscape community. A letter of commitment from the Illinois State Nurserymen's Association and the Illinois Landscape Contractors Association to distribute the performance skill standards, to publicize them and to periodically review and update them has been received. The Illinois Landscape Contractors Association will be the credentialing group.

ASSUMPTIONS FOR LANDSCAPE TECHNICIAN CLUSTER STANDARDS

Skill standards statements assume:

1. Workplace skills (employability skills) are expected of all technicians, including those in the landscape industry. They are included in Appendix F of these skill standards.
2. All skills are to be accompanied by a 'work environment' check that leaves the site a neat, clean and safe place in which to live and work.
3. The rights of individuals will be known to the technicians as part of their educational process and will be respected and expected as part of employment.
4. Technicians will know and adhere to specific policies and procedures of the worksite.
5. Certification conditions will be conducive to meeting the standard of performance. Standard equipment in the landscape industry will be used and identified prior to the certification testing.
6. The range of plant and landscape materials, soils and fertilizers will be defined in the certification system. The range of plant materials will include annuals, bulbs, perennials, vines, ground covers, trees, shrubs, evergreens, native forbes, grasses and water plants. Time elements will be outlined for the skill standards at the certification testing and will result from the experience and consideration of a panel who are members of the Illinois Landscape Contractors Association.
7. Socialization skills needed for work are viewed in relation to the lifelong career experience and are not solely part of the initial educational experience.
8. The skill standards are intended to reflect competencies at entry to the identified occupation.
9. Skills will progress from the simple to the complex. Once a skill level has been successfully performed, it will be incorporated into more complex skills.

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PERFORMANCE SKILL LEVELS

	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	
Cemetery Worker				●		●	●	●	●	●	●	●	●	●						●
Horticulture Worker			●	●		●	●	●	●	●	●	●	●	●	●					●
Gardner			●	●		●	●	●	●	●	●	●	●	●	●					●
Landscape Technician	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●
Landscape Designer	●		●	●	●	●	●	●	●	●	●	●	●	●						●
Landscape Specialist		●	●	●	●	●	●	●	●	●	●	●	●	●		●	●			●
Landscape Supervisor	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●

1. Market and promote landscape services and products.
2. Sell landscape products and services.
3. Answer customer questions and inquiries about plant characteristics, planting and maintenance.
4. Answer customer questions about plant materials and their sensitivities.
5. Plan, design and price a landscape.
6. Analyze, interpret and enhance soil fertility.
7. Install and maintain plants in the landscape.
8. Install and maintain hardscape.
9. Prune trees, shrubs and herbaceous plants.
10. Plan and implement changes in a landscape maintenance program.
11. Control weeds, pests, insects, diseases, moss and plant disorders.
12. Operate and maintain delivery vehicles and equipment.
13. Select, operate and maintain landscape tools and equipment.
14. Transport and deliver plants and materials.
15. Receive, unpack and place incoming landscaping materials into storage.
16. Monitor, manage and analyze the financial performance of landscape projects.
17. Prepare and submit accident and insurance reports and claims.
18. Plan and manage work schedules in the landscape company.
19. Follow relevant procedures in case of an emergency.

- *Bullets shown on the matrix identify the skill standards (by number) which are needed for each listed occupation.*

ILLINOIS OCCUPATIONAL SKILL STANDARDS LANDSCAPE TECHNICIAN CLUSTER

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SKILL STANDARD

CONDITIONS OF PERFORMANCE

Given the following equipment and materials:

Business and marketing plan and company policies and standards for maintaining the company image
Company marketing materials on products and services

WORK TO BE PERFORMED

Market and promote the company through professional, community and customer sales presentations and interaction strategies based on the marketing plan and materials.

PERFORMANCE CRITERIA

Marketing and promotional presentations and interactions clearly communicate the products and services of the company, the major selling points and the company image to professional and customer audiences.

PERFORMANCE ELEMENTS AND ASSESSMENT CRITERIA

1. Marketing and promotional presentations clearly and effectively communicate the products and services of the company and the major selling points contained in the marketing plan and materials.
2. Marketing and promotional presentations and interactions clearly communicate and reinforce the company image.

SKILL STANDARD**CONDITIONS OF PERFORMANCE****Given the following information:**

Business and marketing plan
Product and service information and pricing (plant and landscape)
Sales record keeping forms and procedures

WORK TO BE PERFORMED

Sell landscape products and services through telephone and face-to-face interactions with customers.

PERFORMANCE CRITERIA

Customers are professionally met and greeted at the company or another location and proper telephone etiquette is displayed in all customer contacts. Company products and services are effectively presented and explained based on customer needs and requirements. Sales records are properly maintained.

PERFORMANCE ELEMENTS AND ASSESSMENT CRITERIA

1. Customers are professionally met and greeted at the company or another location.
2. Proper telephone etiquette is displayed in all customer contacts.
3. Customer needs and requirements are clarified and described in the sales transaction.
4. Company products (plants and landscape) and services are effectively presented and explained based on customer needs and requirements.
5. Sales records are properly maintained.

ANSWER CUSTOMER QUESTIONS AND INQUIRIES ABOUT PLANT CHARACTERISTICS, PLANTING AND MAINTENANCE.

SKILL STANDARD

CONDITIONS OF PERFORMANCE

Given customer questions about the characteristics, planting and maintenance of the following equipment and materials:

Annuals	Grasses
Bulbs	Water plants
Perennials	Stems
Vines	Roots
Ground covers	Leaves
Trees	Florets
Shrubs	Insects
Evergreens	Weeds
Native forbes	

WORK TO BE PERFORMED

Identify plant parts and explain plant anatomy and physiology and proper planting and maintenance to the customer.

PERFORMANCE CRITERIA

Plant is identified by common scientific name and family. Any cultural problems are identified and diagnosed. The plant processes and parts are identified and explained and proper planting and maintenance is explained.

PERFORMANCE ELEMENTS AND ASSESSMENT CRITERIA

1. Plant materials are properly identified and described including the plant's scientific name and family and plant anatomy and physiology.
2. Planting and maintenance instructions are properly described.
3. Potential cultural problems, insects, diseases and weeds are properly explained.

SKILL STANDARD

CONDITIONS OF PERFORMANCE

Given the following equipment and materials:

Annuals	Evergreens
Bulbs	Native forbes
Perennials	Grasses
Vines	Water plants
Ground covers	Insects
Trees	Weeds
Shrubs	Performance schedule

WORK TO BE PERFORMED

Answer customer inquiries by identifying a plant, recommending a variety and making recommendations about care for the plant.

PERFORMANCE CRITERIA

Identify the plant materials and have an understanding about each of their sensitivities. Identify pest and cultural problems and have an understanding of how to correct them.

PERFORMANCE ELEMENTS AND ASSESSMENT CRITERIA

1. Different varieties of annuals, bulbs, perennials, vines, ground covers, trees, shrubs, evergreens, native forbes, grasses and water plants by variety and their sensitivities are recommended based on customer needs.
2. Potential cultural problems, insects, diseases and weeds are identified and described in answer to customer inquiries.

SKILL STANDARD

CONDITIONS OF PERFORMANCE

Given customer requirements and budget and the following equipment and materials:

Pricing schedules for plants, landscape materials and services available	Concrete
Drafting tools	Lights
Tripod	Ponds
Surveying equipment	Pools
Edging	Retaining walls
Brick	Lumber
Pavers	Irrigation
	Tools and equipment

WORK TO BE PERFORMED

Survey and measure the landscape area; calculate, draw, design and price a landscape design; and plan and present the design and plan to the customer.

PERFORMANCE CRITERIA

The landscape area is surveyed and measured and assessed for proper excavation. The design and plan contain all customer requirements and meet budget constraints. The design and plan contain proper plant materials. The design and plan are produced, priced and explained to the customer.

PERFORMANCE ELEMENTS AND ASSESSMENT CRITERIA

1. The excavation of the landscape is correctly recommended based on the calculation of grade.
2. The landscape area is correctly surveyed and measured for the development of the landscape design and plan.
3. The landscape design and plan correctly include all major customer requirements and budget.
4. Landscape plan contains appropriate plants and materials.
5. Landscape plan is correctly priced according to company procedures and rates.
6. Landscape design and plan are correctly detailed in writing and graphic display and effectively explained to the customer.
7. The landscape plan is completed within company time guidelines.

SKILL STANDARD

CONDITIONS OF PERFORMANCE

Given the following equipment and materials:

- Soil application area
- Soil sampling procedures and techniques
- Fertilization application procedures and timings
- Fertilizer application equipment

WORK TO BE PERFORMED

Conduct and interpret a soil test, make recommendations and apply fertilizers in the correct amounts to a designated application area.

PERFORMANCE CRITERIA

The soil is accurately sampled and analyzed, and the correct fertilizer is applied in the appropriate amounts.

PERFORMANCE ELEMENTS AND ASSESSMENT CRITERIA

1. The soil sample is taken according to stated procedures.
2. The soil test is correctly conducted according to stated procedures.
3. The correct recommendations are made based on the test results.
4. The proper fertilizer is applied to the application area in the correct amounts.
5. The fertilizer application is calibrated correctly to application equipment.
6. The fertilizer is applied through the proper and safe use of application equipment.

SKILL STANDARD

CONDITIONS OF PERFORMANCE

Given company procedures, management plans, tools and equipment and the following materials:

Landscape plans	Sod
Trees	Annuals
Shrubs	Perennials
Ground covers	Edging
Vines	Mulch
Bulbs	Water
Seed	Staking

WORK TO BE PERFORMED

Install and maintain plants in the landscape with a landscaping crew.

PERFORMANCE CRITERIA

Reading, interpreting and following landscape plans will be accomplished, and appropriate tools and equipment will be selected and operated. Plants will be staked, pruned, planted, cleaned, edged, mulched, watered and fertilized; and all cultural problems will be diagnosed.

PERFORMANCE ELEMENTS AND ASSESSMENT CRITERIA

1. Landscape is cleaned of all litter, weeds and leaves.
2. Cultural problems are identified and corrected.
3. Soil media are measured correctly, and the proper fertilizer is applied.
4. Plant materials are properly staked, pruned, planted, cleaned, edged, mulched, watered and fertilized according to the landscape plan and company time guidelines.
5. Equipment and tools are properly selected, used, operated and maintained according to equipment manuals and company procedures.
6. Landscaping crew is organized and supervised to ensure proper and efficient installation according to plan and budget.

SKILL STANDARD**CONDITIONS OF PERFORMANCE**

Given the following equipment and materials:

Planting plan	Pools
Edging	Retaining walls
Brick	Lumber
Pavers	Irrigation
Concrete	Tools and equipment
Lights	Calculations, time and
Ponds	report criteria

WORK TO BE PERFORMED

Install and maintain hard goods in the landscape.

PERFORMANCE CRITERIA

The hardscape plans are followed, and any problems are diagnosed and corrected. The paving materials, lighting materials, irrigation materials and edging are installed. Retaining walls are constructed. All work is completed within company time guidelines. The area is cleaned up after work is completed.

PERFORMANCE ELEMENTS AND ASSESSMENT CRITERIA

1. Hardscape plans are read, hardscape installation problems are properly identified and all revisions or changes are completed.
2. Hardscape materials are correctly identified and transported to the worksite.
3. All hardscape materials (including irrigation equipment, paving materials, lighting equipment, retaining wall materials and edging materials) are properly installed (including programming of solid state controls) within company time guidelines.
4. The worksite is cleaned properly after completion of work.

SKILL STANDARD

CONDITIONS OF PERFORMANCE

Given instruction on company procedures and the following equipment and materials:

- Shears
- Loppers
- Hedge trimmers
- Saws
- Knives
- Vehicle

WORK TO BE PERFORMED

Prune trees, shrubs, hedges, herbaceous plants, espalier, topiary and standards from the ground. Collect, stack, remove, compost, chip, sort and load debris to be removed from the landscape.

PERFORMANCE CRITERIA

Trees, shrubs, hedges, herbaceous plants, espalier, topiary and standards are properly pruned. Plant materials are removed and the area is swept clean.

PERFORMANCE ELEMENTS AND ASSESSMENT CRITERIA

1. Trees, shrubs, hedges, herbaceous plants, espalier, topiary and standards are properly and safely pruned from the ground.
2. Plant materials are completely removed and loaded into vehicles.
3. Work areas are cleaned and swept.
4. All tools and equipment are properly cleaned and stored.

SKILL STANDARD

CONDITIONS OF PERFORMANCE

Given instructions on company procedures and the following equipment and materials:

- Seed
- Tools and equipment

WORK TO BE PERFORMED

Analyze the growth and development of existing landscape plant materials and plants and make and implement changes in the landscape maintenance program including sowing seeds and managing growth and development.

PERFORMANCE CRITERIA

The existing plant materials are properly analyzed; proper recommendations and changes are made to the landscape plan; and seeds are properly sown, monitored and managed for growth and development.

PERFORMANCE ELEMENTS AND ASSESSMENT CRITERIA

1. The growth and development of existing landscape plants are correctly analyzed and interpreted.
2. Proper recommendations are made on changes in the landscape maintenance program.
3. The proper seeds are sown in a medium of required evenness conducive to rapid, vigorous germination, growth and development.
4. The seeds are sown through the proper and safe use of equipment.
5. The plant germination, growth and development are correctly monitored and analyzed for changes in maintenance program.
6. All germination problems are correctly determined, and recommendations are made and implemented to resolve problems.

SKILL STANDARD

CONDITIONS OF PERFORMANCE

Given instruction on company procedures and the following:

Pesticide license (must be 18 years of age)	Pests
Performance schedules	Diseases
Sprayers	Insects
Tractors	Moss
Pesticide equipment	Plants
Weeds	MSDS (Material Safety Data Sheet)

WORK TO BE PERFORMED

Identify the cultural problem, recommend a control program and implement an approved program.

PERFORMANCE CRITERIA

Cultural problems are properly diagnosed, the proper control program is recommended and proper action is taken. Sprayers, tractors and other pesticide equipment are properly operated, calibrated and maintained to eliminate diseases, insects, moss or weeds.

PERFORMANCE ELEMENTS AND ASSESSMENT CRITERIA

1. Cultural problems, diseases, insects, moss and weeds are properly identified or diagnosed.
2. The proper control program is recommended considering the economic thresholds.
3. Weeds, pests, diseases, insects, moss and plant disorders are properly controlled through pesticide application and alternative cultural controls.
4. Hazardous or dangerous substances are properly handled and disposed, and proper records are maintained.
5. Sprayers, tractors and other pesticide equipment are properly operated, calibrated, maintained and stored.

SKILL STANDARD

CONDITIONS OF PERFORMANCE

Given company procedures and the following equipment and materials:

- Delivery vehicles and trailer equipment
- CDL license (Commercial Driver's License)
- MSDS sheets (Material Safety Data Sheet)
- Jumper cables
- Vehicle maintenance tools, materials and equipment
- Vehicle maintenance manuals

WORK TO BE PERFORMED

Operate and maintain delivery vehicles and trailer equipment.

PERFORMANCE CRITERIA

Proper CDL license is received and maintained to operate vehicles and equipment. Vehicles and equipment are safely and properly operated and maintained according to company procedures. Hazardous substances are labeled and placed in a designated area.

PERFORMANCE ELEMENTS AND ASSESSMENT CRITERIA

1. Proper CDL license is identified, received and maintained to operate delivery vehicles.
2. Trailers are correctly and safely attached to delivery vehicles.
3. Delivery vehicles are properly and safely operated according to company policies and procedures.
4. The proper use of jumper cables is demonstrated to start a delivery vehicle.
5. Hazardous and dangerous substances are correctly identified, labeled and stored in proper containers.
6. Engine fluids, tires, batteries and cables are correctly inspected and serviced.
7. Potential vehicle and equipment failures are monitored. Troubleshooting is done according to vehicle manual and company procedures. Problems are properly referred for repair as needed.

SELECT, OPERATE AND MAINTAIN LANDSCAPE TOOLS AND EQUIPMENT.

SKILL STANDARD

CONDITIONS OF PERFORMANCE

Given company procedures and the following equipment and materials:

Surveying equipment	Trimmers
Sprayers	Aerators
Fertilizer applicators	Riding and walking lawn mowers (21" and 36")
Tractors (with front end loaders and/or scrapers)	Electrical tools
Rototillers	Two-cycle engine equipment
Chain saws	Dressing
Tree spades	Fertilizers
Edgers	Plants
Pruners	Hard goods
Loppers	Chemicals

WORK TO BE PERFORMED

Identify, calibrate, operate and maintain tools and equipment.

PERFORMANCE CRITERIA

Landscape equipment is properly identified and safely calibrated, operated and maintained according to equipment manuals and company procedures. All equipment is properly cleaned and stored after use. All operating and maintenance forms and records are correctly completed.

PERFORMANCE ELEMENTS AND ASSESSMENT CRITERIA

1. Landscaping equipment is properly and safely operated according to equipment manuals and company procedures.
2. Landscaping equipment is properly inspected, calibrated and maintained according to equipment manuals and company procedures.
3. Hazardous and dangerous materials are identified (MSDS sheets), handled and stored.
4. Work sites are properly cleaned after use of equipment.
5. Equipment is properly cleaned and stored.
6. Maintenance records are maintained and securely filed.

SKILL STANDARD

CONDITIONS OF PERFORMANCE

Given company delivery and return policies and procedures and the following equipment and materials:

- Schedule of delivery
- Plants and materials (Plants used in Illinois communities for landscaping could include 4,000 variations.)
- Vehicle registration and insurance identification
- Illinois driver's license/CDL (Commercial Driver's License)
- Delivery vehicle
- Maps

WORK TO BE PERFORMED

Transport and deliver plants and materials to customers according to delivery schedule.

PERFORMANCE CRITERIA

Plants and materials are properly loaded and secured for transport. Delivery destinations are identified, and plants and materials are transported in most efficient manner according to delivery schedule. Products are unloaded, inspected and professionally presented to customers.

PERFORMANCE ELEMENTS AND ASSESSMENT CRITERIA

1. Plants and materials are properly and safely loaded onto vehicles and are secured and packed for successful delivery with no damage.
2. Maps are read, and the proper delivery designations are located.
3. Deliveries are planned to transport plants and materials to destinations by the most efficient route and in a timely manner according to the delivery schedule.
4. Plants and materials are properly and safely unloaded from vehicles and checked for damage.
5. Plants and materials are placed at the customer designation according to customer requirements.
6. Customers are properly greeted, and plants and materials are professionally presented to the customer for inspection.
7. Plants and materials are replaced if they are damaged or do not meet customer standards according to company return policies.

RECEIVE, UNPACK AND PLACE INCOMING LANDSCAPING MATERIALS INTO STORAGE.

SKILL STANDARD

CONDITIONS OF PERFORMANCE

Given the following equipment and materials:

Landscape materials (landscape and plant materials, tools, equipment)
 Shipping/freight forms
 Company inventory and storage forms and procedures

WORK TO BE PERFORMED

Receive, unload, unpack, record and properly store incoming inventory according to company procedures.

PERFORMANCE CRITERIA

All incoming materials are properly received, unloaded and stored without damage to materials. All shipping and inventory forms are correctly completed and filed.

PERFORMANCE ELEMENTS AND ASSESSMENT CRITERIA

1. All incoming materials are properly and safely unloaded and stored without damage to materials and in the proper location and spacing.
2. All incoming materials are correctly identified and counted and correctly matched to purchase order and shipping forms.
3. Inventory forms are correctly completed with no errors and are properly filed.
4. All packing materials are correctly removed and discarded.
5. All tools and equipment are safely used and returned to the correct location.
6. The processing and storing of inventory is conducted with minimum disruption.

SKILL STANDARD

CONDITIONS OF PERFORMANCE

Given the following company information and materials:

- Company policies and procedures for project proposals
- Company information on materials, labor and equipment costs/prices
- Company procedures and forms for recording material, labor and equipment utilization
- Landscape project proposal and budget
- Company revenue and cost data on landscape project

WORK TO BE PERFORMED

Monitor, manage and analyze the use of materials, labor and equipment to ensure efficient resource utilization and the profitability of a landscape project. Recommend strategies to improve resource use and profitability.

PERFORMANCE CRITERIA

The landscape project costs are properly monitored and recorded, and the project is completed on schedule and within budget. Resource utilization problems are identified and analyzed and appropriate strategies are recommended to improve resource utilization and increase profitability.

PERFORMANCE ELEMENTS AND ASSESSMENT CRITERIA

1. Landscape project resource use is monitored and properly recorded according to company policies and procedures.
2. Landscape project is completed on schedule and within budget.
3. Landscape project costs (e.g. materials, labor, equipment) are analyzed, problems identified and appropriate strategies proposed for improving resource use and profitability.

SKILL STANDARD

CONDITIONS OF PERFORMANCE

Given the following company information and materials:

Company insurance policies and procedures
Insurance report and claim forms

WORK TO BE PERFORMED

Prepare and submit accident reports and claims to insurance company, and file reports and claims according to company policies and procedures.

PERFORMANCE CRITERIA

Accident reports and claims are properly prepared and submitted to the insurance company and filed according to company policies and procedures.

PERFORMANCE ELEMENTS AND ASSESSMENT CRITERIA

1. Accident reports and claims are properly prepared and submitted to the insurance company and filed according to company policies and procedures.
2. Accident reports and claim forms are properly submitted according to company policies and procedures.
3. Accident reports and claim forms are properly filed according to company policies and procedures.

SKILL STANDARD

CONDITIONS OF PERFORMANCE

Given the following equipment and materials:

- Job work orders and reporting information
- Time sheets and job record forms
- Crew work schedules

WORK TO BE PERFORMED

Plan, adjust and maintain daily work schedules; and maintain and file information on project costs and completion times.

PERFORMANCE CRITERIA

Work plans and schedules result in the efficient utilization of crew and equipment, and all records are complete and accurate.

PERFORMANCE ELEMENTS AND ASSESSMENT CRITERIA

1. Work schedules are accurate and provide the most efficient utilization of crew and equipment.
2. Work schedules are maintained according to plan.
3. Work records are complete and accurate.

SKILL STANDARD

CONDITIONS OF PERFORMANCE

Given company procedures and the following equipment and materials:

- Accident reports
- First aid kit
- Fire extinguisher
- CPR certification
- Guidelines on Industrial First Aid Certification

WORK TO BE PERFORMED

Follow company policies and procedures in an accident, emergency or natural disaster and complete all required reports.

PERFORMANCE CRITERIA

Knowledge of tornado and fire evacuation procedures are demonstrated. First aid kits and fire exits can be located. CPR and use of a fire extinguisher are demonstrated.

PERFORMANCE ELEMENTS AND ASSESSMENT CRITERIA

1. First aid kits, fire extinguishers, evacuation and CPR procedures are properly used and demonstrated in an accident or natural disaster according to company policies and procedures.
2. All accident reports are correctly and properly completed and filed with designated persons.

Academic Skills	Skills (and related knowledge) contained in the subject areas and disciplines addressed in most national and state educational standards, including English, mathematics, science, etc.
Assessment	A process of measuring performance against a set of standards through examinations, practical tests, performance observations and/or the completion of work portfolios.
Content Standard	A specification of what someone should know or be able to do to successfully perform a work activity or demonstrate a skill.
Critical Work Functions	<p>Distinct and economically meaningful sets of work activities critical to a work process or business unit which are performed to achieve a given work objective with work outputs that have definable performance criteria. A critical work function has three major components:</p> <ul style="list-style-type: none"> • Conditions of Performance: The information, tools, equipment and other resources provided to a person for a work performance. • Work to Be Performed: A description of the work to be performed. • Performance Criteria: The criteria used to determine the required level of performance. These criteria could include product characteristics (e.g., accuracy levels, appearance), process or procedure requirements (e.g., safety, standard professional procedures) and time and resource requirements. The IOSSCC requires that these performance criteria be further specified by more detailed individual performance elements and assessment criteria.
Credentialing	The provision of a certificate or award to an individual indicating the attainment of a designated set of knowledge and skills and/or the demonstration of a set of critical work functions for an industry/ occupational area.
Illinois Occupational Skill Standards and Credentialing Council (IOSSCC)	Legislated body representing business and industry which establishes skill standards criteria, endorses final products approved by the industry subcouncil and standards development committee and assists in marketing and dissemination of occupational skill standards.
Industry	Type of economic activity, or product or service produced or provided in a physical location (employer establishment). They are usually defined in terms of the Standard Industrial Classification (SIC) system.

Industry Subcouncil	Representatives from business/industry and education responsible for identifying and prioritizing occupations for which occupational performance skill standards are adapted, adopted or developed. They establish standards development committees and submit developed skill standards to the IOSSCC for endorsement. They design marketing plans and promote endorsed skill standards across the industry.
Knowledge	Understanding the facts, principles, processes, methods and techniques related to a particular subject area, occupation or industry.
Occupation	A group or cluster of jobs, sharing a common set of work functions and tasks, work products/services and/or worker characteristics. Occupations are generally defined in terms of a national classification system including the Standard Occupational Classification (SOC), Occupational Employment Statistics (OES) and the Dictionary of Occupational Titles (DOT).
Occupational Cluster	Grouping of occupations from one or more industries that share common skill requirements.
Occupational Skill Standards	Specifications of content and performance standards for critical work functions or activities and the underlying academic, workplace and occupational knowledge and skills needed for an occupation or an industry/occupational area.
Occupational Skills	Technical skills (and related knowledge) required to perform the work functions and activities within an occupation.
Performance Standard	A specification of the criteria used to judge the successful performance of a work activity or the demonstration of a skill.
Product Developer	Individual contracted to work with the standard development committee, state liaison, industry subcouncil and IOSSCC for the adaptation, adoption or development of skill standards content.
Reliability	The degree of precision or error in an assessment system so repeated measurements yield consistent results.
Skill	A combination of perceptual, motor, manual, intellectual and social abilities used to perform a work activity.
Skill Standard	Specifies the knowledge and competencies required to perform successfully in the workplace.
Standards Development Committee	Incumbent workers, supervisors and human resource persons within the industry who perform the skills for which standards are being developed. Secondary and postsecondary educators are also represented on the committee. They identify and verify occupational skill standards and assessment mechanisms and recommend products to the industry subcouncil for approval.

State Liaison	Individual responsible for communicating information among all parties (IOSSCC, subcouncil, standard development committee, product developer, project director, etc.) in skill standard development.
Third-Party Assessment	An assessment system in which an industry-designated organization (other than the training provider) administers and controls the assessment process to ensure objectivity and consistency. The training provider could be directly involved in the assessment process under the direction and control of a third-party organization.
Validity	The degree of correspondence between performance in the assessment system and job performance.
Workplace Skills	The generic skills essential to seeking, obtaining, keeping and advancing in any job. These skills are related to the performance of critical work functions across a wide variety of industries and occupations including problem solving, leadership, teamwork, etc.

Margaret Blackshere

AFL-CIO

Michael Breslan(Retired)
Chicago Building Trades Council

Hollis Earnest

Manufacturing/Electronics

David Emerson

Downstate National Bank

Bernard Gregory

Passavant Hospital

Janet Payne

United Samaritans Medical Center

Gerald SchmidtIllinois Manufacturing Association
Caterpillar, Inc.

Jim SchultzIllinois Retail Merchants Association
Walgreen Company

Larry VaughnThe Illinois State Chamber of Commerce
Alternative School Network

Lanny Anderson	Black Hawk College, East Campus
Steve Bailey	Family Tree Garden Center
Dale A. Benz	Personnel Officer, U.S. Department of Agriculture Natural Resources Conservation Service
Rick Butler	Pekin Hardwood Lumber Company, Inc.
David Gillespie	Section Manager, Illinois Department of Conservation Division of Forest Resources
Eldon Haab	Illinois State Florists Association Forget-Me-Not Flowers
Harold Hawkinson	Farm Owner/Operator
Paul Julius	Executive Director Midwest Food Processors Association
John Kraft	Owner Kraft Fertilizer, Inc.
Donald Krug	Chicago High School for Agricultural Sciences
Glen Nichols	President Harvestore Systems
Richard W. Nichols	Soil Conservation Advisor III Bureau of Soil and Water Conservation
Tony Romolo	Illinois Laborers
Hugh David Scates	Partner Pat Scates and Sons
Perry Schneider	Agra-Placements, Ltd.

Sharon Schwarz

Subcouncil Chair
Schwarz Nursery

Jean Sussman, Ph.D.

The Quaker Oats Company

William B. Schreck

State Liaison
Illinois State Board of Education

Thomas R. Wiles

State Liaison
Illinois State Board of Education

Greg Bohacz	Superintendent of Landscape The Barn Nursery
Jennifer Craven	Landscape Architect The Barn Nursery
Karen Heier	Garden Center Manager Schwarz Nursery
Tony Lobello	Production Manager Mariani Landscape
Gary McDonald	Horticulture Specialist Agra-Placements, Ltd.
Kurt Miller	Vice-President Thornapple Landscapes, Inc.
Sharon Schwarz	Schwarz Nursery
Tim Southey	Manager Green View Nursery
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James Ethridge, Ph.D.	Product Developer Chairman, Agriculture Department Joliet Junior College
William B. Schreck	State Liaison Illinois State Board of Education
Thomas R. Wiles	State Liaison Illinois State Board of Education

I. Occupational Definition and Justification

A. Occupational Definition

CEMETERY WORKER/HORTICULTURE WORKER/GARDENER/LANDSCAPE
TECHNICIAN/LANDSCAPE DESIGNER/LANDSCAPE SPECIALIST/LANDSCAPE
SUPERVISOR

Cultivates and cares for ornamental plants and installs flower beds/borders. Conditions and prepares soils, spades and trowels; sows grass seed; uses spreaders; plants bulbs; operates sprayers, sprinklers and cultivating equipment; and uses gardening hand tools and equipment. Fertilizes, waters, weeds, transplants, mixes and applies pesticides to maintain the health of the plants and prepares plants for installation. Lays sod, builds framework for flower beds/borders and works from a plan or design. Attends beds to maintain the health of the plant. Maintains tools and equipment. May mow lawns, prune trees and shrubs and perform other duties to maintain grounds. May plan, design, bid and install a landscape. May supervise and coordinate activities of workers engaged in the maintenance of such areas as parks, gardens and playgrounds. Plans landscaping tasks; and instructs workers in taking care of nursery, planting of flowers and transplanting and pruning of trees and shrubs. Directs workers in maintenance and repair of driveways, walks, hedges, swings, benches and other equipment. May supervise workers engaged along highways around rest areas and federal and state facilities. May remove rubbish. May repair and paint equipment, tools and facilities. May install hardgoods into the landscape.

B. Employment and Earnings Opportunities

Employment outlook indicates that this occupational cluster is medium-sized with above-average projected growth and annual job openings. Average annual wages range from \$15,950 to \$21,640.

C. Career Opportunities and Education and Training Requirements

Up to two years of postsecondary education, specific work experience or training needed. May exhibit the capabilities to speak English and Spanish.

II. Occupational Standards and Credentials

A. Occupational Standards. (See attached standards.)

B. Assessment and Credentialing System

The Illinois Landscape Contractors Association (ILCA) has already implemented their assessment and certification program. The ILCA has endorsed the standards and will utilize them in further refining and completing their assessment and certification efforts. The standards and occupations identified in this document are addressed in the ILCA program which will consist of 10% written exam and 90% performance.

III. Industry Support and Commitment

A. Industry Commitment for Development and Updating

1. The development of these performance skill standards is a result of the subcouncil and standards development committee efforts. The development effort utilized the following steps:
 - a. Identification of performance skills.
 - b. Review of resources.
 - c. Covering of standards development committee.
 - d. Validation and approval of performance skills by standards development committee.
 - e. Development of draft performance skills.
 - f. Review of skill standards by standards development committee.
 - g. Review and approval of the skill standards by the subcouncil.
 - h. Approval of the skill standards by the subcouncil.
 - i. Endorsement of the skill standards by the Illinois Landscape Contractors Association.
2. A list of Agriculture and Natural Resources Subcouncil and Landscaping Standards Development Committee members may be seen in Appendixes C and D respectively.

B. Industry Commitment for Marketing

The Agriculture and Natural Resources Subcouncil is committed to marketing and obtaining support and endorsement from the business community impacted by these skill standards.

The Subcouncil will encourage the availability of occupational skill standards to the public including learners, parents, workers, educators at all levels, employers and industry organizations.

The Illinois Landscape Contractors Association has submitted a letter endorsing the skill standards. This letter is available upon request from the Illinois State Board of Education.

-
- A. Developing an Employment Plan**
1. Match interests to employment area.
 2. Match aptitudes to employment area.
 3. Identify short-term work goals.
 4. Match attitudes to job area.
 5. Match personality type to job area.
 6. Match physical capabilities to job area.
 7. Identify career information from counseling sources.
 8. Demonstrate a drug-free status.
-
- B. Seeking and Applying for Employment Opportunities**
1. Locate employment opportunities.
 2. Identify job requirements.
 3. Locate resources for finding employment.
 4. Prepare a resume.
 5. Prepare for job interview.
 6. Identify conditions for employment.
 7. Evaluate job opportunities.
 8. Identify steps in applying for a job.
 9. Write job application letter.
 10. Write interview follow-up letter.
 11. Complete job application form.
 12. Identify attire for job interview.
-
- C. Accepting Employment**
1. Apply for social security number.
 2. Complete state and federal tax forms.
 3. Accept or reject employment offer.
 4. Complete employee's Withholding Allowance Certificate Form W-4.
-
- D. Communicating on the Job**
1. Communicate orally with others.
 2. Use telephone etiquette.
 3. Interpret the use of body language.
 4. Prepare written communication.
 5. Follow written directions.
 6. Ask questions about tasks.
-
- E. Interpreting the Economics of Work**
1. Identify the role of business in the economic system.
 2. Describe responsibilities of employee.
 3. Describe responsibilities of employer or management.
 4. Investigate opportunities and options for business ownership.
 5. Assess entrepreneurship skills.
-
- F. Maintaining Professionalism**
1. Participate in employment orientation.
 2. Assess business image, products and/or services.
 3. Identify positive behavior.
 4. Identify company dress and appearance standards.
 5. Participate in meetings in a positive and constructive manner.
 6. Identify work-related terminology.
 7. Identify how to treat people with respect.

G. Adapting to and Coping with Change	<ol style="list-style-type: none"> 1. Identify elements of job transition. 2. Formulate transition plan. 3. Identify implementation procedures for a transition plan. 4. Evaluate the transition plan. 5. Exhibit ability to handle stress. 6. Recognize need to change or quit a job. 7. Write a letter of resignation.
H. Solving Problems and Critical Thinking	<ol style="list-style-type: none"> 1. Identify the problem. 2. Clarify purposes and goals. 3. Identify solutions to a problem and their impact. 4. Employ reasoning skills. 5. Evaluate options. 6. Set priorities. 7. Select and implement a solution to a problem. 8. Evaluate results of implemented option. 9. Organize workloads. 10. Assess employer and employee responsibility in solving a problem.
I. Maintaining a Safe and Healthy Work Environment	<ol style="list-style-type: none"> 1. Identify safety and health rules/procedures. 2. Demonstrate the knowledge of equipment in the workplace. 3. Identify conservation and environmental practices and policies. 4. Act during emergencies. 5. Maintain work area. 6. Identify hazardous substances in the workplace.
J. Demonstrating Work Ethics and Behavior	<ol style="list-style-type: none"> 1. Identify established rules, regulations and policies. 2. Practice cost effectiveness. 3. Practice time management. 4. Assume responsibility for decisions and actions. 5. Exhibit pride. 6. Display initiative. 7. Display assertiveness. 8. Demonstrate a willingness to learn. 9. Identify the value of maintaining regular attendance. 10. Apply ethical reasoning.
K. Demonstrating Technological Literacy	<ol style="list-style-type: none"> 1. Demonstrate basic keyboarding skills. 2. Demonstrate basic knowledge of computing. 3. Recognize impact of technological changes on tasks and people.
L. Maintaining Interpersonal Relationships	<ol style="list-style-type: none"> 1. Value individual diversity. 2. Respond to praise or criticism. 3. Provide constructive praise or criticism. 4. Channel and control emotional reactions. 5. Resolve conflicts. 6. Display a positive attitude. 7. Identify and react to sexual intimidation/harassment.
M. Demonstrating Teamwork	<ol style="list-style-type: none"> 1. Identify style of leadership used in teamwork. 2. Match team member skills and group activity. 3. Work with team members. 4. Complete a team task. 5. Evaluate outcomes.

