

COMPETENCY ASSESSMENT
for
FOREST TECHNOLOGY (FR)

This document contains a list of courses, descriptions and associated competencies in the first year of the Forest Technology program. Please assess each applicable competency by checking the box corresponding to the code letter, sign, date and return this form to:

Office of Admissions
Pennsylvania College of Technology
One College Avenue
Williamsport, PA 17701-5799

<u>Code Letter</u>	<u>Student's Skill Level</u>
H	Highly skilled; student is able to work independently
M	Moderately skilled; student requires minimum supervision
L	Limited skill; student requires supervision
N	Competency not covered in instruction or work experience

Student

Student ID Number

School

Date

FOR 111 - Dendrology

Classification, identification, and distribution of woody plants in the United States. Emphasizes species of local commercial importance. 3 Cr. (2-3).

H M L N Competency

- a. The student will be able to identify the following species (see **SELECTED TREES AND SHRUBS** list at the end of this competency).
- b. The student will be able to write the tolerances of the trees from the list of Tolerances of American Forest Trees.
- c. The student will be able to write the relative values of the important commercial tree species.

FOR 113 - Forest Mensuration

Measurement of standing trees, logs and other cut wood products. Calculating the contents of these products in terms of board feet, cubic feet, cords, and pounds. Measuring growth in trees and forests. 3 Cr. (2-3)

H M L N Competency

- a. Describe the scope of natural resource measurements.
- b. Justify the need to measure natural resources and determine the maximum cost that can be expected in the data collection process.
- c. Determine acreage by use of pacing, dot-grid and GIS/GPS technology.
- d. Define diameter at breast height.
- e. Demonstrate proficiency in the use of various dendrometers and hypsometers.
- f. Describe the techniques, which should be employed in the measurement of irregular trees.
- g. Define total and merchantable tree heights.
- h. Explain the underlying theories used in the development of dendrometers and hypsometers.
- i. Define and calculate various measures of tree taper.
- j. Measure trees and stand ages.
- k. List and define tree crown classes.
- l. List and define various types of volume tables.
- m. Explain steps involved in the construction of local volume tables from felled tree data or from the use of a standard volume table.
- n. Understand the primary purposes of site measurements.
- o. List the direct and indirect measures of site quality.
- p. Demonstrate proficiency in determination of site index.
- q. Understand the limitations of site index.
- r. List and explain the terms used to measure stand density and stocking.

- s. List the characteristics of full, under stocked and overstocked stands.
- t. Describe linear and radical tree growth.
- u. Understand the concept of current annual growth, mean annual growth and periodic annual growth.
- v. Determine past tree growth by complete stem analysis and predict future sizes of trees.
- w. Explain the various formulas that can be used to calculate cubic foot volume of saw logs.
- x. Understand the procedures used in the measurement of pulpwood.
- y. Describe the typical specifications for pulpwood.
- z. Explain the effect that various factors have on the solid wood content of a cord.
- aa. Determine the board foot content of logs.
- bb. List and describe the various hardwood and softwood log grades.
- cc. Explain the importance of log grading.
- dd. Explain the critical thinking processes that go in to decision-making process.
- ee. Demonstrate a multi-faceted approach via of information literacy to identify, evaluate and utilize information.

FOR 111 - DENDROLOGY (continued)

SELECTED TREES AND SHRUBS

Please circle the number of each tree or shrub that can be **identified by** the student applicant in meeting the requirements **of items a and b** of the above course competency list.

Family, Genus & Species

PINACEAE

- | | |
|---------------------------|----------------------|
| 1. Pinus strobus | 2. Pinus resinosa |
| 3. Pinus rigida | 4. Pinus virginiana |
| 5. Pinus sylvestris | 6. Pinus nigra |
| 7. Larix sp. | 8. Picea glauca |
| 9. Picea pungens | 10. Picea abies |
| 11. Pseudotsuga menziesii | 12. Tsuga canadensis |

TAXODIACEAE

13. Taxodium distichem

CUPRESSACEAE

14. Juniperus virginiana

TAXACEAE

15. Taxus sp.

SALICACEAE

- | | |
|---------------------------|-------------------------|
| 16. Salix nigra | 17. Salix babylonica |
| 18. Salix fragilis | 19. Populus tremuloides |
| 20. Populus grandidentata | 21. Populus balsamifera |
| 22. Populus deltoides | |

JUGLANDACEAE

- | | |
|-------------------|-----------------------|
| 23. Juglans nigra | 24. Juglans cinerea |
| 25. Carya ovata | 26. Carya tomentosa |
| 27. Carya glabra | 28. Carya cordiformis |

BETULACEAE

- | | |
|---------------------------|------------------------|
| 29. Betula alleghaniensis | 30. Betula lenta |
| 31. Betula papyrifera | 32. Betula populifolia |
| 33. Betula nigra | 34. Alnus rugosa |
| 35. Carpinus caroliniana | 36. Ostrya virginiana |
| 37. Corylus americana | 38. Corylus cornuta |

FAGACEAE

- | | |
|-----------------------|------------------------|
| 39. Fagus grandifolia | 40. Castanea dentata |
| 41. Quercus alba | 42. Quercus macrocarpa |
| 43. Quercus prinus | 44. Quercus rubra |
| 45. Quercus velutina | 46. Quercus coccinea |
| 47. Quercus palustris | |

ULMACEAE

48. *Ulmus americans* 49. *Ulmus rubra*
50. *Celtis occidentalis*

MAGNOLIACEAE

51. *Liriodendron tulipifera* 52. *Magnolia acuminata*

LAURACEAE

53. *Sassafras albidum*

HAMAMELIDACEAE

54. *Liquidambar styraciflua* 55. *Hamamelis virginiana*

PLATANACEAE

56. *Platanus occidentalis*

ROSACEAE

57. *Prunus serotina* 58. *Prunus avium*
59. *Prunus Pennsylvanica* 60. *Prunus virginiana*
61. *Amelanchier arborea* 62. *Crataegus sp.*

LEGUMINOSAE

63. *Gymnocladus dioicus* 64. *Gleditsia triacanthos*
65. *Cercis canadensis* 66. *Robinia pseudoacacia*

ACERACEAE

67. *Acer saccharum* 68. *Acer nigrum*
69. *Acer rubrum* 70. *Acer saccharinum*
71. *Acer negundo* 72. *Acer spicatum*
73. *Acer pensylvanicum* 74. *Acer platanoides*

HIPPOCASTANACEAE

75. *Aesculus octandra* 76. *Aesculus hippocastanum*

TILIACEAE

77. *Tilia americans* 78. *Nyssa sylvatica*

CORNACEAE

79. *Cornus florida*

OTHER TREES AND SHRUBS TO BE IDENTIFIED

80. *Comptonia Peregrina* (sweet fern) 89. *Sambucus Canadensis* (elderberry)
81. *Morus Rubra* (red mulberry) 90. *Ilex verticillata* (black alder, wintergreen)
82. *Lindera Benzoin* (spicebush)
83. *Ailanthus Altissima* (ailanthus)
84. *Rhus Typhina* (staghorn sumac)
85. *Rhus Glabra* (smooth sumac)
86. *Toxicodendron Radicans* (poison-ivy)
87. *Viburnum Acerifolium* (mapleleaf viburnum)
88. *Viburnum Dentatum* (arrow-wood)

