Bloom's Taxonomy[1] for Learning Outcomes (adapted)

Bloom's levels of educational learning provide a framework to consider what applicants know and where the educational effort should be targeted in order to further promote additional, and more sophisticated, learning. For these standards, Bloom's hierarchical taxonomy has been adapted as given below:

Category	Keywords
Knowledge: remembering information *(The learner first must be made aware of the situation)*	Define identify label state list match *(Rote memory)*
Comprehension: explaining the meaning of information *(The learner must then comprehend the value of situation*	Describe paraphrase summarize estimate *(Translate to your words)*
Application: using abstracts in concrete situations *(The learned must be able to consider what they have learned in one situation and use it in an other different situation)*	Determine chart implement prepare solve use develop *(Apply general principle)*
Analysis: breaking down a whole into component parts *(The learner acquires additional information about the situation, and begins to look at the different pieces of information that comprise the whole story)*	Point out differentiate distinguish discriminate compare *(Break down into parts)*
Synthesis: putting parts together to form a new and integrated whole *(The learner then develops the skills to assemble that information in new ways, rather than simply reflecting back what they have learned)*	Create design plan organize generate write *(Create a whole from parts)*
Evaluation: making judgements about the merits of ideals, materials or phenomena *(The learner is able to judge the information and make decision for him/herself about its (good or bad) value based on criteria)*	Appraise critique evaluate judge weigh select *(Judge according to standards)*

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[1]   Bloom B.S., Editor. 1956. Taxonomy of educational objectives: the classification of educational goals.   Handbook 1: Cognitive Domain. White Plains, NY: Longman.

Verbs[2] to Specify Demonstrable Competencies and Performance Indicators

The action verbs listed below are as found in the *Academic Standards for the Accreditation of Degree Forestry Programs in Canada* of the Canadian Forestry Accreditation Board.

For Knowledge

arrange	define	duplicate	label	list
measure	memorize	name	order	read
recall	recognize	relate	repeat	reproduce
state				

For Comprehension

classify	describe	determine	discuss	explain
express	identify	indicate	locate	report
restate	review	select	translate	

For Application

apply	choose	communicate	demonstrate	dramatize
employ	facilitate	illustrate	implement	operate
perform	practice	schedule	sketch	solve
use	write			

For Analysis

analyse	appraise	calculate	categorize	compare
contrast	criticize	differentiate	discriminate	distinguish
examine	experiment	interpret	question	test

For Synthesis

arrange	assemble	collect	compose	construct
create	design	develop	display	formulate
manage	organize	plan	prepare	propose
write				

For Evaluation

appraise	argue	assess	attach	choose
compare	defend	estimate	evaluate	judge
predict	rate	score	select	support

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2 Jenkins, A. and D. Unwin. 2001. How to write learning outcomes.
http: /www.ncgia.ucsb.edu/education/curricula/giscc/units/format/outcomes.html

Foundational Studies

Art, Science and Humanities

Knowledge of arts, science (social, biological and physical) and the humanities is foundational to a university bachelor's degree and provides the necessary exposure to principles that underpin the practice of professional forestry.

A candidate for certification as an RPF or ing.f. must have had exposure at the basic/introductory undergraduate level to a variety of disciplines such as:

- Anthropology
- Art
- Biology
- Chemistry (organic, inorganic)
- Economics
- Geography
- Geology
- History
- Languages
- Literature
- Mathematics
- Philosophy
- Physics
- Political Science
- Sociology
- Statistics

Societal Context

Forests in Canada form part of the life and culture of Canadian society. Society has a right and obligation to identify what it values and how it wishes to benefit from the forest resources. Professional foresters need sufficient grounding in social sciences and humanities to discharge their duties as forest stewards mandated to act in interest of the public.

Knowledge from the arts, science and humanities are essential to understanding and contributing to the societal context within which foresters work, as described by:

- Aboriginal rights, values, interests
- Civics (legislative development, governance systems)
- Development of forest policy
- Global environments, economic structures, human population centres and industry services
- Public and stakeholder interests and methods for determining public forest resource values/interests
- Social systems and change, concepts of property, cultural resources and social forces
- Social impact analysis and planning

A candidate for certification[1] shall be able to:

1. Describe local, regional, national and international values, social forces and political systems.

2. Acquire a sufficient level of humanities and social science knowledge to support forestry core learning and professional forestry practice.

3. Describe the components, patterns and processes of biological systems, and the properties, structures and states of matter.

4. Acquire, and be able to defend and demonstrate the use of, a sufficient level of scientific knowledge to support core forestry learning and professional forestry practice.

5. Describe concepts of social and economic structures, processes, and institutions of importance across a broad range of societies.

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[1] Pre-or co-requisite studies that provide foundational knowledge for the core competency standards are acquired either within the degree (in the case of accredited programs) or through other qualification (in the case of applicants from non-accredited, recognized programs). When it comes to accredited programs, the CFAB will determine whether the program itself provides sufficient exposure to the foundation knowledge. When it comes to applicants from non-accredited, recognized programs, the onus is on the candidate to demonstrate achievement of the numbered requirements as stated above.

The Role of Standards in Professional Licensure

The diagram is meant to illustrate the relationship between the standards developed for certification, enrolment and university accreditation.

A candidate that applies to a regulatory body for entry into the forestry profession must meet a standard of enrolment. Candidates apply from accredited and non-accredited programs.

Profession

	Experience	**Experience**	
Intern or Enrollee	Additional Academic Requirements	*X*	

Certification Standards

Post graduate experience

Standards for Enrolment

Academic Credentials	Non-Accredited Education	Accredited Program

Standards for Accreditation

Education requirements