

# CREDENTIALING STANDARD

*Effective June 2026*



COLLEGE OF  
**APPLIED BIOLOGISTS**  
Professional Accountability

[www.cab-bc.org](http://www.cab-bc.org)

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## 1.0 The College of Applied Biologists

The College of Applied Biologists (the College) is the regulatory body for applied biology professionals in British Columbia (BC) who work in the natural resource sector.

The College has been granted authority from the province of BC to register applied biology professionals, grant licenses and protected titles and regulate its registrants under the [Professional Governance Act](#), [Professional Governance Regulations](#), [Applied Biologists Regulation](#) and the [College Bylaws](#).

The Registrar may approve an application for registration under Part 5 of the College Bylaws.

## 2.0 Registrant Categories

The College registers the following categories of applied biology professionals:

- **Registered Professional Biologists (RPBios)** are independent practitioners with a wide scope of practice including experimental design, interpretative analysis and interpretative reporting.
- **Registered Biology Technologists (RBTechs)** are independent practitioners that practice within established parameters, protocols and guidelines. An RBTech may be engaged in experimental design, interpretative analysis, and interpretative reporting if supervised by an RPBio.
- **Applied Biology Technicians (ABT)** work collaboratively with RBTechs and RPBios in the implementation of biological projects. ABTs must work under the supervision of an RBTech or RPBio when performing the reserved practice of applied biology.
- **Applied Biology Limited Licensee (AB-LL)** are independent practitioners who work in a specified licence area, and within established parameters, protocols and guidelines. An AB-LL may be engaged in experimental design, interpretative analysis, and interpretative reporting if supervised by a RPBio.
- “In training” designations (**Biologist in Training (BIT)**, **Registered Biology Technologist in Training (RBTech in Training)**, and **Applied Biology Technician in Training (ABT in Training)**) have met the education requirements and are working to fulfill the experience and competencies required to apply to be a practicing registrant. They must work under the supervision of an RPBio or RBTech when performing the reserved practice of applied biology.

Details on specific registrant category requirements are provided sections 6.0 – 9.0 and general registration requirements are provided in section 5.0.

## 3.0 Registration Process

The application, assessment and registration process is completed online through the College’s [Portal](#).

For details on how applications are assessed please refer to [Policy 5 – 200 Registration Application Assessment](#).

Figures 1.0 and 2.0 outline the College’s application process and fee payment schedule.

Figure 1.0 College's Application Process

A completed application means the application fee has been paid and all documentation (e.g., transcripts, lead author declaration, references etc.) have been received. See [Understanding your application status](#) for details.

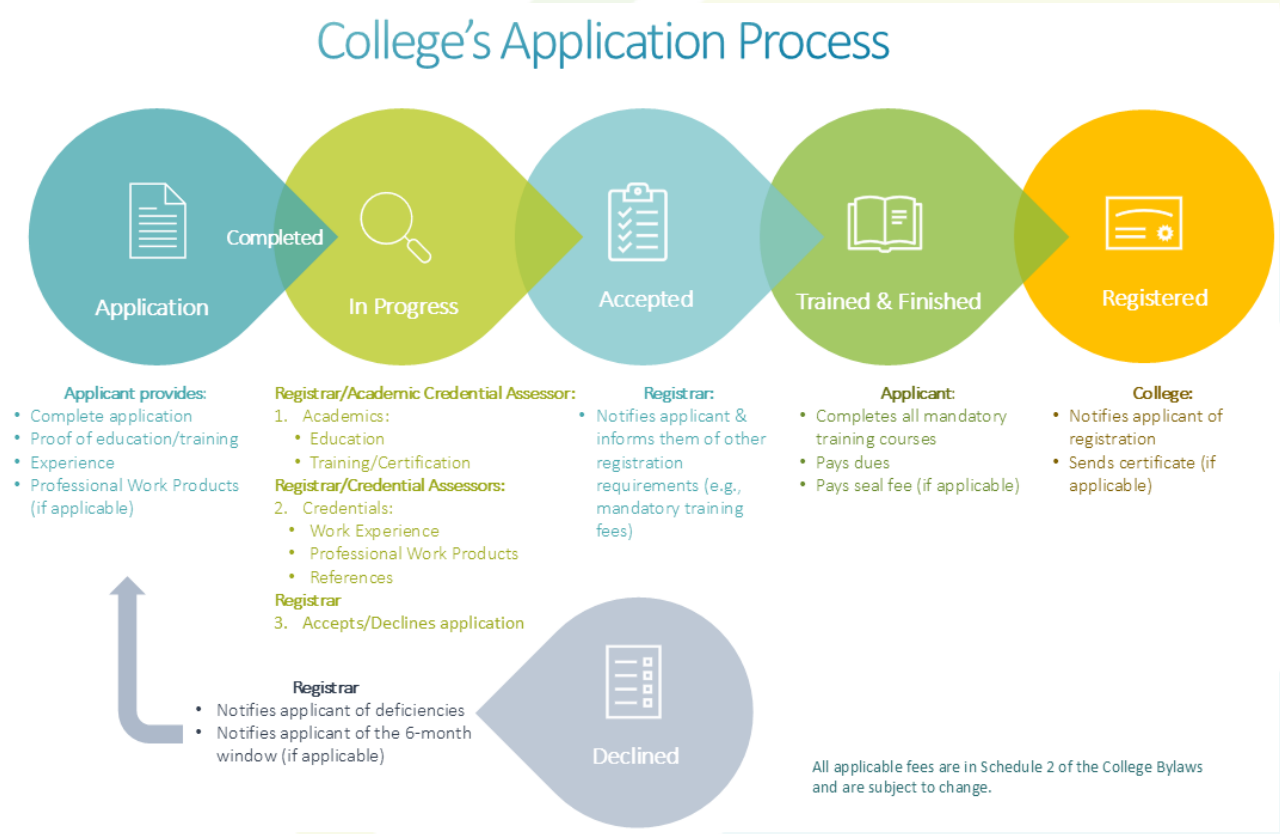


Figure 2.0 College's Fee Payment Schedule

Current fees are listed in 'Schedule 2 – Fees and Charges' of the [College Bylaws](#).



## 4.0 College-Accredited Programs

Accredited programs have met the education requirements set by the College in this Credentialing Standard for the registrant category the program is accredited for. Applicants can only apply through an accredited stream (Stream 1) if they have completed/graduated from a College-accredited program during the timeframe of the program's accreditation.

## 5.0 Credential Requirements for All Applications

### 5.1 Education and Training Requirements

Education must be completed at a recognized post-secondary institution, with the exception of those applying for the Applied Biologist Technician (ABT) or ABT in training designations.

Institutions must send proof of education (e.g., official transcript, certificate) directly to the College.

Any foreign education earned at a post-secondary institution outside of Canada or the United States of America must be evaluated by a credential evaluation service accepted by the College (e.g., World Education Services (WES), International Credential Evaluation Service (ICES), or Comparative Education Service (CES)).

Details of specific education requirements for each registrant category are provided in Sections 6.0 – 9.0. Course descriptions are provided in [Appendix B](#).

### 5.2 Experience Requirements

#### 5.2.1 General

All practicing registrant applicants are required to demonstrate that they meet the experience requirements for the registrant category they have applied for. See specific registrant application requirements in Sections 6.0 – 9.0.

Experience is calculated in months, and must fall within the definition of the “practice of applied biology” in the [Applied Biologists Regulation](#), which is the provision of:

- (a) advice or services that
  - (i) are based on biological sciences, and
  - (ii) relate to aquatic or terrestrial ecosystems or the living organisms, habitats or processes of those ecosystems, or
- (b) advice or services that are ancillary to those described in paragraph (a).

#### 5.2.2 Volunteer Experience

Applicants can use volunteer experience towards meeting the experience requirement, if it falls within the practice of applied biology as defined in the [Applied Biologists Regulation](#).

#### 5.2.3 Graduate Degree Experience

Applicants with a thesis-based Master of Science (MSc) degree in an applied biology topic can claim 12 months towards meeting the experience requirement.

Applicants with a Doctor of Philosophy (PhD) degree in an applied biology topic can claim 24 months towards meeting the experience requirement.

#### 5.2.4 Registrant Experience

An applicant who is already a registrant with the College (or an equivalent professional regulator in

another jurisdiction) may claim all their applied biology experience gained while registered (pre- or post- graduation).

### 5.3 Professional Practice Competencies

All practicing registrant applicants are required to demonstrate that they meet one of the three key indicators for all 7 of the College's Professional Practice Competencies (see [Appendix A](#)).

Applicants are not limited to using applied biology experience when providing examples of how their experience meets the College's Professional Practice Competencies.

### 5.4 Professional Work Products Requirements

#### 5.4.1 General

Applicants for the following registrant categories are required to submit Professional Work Products (PWP) as part of their application:

- Registered Professional Biologist (RPBio)
- Registered Biology Technologist (RBTech)
- Applied Biologist Limited License (AB-LL)

The Professional Work Product requirement is a mechanism for applicants to demonstrate their independent thought as an applied biology professional, and how their practice in applied biology demonstrates the College's Professional Practice Competencies.

Applicants must provide 1, and up to a maximum of 4, Professional Work Products.

The PWP topic must fall within the practice of applied biology as defined in the [Applied Biologists Regulation](#).

There is no required format for PWPs; they may include reports, policies, plans, briefing notes, theses, dissertations, presentations, or correspondence. Draft material is acceptable.

#### 5.4.2 PWP Required Content

PWPs must, between the documents provided, include the following:

- Methods
- Data analysis (*RPBio*)
- Data analysis within established standards, parameters, or guidelines (*RBTech & AB-LL*)
- Conclusions or recommendations
- Communicates technical scientific information to a non-expert audience

Applicants must explain how, between the professional work products, they meet at least one key indicator in each the following professional competencies (see [Appendix A](#) for definitions):

- Scientific Knowledge & Concepts
- Laws, Regulations & Policy
- Standards & Practices
- Communication

Applicants must describe the purpose, intent, or background of each of the work products submitted.

Section 12.0 provides definitions for Methods, Data Analysis, Conclusions, Recommendations and Non-expert audience.

#### 5.4.3 Requirements for using academic reports as PWPs

Masters' theses and PhD dissertations may be used as PWP

s.

Honours' theses may be used as PWP

s if they meet the communication competency.

Reports produced for a graduate or upper-level undergraduate self-directed studies course, or produced as part of a major project for a non-thesis Masters' degree, may be used as PWP

s, if:

- The work is done independently (not as part of a group project).
- The report is produced under the supervision of a faculty member.
- The report includes a problem statement or research question, as well as analysis and integration of information.

#### 5.4.4 Reports with multiple authors

Where a report has multiple authors, and the applicant is not the lead author, the role of the applicant must be corroborated by the lead author.

The online application sends lead authors a direct link to the lead author section in the applicant's application. They cannot see or have access to any other portion of the application.

### 5.5 Reference Requirements

All practicing registrant applicants are required to provide references. See specific registrant application requirements in sections 6.0 – 9.0.

A reference needs to:

- Confirm the applicant demonstrates the Professional Practice Competencies defined by the College
- Be knowledgeable of the applicant's ability and work as an applied biology professional (i.e., they must be someone the applicant has worked with), and
- Not be related to the applicant unless the relative is the supervising professional

The College does not require references to be registrants of the College or be from different employers. Applicants are encouraged to include references from more than one employer when possible.

The online application sends references a direct link to the reference section in the applicant's application. References do not have access to any other portion of the application.

### 5.6 Mandatory Training Courses

All applicants who have been approved must complete the following courses administered by the College:

- Code of Ethics & Professional Conduct
- Indigenous Awareness
- Legal Requirements

## 6.0 Applied Biology Technician (ABT) and ABT in Training Application Requirements

The ABT category has three application streams:

- Streams 1 (College-accredited program) and 2 (non-accredited program) require education and a minimum of 1 year of experience in applied biology within the 10 years prior to application.
- Stream 3 requires 3 years of experience in applied biology within the 10 years prior to application.

Figure 3.0 illustrates the application streams for ABTs, and Table 1.0 summarizes the application requirements for ABT and ABT in training registrant categories.

Figure 3.0 Application Streams for ABTs

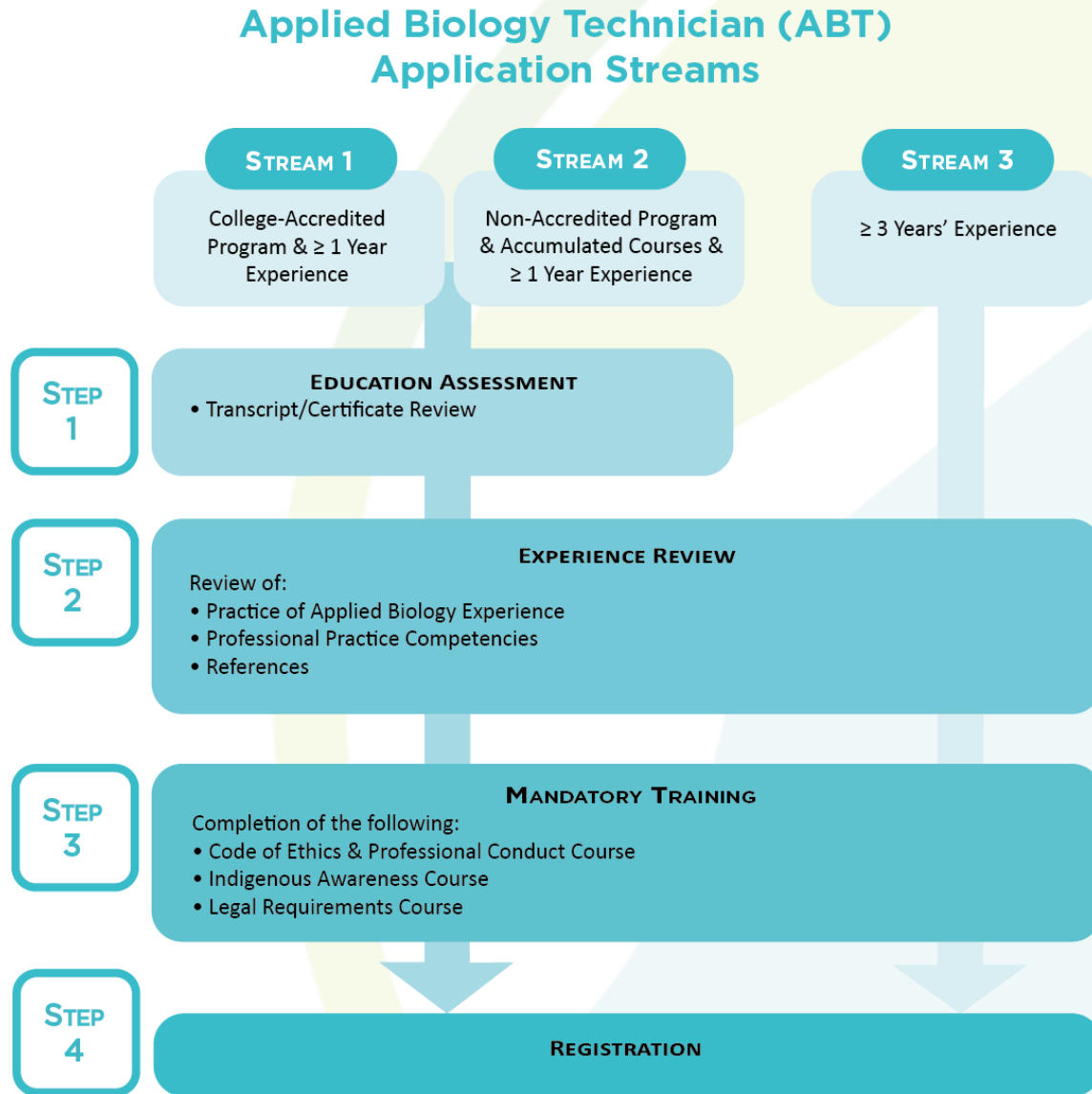


Table 1.0 Summary of ABT and ABT in Training Application Requirements

Requirements	ABT	ABT in Training	ABT
	Streams 1 & 2		Stream 3
<b>Education/Training</b>	A minimum of 200 hours or 5 instructional weeks of course work, with or without a certificate, which includes courses or modules in each of the following areas: <ul style="list-style-type: none"> <li>• Natural Resource Survey Skills</li> <li>• Applied Biology Identification Skills</li> <li>• Field Navigation</li> </ul>		Not Applicable
<b>Experience</b>	≥ 1 year of applied biology experience within the 10 years prior to application.	Not Applicable	≥ 3 years of applied biology experience within the 10 years prior to application.
<b>Professional Practice Competencies</b>	Demonstrate that you meet all the College's Professional Practice Competencies.		Demonstrate that you meet all the College's Professional Practice Competencies.
<b>References</b>	1		2
<b>Mandatory Training Courses</b>	<ul style="list-style-type: none"> <li>• Code of Ethics &amp; Professional Conduct</li> <li>• Indigenous Awareness</li> <li>• Legal Requirements</li> </ul>		

### 6.1 Education and Training Requirements

Applicants in stream 1 and 2 must complete the required course or course modules set out in Table 1.0.

Additional information on education requirements is set out in section 5.1.

### 6.2 Experience Requirements

ABT applicants in streams 1 and 2 must demonstrate a minimum of 1 year of experience practicing applied biology within the 10 years prior to application.

ABT applicants in stream 3 must demonstrate a minimum of 3 years' experience practicing applied biology within the 10 years prior to application.

Additional information on experience requirements is set out in section 5.2.

### 6.3 Professional Practice Competencies

ABT applicants must demonstrate how they meet the professional practice competencies, as set out in section 5.3.

### 6.4 References

ABT stream 1 & 2 applicants must provide one reference that meets the criteria set out in section 5.5.

ABT Stream 3 applicants must provide 2 references that meet the criteria set out in section 5.5.

## 7.0 Registered Biology Technologist (RBTech) and RBTech in Training Application Requirements

The RBTech category has 3 application streams:

- Streams 1 (College-accredited program) and 2 (non-accredited program) require a diploma or degree, courses in 5 areas, and a minimum of 2 years' experience in applied biology within the 10 years prior to application.
- Stream 3 requires 20 post-secondary courses including courses in 5 areas, and a minimum of 3 years' experience in applied biology within the 10 years prior to application.

Figure 4.0 illustrates the application streams for RBTechs, and Table 2.0 summarizes the application requirements for RBTech and RBTech in Training registrant categories.

Figure 4.0 Application streams for RBTech

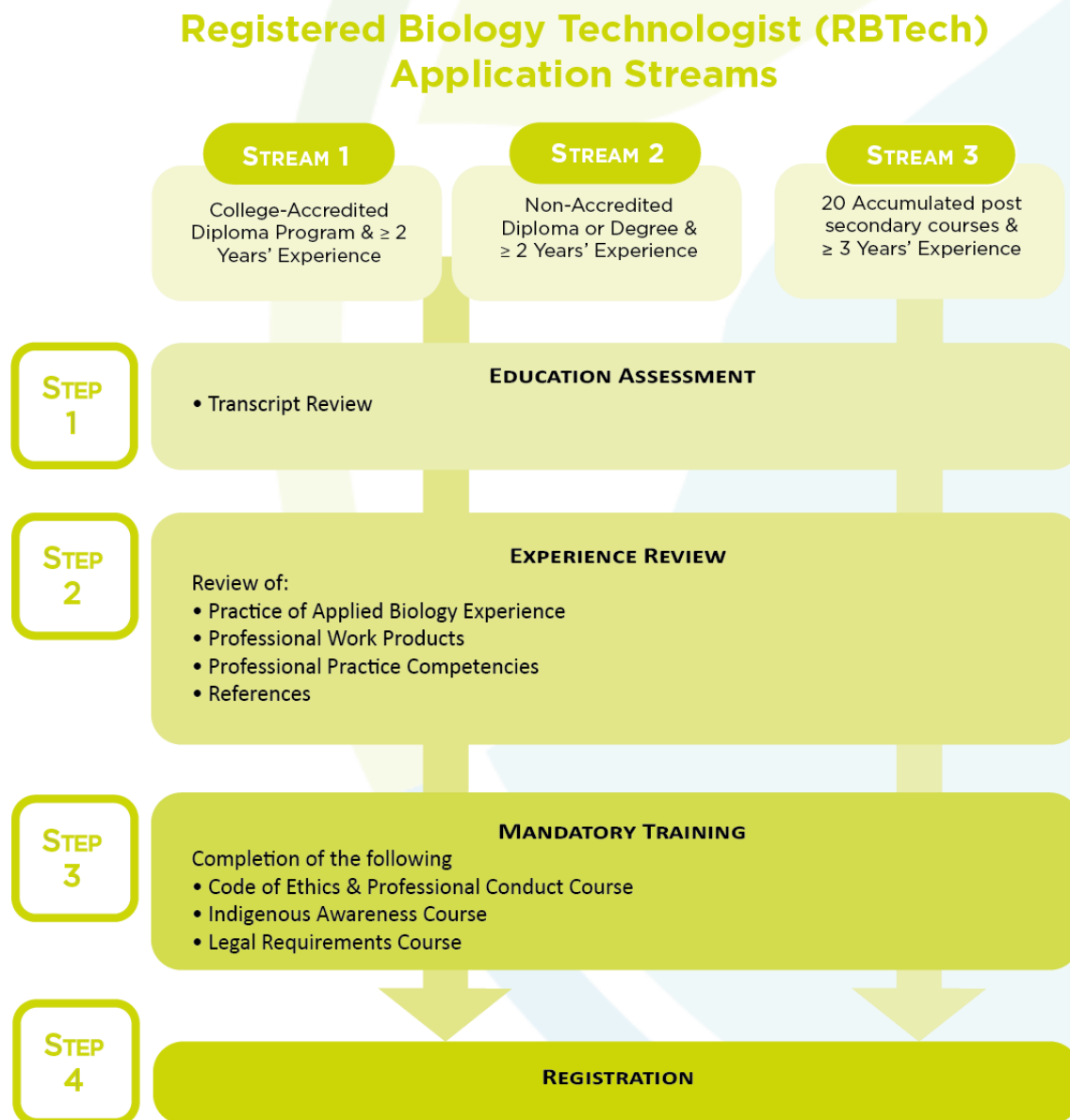


Table 2.0 Summary of RBTech and RBTech in Training Application Requirements

Requirements	RBTech	RBTech in Training	RBTech
	Streams 1 & 2		Stream 3
<b>Education</b>	<ul style="list-style-type: none"> <li>• Degree or Diploma</li> <li>• Courses in each of the following areas:                             <ul style="list-style-type: none"> <li>• Conservation or Resource Management</li> <li>• Communications</li> <li>• Environmental or Earth Science</li> <li>• Field/Laboratory Techniques</li> <li>• Mathematics or Statistics</li> </ul> </li> </ul>		Minimum of 20 courses, including courses in each of the following areas: <ul style="list-style-type: none"> <li>• Conservation or Resource Management</li> <li>• Communications</li> <li>• Environmental or Earth Science</li> <li>• Field/Laboratory Techniques</li> <li>• Mathematics or Statistics</li> </ul>
<b>Experience</b>	≥ 2 years of applied biology experience within the 10 years prior to application.	Not Applicable	≥ 3 years of applied biology experience within the 10 years prior to application.
<b>Professional Practice Competencies</b>	Demonstrate that you meet all the College's Professional Practice Competencies.		Demonstrate that you meet all the College's Professional Practice Competencies.
<b>Professional Work Products (PWP)</b>	1 to 4		1 to 4
<b>References</b>	2		2
<b>Mandatory Training Courses</b>	<ul style="list-style-type: none"> <li>• Code of Ethics &amp; Professional Conduct</li> <li>• Indigenous Awareness</li> <li>• Legal Requirements</li> </ul>		

### 7.1 Education Requirements

Applicants must meet the education requirements set out in Table 2.0.

Additional information on education requirements is set out in section 5.1.

### 7.2 Experience Requirements

RBTech applicants in streams 1 and 2 must demonstrate a minimum of 2 years' experience practicing applied biology within the 10 years prior to application. Up to 1 year of this experience may be pre-diploma/degree.

RBTech applicants in stream 3 must demonstrate a minimum of 3 years' experience practicing applied biology within the 10 years prior to application.

Additional information on experience requirements is set out in section 5.2.

### 7.3 Professional Practice Competencies

RBTech applicants must demonstrate how they meet the professional practice competencies, as set out in section 5.3.

### 7.4 Professional Work Products Requirements

RBTech applicants must include 1 to 4 Professional Work Products that meet the requirements set out in section 5.4.

### 7.5 References

RBTech applicants must provide 2 references that meet the criteria set out in section 5.5.

## 8.0 Registered Professional Biologist (RPBio) and Biologist in Training (BIT) Application Requirements

There are 2 registration streams for the RPBio category:

- Stream 1 is for applicants who have completed a College-accredited Bachelor's Degree program.
- Stream 2 is for applicants who have not completed an accredited program.

In addition, there are 2 pathways for applicants who have professional credentials in other jurisdictions:

- The Labour Mobility pathway is for applicants who are registered as a Professional Biologist (P.Biol.) and are in good standing with the Alberta Society of Professional Biologists (ASPB). To register, applicants must provide proof of registration with ASPB, complete the mandatory training courses, and pay the applicable fees.
- The UK Royal Society of Biology pathway is for applicants who are registered as a Chartered Biologist and are in good standing with the Royal Society of Biology (RSB) in the United Kingdom. To register, applicants must provide proof of registration with RSB, provide confirmation of education, provide a professional work product, complete the mandatory training courses, and pay the applicable fees.

Figure 5.0 illustrates the application streams for RPBios, and Table 3.0 summarizes the application requirements for RPBio and BIT registrant categories.

Figure 5.0 Application streams for RPBios

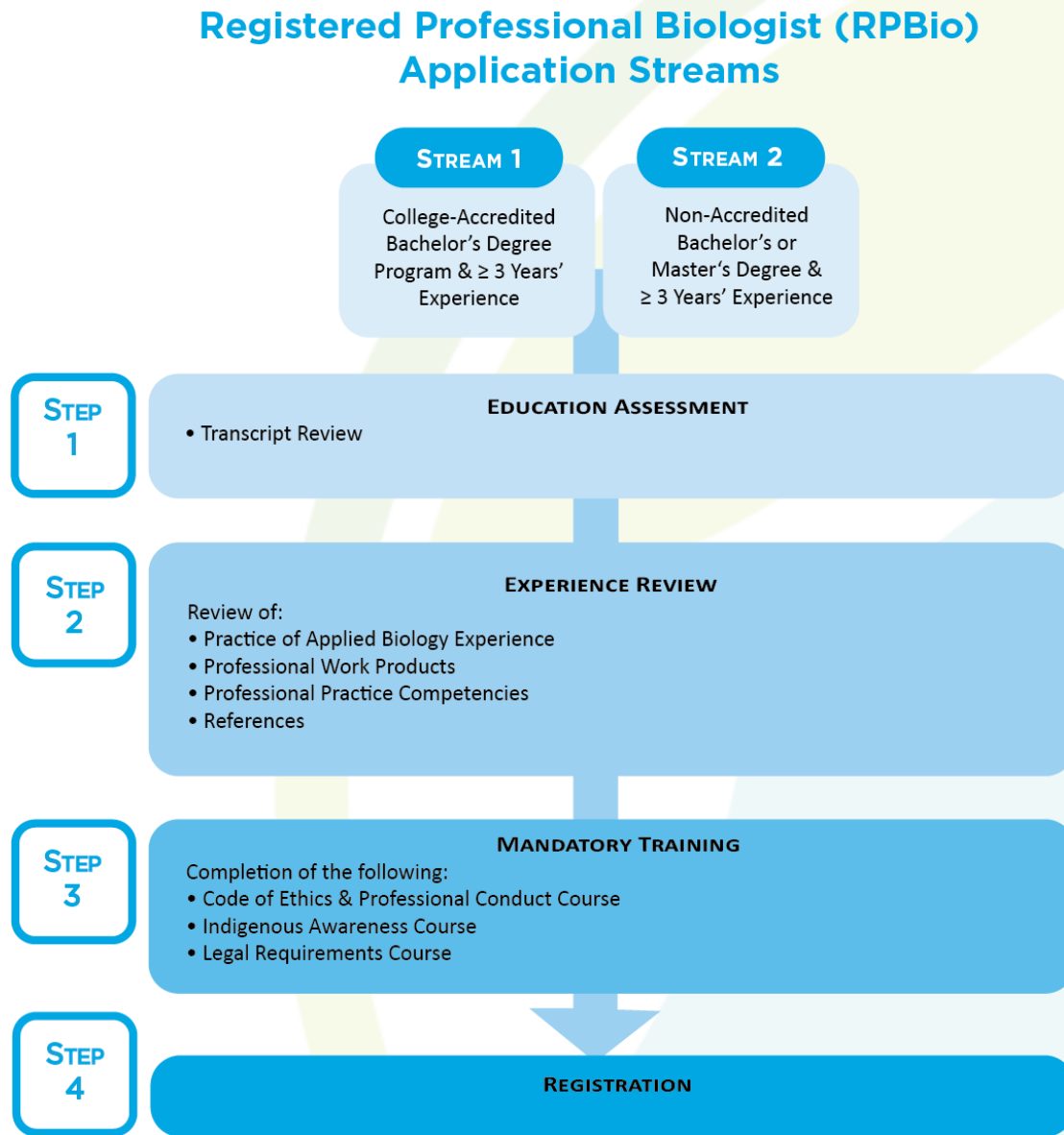


Table 3.0 Summary of RPBio and BIT Application Requirements

Requirements	Stream 1 & 2	
	RPBio	BIT
<b>Education*</b>	<ul style="list-style-type: none"> <li>• Bachelor of Science degree, including 13 biology courses OR A Bachelor’s or Master’s degree with 25 Science Courses, including 13 biology courses</li> <li>• Courses in:                             <ul style="list-style-type: none"> <li>• Communications</li> <li>• Conservation or Resource Management</li> <li>• Ecology</li> <li>• Statistics</li> </ul> </li> <li>• Courses in 3 of the following areas:                             <ul style="list-style-type: none"> <li>• Cell Biology</li> <li>• Genetics</li> <li>• Physiology</li> <li>• Systematics</li> <li>• Evolution</li> <li>• Biochemistry</li> <li>• Environmental or Earth Sciences</li> <li>• Geomatics or Bioinformatics</li> </ul> </li> </ul>	
<b>Minimum Experience*</b>	3 years’ experience within the 10 years prior to application	Not Applicable
<b>Professional Practice Competencies</b>	Demonstrate that you meet all the College’s Professional Practice Competencies	
<b>Professional Work Products (PWP)</b>	1 to 4	
<b>References</b>	3	
<b>Mandatory Training Courses</b>	<ul style="list-style-type: none"> <li>• Code of Ethics &amp; Professional Conduct</li> <li>• Indigenous Awareness</li> <li>• Legal Requirements</li> </ul>	

\*Applicants with graduate degrees or additional experience may qualify despite missing some course requirements; see section 8.1.2 for more information

## 8.1 Education Requirements

### 8.1.1 Education

Applicants must meet the education requirements set out in Table 3.0.

Additional information on education requirements is set out in section 5.1.

### 8.1.2 Options to resolve a course deficiency

Beyond the options provided in section 10.0 to resolve a course deficiency, applicants with graduate degrees or additional experience may qualify for registration with fewer courses than specified in Table 3.0.

#### **BIT applicants, and RPBio applicants with less than 6 years' experience**

An applicant may address a deficiency of up to 2 courses, 1 of which may be from the specific course requirements (except communications), through the following options:

- Completion of a MSc or PhD in an applied biology topic,
- Increasing the required experience by 1 year for a specific course, or 6 months per general biology or science course,
- Substituting one general science course with a course in:
  - Law
  - Policy development
  - Indigenous studies or relations
  - Conflict management
  - Project management
  - Environmental impact assessment

#### **RPBio applicants with 6-8 years' experience**

An applicant may miss up to 4 courses total (including communications). However, applicants must have a minimum of 23 science courses, including a minimum of 11 biology courses.

#### **RPBio applicants with more than 8 years' experience**

An applicant may miss all specific course requirements (including communications). However, applicants must have a minimum of 23 science courses, including a minimum of 11 biology courses.

## 8.2 Experience Requirements

RPBio applicants must demonstrate a minimum of 3 years' experience practicing applied biology within the 10 years prior to application. Up to 1 year of experience may be pre-degree.

Additional information on experience requirements is set out in section 5.2.

## 8.3 Professional Practice Competencies

RPBio applicants must demonstrate how they meet the professional practice competencies, as set out in section 5.3.

## 8.4 Professional Work Products Requirements

RPBio applicants must include 1 to 4 Professional Work Products that meet the requirements set out in section 5.4.

## 8.5 References

RPBio applicants must provide 3 references that meet the criteria set out in section 5.5.

## 9.0 Applied Biology – Limited Licensee (AB-LL) Application Requirements

There is 1 application stream for the AB-LL registrant category. This category requires education/training in the area of the limited license, and 5 years of experience in applied biology, with a minimum of 2 years in the specific area of the limited license application.

Figure 6.0 illustrates the application stream for Applied Biology – Limited Licensee (AB-LL), and Table 4.0 summarizes the application requirements for the AB-LL registrant category.

Figure 6.0 Application Stream for Applied Biology – Limited Licensee (AB-LL)

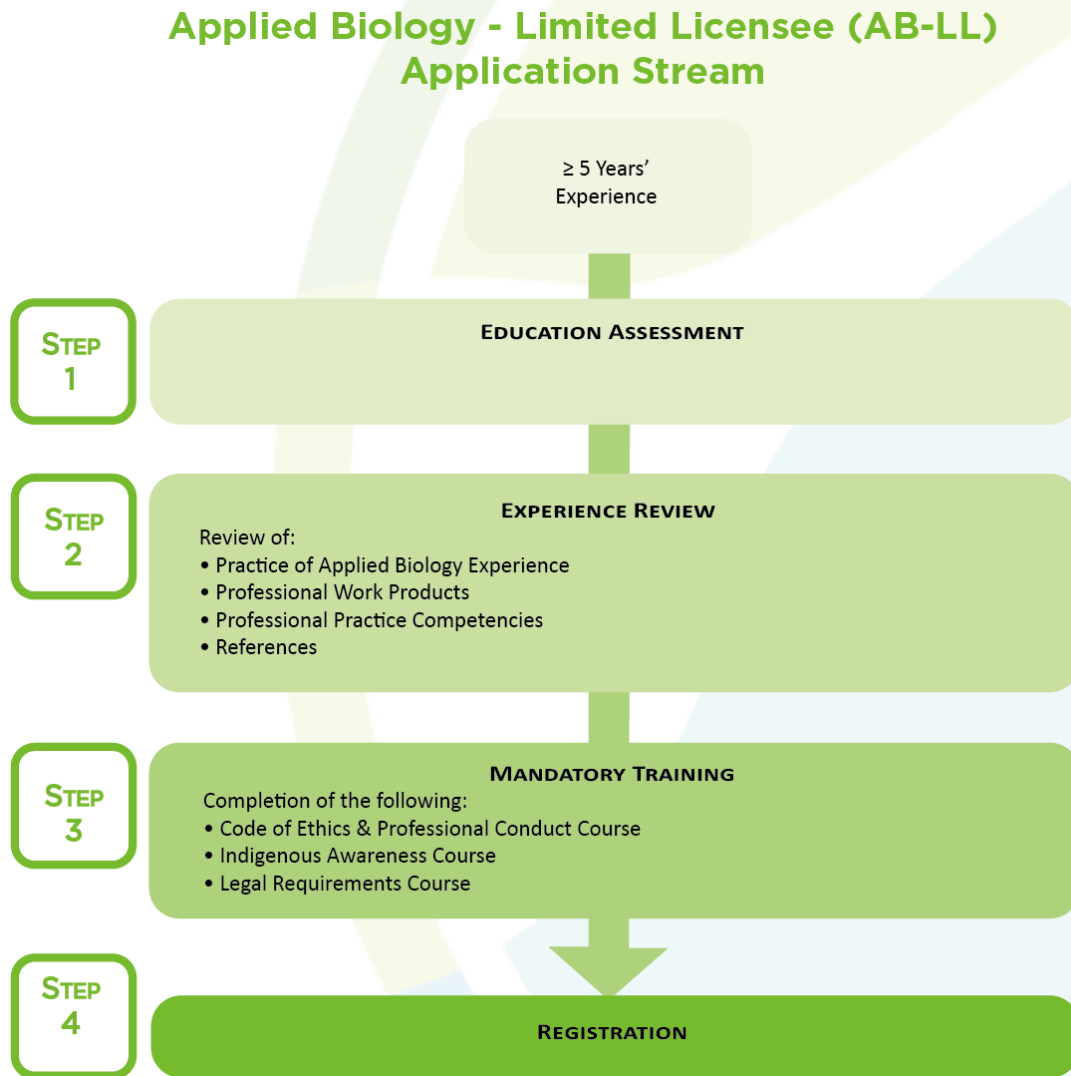


Table 4.0 Summary of the AB-LL Application Requirements

Requirements	AB-LL
<b>Education/Training</b>	Education or training that supports the license being applied for
<b>Experience</b>	≥ 5 years of applied biology experience with 2 years' experience specific to the area of the license application
<b>Professional Practice Competencies</b>	Demonstrate that you meet all the College's Professional Practice Competencies
<b>Professional Work Products (PWP)</b>	1 to 4
<b>References</b>	3
<b>Mandatory Training Courses</b>	<ul style="list-style-type: none"> <li>• Code of Ethics &amp; Professional Conduct</li> <li>• Indigenous Awareness</li> <li>• Legal Requirements</li> </ul>

### 9.1 Description of the specific area of the limited license

Applicants must provide a description of the proposed specific practice area of the Limited License.

### 9.2 Education and Training Requirements

Applicants must have education or training that supports the licence being applied for.

Additional information on education requirements is set out in section 5.1.

### 9.3 Experience Requirements

Applicants must demonstrate at least 5 years' experience in the practice of applied biology as defined in the [Applied Biologists Regulation](#) with at least 2 years' experience in the specific area of the Limited License application.

Additional information on experience requirements is set out in section 5.2.

### 9.4 Professional Practice Competencies

Applicants must demonstrate how they meet the professional practice competencies, as set out in section 5.3.

### 9.5 Professional Work Products Requirements

Applicants must include 1 to 4 Professional Work Products that meet the requirements set out in section 5.4.

### 9.6 References

Applicants must provide 3 references that meet the criteria set out in section 5.5.

## 10.0 Options to Resolve Education Deficiencies

An applicant who is deficient in meeting specific course requirements may resolve the deficiency by:

- Completing the missing course at a recognized post-secondary institution, or
- Obtaining course credit from a post-secondary institution through Prior Learning Assessment and Recognition (PLAR) if available.

Section 8.1.2 provides additional options for RPBio or BIT applicants to resolve course deficiencies.

## 11.0 Steps Required After an Application is Approved

After an application has been approved, applicants must:

- Pay for and complete the College's mandatory training courses, and
- Pay fees (e.g., annual registration dues, seal fee).

Annual dues are pro-rated to reflect the period during the College's fiscal year (Jan 1 to Dec 31) in which the application was approved.

All practicing registrant categories except ABT must pay a seal fee.

Current fees are listed in 'Schedule 2 – Fees and Charges' of the [College Bylaws](#).

## 12.0 Definitions

**Accredited program** - has met the standard education requirements set by the College of Applied Biologists for the registrant category the program is accredited for (e.g., RPBio, RBTech, ABT).

**Conclusions** – a summation of outcomes of data analysis, along with an interpretation of significance and implications.

**Course** - Is defined as a one-semester course, which includes at least 3 lecture or lab hours per week.

**Data** - Facts, information, and/or statistics (e.g., measurements, metrics) collected for reference or analysis.

**Data Analysis** - The study and/or examination of data applying logical techniques to describe and illustrate, condense and recap, and evaluate data.

**Methods** - Implementing a systematic or a particular form of procedure or process for accomplishing or approaching something such as, a task (e.g., information/data gathering, statistical analysis).

**Non-expert audience** - An individual/individuals who is/are not a subject matter expert in the topic being communicated. This can include other applied biology professionals, clients, the public, or other professionals.

**Official transcript** - Means a transcript issued by the granting institution directly or via a third party (e.g., My eQuals, Mycreds, National Student Clearinghouse) that includes a record of courses, marks, degrees, diploma or certificates obtained.

**Practicing Registrant Applicant** - Is an applicant for one of the following categories: Registered Professional Biologist, Registered Biology Technologist, Applied Biology Technician, or Applied Biology Limited Licensee.

**Professional Work Product** - is a mechanism for RPBio, RBTech and AB-LL applicants to demonstrate their independent thought as an applied biology professional, and how their practice in applied biology demonstrates the College's Professional Practice Competencies. See section 5.4 for more information.

**Recognized** - means the academic institution has met a quality assurance program as defined by the British Columbia Council on Admission and Transfer or similar definition in another jurisdiction.

**Recommendation** - an informed suggestion regarding the best course of action.

# APPENDIX A – Professional Practice Competencies and Competence Standard



V2.0 2022

## PROFESSIONAL PRACTICE COMPETENCIES & COMPETENCE STANDARD

Fundamental principles of professional reliance are that all applied biology professionals meet high professional standards such as competence, expertise and work within their own area(s) of practice and level(s) of competency. A competency is more comprehensive than skill set(s) alone, it is measurable, assessable and verifiable.

The College of Applied Biologists (the College) uses a competency framework of seven (7) Professional Practice Competencies (figure 1.0) each with their own key indicators, and a competence continuum (figure 2.0) to align registrants' skills, capabilities, knowledge and competence with their professional practice. The intent of the competency framework, key indicators and competence continuum is to provide the College (the regulator), registrants, employers and the public with clear and consistent expectations and an understanding of what is required of an applied biology professional that is registered and certified by the College.

The Competency Framework, its Key Indicators and the Competence Continuum:

- ◆ Were developed to ensure that College registrants meet and maintain high level practice and competence standards to uphold and protect the public interest;
- ◆ Encompass the required credentials through the registration process to become a College registrant ; and
- ◆ Ensure registrants maintain and enhance the required credentials through the Continued Education, Audit and Practice Review Programs.

Figure 1.0 Professional Practice Competencies.



The College uses the following key indicators (KIs) in each Professional Practice category to assess and verify that a professional meets the minimum competency level requirement: Competent (Figure 2.0). College applicants and registrants are required to demonstrate and maintain competence in at least one (1) key indicator in each Professional Practice Competency category during the Registration, Audit and Practice Review processes.

#### Records/Data Management & Informatics



1. Demonstrate knowledge of records management and information.
2. Implement policies and protocols relating to records management and informatics in their practice.
3. Respect for confidentiality in their practice.

#### Professional Accountability



1. Demonstrate an awareness of scope of practice and limitations.
2. Take responsibility for their work and work of others' (if applicable).
3. Exercise skills in applied biology and other professional skills as required for work to be undertaken.

#### Communication



1. Communicate written and oral information in a clear, concise, and comprehensible manner.
2. Communicate and acknowledge the value of alternative views and hypotheses.
3. Demonstrate the ability to communicate effectively with specialist and non-specialist audiences, colleagues, clients and others.

#### Scientific knowledge & Concepts



1. Demonstrate knowledge of scientific information and concepts.
2. Incorporate relevant scientific knowledge and concepts in their practice.
3. Use knowledge and scientific understanding to improve the application of existing and emerging scientific concepts, knowledge or technology in their practice.

#### Laws, regulations & policy



1. Incorporate regulatory and policy requirements in their practice.
2. Implement regulatory and policy requirements in their practice.
3. Demonstrate knowledge of: a) regulatory and policy requirements as a regulated professional; b) Demonstrate knowledge relevant to their practice.

#### Standards & Practices



1. Demonstrate knowledge of standards and practices relevant to their area of practice.
2. Incorporate standards and practices in their practice.
3. Implement standards and practices in their practice.

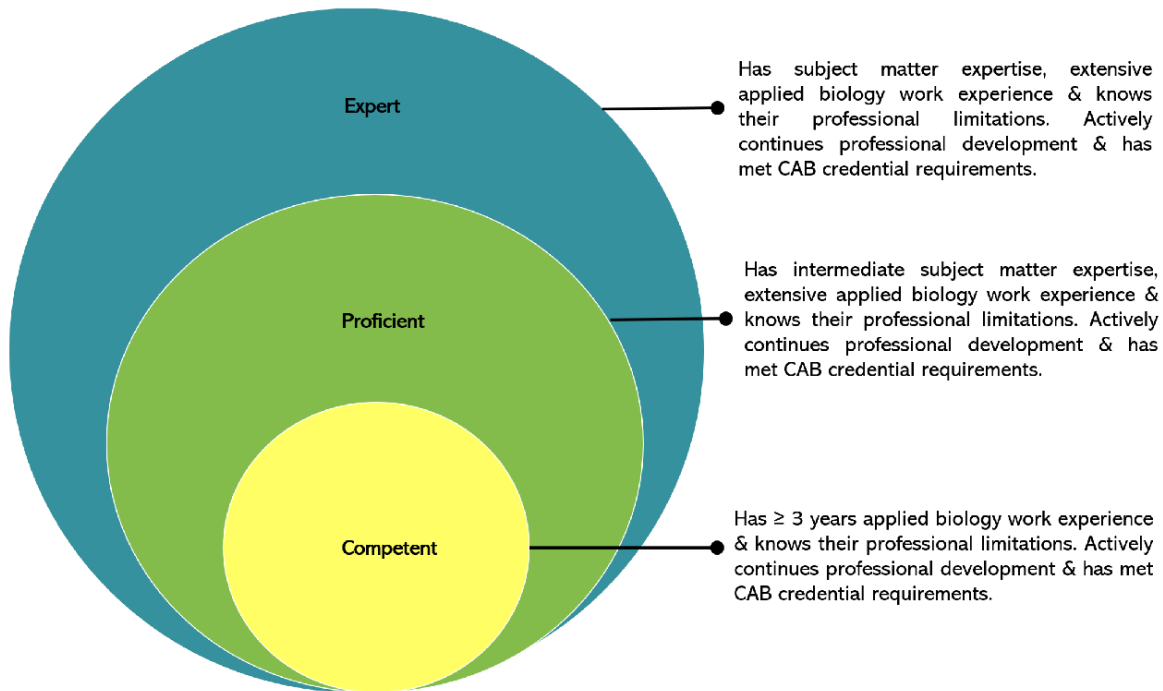
#### Project &/or Work product Management



1. Provide advice, options /solutions, requirements.
2. Demonstrate skills in evaluation of and in drawing conclusions.
3. Demonstrate skills in the scoping, planning and implementing of projects/assignments.

A registrants Professional Practice Competencies and associated competence level (competent, proficient, expert) (Figure 2.0) are acquired through knowledge (education & training), skills and abilities (work experience, professional practice experience) in each of the Professional Practice Competency categories. The two are linked together.

2.0 Competency Continuum.



During the registration process an applicant is required to:

- ◆ Be respectful and professional while interacting with College Staff and employees throughout the process;
- ◆ Demonstrate they meet at least one (1) key indicator in each Professional Practice Competency category;
- ◆ Establish they have a minimum competence level of Competent in each competency category; and
- ◆ Provide References who can verify they meet the Professional Practice Competency categories and are competent.

**The College:**

- ◆ Assesses the application using the key indicators and competence level requirements;
- ◆ Verifies the information provided by the applicant through information provided by references; and
- ◆ Determines if the applicant is accepted or not accepted. If not accepted, the College provides information regarding any deficiency(ies) and associated resolution(s).

**A Registrant is required to:**

- ◆ Self-declare their area of expertise and associated competence level with each Professional Practice Competency category;
- ◆ Continue to demonstrate they maintain competence with at least one (1) key indicator in each Professional Practice Competency category through the Audit and Practice Review Processes; and
- ◆ Maintain or enhance their competence and area(s) of expertise through the Continuing Education Program.

**The College:**

- ◆ Assesses and verifies a Registrants Professional Practice Competencies through the Audit and Practice Review processes, using the key indicators, competent level requirements and Continuing Education activities.

## APPENDIX B – Course Definitions

The following course definitions are provided to assist applicants in understanding the College's academic requirements.

### Biology courses (general)

Biology courses must include a majority (>50%) of biological concepts, theory, or practice, from a range of disciplines such as geography, environmental science, forestry and forest sciences, ecological restoration, and environmental engineering.

### Science courses (general)

Science courses study the natural and social world following a systematic methodology based on evidence. These courses are based on the scientific method, incorporating laboratory or field work, data analysis, and critical thinking to understand how the world works. Science courses must include a majority (>50%) of scientific concepts, theory or practice. Examples of science courses include the physical sciences (e.g., biology, chemistry), social sciences (e.g., psychology, economics), and applied sciences (e.g. engineering, forestry, agriculture). In addition, courses in mathematics and computer science may be counted as science courses.

### Applied biology identification skills

Courses or a course module should cover identification of flora and fauna such as plants, fish, mammals, birds, insects and the differences between groups (e.g., trees, shrubs, mosses). Course or course module can also include collection, labeling and preservation of a specimen(s).

### Biochemistry

Biochemistry is the study of the chemical processes within living organisms. It focuses on the structure, composition, and function of biological molecules—such as proteins, nucleic acids, and lipids—and how they interact in processes like metabolism and gene expression.

### Bioinformatics

Bioinformatics is an interdisciplinary field that uses computational and statistical techniques to analyze and understand complex biological data.

### Cell Biology

A cell biology course should include cellular structure and organelles, bioenergetics, enzyme production and function, membranes and cell signaling, membrane transport processes, signal transduction mechanisms, extracellular structures (adhesions, junctions, etc.), chemotrophic energy metabolism, intracellular compartments, phototrophic metabolism, structural basis of cellular information, sexual reproduction, gene expression – transcription and protein synthesis, regulation of gene expression, cytoskeletal systems, as well as motility and contractility. Courses that would meet this requirement include Cell Biology or Molecular Biology.

The following list represents the general range of topics of Cell biology:

- Membrane transport
- Membranes and signal transduction mechanisms
- Extracellular structures (adhesions, junctions, etc.)

- Intracellular compartments
- Cytoskeleton systems, motility and contractility
- Chemotrophic energy metabolism, phototrophic metabolism, structural basis of cellular information
- Nucleic acid structure and function – replication, transcription, translation and regulation of gene expression

## Communications

First year or higher courses that focus on communication skills may include technical writing, scientific writing, or English composition. The aim of this requirement is to ensure the applicant has the ability to provide clear and concise communications which can be interpreted by people at all levels of a decision-making process.

More specifically the graduating student should demonstrate competence in some or all of the following topic areas:

- Development of skills in research and writing academic essays or reports
- Technical writing skills including memos, briefing notes, technical reports and bulletins
- Development of grammatical skills, organizational skills and appropriate use of vocabulary
- Prepare and deliver oral presentations

## Conflict Management

A course in conflict management covers topics like conflict theory, effective communication, negotiation, mediation, and understanding different conflict styles to provide practical skills for navigating interpersonal conflicts.

## Conservation or Resource Management

A course in Conservation or Resource Management will focus on the application of biological, ecological or socioeconomic principles, including law and governance, to the management or conservation of biological resources, elements or systems. The course can focus on a specific group of organisms or consider broader ecosystem-level issues, however, the majority of the course content (>50%) must consider biological resources, elements or systems, not topics related to the management or conservation of abiotic resources or the more general idea of environmental sustainability.

Courses that typically meet the requirements for this subject category include Conservation Biology, Environmental Biology, Wildlife Management, Fisheries Management, Range Management, Natural Resource Policy, or Landscape Ecology.

The following list represents the general range of topics for Conservation or Resource Management:

- Discussion of the application of biological and ecological principles on the use, management or conservation of biological resources
- Discussion of the management or conservation of biological resources
- Discussion of law or governance with direct application to biological resources
- Discussion of the principles of sustainability in the context of biological resources

## Earth Science

Earth science, also known as geoscience, encompasses the study of Earth's physical properties, chemical composition, and processes. It explores the Earth's structure, including its crust, atmosphere,

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hydrosphere (including oceans and ice), and biosphere (living organisms). Earth science integrates knowledge from other sciences like biology, chemistry, physics, and mathematics to understand the Earth's past, present, and future.

Examples of areas of study include:

- Geology: Focuses on the Earth's solid composition, including rocks, minerals, and landforms, as well as the processes that shape them (e.g., plate tectonics, erosion)
- Geomorphology: Study of landforms, their origin, development, and classification; examines the processes that shape the Earth's surface, such as erosion, weathering, tectonic activity, and sedimentation
- Hydrology: Examines the distribution and movement of water on the Earth's surface and underground
- Meteorology: Studies the Earth's atmosphere, weather patterns, and climate.
- Oceanography: Investigates the Earth's oceans, their properties, and the organisms that inhabit them
- Soil Science: Examines soil formation, properties, and its role in sustaining life and ecosystems

## Ecology

A course in ecology will consider the relationships between living organisms and the abiotic systems within which they occur. Courses focused on ecology can consider a broad range of content from the description and distribution of biomes at the ecosystem level to the factors and theory underlying population and community dynamics. Courses in specific areas of ecology such as population, community or microbial ecology are acceptable as are courses that take a more general perspective on ecology or ecosystem-level processes.

The following list represents the general range of topics of Ecology:

- The relationships between living organisms and the abiotic systems within which they occur
- Description and distribution of biomes at the ecosystem level
- Understanding of the factors and theory underlying population and community dynamics

## Evolution

Courses in evolution will cover the contemporary theory of evolution, such as variation, descent, natural selection, adaptation, speciation, and extinction on both micro- and macro-evolutionary scales. Topics include origins of living systems; species and their origins and extinctions; adaptation and constraints; systematics; evolutionary ethics.

Examples of courses that may meet these criteria include but are not limited to:

- Evolution
- Diversity and Evolution
- Evolutionary Genetics
- Ecology and Evolution

## Environmental Impact Assessment

Environmental Impact Assessment aims to predict, evaluate and mitigate the impacts of a proposed project, program or policy prior to its undertaking in to minimize or avoid adverse effects. A course in EIA covers the theory and practice of environmental impact assessment. Topics could include reviewing and critically evaluating the regulatory frameworks, institutions and methods associated with impact

assessment for resource and other development and exploring current practices, processes and prevailing techniques used in EIA.

## Environmental Science

Environmental science is an interdisciplinary field that combines elements of earth science, biology, and chemistry to study the environment, including ecosystems, pollution, conservation, and the impact of human activities on the planet. It focuses on the study of natural systems and the application of technology to seek solutions to environmental issues and sustainable resource management.

## Field/Laboratory Techniques

A course in field/laboratory techniques will focus on the skills and techniques required either in the field or laboratory for the practice of applied biology as defined in the [Applied Biologists Regulation](#). There should be a focus on following standardized data collection methodology.

Courses that typically meet the requirements for this subject category include chemistry with a lab component, biology with a lab component, field studies, surveying, maps and navigation, fish or plant identification.

The following list represents the general range of topics of Field/Laboratory Techniques:

- Field survey methods
- Laboratory methods
- GPS data collection
- Ecosystem classification

## Field Navigation

Courses or a course module should cover navigation skills required for field work. This may include the use of and interpretation of (hardcopy and digital) maps, compasses, GPS systems (handheld and software), hip chain, navigation data collection and storage.

## Genetics

Courses in genetics should cover structure and function of genes, chromosomes and genomes, biological variation resulting from recombination, mutation, and selection, population genetics, use of genetic methods to analyze protein function, gene regulation and inherited disease.

Examples of courses that meet these criteria include Genetics, Molecular Genetics, or Genomics.

## Geomatics

Geomatics is the science and technology of collecting, integrating, analyzing, and presenting geographically referenced (spatial) information, integrating fields like surveying, remote sensing, GIS, and data management to solve real-world problems in urban planning, resource management, and engineering.

## Indigenous Studies or Relations

A course in Indigenous Studies explores Indigenous knowledge, histories, rights, and contemporary issues from Indigenous perspectives. Indigenous relations courses include topics such as Indigenous history, cultural safety, consultation and engagement processes, UNDRIP, and building respectful relationships.

## Law

A course in law covers topics such as legal principles, statutory interpretation, the Canadian legal system, sources of law, an understanding of the constitution and divisions of power, the Charter of Rights and Freedoms, legal professional responsibility; or introduces general areas of law such as administrative law, Indigenous law, or environmental law.

## Mathematics

Mathematics courses need to be at a first year or higher university level. Introductory courses in calculus, applied calculus, finite math, linear algebra or a first year statistics course will generally meet this requirement. Technical math courses may not meet the requirement unless they transfer to an equivalent first year math course at a college or university through a recognized transfer agreement.

## Natural Resource Survey Skills

Courses or a course module should cover data collection (hard copy or digital), proper field note taking, common field equipment requirements, use, maintenance and care (e.g., calibration, storage), quality assurance and data integrity and security.

## Physiology

A course in physiology will focus on the relationship between the structure and functioning of individual organisms relative to the environments they occupy. The majority of course content (>50%) should consider the physiology of the organism in the context of environmental responses and/or the interaction between anatomical structure and life history including adaptive behaviour. The course can include the study of a single taxonomic group or a broader perspective across a number of Kingdoms.

The following table represents the general range of topics of cell, animal, or plant physiology courses.

Cell Physiology Course	Animal Physiology Course (including human physiology)	Plant Physiology Course
<ul style="list-style-type: none"><li>• Structure and function of the cytoskeleton</li><li>• Structure and function of the cell membrane</li><li>• Structure and function of cell organelles</li><li>• Topics on cell dynamics and bioenergetics</li><li>• Topics on regulation of cellular activities</li></ul>	<ul style="list-style-type: none"><li>• Principles of homeostasis</li><li>• Discussions of cardiovascular systems</li><li>• Discussions of respiratory system</li><li>• Discussion of osmoregulatory system</li><li>• Discussions of endocrine system</li><li>• Discussions of excitable membranes of nerve and muscle</li><li>• Discussions of reproduction</li></ul>	<ul style="list-style-type: none"><li>• Mechanisms and regulation of functional processes contributing to assimilation, transport and utilization of water, mineral nutrients and carbon</li><li>• Understanding of cell division, sexual and asexual reproduction</li><li>• Understanding of differentiation and functions of various tissue types</li><li>• Understanding of the action of major growth regulators and photomorphogenesis</li></ul>

## Policy development

A course in policy development provides an overview of the policy process, current theories, and the stages of the policy development process. Topics may include issue identification, information gathering and analysis, identifying potential solutions, formulating advice and recommendations, and implementation and evaluation. The course may be general in nature or focus on a specific area such as environmental or climate policy.

## Project management

A course in project management covers how organizations plan and execute projects. Topics could include an overview of the project management methodology and the tools and techniques through which projects are selected, planned, executed, monitored and controlled and then brought to a close.

## Statistics

A course in statistics will include applications of parametric and non-parametric statistical methods.

The following list represents the general range of topics found in a Statistics course. It is not expected that all topics will be addressed during a major or degree. However, it is expected that graduating students will engage with enough topics to gain fundamental knowledge necessary to be competent in this area.

- Descriptive statistics and probability
- Types of distributions
- Hypothesis testing on means and proportions
- Experimental and sampling design
- Analysis of variance, regression and correlation
- Understand or conduct survival analyses

## Systematics or Classification

A course in systematics or classification will focus on the nomenclature, identification, and categorization of organisms from within one or more taxonomic groups. Course content often includes a description of the unique anatomy or other differentiating characteristics of the organisms under study. Courses in Systematics or Classification may require students to develop a collection of specimens (e.g. herbarium) or develop the skills to identify individual species or genera from a broader set of related organisms.

The following list represents the general range of topics of systematics or classification.

- Nomenclature, identification and categorization within one or more taxonomic group
- Description of unique anatomy or other differing characteristics
- Development of a collection of specimens or development of skills to identify species

Examples of courses that typically meet this subject category include:

- Invertebrate Zoology
- Vertebrate Zoology
- Vascular Plants
- Non-Vascular Plants
- Ornithology
- Herpetology
- Mammalogy

- Phylogenetics
- Forest Classification and Silvics



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