

# Geoscience and APEGM

What you need to know  
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Hello everyone, my name is Sharon Sankar and I am the Admissions Director for the Association of Professional Engineers and Geoscientists of Manitoba, or as we know it - APEGM.

# What is Registration and What does it mean to a Geoscientist?

- History
- Practice of Geoscience
- Requirement for Registering – it's the Law!

So, what exactly is Registration and what does it mean to your career as a Geoscientist?

First off, a little history. In the 1990's, geoscientists approached what was then known as the Association of Professional Engineers or APEM. In June 29, 1998 the Engineering Act was changed to include geoscientists within the mandate of APEM and as a result the Association was renamed APEGM – Association of Professional Engineers and Geoscientists of Manitoba.

APEGM defines the practice of geoscience as follows:

“ any act of documenting, analyzing, evaluating, interpreting, or reporting on the earth's materials or on resources, forms, or processes, or managing any of the foregoing, that requires the application of the principles of geology, geophysics, or geochemistry and that concerns the safeguarding of life, health, property, economic interests, the public interest, or the environment.”

In order to practice geoscience in the province of Manitoba you are required to be registered or you must have a registered geoscientist take direct responsibility for your work. This is the law.

The rest of this presentation will focus on the steps you must take in order to become registered.

# Requirements for Registration

- Academic
- Professional Practice Test (PPT)
- Pre-registration Program
  - Work Experience (48 months)
  - Professional Development
  - Professional/Community Service
  - Professional Practice Exam (PPE)
- Do not delay!!!!!!

Geoscientists and Engineers follow the same two-step path in order to become registered with APEGM.

First, there is the Academic requirement. To fulfill the Academic requirement it is not sufficient to have a degree in Geoscience – that degree must contain courses which correspond to APEGM's Geoscience syllabi. I am going to speak on this at length because it is important that you make the correct course choices now, at the beginning of your academic career.

Second, once you've been declared a/q (or academically qualified), you will be required to write an open book test which we call the PPT (professional practice test). This test covers information in our Act, Code of Ethics and Bylaws which you as members, will be required to follow. Once you pass this test (with 90% or higher) you will be eligible to apply for the pre-registration program.

After completing the PPT, you will enter the pre-registration program and you will be called a Geoscientist-in-Training (GIT).

The pre-registration program consists of four components:

48 months of Geoscience work experience

48 hours of Professional development

48 hours of Professional or Community Service – examples of professional service include serving on APEGM committees, technical boards. Examples of community service include service organizations such as volunteering for CNIB, Habitat for Humanity, church groups, etc. (By the way, APEGM is always looking for GIT volunteers!)

Professional Practice Exam (PPE) – a 2 hour closed book exam which tests your understanding of Geoscience and the Law.

In all cases, academic qualification must be established before the experience qualification, however, in most cases, you will be able to count experience gained while on the 'academic program' towards your experience requirement for registration. You will only have it reviewed once you've completed the academic requirements, however.

My last note – Do not delay!!! Once you get your degree and especially once you become employed, phone for an application. All things being equal, the sooner you get on the program, the more quickly you will be registered.

Even with a wealth of experience, having a valid and current geoscience degree which meets the requirement for registration is the first requirement. Experience is reviewed only after the academic qualification is met.

# Academic Requirements

- APEGM Syllabi (based on Canadian Council of Professional Geoscientists syllabi)
- For general information. PLEASE READ THIS!
- See: <http://www.apegm.mb.ca/GeoAssessment.html>

Geology Syllabus

<http://www.apegm.mb.ca/pdf/Registration/Assessment/geologysyllabus.pdf>

Geophysics Syllabus

<http://www.apegm.mb.ca/pdf/Registration/Assessment/geophysicsyllabus.pdf>

Starting January 1, 2003 the APEGM syllabi (which is based on the CCPG syllabus) has been adopted as the minimum academic standard for geoscientists in Manitoba.

There are two syllabi – one for Geology and one for Geophysics and these can be accessed from the web pages shown above. The information in the next two slides is available directly off our website.

# Geology Syllabus

## Fundamental Sciences

### 1A. Specified Science

Math – 1 EU

Physics – 1 EU

Chemistry – 1 EU

- An additional 3 EUs in Math, Physics, Biology or Chemistry with no more than 2 EUs in Biology.

– 1B. Additional Science – 3 EUs

– 1C. Technical Communications

## Geoscience (Geology) Subjects

2A. Field Practice or Techniques (1 EU)

2B. Fundamental Geology Subjects (5 EUs)

2C. Additional Subjects (14 EUs)

First, the Geology Syllabus. As you can see, the syllabus is divided into 2 portions - Fundamental Sciences and Geoscience subjects.

An 'EU' as indicated here is the equivalent of a one semester (or 3 credit hour course). A full-year course would be the equivalent of 2 EUs.

Looking at the Fundamental Sciences, specified science includes 1 EU each of Math, Physics and Chemistry with an additional 3 EUs in your choice of Math, Physics, Biology or Chemistry but no more than 2 EUs in Biology.

Additional Science includes 3 EUs in your choice of Math, Physics, Chemistry, Biology, Statistics or Computer Science.

Technical Communications is described in the website as "submission of a substantive report or thesis that demonstrates technical communication involving data collection and description, interpretation & synthesis. A literature-based paper is not acceptable". Effectively it is a project – much more than a report.

Geoscience or Geology Subjects, as shown here include field practice – which is knowledge obtained from field-based instruction. Fundamental Geology subjects include 5 choices of either Mineralogy, Stratigraphy or Sedimentology, Structural geology, petrology, geochemistry, geophysics, hydrology or hydrogeology with no more than one EU in any subject. Additional subjects include 14 EUs of which at least 12 must be geoscience and no more than 2 can be other sciences.

Certain Earth Sciences such as meteorology and oceanography fall outside the scope of geological practice as defined by APEGM so they can't be counted as geoscience courses within the Additional subjects section. They can, however, be counted as Additional science courses.

# Geophysics Syllabus

- Fundamental Sciences
  - Same as Geology Syllabus
- Geoscience (Geology) Subjects
  - 2A. Field practice or Techniques (1 EU)
  - 2B. Fundamental Geology Subjects (4 EUs)
  - 2C. Geophysics Subjects (6 EUs)
    - Data Processing or Inversion (1 EU)
    - Geophysics subjects and their application (5 EUs)
  - 2D. Additional Subjects (9 EUs)
    - 7 EUs must be in Math, Physics, Computer science or Geophysics. Not more than 2 EUs in any other science.

As you can see here, the Geophysics syllabus is identical to the geology syllabus in the fundamental sciences. Also, Field Practice and the same fundamental geology subjects are required – the difference is that there is a requirement for 4 rather than 5 fundamental geology subjects.

The main difference is that the geophysics syllabus is somewhat more specific than the geology syllabus with a greater emphasis on math and physics.

Pick your courses carefully now and you will avoid hassles down the road. If your degree is found to be deficient – you may still be able to get registered but you will have to take exams and/or additional courses to bring your program in line with the syllabus.

Now I will speak about the process for becoming registered:

# APEGM Academic Assessment The Process

- Academic Assessment (Canadian Geoscience Assessment). **Self-assessment** checksheets are available at:  
<http://www.apegm.mb.ca/GeoAssessment.html>
- APEGM Exam Program to address deficiencies.
- Academically Qualified
- Enroll as a GIT.

The first requirement is an APEGM Academic Assessment – for 4 year Geoscience graduates from Canadian universities this requires an application, transcripts, and a fee which is currently \$105.00. (We call this a Canadian Geoscience Assessment). The application will be forwarded to the Academic Review Committee, a committee of APEGM, who will then do an in depth review of the courses taken. [Those who have their Bachelor's degrees in geoscience from outside Canada or who have other than 4 year Canadian geoscience degrees will be required to do a full Academic Assessment which requires an application, transcripts, **syllabus or course description of all courses taken**, and a fee of \$400.00]

The Academic Review Committee will compare your courses taken with the syllabus for either geology or geophysics. If there are deficiencies in your program, when compared to the syllabus, you will have the choice whether to write exams through APEGM or take University courses in order to address those deficiencies. **If you choose to take courses in lieu of exams, you will need to get approval from the Academic Review Committee that the courses are equivalent.**

To assist you in doing a self-assessment of your degree(s) please use the checksheets which are referenced in the above link. This will give you an idea of which courses you may still be required to obtain.

# APEGM Exams

- If you choose to write exams through APEGM (rather than take University courses) there are two types of exams which you can be assigned:
- Fundamental Exams
- Geology/Geophysics Exams
- Web page for Exam syllabi:
- <http://www.apegga.org/Applicants/Examinations/syllabi.html> [Note: this is subject to change, please search Apegga's website]

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For detailed information on the steps you take after completing the Assessment program, please view:

- General Overview of the Pre-registration program:

<http://www.apegm.mb.ca/MIT.html>

If you are assigned APEGM exams, there are essentially 2 types of exams that you could potentially be assigned:

Fundamental Exams generally cover Math, Physics, Chemistry, Biology, Computer Science and Statistics.

Geology or Geophysics Exams cover more in-depth material on the relevant Geoscience topics.

These exams are developed and marked by the Alberta association (APEGGA) but applicants write them at the APEGM office. More information about these exams are available at the web page referenced above.

Applicants on the Academic Assessment program who are interested in taking courses in lieu of exams need to look at the exam description and find a University course or courses that seem similar. They should contact the relevant university departments for more information about which courses are available, and they must then apply to the Academic Review Committee who will approve or reject the courses as being equivalent. Caution: in general, remedial courses in Math, Physics and Chemistry are not acceptable. **NOTE: APEGM has no control or jurisdiction over when courses are offered at the university.**

More information on the General requirements of the Pre-registration program can be found at the second web page shown above.

A summary of the steps you require in order to become registered is shown in the next slides.

## Summary of Registration Process for Geoscientists

- 1. Complete 4 year degree in geoscience
- 2. Apply for a Canadian Geoscience Assessment at APEGM or a full Academic Assessment if your Bachelor's degree is from outside Canada.
- 3. If deficiencies are found, write exams (through APEGM) or take equivalent courses through University
- 4. Enroll as a GIT

## Summary of Registration Process (Con't)

- 5. Complete 48 months of geoscience experience. (Usually, you will be able to get back- credit for experience earned while on the Assessment program)
- 6. Write Professional Practice Exam and do Professional development hours and volunteer service hours required.
- 7. Send in references (you will be asked to submit these near the end of the 48 months).
- 8. Register as a Professional Geoscientist with all its obligations and privileges.

- For General Information:  
Please contact Sharon Sankar, Director of Admissions: [ssankar@apegm.mb.ca](mailto:ssankar@apegm.mb.ca)
- To apply for an Canadian Geoscience Assessment or an Academic Assessment  
Please contact Claudia Shymko at  
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