# Physical Sciences Career Options

Specialist ☐ Major ☑ Minor ☐ Co-op ☑ Joint ☐

Exploring career options involves researching **occupations** and **industry sectors** that fit your **skills**, interests, personality preferences and values. An *occupation* relates to the activities of the work you perform, whereas *industry sector* classifies the organizations that employ people in such occupations.

**Example:** "Research Scientist" is an occupation that involves deductive reasoning, complex problem solving and critical thinking skills to develop project goals, equipment requirements, methodologies and conduct scientific research independently and with colleagues. Research Scientists work in many industry sectors — particularly but not exclusively in the natural and applied science sector. They might also work in the government, agriculture and professional services sectors.

## Physical Sciences graduates have many skills. In particular, they can:

Analyze and evaluate data and results
Apply computer skills and statistical techniques
Establish and control experimental designs
Examine theories on how galaxies are clustered
Organize, analyze and interpret scientific data
Perceive patterns and structures
Problem solve and troubleshoot
Think analytically and critically
Understand and utilize technological innovations
Write for technical and non-technical audiences

## With these skills in mind, how can I research my career options?

### Occupational Research

**Canada's National Occupational Classification (NOC)** system categorizes over 30,000 occupational titles into 10 broad classes listed in **Table 1**. The 4-digit titles in **Table 2** are examples of occupations related to Physical Sciences within these classes (NB: Some require further education).

**Table 1: NOC Occupational Titles** (www5.hrsdc.gc.ca)

| | |
|---|---|
| 0 Management Occupations | 5 Occupations in Art, Culture, Recreation and Sport |
| 1 Business Finance and Administration Occupations | 6 Sales and Service Occupations |
| 2 Natural and Applied Sciences and Related Occupations | 7 Trades, Transport and Equipment Operators and Related Occupations |
| 3 Health Occupations | 8 Occupations Unique to Primary Industry |
| 4 Occupations in Social Science, Education, Government Services and Religion | 9 Occupations Unique to Processing, Manufacturing and Utilities |

**Table 2: Sample Occupational Titles Related to Physical Sciences**

2111 Research Scientist
2113 Climate Service Specialist
2133 Geophysicist
2146 Space Reliability Specialist
2171 Interactive Media Consultant
2172 Information Resource Analyst
2211 Chemical Analyst
2231 Pollution Control Technician
2241 Physical Science Laboratory Technician
2255 Cartographer
2263 Environmental Compliance Specialist
4112 Patent Lawyer
4131 Environmental Education Specialist
4161 Scientific Consultant
4164 Public Policy Analyst
4166 Education Science Specialist
5121 Technical Writer
5123 Journalist/Editor, Reporter
5212 Planetarium Interpreter
5221 Scientific Photographer

### Occupational Research Links

The two excellent occupational databases below provide you with details about job prospects, nature of work, educational requirements, working conditions, pay and related occupations:

**Career Cruising:** www.careercruising.com (Access our subscription through your Career Centre Online account)
**ONet:** http://online.onetcenter.org (U.S. site)


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## Industry Research

The **North American Industry Classification System (NAICS)** is a hierarchical industry structure that divides the economy into 20 broad sectors of activity listed in **Table 3**. **Table 4** provides examples of specific industry groups relevant to Physical Sciences graduates.

**Table 3: NAICS Industry Sectors** (www.statcan.gc.ca/subjects-sujets/standard-norme/naics-scian/2007/list-liste-eng.htm)

| | |
|---|---|
| 11 Agriculture, Forestry, Fishing and Hunting | 53 Real Estate and Rental and Leasing |
| 21 Mining and Oil and Gas Extraction | 54 Professional, Scientific and Technical Services |
| 22 Utilities | 55 Management of Companies and Enterprises |
| 23 Construction | 56 Administrative, Support, Waste Management, Remediation |
| 31-33 Manufacturing | 61 Educational Services |
| 41 Wholesale Trade | 62 Health Care and Social Assistance |
| 44-45 Retail Trade | 71 Arts, Entertainment and Recreation |
| 48-49 Transportation and Warehousing | 72 Accommodation and Food Services |
| 51 Information and Cultural Industries | 81 Other Services (except Public Administration) |
| 52 Finance and Insurance | 91 Public Administration (= Government) |

**Table 4: Sample Industry Groups Relevant to Physical Sciences Graduates**

| | |
|---|---|
| 3342 Space Satellites Equipment Manufacturing | 5419 Weather Forecasting Services |
| 5111 Newspaper and Magazine Publishers | 6113 Universities |
| 5151 Radio and Television Broadcasting Stations | 8133 Social Advocacy Agencies |
| 5411 Law Firms | 9119 Federal — Space Research and Development |
| 5416 Consulting Firms | 9129 Provincial — Energy Resource Programs |
| 5417 Physical Science and Development Services | |

## Industry Research Links

To learn more about job prospects in your sectors of interest, visit:
**Industry Canada:** www.ic.gc.ca/eic/site/company-entreprises.nsf/eng/home

## Career Links Related to Physical Sciences

**Professional Associations**

| | |
|---|---|
| Canadian Space Society | www.css.ca |
| National Space Society | www.nss.org |
| American Chemical Society | http://portal.acs.org/portal/acs/corg/content |
| The Chemical Institute of Canada | www.chemistry.ca |
| Science Teachers' Associations of Ontario | http://stao.ca |
| National Council for Science and the Environment | http://ncseonline.org |

**Other Resources**

| | |
|---|---|
| National Research Council of Canada | www.nrc-cnrc.gc.ca |
| The Environmental Careers Organization | www.eco.org |
| Chemical and Engineering News ChemJobs | http://chemistryjobs.acs.org/jobs |
| National Aeronautics and Space Administration | www.nasa.gov |
| Live Science: Science News | www.livescience.com |
| Natural Science and Engineering Research Council of Canada | www.nserc-crsng.gc.ca |

## E-Journals Available through the University of Toronto Library (www.library.utoronto.ca/utsc)

| | | |
|---|---|---|
| Advances in Physics | Chemistry World | Research in Science Education |
| Advances in Space Research | Geosphere | Scientific American |
| Canadian Journal of Physics | Nature | Space Science Reviews |

## Resources Available at the Academic Advising & Career Centre

Not sure how your skills, values, personality and interests fit your career options? Book an appointment with a Career Counsellor or sign-up for the *Discover Your Skills and Career Options* workshop via the Intranet. The Academic Advising & Career Centre has a very good collection of books related to career planning and job search.



**Waiver:** While every attempt was made to provide accurate information on this tipsheet, information may change at any time.