



PROGRAM OUTLINE

Program Title:	Pre-Health Sciences
Program Code:	Not Applicable
Level:	To be Determined by Dept of Ed
Delivery:	3 Semesters
Credential:	Certificate
Eligible for RPL:	No
Location:	Iqaluit
Division:	Health and Wellness
Prepared By:	Chair, Health & Wellness
Date:	February 1, 2021
Previous Outline Dated:	
Reviewed/Revised By:	
Approval Date:	
And BOG Motion #	

Program Description:

The one-year (3 semester), Pre-Health Sciences program is designed to provide several pathways to students interested in pursuing a diploma (Standard stream) or, degree (Advanced stream), in the field of health sciences. The intent is to prepare students for entry into a variety of health sciences post-education programs by allowing them to earn academic credits that may be transferable to other institutions and programs of study. The curriculum equips students for more advanced studies by giving them the required knowledge for successful entrance into post-secondary health care studies and by providing them with post-secondary credits in communications, mathematics, biology, chemistry, and research skills. It is expected that the students will be able to transfer credits from this program into other institutions for first-year health care studies.

The Pre-Health Sciences program provides a solid academic base for a successful transition to a variety of health sciences programs. Graduates of this program will be able to move forward with confidence in their pursuit of further post-secondary education.

The objectives of the program are:

- To give graduates in-depth knowledge in the required subject areas of the health sciences field
- To provide the foundational supports for learning advanced concepts in the sciences
- To provide graduates opportunities to develop an appreciation for and knowledge of Inuit Qaujimajatuqangit as it relates to the health sciences.
- To prepare graduates for success in gaining admittance to a broad choice of career options within health sciences post-secondary programs
- To provide a variety of transferable post-secondary credit courses

Inuit Qaujimajatuqangit:

The Pre-Health Sciences Program integrates the Guiding Principles of Inuit Qaujimajatuqangit and recognizes the value of collaborative learning environments unique to Nunavut. Students in the program will develop the required competencies to meet the standards for entry into health sciences degree or diploma programs. Presentation of program content will draw heavily on the Inuit concept of Inuuqatigiitsiarniq: Respecting others' work and developing healthy work relationships that respect fellow workers. This instructional strategy will help to prepare the students to work collaboratively with other professionals toward a common result. The program will also integrate Pilimmaksarniq: development of skills through practice, effort, action, and patience. Instructors will seek to balance instructional methods using learning labs and project-based learning assignments, in addition to conventional lectures. Instructors will also promote an environment of inclusive participation through open dialogue and continuous feedback throughout the program drawing on the Inuit concept of Tunnganarniq. This instructional strategy draws upon a collaborative approach among students by forming working relationships with each other to collectively solve problems as they strive toward a common goal.

Career Opportunities

This program will be offered in both a standard format as well as advanced. Graduates will be eligible to apply for entrance into various post-secondary programs within the health field including the NAC Bachelor of Science in Nursing as well as Licensed Practical Nursing. Students will receive a broad exposure to a variety of foundational courses that allow participants to develop core knowledge for many health-related careers, such as biotechnology, radiation therapy, dental hygiene, massage therapy, paramedics, and nursing.

Program Learning Outcomes:

Upon successful completion of the Pre-Health Sciences Advanced Program, the student will be able to:

Advanced Stream

- Examine fundamental biological concepts, processes, and systems of the human body, including genetics and epigenetics, as well as the structure, function and properties of the molecules of life, cells, tissues and organ systems in relation to homeostasis, physical development and health.
- Examine concepts, processes, and systems of chemistry, including atomic and molecular structure; quantities in chemical reactions; solutions and solubility; acids and bases, as well as organic chemistry and biochemistry in relation to health and the human body.
- Solve numeric problems and interpret data related to health sciences and other science-related fields using mathematical concepts, including algebra and probability, along with descriptive and inferential statistics.
- Use health sciences and other science-related language and terminology appropriately to communicate clearly, concisely, and correctly in written, spoken and visual forms.
- Prepare a personal strategy and plan for academic, career and professional development in the health sciences or other science-related fields.
- Investigate health sciences and science-related questions, problems and evidence using the scientific method.
- Identify and apply discipline-specific practices that contribute to the local and global community through social responsibility, economic commitment, and environmental stewardship.
- OPTIONAL: Examine fundamental physics laws and concepts and their application to health sciences and other science-related fields.

Standard Stream

Upon successful completion of the Pre-Health Sciences Standard Program, the student will be able to:

- Examine fundamental biological concepts, processes, and systems of the human body, including the structure, function and properties of life, cells, tissues and organ systems in relation to homeostasis and health.
- Examine fundamental concepts, processes, and systems of chemistry, including matter and chemical bonding; qualities in chemical reactions; solutions and solubility; acids and bases; as well as nomenclature, structure and properties of organic compounds in relation to health and the human body.
- Solve basic numeric problems and interpret data related to health sciences and other science-related fields using mathematical concepts, including algebra, basic probability and descriptive statistics.
- Use health sciences and other science-related language and terminology appropriately to communicate clearly, concisely and correctly in written, spoken and visual form.
- Prepare a personal strategy and plan for academic, career and professional development in the health sciences or other science-related fields.
- Investigate health sciences and science-related questions, problems and evidence using the scientific method.
- Identify and apply discipline-specific practices that contribute to the local and global community through social responsibility, economic commitment and environmental stewardship.

Program Delivery Model:

Applied learning, laboratory work, classroom, seminars/workshops, guest speakers/Elders, and opportunities to connect with the community through field trips and project work. Some elements of digital learning are incorporated in courses throughout the program.

Admission Requirements

Applicants must be:

- Age 17 or older
 - Completion of Grade 12 or equivalent
- Plus**
- Assessment tested at ABE English 140
 - Assessment tested at ABE Math 140

Mature Students

- Age 19 or older
- Out of high school for one year or more
- Assessment tested at ABE English 140
- Assessment tested at ABE Math 140

All applicants must:

- be Nunavut resident for 1 year prior to application
- Provide proof of Nunavut residency

All applicants must provide:

- A letter of intent
- 3 references (non-family)

Preference will given to Nunavut Inuit.

Selection Process:

- Review letter of intent and references
- Interviews may be requested (phone or in person if the application is in the community)
- Review results of assessments for Math and English

Applicants will be admitted to the program based on space availability and their ability to meet the entrance requirements. The program admissions committee reserves the right to conduct interviews with students to assess qualifications. In some cases, students may be required to meet special conditions before entry into the program.

Graduation Eligibility:

To graduate from this program, students must successfully complete all courses in the program structure and have achieved a cumulative average of 60% or higher.

Students who achieve a cumulative grade of 70% or higher in the Advanced Stream will be eligible for direct entry into BScN (Arctic Nursing) program.

Students who achieve a cumulative grade of 60% or higher in the Standard Stream will be eligible for direct entry into the Licensed Practical Nursing Program at Nunavut Arctic College.

Other Important Information:

Previous course work, employment, or volunteer experience in related areas of Science can enhance the student's understanding of course materials. Maturity, stress management and organization of one's time are important for successful completion of the program. Class sizes are small, allowing instructors to assist students with learning needs. Students are encouraged to seek assistance when needed. Applicants can contact the program manager for information on transfer of credit arrangements with other institutions of learning. Some course credits in this program may be transferable to a Bachelor of Science in Nursing, Bachelor of Health Sciences or Bachelor of Human Kinetics at other post-secondary institutions.

1 year – Three semesters

Advanced Stream – 600 hours Total credits: 40 credits (or 44 with Physics Elective)

Standard Stream – 555 Total credits: 37 credits

Course Descriptions

Semester 1
<p>080-152 Inuktitut Literacy 120 - 45 hours –3 credits (Sample)</p> <p>Note: All programs at the Nunatta campus must include one course in Inuktitut Literacy, which is taken during year one. There are varying levels for the language courses and students are placed in the appropriate course based on their language competency entering the college. These courses are offered through the Department of Inuit Culture and Language.</p> <p>The course teaches fundamentals in speaking, reading and writing Inuktitut. It uses a motivational learning approach based on integrating Inuit culture through projects, activities, lectures, assignments and discussions.</p> <p>Four themes weave curriculumm content holistically including:</p> <ul style="list-style-type: none">• Inuit Culture• Family and Social Relationships• Community, Leadership & Work• Environment <p>Short readings, including oral reading and dictation, comprehension questions, reading drills, crosswords and word finds will give students the opportunity to increase their speed and accuracy in syllabics. Many of the readings in the course are based on creation <i>unikkaaqtuat</i>, which will help to increase student’s cultural literacy.</p>
<p>BIOL 101 – Human Biology I - 60 hours – 4 credits Lab time: 10 hours Require Chem Lab approx. 5 hours</p> <p>An understanding of human biology forms the basis of further study in health science. Students learn about the cell as the basic unit of structure and function in the human body. In addition, students relate the organization of cells to tissues, organs, and systems to the maintenance of homeostasis. Through interactive group work and laboratory exercises, human biology and genetics are explored and on both microscopic and macroscopic levels.</p>
<p>Math 101 – Math for Health Sciences – 60 hours – 4 credits (Lab: 2 hours – using glassware/preparing vials)</p> <p>Through the study of mathematics, students learn how to reason logically, think critically, and solve problems – key skills for success in the health sciences. Students review key numeracy concepts, systems of measurement and dimensional analysis and use analytical techniques to solve problems arising from real-world applications involving algebraic, linear, exponential and logarithmic functions and equations.</p>
<p>COMM 101 – Effective Communications – 60 hours – 4 credits</p> <p>The ability to exchange ideas effectively contributes to success in a variety of endeavors. To identify and develop necessary communication skills students will explore career paths of interest in order to self-assess and career career portfolios. In the development and sharing of these portfolios, students apply principles of clear communications – focus, relevance, organization, tone and style. Tasks include research, analysis, documentation, and presentation. Through</p>

discussion, individual and team-based assignments, students focus on communicating in a variety of contexts and media.

CHEM 101– Introduction to Chemistry – 60 hours – 4 credits (Lab time = 5 labs = 10 hours)

All biological processes are rooted in chemistry. Through collaboration and a focus on health-related examples, students learn about matter, atoms, the periodic table, compounds, quantities in chemical reactions and solutions and solubility. Laboratory experiments and demonstrations enhance comprehension of concepts and help students develop sage laboratory practices.

Semester Two

Standard - CHEM 102 - Chemistry II – 45 hours – 3 credits Lab time: 5 labs x2 or 3 hours – 10-15 hours

Chemistry underlies fundamental biological principles. Students deepen their understanding of matter and chemical reactions. In addition, nuclear chemistry, gases, acids, bases and buffers, organic compounds and biochemistry are introduced. The chemical concepts included are particularly applicable to students entering health science programs.

Advanced – CHEM 103 - Advanced - General, Organic, and Biological Chemistry – 75 hours – 5 credits

Understanding the human body, its diseases and the medicines used to treat disease requires knowledge of general, organic and biological chemistry. Through lectures and laboratory exercises, students study energy changes in chemical systems, acids, bases and buffers, equilibria, electrochemistry, organic compounds and the biochemistry of the human body. Focus is on the different classes of organic compounds and their relationship to carbohydrates, lipids, proteins and nucleic acids.

MATH 102 – Statistics for Health Sciences – 60 hours – 4 credits

Statistics and probability theory are utilized in many ways in the health sciences and in everyday life. Students further develop mathematical problem-solving skills working individually and in groups by applying statistical concepts and methods to collect, organize, analyze and interpret data. In addition to examining and applying descriptive and inferential statistics, students solve health science-related problems involving empirical and theoretical probability and carry out a culminating investigation that integrates statistical concepts and skills.

Standard - BIOL 102 – Biology II – 60 hours – 4 credits (2-3 hours Chem Lab)

The structure and function of the body is fundamental to health science. Students further their study of the structure of the human body by examining anatomical models and wet specimens in a laboratory environment. The function of body systems is explored through labs and interactive group projects. In addition, students are introduced to the field of microbiology and the importance of homeostatic mechanisms to maintain health.

Advanced - BIOL 103 - Anatomy and Physiology – 75 hours – 5 credits

The structure and function of the body is fundamental to health science. Students further their knowledge of the structure of the human body through case studies, online activities and the examination of anatomical models and wet specimens in a laboratory environment. The impact of microbes on human health and the interrelationships of body systems are investigated.

Semester 3

COMM 102 – Communication for Research and Health Sciences – 45 hours – 3 credits

The ability to understand, apply and communicate scientific information is critical in healthcare education and practice. Students learn to conduct preliminary research, develop reports, and write with a scientific focus. Skills are developed through collaborative projects, literature reviews and presentations.

PSYC 101 – Introduction to Psychology - 60 hours – 4 credits

This course is designed to introduce students to psychology, promote critical thinking skills, and develop an understanding of the connection between psychological theory and perspectives and their real-world applications. Learners will be introduced to current issues in the field of psychology that will broaden their understanding of the importance of the mind-body connection in overall mental and physical health and create an understanding of self and others that is essential in promoting healthy interactions and success in personal and professional relationships.

Elective

PHYS 101 – Physics for the Health Sciences – 60 hours – 4 credits

As the fundamental science, physics underpins chemistry and biology. Through the extensive use of algebra, students apply critical thinking and problem-solving techniques to physics principles related to the health science field. Concepts studied include kinematics, forces, work, energy and power, thermodynamics, fluids and pressure, nuclear physics, electrostatics, magnetism, waves, and electromagnetic radiation. A minimum B- grade in MATH 101 is required for registration in this elective course.