Area of Interest: Health Sciences

Respiratory Therapy

Ontario College Advanced Diploma Program Code: 0606X01FWO

3 Years

Ottawa Campus

Our Program

Explore a rewarding career advancing community care with clinical care.

The Respiratory Therapy Ontario College Advanced Diploma program prepares you for success in the profession of respiratory therapy. With access to state-of-the-art equipment, simulation techniques and clinical placements, you gain the hands-on skills necessary for employment.

Learn to practice competently, safely and effectively in diverse practice settings. By the end of the program, you demonstrate the ability to work as a team member in support of clients' respiratory care.

You participate in clinical lab simulations and apply theory to clinical practice. You also complete more than 1,200 hours in clinical placements, which may require relocation for a portion or for the full placement to another clinical setting across Ontario. These experiences take place in various settings: general wards, emergency departments, neonatal intensive care units, and operating units. Graduates are eligible to take the National Alliance of Respiratory Therapy Regulatory Bodies credential exam, which is required to work in Canada and to use the title of Registered Respiratory Therapist.

Graduates typically find employment as/in:

- staff therapists in hospitals
- adult, pediatric and neonatal intensive care units
- emergency departments and cardiopulmonary diagnostic units
- the private sector in community care, medical sales, dental offices or research

Graduates may choose to pursue post-graduate studies in areas such as polysomnography, anesthesia assistant or cardiopulmonary perfusion.

Employment

Successful completion of the National Alliance of Respiratory Therapy Regulatory Bodies credential exam allows graduates to work in Canada. This exam is conducted by the Health Professions Testing Canada (HPTC) organization. Students apply to the HPTC in the third year of the program in order to write the exam upon graduation. Graduates and Registered Respiratory Therapists working in regulated provinces must be a member of their Regulatory College, the College of Respiratory Therapists of Ontario (CRTO).

Graduates typically find employment as staff therapists in hospitals. They work wards, adult, pediatric and neonatal intensive care units, emergency departments and cardiopulmonary diagnostic units. Graduates may also find employment in the private sector in community care, medical sales, physicians'or dental offices or research. Graduates may pursue post-graduate studies in such areas as polysomnography, anesthesia assistant or cardiopulmonary perfusion.

Learning Outcomes

The graduate has reliably demonstrated the ability to:

- Provide cardio-respiratory care in compliance with relevant legislation, professional

- Provide cardio-respiratory care in compliance with relevant legislation, professional standards, codes of ethics and practice setting policies and procedures.

- Use preventive measures that contribute to a culture of patient and employee health and safety within a range of practice settings.

- Establish and maintain therapeutic relationships and communicate in a culturally sensitive manner with diverse patients/clients and their families to support cardio-respiratory health.

- Collaborate with patients/clients and members of the inter-professional health care team to optimize cardio-respiratory health and well-being.

- Assess and interpret relevant diagnostic and patient information when treating patients/clients who are experiencing a range of cardio-respiratory conditions.

- Develop patient's/client's plan of care in collaboration with patients/clients and health care team members by identifying priorities,establishing goals and determining interventions to support optimal cardio-respiratory outcomes.

- Select, implement, evaluate and modify therapeutic cardio-respiratory interventions to provide evidence-based, patient-centered care in a range of practice settings.

- Develop, implement and evaluate cardio-respiratory related learning plans in collaboration with patients/clients, families and health care team members to support client independence and self-management.

- Complete written and electronic documentation of patient/client care to meet legal, organizational and professional requirements.

- Read, interpret and participate in research and use relevant evidence-based findings to inform and guide respiratory therapy practice.

- Engage in reflective practice and ongoing professional development activities to maintain and enhance competence in the field of respiratory therapy.

- Identify and apply discipline-specific practices that contribute to the local and global community through social responsibility, economic commitment and environmental stewardship.

Program of Study

Level: 01	Courses	Hours
ENL1813S	Communications 1	42.0
PSY1757	Psychosociology	42.0
RES1104	Practice Foundations and Legalities	28.0
RES4810	Medical Gas Therapy - Theory	42.0
RES4812	Anatomy and Physiology 1	84.0
RES4815	Medical Gas Therapy - Laboratory	42.0
RES4817	Applied Respiratory Sciences	42.0
Level: 02	**Courses**	**Hours**
BIO4316	Pathophysiology 1	56.0
RES4801	Basic Respiratory Protocols Theory	42.0
RES4802	Anatomy and Physiology 2	56.0

RES4803	Principles of Mechanical Ventilation Theory	42.0
RES4821	Basic Respiratory Protocols - Laboratory	42.0
RES4825	Pharmacology	42.0
RES4844	Pulmonary Diagnostics - Theory	28.0
RES4872	Principles of Mechanical Ventilation Lab	42.0
Level: 03	**Courses**	**Hours**
BIO4317	Pathophysiology 2	42.0
RES2365	Applied Mechanical Ventilation Laboratory 1	42.0
RES4830	Advanced Respiratory Protocols - Theory	42.0
RES4831	Advanced Respiratory Protocols - Laboratory	42.0
RES4845	Pulmonary Diagnostics - Laboratory	28.0
RES4855	Principles of Blood Analysis (Theory and Lab)	42.0
RES4858	Applied Mechanical Ventilation - Theory	42.0
RES4878	Clinical Practicum 1	16.0
Choose one from equivalencies:	**Courses**	**Hours**
GED0606	General Education Elective	42.0
Level: 04	**Courses**	**Hours**
ENL1938	Professional Communication for Respiratory Therapists	42.0
RES4832	Neonatal and Paediatric Care	42.0
RES4847	Applied Mechanical Ventilation - Laboratory 2	28.0
RES4848	Anesthesia	42.0
RES4849	Research, Ethics & Healthcare Issues	42.0
RES4851	Cardiopulmonary Management - Theory	28.0
RES4857	Cardiopulmonary Management Lab	28.0
RES4870	Patient Care Lab	28.0
RES4879	Clinical Practicum 2	16.0
Level: 05	**Courses**	**Hours**
RES4853	Clinical Practicum 3 - Hospital Training	600.0
RES4875	Comprehensive Examination	19.0
Level: 06	**Courses**	**Hours**
RES4859	Patient Case Study	10.0
RES4863	Clinical Practicum 4 - Hospital Training	600.0

Fees for the 2025/2026 Academic Year

Tuition and ancillary fees for this program can be viewed by using the Tuition and Fees

Estimator tool at https://www.algonquincollege.com/ro/pay/fee-estimator/

Further information on fees can be found by visiting the Registrar's Office website at https://www.algonquincollege.com/ro/

Fees are subject to change.

Additional program related expenses include:

- Books and non-disposable supplies cost approximately $2,200 per year, excluding the clinical year and can be purchased from the campus store. For more information visit https://www.algonquincollege.com/coursematerials/

- The uniform required for clinical site activities (all three years) costs approximately $300.

- Throughout the program students are required to attend clinical experiences at various sites in Ottawa, Kingston, Pembroke, Brockville and Belleville. Additional sites are under review. Third year students are placed either in Kingston/Belleville/Brockville, or in Ottawa/Pembroke. Students should note that additional sites are being reviewed across Ontario and additional relocation may be required. All students must be aware that they are required to relocate for all or a portion of the third year of the program. All expenses, such as travel, parking and accommodation for these experiences are the responsibility of the student.

- Prior to clinical practicums students require training in Healthcare Provider Level CPR, Standard First Aid, Advanced Cardiovascular Life Support (ACLS), Health and Safety, WHMIS, OWHSA training and approved Neonatal Resuscitation Program (NRP). There are some additional costs associated with the training that should be anticipated by students which are not covered by tuition fees including the cost of a Police Records Check for Service with the Vulnerable Sector (PRCSVS).

- The Health Professionals Testing Canada (HPTC) Licensing exam fee is currently $900 (+HST) and subject to change.

Admission Requirements for the 2026/2027 Academic Year

College Eligibility

- Ontario Secondary School Diploma (OSSD) or equivalent; OR

- Mature Student status (19 years of age or older and without a high school diploma at the start of the program). Eligibility may be determined by academic achievement testing, for which a fee will be charged.

Program Eligibility

- English, Grade 12 (ENG4C or equivalent) with a grade of 65% or higher.

- Mathematics, Grade 12 (MAP4C or equivalent) with a grade of 65% or higher.

- Biology, Grade 11 or 12 with a grade of 65% or higher.

- Chemistry, Grade 11 or 12 with a grade of 65% or higher.

- Physics, Grade 11 or 12 with a grade of 65% or higher.

- All applicants must complete an assessment of their knowledge and skills through the Test Centre, and pay an exam fee. Results from the Algonquin College Health Program Admissions Test (AC-HPAT) will be utilized to establish minimum eligibility and applicant ranking. The AC-HPAT can only be written once per academic cycle. For further information on the HPAT and how to book your assessment, please visit Algonquin's Test Centre.

- Applicants with international transcripts must provide proof of the subject specific requirements noted above and may be required to provide proof of language proficiency. Domestic applicants with international transcripts must be evaluated through the International Credential Assessment Service of Canada (ICAS) or World Education Services (WES).

- IELTS-International English Language Testing Service (Academic) Overall band of 6.5 with a minimum of 6.0 in each band; OR TOEFL-Internet-based (iBT)-overall 88, with a minimum of 22

- IELTS-International English Language Testing Service (Academic) Overall band of 6.5 with a minimum of 6.0 in each band; OR TOEFL-Internet-based (iBT)-overall 88, with a minimum of 22 in each component: Reading 22; Listening 22; Speaking 22; Writing 22; OR Duolingo English Test (DET) Overall 120, minimum of 120 in Literacy and no score below 105.

International Applicants
International applicants who meet the program eligibility requirements are required to complete preparatory courses (4-months in duration): Introduction to Canadian Health Studies (ICHS). Students who successfully complete the introduction will then proceed to their original health program of choice. The ICHS requires applicants to submit an academic IELTS score.

Please click this link for more information
https://www.algonquincollege.com/health-studies/program/introduction-to-canadian-health-studies/

Accepted applicants must:
Complete the ParaMed Clinical/Field Pre-Placement Health Requirements Form by the date indicated at the top of the form. Immunization for Hepatitis B is required. An immunization form for returning students must be submitted prior to the start of the second and third year. This will only apply to these students attending clinical placement in second and third year.

Provide proof of current Healthcare Provider Level CPR and Standard First Aid Certificate. Recertification of BLS is required annually. Currency of BLS and Standard First Aid is required throughout the program.

Police Records Check Documentation:
Though not an admission requirement, applicants must note important information listed below regarding Police Record Check program requirements.

Successful completion of clinical placement is a requirement for graduation from the Respiratory Therapy program. Agencies that provide placement opportunities require you to have a clear Police Records Check for Service with the Vulnerable Sector (PRCSVS). Your acceptance for placement is at the discretion of the agency. If you register in the program without a clear PRCSVS and as a result are unable to participate in placement, you will not be able to graduate.

Clinical Placement Eligibility:
Students must complete all ParaMed Clinical/Field Pre-Placement Health requirements one (1) month prior to starting clinical placements. Details regarding the requirements including immunizations, may be found in the form mentioned above. It will be provided to you in Level 02 of the program.

To be eligible for placement, you must submit proof of a clear Police Records Check for Service with the Vulnerable Sector (PRCSVS), which will be retained on your departmental file and used only for purposes related to your placement. You will be required to disclose the contents of the PRCSVS, including all notations, to the placement agencies.

It is your responsibility to obtain the PRCSVS from your local Police Department prior to the deadline identified by your Department and to pay any associated costs. Obtaining this documentation may be a lengthy process so submit your application as early as possible. Should you require further information, contact the Program Chair.

An updated PRCSVS must be submitted at the beginning of each year of the program. Students will not be permitted to attend clinical until a clear PRCSVS is received by the clinical site(s).

Admission Requirements for 2025/2026 Academic Year

College Eligibility

- Ontario Secondary School Diploma (OSSD) or equivalent. Applicants with an OSSD showing senior English and/or Mathematics courses at the Basic Level, or with Workplace or Open courses, will be tested to determine their eligibility for admission; OR

- Academic and Career Entrance (ACE) certificate; OR

- General Educational Development (GED) certificate; OR

- Mature Student status (19 years of age or older and without a high school diploma at the

- Mature Student status (19 years of age or older and without a high school diploma at the start of the program). Eligibility may be determined by academic achievement testing for which a fee will be charged.

Program Eligibility

- English, Grade 12 (ENG4C or equivalent) with a grade of 65% or higher.
- Mathematics, Grade 12 (MAP4C or equivalent) with a grade of 65% or higher.
- Biology, Grade 11 or 12 with a grade of 65% or higher.
- Chemistry, Grade 11 or 12 with a grade of 65% or higher.
- Physics, Grade 11 or 12 with a grade of 65% or higher.
- All applicants must complete an assessment of their knowledge and skills through the Test Centre, and pay an exam fee. Results from the Algonquin College Health Program Admissions Test (AC-HPAT) will be utilized to establish minimum eligibility and applicant ranking. The AC-HPAT can only be written once per academic cycle. For further information on the HPAT and how to book your assessment, please visit Algonquin's Test Centre.
- Applicants with international transcripts must provide proof of the subject-specific requirements noted above and may be required to provide proof of language proficiency. Domestic applicants with international transcripts must be evaluated through the International Credential Assessment Service of Canada (ICAS) or World Education Services (WES).
- IELTS-International English Language Testing Service (Academic) Overall band of 6.5 with a minimum of 6.0 in each band; OR TOEFL-Internet-based (iBT)-overall 88, with a minimum of 22 in each component: Reading 22; Listening 22; Speaking 22; Writing 22; OR Duolingo English Test (DET) Overall 120, minimum of 120 in Literacy and no score below 105.

Not sure if you meet all of the requirements? Academic Upgrading may be able to help with that: https://www.algonquincollege.com/access/ .

International Applicants:
International applicants who meet the program eligibility requirements are required to complete preparatory courses (4-months in duration): Introduction to Canadian Health Studies (ICHS). Students who successfully complete the introduction will then proceed to their original health program of choice. The ICHS requires applicants to submit an academic IELTS score.

Please click this link for more information:
https://www.algonquincollege.com/healthandcommunity/ICHS/ .

Accepted applicants must:
Complete the ParaMed Clinical/Field Pre-Placement Health Requirements Form by the date indicated at the top of the form. Immunization for Hepatitis B is required. An immunization form for returning students must be submitted prior to the start of the second and third year. This will only apply to these students attending clinical placement in second and third year.

Provide proof of current Healthcare Provider Level CPR and Standard First Aid Certificate. Recertification of BLS is required annually. Currency of BLS and Standard First Aid is required throughout the program.

Police Records Check Documentation:
Though not an admission requirement, applicants must note important information listed below regarding Police Record Check program requirements.

Successful completion of clinical placement is a requirement for graduation from the Respiratory Therapy program. Agencies that provide placement opportunities require you to have a clear Police Records Check for Service with the Vulnerable Sector (PRCSVS). Your acceptance for placement is at the discretion of the agency. If you register in the program without a clear PRCSVS and as a result are unable to participate in placement, you will not be able to graduate.

Clinical Placement Eligibility:
Students must complete all ParaMed Clinical/Field Pre-Placement Health requirements one (1) month prior to starting clinical placements. Details regarding the requirements including

immunizations, may be found in the form mentioned above. It will be provided to you in Level 02 of the program.

To be eligible for placement, you must submit proof of a clear Police Records Check for Service with the Vulnerable Sector (PRCSVS), which will be retained on your departmental file and used only for purposes related to your placement. You will be required to disclose the contents of the PRCSVS, including all notations, to the placement agencies.

It is your responsibility to obtain the PRCSVS from your local Police Department prior to the deadline identified by your Department and to pay any associated costs. Obtaining this documentation may be a lengthy process so submit your application as early as possible. Should you require further information, contact the Program Chair.

An updated PRCSVS must be submitted at the beginning of each year of the program. Students will not be permitted to attend clinical until a clear PRCSVS is received by the clinical site(s).

Application Information

RESPIRATORY THERAPY
Program Code 0606X01FWO

Applications to full-time day programs must be submitted with official transcripts showing completion of the academic admission requirements through:

https://www.ontariocolleges.ca/en
60 Corporate Court
Guelph, Ontario
N1G 5J3
1-888-892-2228

Students currently enrolled in an Ontario secondary school should notify their Guidance Office prior to their online application at https://www.ontariocolleges.ca/en

Applications for Fall Term and Winter Term admission received by February 1 will be given equal consideration. Applications received after February 1 will be processed on a first-come, first-served basis as long as places are available.

International applicants applying from out-of-country can obtain the International Student Application Form at https://algonquincollege.my.site.com/myac360/s/self-registration-page or by contacting the Registrar's Office.

For further information on the admissions process, contact:

Registrar's Office
Algonquin College
1385 Woodroffe Ave
Ottawa, ON K2G 1V8
Telephone: 613-727-0002
Toll-free: 1-800-565-4723
TTY: 613-727-7766
Fax: 613-727-7632
Contact: https://www.algonquincollege.com/ro/

Additional Information

Students complete limited clinical experience in year two, as an observer.

The primary clinical experience in year three involves rotations in various clinical settings such as wards, intensive care, pulmonary and cardiac diagnostics, pediatric/neonatal care, operating rooms and community care for a maximum of 31 weeks. This does not include break weeks. Note, the length of clinical experience is under review. Third year clinical experience is completed during a 12-month period, beginning in either May, August or September, and finishing between March and June of the following calendar year. Students should expect to do combinations of 8 to 10 and 12-hour shifts inclusive of days, evenings, nights and weekends. Student schedules are assigned in blocks; therefore, start and end times of the total clinical experience varies with block assignments. Students must comply with the code of ethics and standards of practice of both the provincial regulatory body and the national professional association, as well as the policies of the clinical sites.

All costs associated with clinical experience, such as travel, parking and relocation/ accommodations are the responsibility of the student.

During the clinical placement, if there is significant professional/safety infractions, students will be removed from the clinical site and pending results of an investigation may receive an F grade for the clinical placement course. If this results in a break in clinical placement of one term or more, the student will have to enroll and pass a mandatory Continuing Education course to update skills. The cost of the Continuing Education course will be dependent on the total hours required.

This program is offered on a full-time basis only. Individual courses are available only to those registered full-time in the program.

Course Descriptions

BIO4316 Pathophysiology 1

An understanding of applied medical terminology and the pathological processes which occur in the body are the main themes of this course. The general processes of pain, inflammation, healing and neoplastic growth are studied. Pulmonary disorders are classified as obstructive, restrictive or vascular and studied as to etiology, pathogenesis, clinical manifestations, differential diagnosis, management and pulmonary function. The link between pathophysiology and the sciences of anatomy, physiology, biochemistry and clinical practice are emphasized.

Prerequisite(s): none
Corerequisite(s):none

BIO4317 Pathophysiology 2

Pathological processes with emphasis on cardiac disease and the interrelationship between pathophysiology and compensation mechanisms are examined. Clinical manifestations, patient assessment and management of diseases common to circulatory, gastrointestinal, neurological, urinary and immune systems are reviewed. The impact of the pathophysiological process on the respiratory system is included with all of the disease conditions.

Prerequisite(s): BIO4316 and RES4802
Corerequisite(s):none

ENL1813S Communications 1

Communication remains an essential skill sought by employers, regardless of discipline or field of study. Using a practical, vocation-oriented approach, students focus on meeting the requirements of effective communication. Through a combination of lectures, exercises, and independent learning, students practise writing, speaking, reading, listening, locating and documenting information and using technology to communicate professionally. Students develop and strengthen communication skills that contribute to success in both educational and workplace environments.

Prerequisite(s): none
Corerequisite(s):none

ENL1938 Professional Communication for Respiratory Therapists

Respiratory therapists work in an environment that requires a high level of competency in both written and oral communication. Students investigate various clinical scenarios depicting conflict, misunderstanding and emotional distress. Students use critical-thinking skills and communication techniques to address and/or defuse the situations described in these case studies. Furthermore, students reflect upon the guidelines mandated by the College of Respiratory Therapists of Ontario to compose written responses to a variety of vocation specific scenarios. Finally, students examine and employ strategies that assist them in finding a job in the highly competitive area of healthcare.

Prerequisite(s): ENL1813S
Corerequisite(s):none

GED0606 General Education Elective

Students choose one course, from a group of general education electives, which meets one of the following five theme requirements: Arts in Society, Civic Life, Social and Cultural Understanding, Personal Understanding, and Science & Technology.

Prerequisite(s): none
Corerequisite(s):none

PSY1757 Psychosociology

Themes in Psychosocial Science are introduced through lectures, discussions and role-playing. Students acquire the communication skills used when interacting with patients, families and other healthcare personnel. Areas studied include therapeutic approaches to communication, stress/ anxiety, perception of self and others, crisis management, suicide, death and dying. Also discussed are healthcare issues, such as professionalism and healthcare ethics.

Prerequisite(s): none
Corerequisite(s):none

RES1104 Practice Foundations and Legalities

Administrative skill sets are applied to the workplace setting. Topics include the basic elements of staffing, budgeting, use and development of policies and procedures and quality assurance. Students are introduced to organizational structure and departmental relationships. The concepts of a Professional Association and a Regulatory College are introduced, as is the overarching legislation governing the profession of respiratory therapy.

Prerequisite(s): none
Corerequisite(s):none

RES2365 Applied Mechanical Ventilation Laboratory 1

Practical application of mechanical ventilation through the use of case studies covering a variety of pathophysiological conditions is the main theme of this course. Students learn to initiate ventilation and analyze data in order to provide optimal therapy utilizing evidence-based guidelines. Students use adjunctive equipment and techniques best suited to patients' needs. Charting is emphasized.

Prerequisite(s): RES4872
Corerequisite(s):RES4858

RES4801 Basic Respiratory Protocols Theory

Concepts of infection prevention and control, patient assessment techniques, oxygen and humidity therapy, suction therapy, thermal regulation, basic non-invasive airway management, manual ventilation and intubation assisting are discussed. Students follow therapist driven protocols and use critical thinking to evaluate indications/contraindications, therapeutic goals, technical considerations, and patient assessment and response to provide and adjust therapy.

Prerequisite(s): RES1104 and RES4810 and RES4815 and RES4817
Corerequisite(s):RES4821

RES4802 Anatomy and Physiology 2

The anatomy and physiology of the following systems are explored: cardiovascular, endocrine, digestive and urinary. The focus is placed on the effects that these systems have on the provision of patient care from a respiratory therapy perspective. Acid-base balance is also introduced in relation to respiratory therapy.

Prerequisite(s): RES4812 and RES4817
Corerequisite(s):none

RES4803 Principles of Mechanical Ventilation Theory

The operating principles of a variety of ventilators are examined. Topics include control variables, phase variables, ventilation modes, alarm systems, inspiratory/expiratory pressures and volumes. Basic principles of mechanical ventilators and the interaction of ventilators with patients are discussed. Students explore the interactions and operating principles of various aspects of ventilators, such as triggering, cycling, ventilation modes and alarms.

Prerequisite(s): RES4810 and RES4815 and RES4817
Corerequisite(s):RES4872

RES4810 Medical Gas Therapy - Theory

A basic introduction to gases, equipment and associated principles employed in respiratory therapy is provided. The material presented covers a broad spectrum of topics that include characteristics of medical gases, medical gas storage, delivery systems, medical gas equipment calibration techniques and zone valves. Workplace Hazardous Materials Information System (WHMIS) training is incorporated.

Prerequisite(s): none
Corerequisite(s):RES4815

RES4812 Anatomy and Physiology 1

The study of the human body and its functions is applied to the practice of respiratory therapy. Topics include the language of anatomy, the cell, cell transport mechanisms, tissues, membranes, skeletal, muscular, immune and lymphatic systems. In addition, there is an in-depth study of the nervous and respiratory systems and how they impact tissue oxygenation and the maintenance of cellular function. The circulatory system is introduced relative to pulmonary circulation.

Prerequisite(s): none
Corerequisite(s):none

RES4815 Medical Gas Therapy - Laboratory

Practical experience involving the use of medical gases and their delivery systems is emphasized. This includes flowmeters, regulators, cylinders, bulk gas storage, gas outlets, oxygen analyzers and troubleshooting. Safety rules and regulations pertaining to medical gas use and delivery are reviewed incorporating WHMIS. The technical aspects of humidity, aerosol and oxygen therapy delivery systems are covered. The use of Personal Protective Equipment (PPE) is utilized in simulated practice.

Prerequisite(s): none
Corerequisite(s):RES4810

RES4817 Applied Respiratory Sciences

Basic scientific and math principles are applied to the practice of respiratory therapy. Principles of biology, chemistry and physics are applied to human physiology and various technical applications. Students use this information as the basic building blocks for principles in more advanced practical workplace environments.

Prerequisite(s): none
Corerequisite(s):none

RES4821 Basic Respiratory Protocols - Laboratory

The following basic patient care skills are applied in a simulated setting: patient assessment, oxygen therapy, humidity therapy, charting, infection prevention and control, suctioning, basic non-invasive airway management, manual ventilation and assisting with endotracheal intubation.

Prerequisite(s): none
Corerequisite(s):RES4801

RES4825 Pharmacology

A practical basis for pharmacology in the practice of respiratory therapy protocols is presented. Emphasis is placed on agents used in cardiopulmonary management of patients. Agents are discussed for their indications/contraindications, mode of action, dosage and administration route, onset and duration of action, therapeutic effects and side/toxic effects. General knowledge is gained regarding antibiotics and diuretics.

Prerequisite(s): RES4812
Corerequisite(s):none

RES4830 Advanced Respiratory Protocols - Theory

Background knowledge on a variety of cardiorespiratory diagnostics and therapeutics is the focus of this course. Advanced airway management techniques, such as intubation and surgical airways are discussed. Students learn why diagnostic tests, such as ECG rhythm monitoring, bronchoscopy and chest x-rays are performed, as well as how to interpret the results.

Prerequisite(s): RES4801 and RES4802 and RES4825
Corerequisite(s):RES4831

RES4831 Advanced Respiratory Protocols - Laboratory

Advanced cardiorespiratory diagnostic and therapeutic skills are performed via use of therapist driven protocols in a simulated setting. Students analyze data from a variety of sources to plan and then perform advanced therapeutic protocols. Skills include patient assessment, advanced airway management and pulmonary rehabilitation.

Prerequisite(s): RES4821
Corerequisite(s):RES4830

RES4832 Neonatal and Paediatric Care

The principles and techniques employed in respiratory therapy when providing care for neonatal and pediatric patients are introduced. Topics include fetal lung development, fetal circulation and labour and delivery. Students compare anatomy and physiology of the neonatal and pediatric patient to that of adults. Pathophysiology of a variety of diseases relative to this patient group is discussed in terms of definition, etiology, differential diagnosis, clinical manifestations, laboratory findings and modes of treatment.

Prerequisite(s): RES4802 and RES4825 and RES4830 and RES4855 and RES4858
Corerequisite(s):none

RES4844 Pulmonary Diagnostics - Theory

The principles and techniques utilized in Pulmonary Function Diagnostics are introduced. Topics include the operation of various pulmonary function testing devices and the interpretation of test results. Routine testing and patient communication are emphasized. Stress testing and bronchial challenge testing are discussed. In addition, patient assessment is reviewed to include monitoring during a diagnostic procedure, patient interview and patient safety procedures during testing. Contraindications and reasons to abort testing procedures are discussed.

Prerequisite(s): RES4810 and RES4817
Corerequisite(s):none

RES4845 Pulmonary Diagnostics - Laboratory

The principles and techniques discussed in Pulmonary Functions Diagnostics Theory are applied. Students operate various types of pulmonary function testing equipment. Students coach patients, interpret results and troubleshoot equipment. In addition, emphasis is placed on the pre-test patient interview, as well as patient assessment and safety procedures during testing.

Prerequisite(s): RES4815 and RES4825 and RES4844

Corerequisite(s):none

RES4847 Applied Mechanical Ventilation - Laboratory 2

Comprehensive patient management skills are developed in a simulated clinical setting through a series of case studies. Emphasis is placed on ventilatory management for both the adult and neonatal patient populations.

Prerequisite(s): BIO4317 and RES2365 and RES4855
Corerequisite(s):none

RES4848 Anesthesia

Part of the role of a respiratory therapist is working in the operating room. Topics covered include anesthesia equipment, pre-operative and pre-induction procedures, types of anesthesia, monitoring an anesthetized patient, emergence from anesthesia, complications of anesthesia, as well as emergency and post-operative care. Operating room safety is discussed.

Prerequisite(s): BIO4317 and RES4825 and RES4830 and RES4855
Corerequisite(s):none

RES4849 Research, Ethics & Healthcare Issues

Issues related to society and healthcare are discussed. The roles and evaluation processes of healthcare throughout history are examined. The following aspects of community care are reviewed: government vs. private control, healthcare regulation, levels of care, funding and education. The following healthcare and societal ethical issues are discussed: euthanasia, provision or denial of care and research. The research component has its emphasis on types of research in healthcare, literature review and methodology analysis.

Prerequisite(s): none
Corerequisite(s):none

RES4851 Cardiopulmonary Management - Theory

Advanced skills associated with advanced life support protocols are introduced, such as 12 lead ECG interpretation, electrical therapy, phlebotomy and intravenous access. In addition, students learn advanced patient monitoring techniques, such as invasive pressure monitoring. Students synthesize monitoring data from a variety of sources, such as hemodynamic data to assess patient status.

Prerequisite(s): BIO4317 and RES2365 and RES4830 and RES4855
Corerequisite(s):RES4857

RES4853 Clinical Practicum 3 - Hospital Training

Clinical rotations allow students to gain practical experience in a variety of clinical settings. Students progress from direct to indirect supervision as they complete each rotation. Each rotation has specific objectives and students are expected to complete all to meet program requirements.

Prerequisite(s): RES4832 and RES4847 and RES4848 and RES4849 and RES4851 and RES4857 and RES4870 and RES4879
Corerequisite(s):none

RES4855 Principles of Blood Analysis (Theory and Lab)

Understanding the technical aspects of blood analysis is important to the Respiratory Therapy student. Laboratory data is used to perform complex calculations relating to cardiopulmonary physiology. Emphasis is placed on blood gas analysis interpretation relative to patient physiology and pathophysiology. The complex interrelationships of acid-base balance and fluid electrolyte balance are studied in the context of the patient's pathophysiology, clinical status and case management. Students are required to safely perform arterial puncture, interpret the blood result

and choose appropriate therapy, all in a simulated setting.

Prerequisite(s): RES4802
Corerequisite(s):none

RES4857 Cardiopulmonary Management Lab

Skills associated with cardiopulmonary stabilization are practised. Emphasis is placed on the following procedures: obtaining IV access, setting up invasive monitoring systems, arterial line insertion, BLS, ACLS and PALS protocols.

Prerequisite(s): none
Corerequisite(s):RES4851

RES4858 Applied Mechanical Ventilation - Theory

The physiological aspects of normal versus assisted ventilation are compared in order to determine the necessity for mechanical ventilation. Various pathophysiological conditions and their effect on mechanical ventilation are discussed. Emphasis is placed on the deleterious effects of mechanical ventilation and how to take preventive measures. Students use evidence based guidelines and case studies to integrate the application of mechanical ventilation into a therapeutic plan. Students discuss the protocols to initiate, maintain and discontinue mechanical ventilation.

Prerequisite(s): RES4802 and RES4803 and RES4825
Corerequisite(s):RES2365

RES4859 Patient Case Study

Clinical presentation and the management of cardiopulmonary diseases using a case study approach are emphasized. Students practise teaching skills by presenting a clinical case for discussion.

Prerequisite(s): none
Corerequisite(s):none

RES4863 Clinical Practicum 4 - Hospital Training

Clinical rotations allow students to gain practical experience in a variety of clinical settings. Students progress from direct to indirect supervision as they complete each rotation. Each rotation has specific objectives and students are expected to complete all to meet program requirements.

Prerequisite(s): RES4853
Corerequisite(s):none

RES4870 Patient Care Lab

Simulated clinical case studies and the implementation of therapist driven protocols are used in an intensive care, emergency or ward setting. Low and high-fidelity simulation is utilized to provide an opportunity for students to integrate the theory and competencies they have learned to this point in the program. Each scenario is followed by a debriefing session and sessions are streamed to aid students in reflective practice.

Prerequisite(s): BIO4317 and RES2365 and RES4831 and RES4855
Corerequisite(s):none

RES4872 Principles of Mechanical Ventilation Lab

The interactions and operating principles of various aspects of ventilators, such as triggering, cycling, ventilation modes and alarms are evaluated. Time is spent understanding the principles of operation and classification for each ventilator. Students perform circuit assembly, operational checks and troubleshooting on each ventilator. Students apply the basic principles of the interaction of ventilators with patients in a simulated setting.

Prerequisite(s): none
Corerequisite(s):RES4803

RES4875 Comprehensive Examination

Examinations prepare students to challenge the national credential exam for entry to practice. The exams are formatted to reflect the Canadian Board for Respiratory Care exams. These exams encourage students to complete a systematic review of the national syllabus throughout their final year of study in preparation for writing the credential exam as a graduate.

Prerequisite(s): none
Corerequisite(s):none

RES4878 Clinical Practicum 1

Understanding the role of a respiratory therapist in the hospital setting develops an understanding of the interprofessional nature of the health care team. Students are primarily observers during this basic introduction to the clinical setting.

Prerequisite(s): none
Corerequisite(s):none

RES4879 Clinical Practicum 2

Clinical experience consolidates the relationship of theory to clinical practice. Students gain experience via observation of diagnostic and therapeutic protocols in a variety of direct patient care settings.

Prerequisite(s): RES4878
Corerequisite(s):none