New Course Outline

Course Number: PHM353H1/PHM553H1

Course Title: Pharmacotherapy in Critical Care

Outline Version Code:

Course Description:

This course is designed to expose students to hospital-based clinical pharmacy practice, with a focus on the Intensive Care unit (ICU). Topics that encompass commonly encountered clinical conditions of patients in the ICU will be discussed, with an emphasis on the role of pharmacotherapy. Students will be introduced to critical care syndromes, such as shock and sepsis, and the roles of multidisciplinary team members integral to the ICU including respiratory therapists, nurses, ethicists, and intensivists (availability pending). The course will be taught using a combination of classroom lectures, case-based discussions (using two integrative and one ethical case), small-group and self-directed learning. Student participation both within the classroom, online and group work assignments are expected.

Semester: ☒ Winter

Course Type: ☒ Selective

1. Course Learning Objectives:
Upon completion of this course, students will have achieved the following level of learning objectives:
Introductory = knowledge and comprehension of concepts, definitions
Intermediate = application of concepts to simple situations
Advanced = application of concepts to more complex situations with ability to synthesize and evaluate

- The PharmD Approval Process for New Course Outlines document provides for more information on next steps and approval timelines.
- The Course Outline Submission Overview document provides more detailed guidelines on course learning objectives, topic outlines/scheduling requirements, and assessment methods.
- The AFPC Educational Outcomes for Professional Programs document provides complete information on roles and key competencies for Pharmacy Degree Programs.
**Knowledge**

**Introductory Level:**

Identify the appropriate laboratory, clinical biochemistry, pathology and histology, and microbiology related to the clinical findings and diagnosis of ARDS, shock, sepsis, traumatic brain injury, status asthmaticus, heparin induced thrombocytopenia, anticoagulation & reversal.

**Intermediate Level:**

Discuss the etiology, pathophysiology, epidemiology, clinical presentation, risk factors, and natural history for the following diseases or therapeutic conditions (ARDS, shock syndromes, sepsis, traumatic brain injury, status asthmaticus, heparin induced thrombocytopenia, anticoagulation & reversal, and supportive care issues common to critically ill patients). Compare and contrast the relevant (available, investigational, complementary, alternative and emerging) classes of agents (neuromuscular blocking agents, vasopressors and inotropes, analgesics, sedatives, antipsychotics, anti-epileptics, anticoagulants) used for the selected critical care syndromes. List commonly used resources and sources of evidence for drug therapy management in critical care syndromes.

**Advanced Level:**

**Skills**

**Introductory Level:**

Interpret relevant information from subjective and objective sources (ROS, biochemistry laboratory results (BUN, SCr, electrolytes, complete blood count (Hgb, WBC, platelets, ANC), urinalysis, microbiology results (Gram-stain, culture interpretation), medical imaging (x-ray, CT scans, MRI) to determine the urgency and priority of drug therapy problems for a given clinical situation. Assess the quality, accuracy and completeness of the care plan (own and peer’s). Select, critically appraise, and apply scientific literature in the area of critical care to the development of pharmacotherapy decisions at the patient, institution and population level; specifically application of in vitro analyses, observational cohort data, randomized control trials, meta-analysis, and clinical guidelines.

**Intermediate Level:**

Select a preferred alternative for a given critical care therapeutic scenario based on assessment of relevant therapeutic alternatives. Select and apply relevant data from; review of systems (ROS), biochemistry laboratory results (blood urea nitrogen(BUN), serum creatinine (SCr), electrolytes (Na, K, Mg, HCO3), complete blood count (Hgb, white blood cells (WBC), platelets, absolute neutrophil count (ANC)), microbiology results, medical imaging (x-ray, computed tomography (CT) scans, magnetic resonance imaging (MRI) to determine actual and potential drug therapy needs or problems for a given patient’s clinical situation. Develop a care plan with follow up monitoring for a given clinical situation. Describe how the proposed interventions of the care plan meet the stated goals of therapy.

**Advanced Level:**

**Attitudes/Values:**

**Introductory Level:**
Intermediate Level:

The student will undertake assessment and care plan development activities in a manner respecting patient autonomy and the individual (patient and/or family) therapeutic goals. The student will use inter-professional patient centered care principles to reach decisions for therapeutic alternatives. The student will demonstrate respect and collaboration in team functioning.

Advanced Level:

2. Rationale for Inclusion in the Curriculum:

Many pharmacists work in a critical care setting as part of a health care team. Their services may include but are not limited to assisting physicians in pharmacotherapy decision making, providing pharmacokinetic consultations, monitoring patients for drug efficacy and safety, providing drug information, and offering medical education to physicians, nurses, and patients. The knowledge of how to optimally manage critically ill patients is important because these patients receive complex pharmaceutical regimens, are prone to drug-drug and drug-nutrient interactions, have an increased frequency of adverse drug events, and have altered pharmacokinetic parameters.

3. Pre-requisites:

PHM112, PHM143/PHM145/PSL205, PHM144, PHM101, PHM201, PHM202, PHM203, PHM204

4. Co-requisites:

5. Course Contact Hours and Teaching Methodologies:

| Didactic (lecture)                              | Hours: 22 |
| Large group problem-based/ case-based learning | Hours: 4  |
| Laboratory or Simulation                       | Hours:    |
| Tutorial/Seminar/Workshop/Small Group          | Hours:    |
| Experiential                                   | Hours:    |
| On-line                                        | Hours:    |
| Other (please specify):                        | Hours:    |
| **Total Course Contact Hours**                 | **Hours: 26** |

6. Estimate and description of student’s weekly out-of-class preparation time excluding exam preparation:

Review on-line lecture content (captured as part of course contact hours) [2 hours total per term]
Review required/recommended readings, learning objectives & prepared materials by classmates 3–6 hrs/week, higher amounts the week of case discussions

7. Topics Covered and Lecture Specific Learning Objectives

**Week 1**
**Lecture Topic:** Introduction & Course Overview, Pharmacokinetic Changes in ICU, and Stress Ulcer Prophylaxis & Support

**Lecture Learning Objectives:**

1. Appreciate how pharmacokinetics are altered in ICU patients
2. Understand how to evaluate and modify drug dosing based on PK changes and individual drug properties
3. Assess treatment alternatives to prevent stress ulcers, venous thromboembolism, and ventilator associated pneumonia
4. Utilize a systematic approach to improve the management of ICU patients

**Week 2**
**Lecture Topic:** Sepsis and NEJM Line Placement Video

**Lecture Learning Objectives:**

1. Compare and contrast the historical and current definitions of syndromes related to sepsis.
2. Identify patient symptoms as early or late sepsis and evaluate diagnostic and laboratory tests for patient treatment and monitoring.
3. Describe the risk factors for developing sepsis and septic shock.
4. Discuss the pathophysiology of sepsis as it relates to pro- and anti-inflammatory mediators.
5. Assess complications of sepsis and discuss their impact on patient outcomes.
6. Identify the pathogens and sites of infection associated with sepsis.
7. Design desired treatment outcomes for septic patients.
8. Formulate a treatment and monitoring plan for septic patients pertaining to initial resuscitation, hemodynamic support, antimicrobial therapy, and adjunctive therapies.
9. Evaluate controversies in initial resuscitation of septic patients.
10. Justify antimicrobial selection, timing, dose, order, and duration citing studies, pharmacokinetic principles and considerations of antimicrobial therapy in critically ill patients with sepsis and septic shock.
11. Assess the role of corticosteroids in sepsis and septic shock.
12. Explain the rationale and evidence for specific glucose targets in critically ill patients.

13. Describe the role of adjunctive therapies in sepsis and septic shock.

**Week 3**

**Lecture Topic:** Mechanical Ventilation, Role of the RT, and Invasive Monitoring & Devices

**Lecture Learning Objectives:**

**Mechanical Ventilation, Role of the RT**

1. Describe the respiratory therapist’s role on the Allied Health Team.

2. Define common terminology such as tidal volume, PEEP, rate, FiO2.

3. Discuss mechanical ventilation (common and unconventional modes of mechanical ventilation).

4. Discuss lung-protective ventilation with higher PEEP.

5. Discuss and differentiate amongst non-invasive modes of ventilation.

6. Discuss other non-traditional ventilation strategies: permissive hypercapnia ventilation (PVH)

7. List three mechanisms that are responsible for the development of respiratory alkalosis and chronic respiratory acidosis.

**Invasive Monitoring & Devices**

1. Examine common ICU monitoring devices related to the cardiovascular system.

2. Know the rationale and limitations of common monitoring devices, as well as the devices that provide advanced hemodynamic information.

3. Interpret basic hemodynamic profiles and relate to common shock state.

4. Integrate physical assessment & technology.

**Week 4**

**Lecture Topic:** Shock I - Pathophysiology and Shock II Vasopressors/Inotropes

**Lecture Learning Objectives:**

1. Define shock and differentiate between the different types of shock.

2. Describe the etiology, pathogenesis, and hemodynamic profiles of critically ill patients with all types of shock.

3. Understand the principles and types of hemodynamic assessments and monitoring performed.

5. Compare and contrast the pharmacologic profiles of vasoactive agents.

6. Describe the evidence for vasoactive agents in shock states.

**Week 5**

**Lecture Topic:** Fluid, Electrolytes & Acid-Base Disturbances, and ARDS, Neuromuscular Blockers

**Lecture Learning Objectives:**

**Fluid, Electrolytes & Acid-Base Disturbances**

1. Understand the differences in total body distribution of various replacement intravenous fluids and therefore the rationale for the choice of fluids for different indications

2. Understand the physiology of potassium homeostasis for the purposes of determining drug therapy problems related to hypokalemia and hyperkalemia

3. Understand the physiology of sodium homeostasis for the purposes of determining drug therapy problems related to hyponatremia and hypernatremia

4. Understand the physiology of acid-base regulation

5. Given a set of arterial blood gases, determine the primary acid-base disorder (with a focus on drug-induced causes)

**ARDS & NMBAs**

1. Describe the etiology, definitions, epidemiology, pathogenesis, and prognosis of critically ill patients with ARDS.

2. Describe the overall treatment approach to critically ill patients with ARDS.

3. Describe non-pharmacologic strategies in the treatment of critically ill patients with ARDS.

4. Compare and contrast the pharmacologic and pharmacokinetic properties of available NMBAs.

5. Describe the rationale and current therapeutic indications for NMBA use.

6. Summarize recent literature on the use of NMBAs to prevent/treat ARDS.

7. Discuss practical considerations for the use of NMBAs.

**Week 6**

**Lecture Topic:** Case Based Teaching - Participation (2.5%)

**Lecture Learning Objectives:**

1. Be able to identify all the actual and/or potential DTPs for the case patient.
2. Select the DTP of which is of the highest urgency and explain why. For this DTP, be able to develop a therapeutic plan and justify the decision at each step of your thought process. The justification should include: undesirable signs/symptoms that are relevant to the urgent DTP, potential therapeutic alternatives, your reasoning for selection of the agent in your therapeutic plan, and a monitoring plan.

3. Be prepared to answer background questions related to each individual lecture presented to date.

**Week 7**

**Lecture Topic:** Pain, Agitation, Delirium (PAD)

**Lecture Learning Objectives:**

1. Identify causes of agitation in ICU patients
2. Describe how pain, sedation, and delirium are measured in ICU patients
3. Explain the importance of managing pain, agitation and delirium in ICU patients
4. Compare and contrast therapeutic options for management of analgesia, sedation and delirium; and justify the most appropriate choice given a patient case
5. Formulate a monitoring plan for efficacy and safety of medications used for PAD
6. Identify and resolve common drug therapy problems related to PAD

**Week 8**

**Lecture Topic:** Post-CV Surgery in the CVICU and Status Asthmaticus

**Lecture Learning Objectives:**

**Post Cardiac Surgery Care**

1. Review principles and complications of cardiopulmonary bypass
2. Understand key concepts in hemodynamic management post cardiac surgery
3. Review standard of care post-cardiac surgery

**Coronary Artery Bypass Grafting**

1. Review the indications for coronary artery bypass grafting (CABG)
2. Understand the principles of post-operative management of CABG patients
Valvular Surgery
1. Review the common types of valvular heart disease.
2. Understand the differences between various prosthetic valves.
3. Appropriately manage anticoagulation of prosthetic valves.

Status Asthmaticus
1. Define severe asthma and explore the risk factors for acute asthma exacerbations
2. Appreciate the pathophysiology involved in an acute asthma exacerbation
3. Understand assessment strategies of acute asthma exacerbations in the critical care setting
4. Outline the role of pharmacotherapeutic interventions as they relate to severity of illness
5. Recognize the role of mechanical ventilation, sedation strategies and drug delivery principles in patients with status asthmaticus

Week 9
Lecture Topic:  TPN in ICU & Compatibility Issues, and Emergency Department & Toxidromes

Lecture Learning Objectives:

TPN in ICU & Compatibility Issues
1. Describe the indications for parenteral nutrition.
2. Describe the major components of parenteral nutrition.
3. Compare and contrast peripheral and central parenteral nutrition solutions. Indicate when each is appropriate.
4. Describe complications of parenteral therapy.
5. Calculate a prescription for parenteral nutrition for a patient.
6. Discuss alterations required in a parenteral nutrition prescription for special patient populations.

Emergency Department & Toxidromes
1. Describe the general management of the poisoned patient
2. Identify role of the coma cocktail
3. Compare and contrast the signs and symptoms of the classic toxidromes
4. Describe place in therapy for decontamination procedures and strategies to enhance elimination
5. Identify key antidotes in the ED and the management of classic toxidromes

**Week 10**  
**Lecture Topic:** Traumatic Brain Injury (TBI), and HIT, Anticoagulation & Reversal

**Lecture Learning Objectives:**

**Traumatic Brain Injury**

1. Discuss the different mechanisms and pathophysiology of traumatic brain injury
2. Be able to differentiate between primary and secondary brain injury
3. Use assessment and monitoring tools to assess and help guide pharmacotherapy in patients with traumatic brain injury
4. Develop a treatment plan to optimize ICP and CPP in patients with traumatic brain injury
5. Compare and contrast pharmacological and non pharmacological agents to manage ICP
6. Develop a plan for preventing and treating common complications of traumatic brain injury
7. Develop and implement a monitoring plan and de-escalation strategy for medication therapy used to treat ICP and complications of traumatic brain injury

**Anticoagulation & Reversal**

1. Review available anticoagulant agents, including mechanism of action, indications, adverse effect profile, drug dosing, convenience, and monitoring.
2. Highlight practical considerations for anticoagulation.
3. Identify the appropriate reversal strategy for various anti-coagulants.
4. Describe the etiology, definitions, epidemiology, pathogenesis, and prognosis of critically ill patients with heparin induced thrombocytopenia (HIT).
5. Describe the overall treatment approach to critically ill patients with HIT.

**Week 11**  
**Lecture Topic:** Status Epilepticus and Acute Renal Failure & Dialysis

**Lecture Learning Objectives:**

**Status Epilepticus**

1. Define status epilepticus (SE).
2. List the causes of acute symptomatic SE.
3. List medications that lower the seizure threshold.

4. Describe the pathogenesis and pathophysiology of SE.

5. List the symptoms of SE.

6. Discuss the tests that should be ordered for a patient presenting with SE.

7. Compare and contrast the therapeutic alternatives used in SE.

8. List alternative therapies used in SE.

9. Describe propylene glycol toxicity.

10. Choose a therapeutic alternative and provide rationale for its choice in select clinical scenarios.

**Acute Renal Failure & Dialysis**

1. Describe the etiology, definitions, epidemiology, pathogenesis, and prognosis of critically ill patients with acute kidney injury (AKI).

2. Describe the overall treatment approach to critically ill patients with AKI.
   a. Highlight treatment controversies

3. Describe the rationale and current renal replacement therapy (RRT) options for critically ill patients.

4. Discuss practical considerations for drug dosing in RRT.

**Week 12**

**Lecture Topic:** Case Based Teaching - Participation (2.5%)

**Lecture Learning Objectives:**

1. Be able to identify all the actual and/or potential DTPs for the case patient.

2. Select the DTP of which is of the highest urgency and explain why. For this DTP, be able to develop a therapeutic plan and justify the decision at each step of your thought process. The justification should include: undesirable signs/symptoms that are relevant to the urgent DTP, potential therapeutic alternatives, your reasoning for selection of the agent in your therapeutic plan, and a monitoring plan.

3. Be prepared to answer background questions related to each individual lecture presented to date.

**Week 13**

**Lecture Topic:** Ethics - Case & Lecture, and Exam Review

**Lecture Learning Objectives:**

*Ethics*
1. Explain basic ethical concepts, principles and theories specific to healthcare.

2. Develop an understanding of the major ethical theories and how they can be applied to moral issues in the critical care department.

3. To understand the purpose and value of ethical decision-making in the ICU.

4. Assemble defensible ethical and normative judgments in difficult choices and cases in the ICU.

8. Assessment Methodologies Used:

<table>
<thead>
<tr>
<th>Assessment</th>
<th>Course Learning Objectives Addressed</th>
<th>Assessment Method Used</th>
<th>Percent of Course Grade</th>
<th>For Group Work: Individualized or same mark for all group members</th>
</tr>
</thead>
<tbody>
<tr>
<td>☒ Assignment - Quiz □ Presentation □ Participation □ Mid-term □ Final Exam</td>
<td>Focus on background/ foundational information</td>
<td>Multiple choice questions</td>
<td>5%</td>
<td>N/A</td>
</tr>
<tr>
<td>☒ Assignment</td>
<td>□ Presentation □ Participation □ Mid-term □ Final Exam</td>
<td>Dependent upon topics covered</td>
<td>Essay (10%) and in-class participation (5%)</td>
<td>15%</td>
</tr>
<tr>
<td>□ Assignment</td>
<td>□ Presentation □ Participation □ Mid-term □ Final Exam</td>
<td>Dependent upon topics covered</td>
<td>Multiple choice questions, short written answers</td>
<td>35%</td>
</tr>
<tr>
<td>☒ Assignment</td>
<td>□ Presentation □ Participation □ Mid-term □ Final Exam</td>
<td>Dependent upon topics covered</td>
<td>Multiple choice questions, short written answers</td>
<td>45%</td>
</tr>
</tbody>
</table>

*Expectation for pass grades for all Pharmacy courses is 60%*

9. Policy and procedure regarding late assignments/examinations/laboratories:

Students who fail to submit an assignment by the specified due date will receive a deduction of 10% for each day beyond the due date (including weekends/holidays), to a maximum of 30%. Assignments will not be accepted for grading after 3 late days.

10. Policy and procedure regarding missed assignments/examinations/laboratories:

Students who miss an examination or a quiz and who have a valid petition filed with the Registrar’s office will be eligible to complete a make-up examination or test. The format of this examination or test will be at the discretion of the course coordinator, and may include, for example, an oral examination.
Students who miss a scheduled tutorial/small group session and who have a valid petition filed with the Registrar’s office will be eligible to do one of the following as selected by the course coordinator:

a) Complete a make-up assignment

b) Increase the relative weighting of other case sessions to compensate for the missed session

c) Other (instructor to specify): Task as assigned by the course coordinator

Students who fail to submit an assignment by the specified due date, and who have a valid petition filed with the Registrar’s office will be eligible to submit the completed assignment, or an alternative assignment based on course requirements, with no academic penalty.

11. AFPC Education Outcomes addressed (check all those that apply):
- Refer to AFPC Educational Outcomes for Professional Programs for further information about the role and key competencies.

As Care Providers, pharmacy graduates:

**CP1 – Practice within the pharmacist scope of practice and expertise**

- **☐ CP1.1** Apply knowledge from the foundational sciences to make decisions relevant to the contemporary and evolving scope of pharmacist practice;

- **☐ CP1.2** Integrate AFPC Communicator, Collaborator, Leader-Manager, Health Advocate, Scholar, and Professional roles in their practice of pharmacy;

- **☐ CP1.3** Recognize and respond to the complexity, uncertainty and ambiguity inherent in pharmacy practice;

- **☐ CP1.4** Explain the benefits, risks and rationale associated with pharmacist-provided care as an important step in obtaining and documenting consent to pharmacist care;

- **☒ CP1.5** Recognize and take appropriate action when signs, symptoms and risk factors that relate to medical or health problems that fall into the scope of practice of other health professionals are encountered.

**CP2 – Provide patient-centred care**

- **☒ CP2.1** Collect, interpret, and assess relevant, necessary information about a patient’s health-related care needs;

- **☒ CP2.2** Formulate assessments of actual and potential issues and in collaboration with the patient and other health team members as appropriate, prioritize issues to be addressed in a given patient encounter;

- **☒ CP2.3** Create and document plans in collaboration with the patient and other health team members as appropriate, and make recommendations to prevent, improve or resolve issues;
CP2.4 Implement plans in collaboration with the patient and other health team members as appropriate, including:

- CP2.4.1 obtaining consent
- CP2.4.2 making a referral or consulting others
- CP2.4.3 adapting, initiating, renewing/continuing, discontinuing or administering medication as authorized
- CP2.4.4a dispensing and/or
- CP2.4.4b compounding and/or
- CP2.4.4c delegating/authorizing such tasks to others appropriately
- CP2.4.5 engaging the patient or care-giver through education, empowerment and self-management, and
- CP2.4.6 negotiating the role of pharmacy and non-pharmacy team members in continuity and transitions of care.

CP2.5 Follow-up by monitoring, evaluating progress toward achievement of the patient’s goals of therapy, adjusting plans in collaboration with the patient and health team members across the care continuum.

CP3 – Actively contribute, as an individual and as a member of a team providing care, to the continuous improvement of health care quality and patient safety

- CP3.1 Recognize and respond to harm and potential harm from health care delivery, including patient safety incidents;
- CP3.2 Adopt strategies that promote patient safety and address human and system factors;

As Communicators, pharmacy graduates:

CM1 – Communicate in a responsible and responsive manner that encourages trust and confidence

- CM1.1 Select and use oral, non-verbal and written communication strategies (tools, techniques, technologies, etc.) effectively so that the patient’s best interests are foremost;
- CM1.2 Provide timely, clear responses that are tailored to the context and audience;
- CM1.3 Express facts, evidence, opinions and positions accurately and effectively, with clarity and confidence;
- CM1.4 Listen, actively solicit and respond appropriately to ideas, opinions and feedback from others;
- CM1.5 Use language, pace, tone, and non-verbal communication that is suitable for:
  a) the intended outcomes of the communication, and
  b) the complexity, ambiguity, urgency and/or difficulty of a situation, conversation or conflict
CM1.6 Seek and synthesize relevant information from others in a manner that ensures common understanding and where applicable, clarifies and secures agreement and/or consent;

CM1.7 Compose and share oral, written, and electronic information in a manner that optimizes patient safety, dignity, confidentiality, and privacy.

**CM2 – Communicate in a manner that supports a team approach to health promotion and health care**

CM2.1 Engage in respectful, empathetic, compassionate, non-judgmental, culturally safe, tactful conversations with patients, communities, populations, and health team members;

CM2.2 Demonstrate awareness of the impact of one’s own experience level, professional culture, biases and power and hierarchy within the health team on effective working relationships, communication and conflict resolution with health team members and adapt the approach to the situation appropriately;

CM2.3 Demonstrate accuracy and appropriateness of communication as well as respect for the role of other health team members when disclosing information about harmful or potentially harmful situations;

CM2.4 In word and in action, convey the importance of teamwork in patient-centred care, patient safety, health care quality improvement and health program delivery.

As **Collaborators**, pharmacy graduates:

**CL1 – Work effectively with members of the health team including patients, pharmacy colleagues and individuals from other professions**

CL1.1 Establish and maintain positive relationships;

CL1.2 Recognize, respect and negotiate the roles and shared/overlapping responsibilities of team members;

CL1.3 Join with others in respectful, effective shared decision-making.

**CL2 – Hand over the care of the patient to other pharmacy team members and non-pharmacy team members to facilitate continuity of safe patient care**

CL2.1 Determine when and how care should be handed over to another team member;

CL2.2 Recognize, respect and honour the negotiate shared and overlapping responsibilities of patients, pharmacy team members and other health members when handovers occur;

CL2.3 Demonstrate safe handover of care, using oral, written, and electronic communication, during a patient transition to a different care provider or setting.

As **Leader-Managers**, pharmacy graduates:
LM1 – Contribute to optimizing health care delivery and pharmacy services

☐ LM1.1 Work with others to apply quality improvement strategies and techniques to optimize pharmacy care;

☐ LM1.2 Contribute to a culture of patient safety;

☐ LM1.3 Confirm the quality, safety, and integrity of products;

☐ LM1.4 Use health informatics to improve the quality of care, manage resources and optimize patient safety.

LM2 – Contribute to the stewardship of resources in health care systems

☒ LM2.1 Apply evidence and management processes to achieve cost appropriate care;

☐ LM2.2 Allocate health care resources for optimal patient care;

☐ LM2.3 Contribute to the management of finances and health human resources in pharmacy practice settings;

LM3 – Demonstrate leadership skills

☐ LM3.1 Demonstrate leadership skills to enhance pharmacy practice and health care.

LM4 – Demonstrate management skills

☐ LM4.1 Work with others to apply the principles of effective management and supervision of health human resources and medication use systems;

☐ LM4.2 Use effective strategies to manage and improve their own practice of pharmacy.

As Health Advocates, pharmacy graduates:

HA1 – Respond to an individual patient’s health needs by advocating with the patient within and beyond the patient care environment

☐ HA1.1 Work with patients to address determinants of health that affect them and their access to needed health services or resources;

☐ HA1.2 Work with patients to increase opportunities to adopt healthy behaviours;

☐ HA1.3 Incorporate disease prevention, health promotion and health surveillance into interactions with individual patients.

HA2 – Respond to needs of communities or populations they serve by advocating with them for system-level change in a socially accountable manner

☐ HA2.1 Work with community or population to identify the determinants of health that affect them;
HA2.2 Participate in health promotion and disease prevention programs.

As Scholars, pharmacy graduates:

**SC1 – Apply medication therapy expertise to optimize pharmacy care, pharmacy services and health care delivery**

- SC1.1 Use knowledge and problem-solving to arrive at recommendations and decisions that are appropriate, accurate, and practical;
- SC1.2 Use professional experience to solve routine, previously encountered problems;
- SC1.3 Use established decision-making frameworks and apply learning required to manage new situations and problems.

**SC2 – Integrate best available evidence into pharmacy practice**

- SC2.1 Generate focused questions related to needs for information, recommendations and decisions in practice;
- SC2.2 Use systematic approaches in the search for best available evidence;
- SC2.3 Critically appraise health-related research and literature;
- SC2.4 Incorporate best available evidence in the decision-making process.

**SC3 – Contribute to the creation of knowledge or practices in the field of pharmacy**

- SC3.1 Apply scientific principles of research and scholarly inquiry;
- SC3.2 Apply ethical principles that underlie research and scholarly inquiry.

**SC4 – Teach other pharmacy team members, the public and other health care professionals including students**

- SC4.1 Provide effective education to others;
- SC4.2 Employ appropriate teaching roles when teaching others;
- SC4.3 Deliver effective feedback in teaching and learning situations;
- SC4.4 Use appropriate learning assessment and evaluation strategies when working with patients, team members, students and teachers.

As Professionals, pharmacy graduates:
PR1 – Committed to apply best practices and adhere to high ethical standards in the delivery of pharmacy care

☒ PR1.1 Exhibit professional behaviour whether face-to-face, in writing, or via technology-enabled communication. Professional behaviour includes, but is not limited to:

   a) demonstrating honesty, integrity, humility, commitment, altruism, compassion, respect for diversity and patient autonomy;
   b) being accessible, diligent, timely and reliable in service to others;
   c) abiding by the principle of non-abandonment;
   d) maintaining appropriate interpersonal boundaries;
   e) maintaining professional composure, demeanor, and language even in difficult situations, and;
   f) maintaining privacy and confidentiality;

☒ PR1.2 Use ethical frameworks as one component of professional judgment;

☒ PR1.3 Recognize and respond to situations presenting ethical dilemmas, including conflicts of interest;

☐ PR1.4 Engage in activities that:

   a) protect the public, and;
   b) advance the practice of pharmacy.

PR2 – Able to recognize and respond to societal expectations of regulated health care professionals

☒ PR2.1 Take responsibility and accountability for actions and inactions;

☒ PR2.2 Demonstrate a commitment to patient safety and quality improvement;

☒ PR2.3 Honour the laws, ethical codes, and regulatory requirements (by-laws, standards, policies) that govern the self-regulated profession of pharmacy;

☐ PR2.4 Demonstrate an understanding of federal, provincial/territorial, and municipal laws, policies and standards that apply to pharmacy workplaces;

☐ PR2.5 Demonstrate an ability to maintain competence to practice through evaluating areas for improvement and planning, undertaking learning activities to address limitations in competence and/or performance and incorporating learning into practice;

☐ PR2.6 Identify and respond to unprofessional, unethical, and illegal behaviours in pharmacists, other pharmacy team members, and other health professionals.

PR3 – Committed to self-awareness in the management of personal and professional well being

☐ PR3.1 Set professional and personal goals, priorities, and manage their time to balance patient care, workflow, and practice requirements;
PR3.2 Examine, reflect upon, and manage personal attributes (knowledge, skills, beliefs, biases, motivations, emotions, etc.) that could influence self-development and professional performance;

PR3.3 Adapt their practice of pharmacy to fulfill evolving professional roles;

PR3.4 Recognize and respond to self and colleagues in need.