New Course Outline

- 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.

**Course Number:** PHM351H1/ PHM551H1

**Course Title:** Pharmacotherapy in Institutional Care

**Outline Version Code:** 201805

**Course Description:**
Institutional pharmacists are accountable for addressing drug therapy needs with patients in an inpatient environment. Students will learn to apply therapeutics that are commonly seen when caring for a hospitalized patient. Some of the topics included are: IV therapeutics (fluid and electrolytes), acute pain management, VTE prophylaxis, diabetic ketoacidosis and in-hospital management of diabetes, pre/perioperative medication management. Topics may include a brief introduction to critical care and some aspects of emergency medicine. Aspects of patient and medication safety will be integrated into the course.

**Semester:**
- □ Fall
- ☒ Winter
- □ Summer

**Course Type:**
- □ Elective
- ☒ Selective
- □ Mandatory

**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

**Knowledge**
Introductory Level:
- Discuss the non-pharmacologic and adjunctive management (e.g. ventilation support) for the selected condition.
- Discuss ethical issues during end-of-life care.
Intermediate Level:
- Identify commonly encountered clinical issues experienced by hospitalized patients and the role of the pharmacist.
- Discuss the etiology, epidemiology, pathophysiology, clinical presentation, risk factors and diagnosis for the following medical conditions or therapeutic situations: Acute pain management, VTE prophylaxis, hypertensive emergency, status epilepticus, acute coronary syndrome, shock, acid/base disorders, diabetic ketoacidosis and acute liver disease.
- Compare and contrast the relevant (available, investigational, complementary, alternative and emerging) agents of drugs used for the selected conditions based on the following criteria: indications, mechanism of action, pharmacokinetics, pharmacodynamics, adverse effects, contraindications, drug interactions, convenience (including ease of administration), cost, onset of action, formulations and stability.
- Discuss pharmacotherapeutic implications and management strategies for patients during pre/peri and post-operative care.
- Discuss the general principles of clinical toxicology, approach to the poisoned patient, general detoxification strategies and common antidotes.
- Summarize pharmacologic and non-pharmacologic approaches in palliative and end-of-life care.
- Describe the role medication safety (root cause analysis, medication reconciliation), quality assurance and knowledge translation in the hospital setting.
- Evaluate the nutritional requirements of a hospitalized patient and perform calculations necessary to develop an appropriate nutritional therapy (TPN /EN).

Advanced Level:

Skills
Introductory Level:
- Locate reliable sources of information in the area of institutional therapeutics.
- Select, critique and apply reliable sources of information in the various areas of institutional therapeutics for a given scenario.

Intermediate Level:
- Select relevant data from: review of systems, laboratory tests, medical imaging to assess drug therapy needs.
- Apply relevant findings from review of systems, laboratory tests and medical imaging to determine actual and potential drug therapy problems, urgency and priority for a given clinical situation.
- Demonstrate the ability to critique and interpret results from observational studies, randomized controlled trials and meta-analyses in relevant literature.
- Justify the selection of a preferred alternative for a given therapeutic scenario based on the assessment of relevant therapeutic alternatives and specific population (e.g., geriatrics, patients in renal failure, patients in hepatic failure).
- Develop and justify a care plan with follow up for a given clinical situation.
- Evaluate the quality, accuracy, and completeness of the care plan.
Advanced Level:

**Attitudes/Values:**

Introductory Level:

Intermediate Level:

Advanced Level:

− The student will undertake assessment and care plan development activities in a manner respecting patient autonomy and the individual therapeutic goals.
− The student will use interprofessional patient centered care principles to reach decisions for therapeutic alternatives.
− The student will demonstrate respect and collaboration in team functioning.

2. **Rationale for Inclusion in the Curriculum:**
Approximately one-fifth of pharmacists in Canada pursue careers in institutional health care facilities. The knowledge and application of therapeutics in the hospital setting is essential for those interested in pursuing a career in this setting. With over 2.8 million hospitalizations in Canada in 2008-2009, knowledge of the therapeutics of a variety of conditions treated in hospital will be important to improve safety and provide seamless care at points of transition.

3. **Pre-requisites:**
PHM112H1, PHM140H1, PHM141H1, PHM142H1, PHM144H1, PHM101H1, PHM305H1, PHM340H1
IPE requirements – Roles/knowledge of other health care professionals

4. **Co-requisites:**
n/a

5. **Course Contact Hours and Teaching Methodologies:**

<table>
<thead>
<tr>
<th>Activity</th>
<th>Group Size</th>
<th>Hours</th>
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</thead>
<tbody>
<tr>
<td>Didactic (lecture)</td>
<td></td>
<td>22</td>
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<tr>
<td>Large group problem-based/ case-based learning</td>
<td>60/80</td>
<td>4</td>
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<tr>
<td>Laboratory or Simulation</td>
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<tr>
<td>Tutorial/Seminar/Workshop/Small Group</td>
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<tr>
<td>Experiential</td>
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<tr>
<td>On-line</td>
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</table>
6. Estimate and description of student's weekly out-of-class preparation time excluding exam preparation:
Review on-line lecture materials
Review learning objectives + case preparation by classmates (3 –5 hrs/ week), higher during weeks of case discussions

7. Topics Covered and Lecture Specific Learning Objectives

**Week 1**
Lecture Topic: Course overview and Introduction to Hospital Pharmacy

Lecture Learning Objectives:

**Week 2**
Lecture Topic: Medication Safety / Quality Assurance /Knowledge Translation and VTE Prophylaxis

Lecture Learning Objectives:

**Week 3**
Lecture Topic: Injectables – IV devices, pharmacotherapeutic considerations, other injectable routes, and Palliative Care / End of Life care

Lecture Learning Objectives:

**Week 4**
Lecture Topic: Acute Pain Management and Pre/Peri/Post –Op considerations

Lecture Learning Objectives:

**Week 5**
Lecture Topic: ACS

Lecture Learning Objectives:

**Week 6**
Lecture Topic: Drug overdose / Clinical Toxicology
Lecture Learning Objectives:

**Week 7**
**Lecture Topic:** Integrated Case Discussion and Mid-term

Lecture Learning Objectives:

**Week 8**
**Lecture Topic:** Critical Care Basics and Introduction, and Shock

Lecture Learning Objectives:

**Week 9**
**Lecture Topic:** Fluids and Electrolytes, and Acid/Base Disorders

Lecture Learning Objectives:

**Week 10**
**Lecture Topic:** Nutrition, and Diabetic Ketoacidosis and in hospital management of diabetes

Lecture Learning Objectives:

**Week 11**
**Lecture Topic:** Alcoholic Liver Disease

Lecture Learning Objectives:

**Week 12**
**Lecture Topic:** Acute GI Bleeding, and Emergency Pharmacotherapy – Hypertensive Emergencies and Status Epilepticus

Lecture Learning Objectives:

**Week 13**
**Lecture Topic:** Integrated Case Discussion and Assessment

Lecture Learning Objectives:
### 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>☒ MCQ/Care Plan Summary</td>
<td>Various depending on topics covered. Values/attitudes learning objectives.</td>
<td>Multiple Choice quizzes and Chart Documentation/Care Plan summary</td>
<td>15% Total MCQ = 5% Chart Documentation = 10%</td>
<td>n/a</td>
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<tr>
<td>□ Presentation</td>
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<tr>
<td>□ Participation</td>
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<tr>
<td>□ Mid-term</td>
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<tr>
<td>□ Final Exam</td>
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<tr>
<td>□ Assignment</td>
<td>Values/attitudes learning objectives.</td>
<td>Participation in 2 group discussion activities. (Approx week 7 &amp; 13)</td>
<td>10%</td>
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<td>□ Presentation</td>
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<td>□ Final Exam</td>
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<tr>
<td>□ Assignment</td>
<td>Various depending on topics covered.</td>
<td>MCQ, short written answers.</td>
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<tr>
<td>□ Assignment</td>
<td>Various depending on topics covered.</td>
<td>MCQ, short written answers.</td>
<td>45%</td>
<td>n/a</td>
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<tr>
<td>☒ Final Exam</td>
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**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/excluding weekends/holidays), to a maximum of 50%. Assignments will not be accepted for grading after 5 late days.

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

Students who miss an examination or a test 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:

a) Attend a subsequent regularly scheduled small group session/tutorial (if space is available)

b) Complete assignment

c) One-on-one oral assessment with instructor (pending availability)
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.