New Course Outline

Course Number: PHM213H1

Course Title: Health Economics and Pharmacoeconomics

Outline Version Code:

Course Description:
This course surveys the economic aspects of the health care and pharmaceutical sector. Specific topics include the economics of the development of new drugs; economic appraisal of new drugs (“pharmaco-economics”); and economic models of the pharmacist labour market. The course will use the methods of economic analysis to investigate how markets allocate resources, when they work well and the role for government when they do not work well.

Semester: ☒ Winter

Course Type: ☒ 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:
Understand the structure of standard economic models of human behavior.

Intermediate Level:
Understand and justify the role for government when markets, and pharmaceutical markets in particular, do not work well.
Skills
Introductory Level:
Evaluate the desirability of market outcomes using the criteria of efficiency (is the most valuable mix of goods and services produced?) and equity (is the distribution of resources across individuals fair?)

Intermediate Level:
Apply the principled of economic appraisal to help assess value for money spent on drugs Communicate ideas related to course content effective in written form

Advanced Level:

Attitudes/Values:
Introductory Level:

Intermediate Level:

Advanced Level:

2. Rationale for Inclusion in the Curriculum:
The course is intended to help students meet the 2013 Association of Faculties of Pharmacy of Canada (AFPC) outcome 5.3 “Support the role of pharmacists in evolving health care systems.”
Only by understanding the structure of the pharmaceutical sector and the rationale for public policy in this sector can pharmacists effectively advocate for their patients and their profession.

3. Pre-requisites:
n/a
4. Co-requisites:
n/a

5. Course Contact Hours and Teaching Methodologies:

<table>
<thead>
<tr>
<th>Didactic (lecture)</th>
<th>Hours: 24</th>
</tr>
</thead>
<tbody>
<tr>
<td>Large group problem-based/ case-based learning (group size: 240)</td>
<td>Hours: 2</td>
</tr>
<tr>
<td>Laboratory or Simulation</td>
<td>Hours:</td>
</tr>
<tr>
<td>Tutorial/Seminar/Workshop/Small Group (group size: )</td>
<td>Hours:</td>
</tr>
<tr>
<td>Experiential</td>
<td>Hours:</td>
</tr>
<tr>
<td>On-line</td>
<td>Hours:</td>
</tr>
<tr>
<td>Other (please specify):</td>
<td>Hours:</td>
</tr>
<tr>
<td><strong>Total Course Contact Hours</strong></td>
<td><strong>Hours: 26</strong></td>
</tr>
</tbody>
</table>

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

7. Topics Covered and Lecture Specific Learning Objectives

**Week 1**
**Lecture Topic:** Principles of economics and their application

**Lecture Learning Objectives:**
This module will introduce the key concepts of economics, including scarcity, tradeoffs, goal seeking behavior, markets, equilibrium, efficiency, and equity. These concepts will be applied to topics in the health sector, including an analysis of the market for pharmacist services, markets for human organs, and externalities, market power, asymmetric information and other sources of market failure.

**Week 2**
**Lecture Topic:** Principles of economics and their application

**Lecture Learning Objectives:**
This module will introduce the key concepts of economics, including scarcity, tradeoffs, goal seeking behavior, markets, equilibrium, efficiency, and equity. These concepts will be applied to topics in the health sector, including an analysis of the market for pharmacist services, markets for human organs, and externalities, market power, asymmetric information and other sources of market failure.
Week 3
Lecture Topic: Principles of economics and their application

Lecture Learning Objectives:
The module will introduce the key concepts of economics, including scarcity, tradeoffs, goal seeking behavior, markets, equilibrium, efficiency, and equity. These concepts will be applied to topics in the health sector, including an analysis of the market for pharmacist services, markets for human organs, and externalities, market power, asymmetric information and other sources of market failure.

Week 4
Lecture Topic: Principles of economics and their application

Lecture Learning Objectives:
The module will introduce the key concepts of economics, including scarcity, tradeoffs, goal seeking behavior, markets, equilibrium, efficiency, and equity. These concepts will be applied to topics in the health sector, including an analysis of the market for pharmacist services, markets for human organs, and externalities, market power, asymmetric information and other sources of market failure.

Week 5
Lecture Topic: Economic aspects of the pharmaceutical sector

Lecture Learning Objectives:
The module will apply the key concepts of economics to issues in the pharmaceutical sector, including drug insurance, drug research and development as well medication non-compliance and other forms of risky health behaviours.

Week 6
Lecture Topic: Economic aspects of the pharmaceutical sector

Lecture Learning Objectives:
The module will apply the key concepts of economics to issues in the pharmaceutical sector, including drug insurance, drug research and development as well medication non-compliance and other forms of risky health behaviours.

Week 7
Lecture Topic: Economic aspects of the pharmaceutical sector

Lecture Learning Objectives:
This module will apply the key concepts of economics to issues in the pharmaceutical sector, including drug insurance, drug research and development as well medication non-compliance and other forms of risky health behaviours.

**Week 8**
**Lecture Topic:** Pharmacoeconomics

**Lecture Learning Objectives:**
Pharmacoeconomics (PE) is the application of the tools of economic appraisal to assess value for money spent on new drugs. There will be four sessions devoted to various aspects of PE. The first reviews the different types of economic appraisal: cost effectiveness analysis (CEA), cost utility analysis (CUA), and cost benefit analysis (CBA) and the different types of questions that they can address. It also reviews briefly the main applications of evidence generated from PE studies. These include how public drug plans use evidence from PE studies to decide whether or not they will reimburse new drugs, how the economic evidence is used in pharmaceutical industry from new drug development to product management in the market, and how the data gap identified in the PE studies directs future research.

**Week 9**
**Lecture Topic:** Pharmacoeconomics

**Lecture Learning Objectives:**
In the second and third sessions, students will explore in some depth the most common forms of PE: cost effectiveness analysis and cost utility analysis. Specific topics to be addressed include: measurement of cost and health benefits and the notion of the quality adjusted life year; role of one's perspective and the distinction between costs and transfers; discounting future benefits and costs; how to measure cost-effectiveness; and the common modeling approaches (decision making tree and Markov model) used in PE studies.

**Week 10**
**Lecture Topic:** Pharmacoeconomics

**Lecture Learning Objectives:**
In the second and third sessions, students will explore in some depth the most common forms of PE: cost effectiveness analysis and cost utility analysis. Specific topics to be addressed include: measurement of cost and health benefits and the notion of the quality adjusted life year; role of one's perspective and the distinction between costs and transfers; discounting future benefits and costs; how to measure cost-effectiveness; and the common modeling approaches (decision making tree and Markov model) used in PE studies.

**Week 11**
**Lecture Topic:** Pharmacoeconomics

**Lecture Learning Objectives:**
The fourth session will be spent critically appraising a published PE study in a large group tutorial setting. Students are expected to have reviewed the study and appraised it using the “Drummond checklist” and come prepared to discuss their findings in class.
Week 12
Lecture Topic: Economic aspects of medical cannabis use

Lecture Learning Objectives:
In this session we examine the following facets of the medical access program. We examine trends in physician and patient participation in the program, and in particular, we focus on the impact of the 2014 policy change in which physicians, not Health Canada, granted access to medical cannabis. This change at once reduced the administrative burden on patients and physicians and potentially allowed cannabis to be used by more patients. However, the Colleges imposed their own restrictions so it is unclear how access was affected. To investigate, we examine the relationship between the number and type of prescribing restrictions imposed by the provincial Colleges and medical cannabis access. Medical cannabis access is defined two ways: 1) shipments from Licensed Producers per 100,000 population, and 2) the fraction of regular cannabis users who are enrolled in the medical access program. Regular (i.e. daily or weekly) cannabis use is estimated using a recent national survey of those 15 and older. Finally, we present evidence on the rates of cannabis use by province under the MMAR and MMPR, including total prescriptions dispensed, daily dosages, and cannabis potency. We conclude the session by examining the potential role of pharmacists in the distribution of medical cannabis.

Week 13
Lecture Topic: Wrap-Up

Lecture Learning Objectives:
In this session, we will work through the answers to some potential exam questions. Students will be required to email me in advance some exam questions discussion. I will then address any questions about concepts discussed in the course and solicit student feedback on how to improve the course.

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</td>
<td></td>
<td>The first written assignment consists of a set of exercises that will help students apply the concepts of economics, including scarcity, tradeoffs, goal seeking behavior, markets, and equilibrium. For assignment #1, students are permitted to collaborate in completing the assignment, but the work you submit must be your own.</td>
<td>15%</td>
<td></td>
</tr>
</tbody>
</table>
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.

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.