PHAR 7310 - Introduction to Community Health and Professional Engagement

Course Syllabus [Fall 2019]
[**1.0**] Credits

This course adheres to the items listed in the College of Pharmacy Central Syllabus:
https://docs.google.com/a/umn.edu/document/d/1artQ5e1rbzxe8lEtWo7BE8k8snZAEgMMz_QcW8yJ-II/edit?pli=1

Meeting Times & Locations

Day	Time	Duluth Room	Twin Cities Room
Friday	**1:25 - 3:20 pm**	**LSci 163**	**Moos 1-451**

Course Website: https://canvas.umn.edu/courses/139973

Instructional Team

If you need assistance with the course, contact one of the Teaching Assistants or the Course Directors.

Technology Help, Duluth: 218-726-8847   itsshelp@d.umn.edu
Technology Help, Twin Cities: 612-301-4357   help@umn.edu

Faculty Office Hours: by appointment
Communication Expectations and Wellbeing Statements: Course faculty will communicate course-related matters through the Canvas site. Please be sure to check your Canvas mail regularly for any updates/changes in the course. Please note that if you email the course faculty in the evening or on weekends, you will not receive a response until the next business day.

Dr. Oscar Garza - COURSE DIRECTOR **Assistant Professor** **Twin Cities Contact Faculty** **owgarza@umn.edu**	**Dr. Laura Palombi - COURSE DIRECTOR** **Assistant Professor** **Duluth Campus Contact Faculty** **lpalombi@d.umn.edu**
Dr. Bruce Benson - MENTORING INSTRUCTOR **Associate Professor**, **Mentoring Program Director** **Twin Cities Campus** **benso001@umn.edu**	**Dr. Chrystian Pereira – Community Health Instructor** **Assistant Professor** **Twin Cities Campus** **pereira@umn.edu**
Dr. Raquel Rodriguez - MENTORING INSTRUCTOR **Assistant Professor** **Program Director, Professional Education** **rodre001@umn.edu**	**Dr. Meg Little – Community Health Instructor** **Assistant Professor** **Duluth Campus** **littlem@d.umn.edu**

Teaching Assistants

Community Health TC TA: Joseph Ahenkorah -- ahenk002@umn.edu

Community Health TC TA: <mark>TBD</mark>
Community Health Duluth: Jenna Puttkammer -- puttk003@d.umn.edu
Community Health Duluth: Anthony Culbertson -- culbe032@d.umn.edu
Mentoring Program TA: Viviene Heitlage -- heitl007@umn.edu
FIPCC: No TA - Contact Faculty

Course Description

Course Overview
This course builds on content learned in Becoming a Pharmacist - to provide students with fundamental knowledge, skills and attitudes required of competent, caring general pharmacist practitioners. Content is integrated with concurrent first year didactic courses and prepares students for "Pre-IPPE".

Course content:
1. **Community Health**

    This part of the course builds on knowledge and experience gained in Becoming a Pharmacist to expand student knowledge, skill and attitudes regarding community health. Students will be exposed to the expanding areas for community and public health involvement by the profession of Pharmacy.

2. **FIPCC (Foundations of InterProfessional Collaboration & Communication)**

    FIPCC is a required course section for incoming students from identified Academic Health Center health professional programs. This part of the course emphasizes face-to-face interaction and incorporates online resources to explore the concepts of interprofessional communication and collaboration.

3. **Mentoring**

    The Pharmacy Mentoring Program consists of two required components: a site experience and a classroom component. The content of the field experience (10 hours) is supervised by the assigned volunteer community pharmacists (mentors) in a variety of practice settings. The classroom component is small group discussions about the mentoring experience.

Course format:
Commensurate with college expectations for a 1 credit course, the requirements for this course represent an average of 52 hours of student effort per semester. The course format is project based and includes a variety of learning strategies including lectures, guest speakers, small group work and written assignments. In addition to in-person class time, there will be online activities and assignments via the Canvas course site.

Computer / Technology Requirements
The University of Minnesota computer requirements are listed here:
 https://www.pharmacy.umn.edu/degrees-and-programs/doctor-pharmacy/current-students/technology-resources

Goals & Objectives

Learning Objectives

1. **Community Health**
    At the end of this section of seminar students will be able to:

    - Explain population health basics as well as compare and contrast Public and Community Health

- Develop and articulate a basic understanding of social determinants of health; describe influences of social location starting with students' personal background and extending that to other communities and populations to develop empathy skills

- Evaluate the ways in which pharmacy practice can be affected by current events as well as the ways in which a pharmacist can create effective solutions to address community challenges.

2. **FIPCC**

See 1Health Database for all FIPCC-related information: https://1health.ahc.umn.edu/
Please also refer to the FIPCC Student Guidebook.

FIPCC dates for 2019 are: 9/20/2019, 10/4/2019, 10/11/2019, 10/18/2019 (online session must be completed 10/11/19-10/25/19), 10/25/2019, 11/15/2019

At the end of FIPCC students will be able to:
- **Roles and Responsibilities:** Develop an awareness for the diversity of expertise that underpins effective interprofessional collaborative teams.
- **Interprofessional Communication:** Acquire an exposure to the positive and negative experiences of interactions and communication with patients, families, communities, and other health professions and develop an appreciation for their impact.
- **Teams and Teamwork:** Establish basic concepts of effective teamwork across professions, given an understanding of the impact of communication.
- **Values/Ethics for Interprofessional Practice:** Explore the emerging concept of interprofessional ethics and professionalism as an underpinning of interprofessional collaborative practice.

3. **Mentoring**

Upon completing this *one-year sequence*, a student will be able to:

- Describe the role(s) of a pharmacist in today's health care system and understand how the changing healthcare environment may impact careers in pharmacy.

- Critically examine and evaluate the pharmacist's responsibilities related to the patient, the profession, and society as observed in different practice settings.

- Explain the concept of pharmaceutical care and its applications in various practice settings observed.

- Apply the knowledge and ideas presented in didactic course work to actual practice problems.

- Compare and contrast the present roles and responsibilities of pharmacists in different practice settings.

- Understand how the challenges of a career in pharmacy relate to life's other responsibilities of family and community.

Assessments and Grading

This course is graded S/N (Satisfactory/Not Satisfactory). As with all required S/N course work in the College, students cannot progress without successfully passing.

To complete this course successfully, **students must complete each graded assessment satisfactorily and receive a score of at least 75 on each assignment.** All work will be reviewed based on rubrics, as appropriate, which students can review when preparing their submissions. Each rubric assesses various components of the submission and rates work on a scale. Each graded assignment requires completion.

Grade Rounding Policy: While the course is graded S/N overall, individual assignment grade percentages will be rounded prior to final grade submission in order to determine satisfactory completion of the assignment. (e.g. if you have a 74.9%, this will round up to a 75%, thereby changing the grade from a Fail to a Pass.)

Course Policies

Statement on Penalties
Participation in all days is required. Situations meeting the University's criteria for an excused absence will be provided with a makeup assignment. All other conflicts will be resolved at the discretion of the Course Directors.

Participation includes completion of all preparatory work. Individual sessions may require pre-readings, an online assessment or other work to ensure the in-class time is productive for each student and for their groups. Additional work may be assigned to those who are unprepared and/or have not completed pre-class assignments. It is expected that all work will be submitted on time.   Work that is submitted more than 48 hours past the submission date will be considered incomplete, unless prior arrangements have been made with the course director. Submissions delayed without prior communication will result in penalties (e.g. extra work, reporting to academic standing) or will complete related alternative activities, at the discretion of the course director.

Attendance
Students are expected to attend every class for which they are registered. Students are expected to attend classes on the campus where they are enrolled. Students who have an excused absence will have make up work provided.   Only University recognized reasons will be accepted for excused absences from the scheduled assignments and deadlines. With excused absences, the student needs to inform the Course Director as soon as possible for arrangements to be made. Unless there are extenuating circumstances, students must contact the course director (by e-mail, phone, or in person) at least 24 hours in advance of the scheduled assignment. All other conflicts will be resolved at the discretion of the Course Directors.

Graded Assessments

The following graded assessments will count toward the final grade for this course as indicated:

#	Title Brief description	Grading System
1	Community Health: Students attend and participate in all class sessions AND complete all assignments and quizzes.	Pass/Fail
2	FIPCC: Students must earn a passing grade for FIPCC to successfully complete this course.	Pass/Fail
3	Mentoring: Completion of 10 hours with Pharmacist Mentor; mentor reflection paper, attendance at discussion group. Students must earn a passing grade for Mentoring to successfully complete this course	Pass/Fail

Failure of any one component of this course will result in failure of the entire course.

Grading Philosophy:

Other ways you can monitor your learning:

● Revisit the course objectives, and reflect honestly about what you are learning and where you might need help. Take steps to get that help.

● Talk with your peers and compare your learning with theirs. Use your area of strength to help others; and ask others to help you. Much learning happens via conversation-- either formal or informal.

● Check in with your course instructional team (instructors, teaching assistants, course coordinators) about areas of concern.

● Be honest about the effort you are putting forth in the course, and areas for improvement.

This document will be a living/breathing entity that may change throughout the semester in order to best serve the learning objectives, course expectations, and needs of those involved in this course. Any changes and updates will be communicated as necessary and/or appropriate.

**Educational research may be conducted on this course design, including any assignments and comments on course evaluations. Any research conducted will occur only after the course has concluded and final grades have been submitted. Any course materials used in the evaluation of educational strategies will first be stripped of any identifying information by a research assistant unrelated to the course. Any materials used for the evaluation of this course will not be able to be linked any individual student.

Course Outline & Schedule

Link to Central Syllabus
[University of Minnesota and College of Pharmacy Policy Reference (Central Syllabus)](#)
See detailed assignment descriptions and grading criteria on course Canvas site

Date: Friday 1:25-3:20 pm	Topics	Overview & Learning Activities	Assignments & Assessments (Due Dates)
9/13/19	**Community Health Section Overview (Garza / Palombi) 1:25-2:15 pm**	**Overview of the course** **Connect with prior learning in Becoming a Pharmacist**	**Take the IDI Prior to Monday, September 27th. If you have not or did not receive your login information for the assessment, please contact Dr. Garza by 9/20/19.**
	Mentoring Section Introduction (Benson / Rodriguez) 2:25-3:20 pm	**Importance of mentoring, expectations and logistical considerations for this course**	
9/20/19	**FIPCC Groups Meet: Session 1** **(NO Community Health CLASS)**		
9/27/19	**Pharmacist Role in Public Health and Community Health Overview (Palombi / Little)**		**Prior to Class:** • **Please review slides from Becoming a Pharmacist related to Public Health Practice and the Community Health Wheel.** • **Please read: How Pharmacists Can Improve our Nation's health, CDC:** http://www.cdc.gov/cdcgrandrounds/archives/2014/oct2014.htm **After class: Individual Assignment #1 - Community Health Reflection / Paper → Due: 10/4/19 11:55PM**
10/4/19	**FIPCC Groups Meet: Session 2** **(NO Community Health CLASS)**		
10/11/19	**FIPCC Groups Meet: Session 3 –** **(NO Community Health CLASS)**		

10/18/19	Fall Break – NO COMMUNITY HEALTH CLASS FIPCC: Session 4 - ONLINE ONLY – NO IN-PERSON FIPCC ***<u>Online session to be completed between 10/11/19 – 10/25/19</u>***		
10/25/19	FIPCC: Session 5 (NO Community Health CLASS)		
11/1/19	**Social Determinants of Health and Community Health Over the Life Course: Childhood (Garza / Pereira)**	<u>Simulation Stage 1</u>	Prior to class: Readings posted on Canvas
11/8/19	**Community Health Over the Life Course: Adolescence (Garza / Palombi)**	<u>Simulation Stage 2</u>	Prior to class: Readings posted on Canvas After Class: <u>Group Project Assignment/ Milestone 1</u>: Character Digital Storyboard/Concept Map. → <u>Due to Canvas: 11/18/19 by 1:00PM</u>
11/15/19	FIPCC Groups Meet: Session 6 (NO Community Health CLASS)		
11/22/19	**Community Health Over the Life Course: Adulthood (Garza / Palombi)**	<u>Simulation Stage 3</u>	Prior to class: Reading posted on Canvas After class: Individual Assignment #2 (Peer Mentoring Feedback) Character Concept Map Response via Canvas: →<u>Due 12/2/19 11:55PM</u>
11/29/19	Thanksgiving Break – NO CLASS (MENTORING PAPER DUE 11/22/19)		
12/6/19	**Community Health Over the Life Course: Old Age (Garza / Palombi)**	<u>Simulation Stage 4</u>	Prior to class: Reading posted on Canvas
12/13/19	**Community Health - Culture, Implicit Bias, and Social Determinants of Health and Course-Wrap Up (Garza / Guest) 1:25-2:15 pm Mentoring Wrap-Up 2:30-3:20 pm**		In Class: Navigating Culture and IDI Debrief. Group Assignment #2: Final Digital Story and Group Peer Evaluations→ <u>Due 12/18/19 11:55PM</u> Individual Assignment #3: Final Paper with Culture and IDI Reflection → <u>Due 12/21/19 11:55PM</u>
12/16/19 - 12/20/19 Finals Week			

Assignments

Community Health Assignments

Class Attendance Requirement	**In order to achieve a passing grade for the Community Health component of this course, students must attend all class sessions. Students who miss a class session for any reason will be assigned a make-up assignment with a significant time investment at the discretion of the course directors.**
Community Health Assignments	**In order to achieve a passing grade for the Community Health component of this course, students must complete each of the following three assignments. Students will be provided a grading rubric prior to assignment submission and will be provided feedback on each assignment within 2 weeks of submission.**
Individual Assignment #1	• **Individual Assignment**: Community Health Reflection / Paper
Group Assignment #1	• **Group Assignment**: Digital Storyboard / Concept Map (Instructions provided via Canvas)
Individual Assignment #2	• **Individual Assignment**: Peer Mentoring / Concept Map Feedback Responses via Canvas (Responses will be coordinated and assigned by course instructional team and posted via Canvas)
Group Assignment #2	• **Part 1**: Final Digital Story • **Part 2**: Group/Peer Evaluations (***Each*** group member must complete and turn in the Peer Evaluation forms, in order for the entire Group to receive full completion of assignment)
Individual Assignment #3	**Final Paper: [*Full Prompt Provided on Canvas]* • <u>Part 1</u>: Culture and IDI Reflection [IDI must have been taken by 9/27/19] • <u>Part 2</u>: Key Takeaways / Lessons Learned from Social Determinants of Health Simulation…**

Mentoring

Overview	This experience is designed to be a full academic year (2 semesters) learning experience, and the learning objectives stated below can be achieved only after completing the entire two-semester sequence. Toward that end, during each semester of this sequence every student will be required to apply (and answer) the questions outlined in the Course Requirements section to each of the two different practice settings.
Websites to Know	*The State of Minnesota's Health Professionals Services Program (HPSP)* *http://www.hpsp.state.mn.us/* *Minnesota Pharmacists Recovery Network (MNPRN)* *http://www.mnprn.org/* *USA Pharmacist Recovery Network (USA PRN)* *http://usaprn.org/*
Field Requirement	Minimum of 10 hours per semester Year 1. Students will be encouraged to explore all aspects of their mentor's area of practice. This may include observation of the pharmacist's work, attending meetings with the mentor, readings that the mentor feels are appropriate, and a variety of other non-internship functions and areas of special interest. The experience should be positive and enjoyable for both student and mentor, so that ideas and concerns can be shared openly. The time requirement for this component of the program is an average of about one hour per week. Scheduling should be coordinated by each individual student and mentor and is somewhat flexible as long as the 10-hour per semester minimum is completed. All hours for a semester should be completed by the end of each semester. Mentoring may take place prior to the beginning of a semester (in the spring). Mentors will certify that this course requirement has been met for each student.
Class Attendance Requirement	Students will structure their own learning experience with a set of questions that each student will be able to answer based upon field experiences. The format of those questions will be provided to you on Canvas. Students will also be encouraged to develop their own individual questions based upon personal interests and goals. A written summary of the mentoring experience will be submitted by each student at the end of each semester and must include the written answers to questions 1 through 5 on the assignment on Canvas. During small group class at the end of the semester, students will make short oral presentations about their mentoring experiences and present their answers to the assigned questions. This will allow each student to compare and contrast different types of practices.
Grading Policy	Grades of S/N (pass/fail) will be awarded for this portion of the course. In order to successfully complete Mentoring students must: - Fulfill the 10 hour mentoring requirement each semester (10 hours per semester first year). - Attend all class meetings scheduled in each semester. Attendance will be taken. Students who miss a class meeting will be required to meet with the course instructor in order to fulfill course requirements. - Submit a written summary of each semester's experience to include answers to assigned questions (see and submit through Canvas). Written summary must be 3-5 pages typewritten/double spaced. - Each student will be required to make one (1) informal oral presentation of a mentoring experience during the classroom periods. Student presentations should be 5-7 minutes in length. One presentation is required during the year (2 semesters)
Make-up Policy	Students must complete all of their required hours by the end of the semester. Missed hours for students with legitimate excuses (e.g. illness or family emergency) will be made up according to a schedule worked out by his or her mentor. Missed class meetings for

	students with legitimate excuses must be approved by the Mentoring TA and faculty in advance. A student must complete *2 sequential semesters* of this mentoring experience and receive a passing grade for each semester. A double mentoring experience (two sites) in a single semester will not be permitted.

Mentoring Paper Instructions

Shadow a mentor pharmacist for 10 hours on-site. Document a reflection of your experience, including mentor's philosophy of mentoring. Complete a final paper summarizing mentoring experience.

Overview

During your first year you will be paired with a mentor. You are encouraged to explore all aspects of your mentor's area of practice. This may include observation of the pharmacist's work, attending meetings with the mentor, readings that the mentor feels are appropriate, and a variety of other non-internship functions and areas of special interest.

Assignment

Please summarize this semester's mentoring experience by answering the following questions (From your syllabus.)

1. What are the professional responsibilities of a pharmacist in this setting? (To the patient, other health care professionals, society?)
   - a.
   - b.
   - c.
2. With whom must the pharmacist establish relationships in order to fulfill his or her responsibilities? (Describe three important relationships in detail.)
   - a.
   - b.
   - c.
3. What are the rewards experienced by the pharmacist in this practice setting? (Include personal, professional, and monetary rewards.)
   - a.
   - b.
   - c.
4. What aspects of this practice setting are consistent with your reasons for becoming a pharmacist? What aspects of this practice setting are inconsistent with your reasons for becoming a pharmacist?

5. How does the pharmacist in this setting contribute to community health or public health? In what ways could they expand this component of their practice?

Save your paper as <Insert Your Name>Mentoring.docx
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If your paper does not have your name in the title we will not be able to identify it as your work and will not be able to grade it.

Appendix A: College of Pharmacy Competency Domain Statements

Domain 1: Patient-Centered Care

As a provider of care, the pharmacist is ethical, benevolent, empathetic, competent, open-minded, prudent in making judgments, and devoted to serving others. The pharmacist applies knowledge, experience, and skills to protect the welfare of humanity. The pharmacist willingly and respectfully cares for patients to assure optimal therapeutic outcomes.

1.0 Assume responsibility for a patient's therapeutic outcome and be accountable for that commitment.

1.1 Collect and interpret relevant data to identify problems and make recommendations to individualize care.

1.2 Design an individualized, evidence-based therapeutic plan.

1.3 Implement a therapeutic plan in collaboration with other health professions.

1.4 Educate patient and/or caregiver regarding a therapeutic plan or other health/drug information.

1.5 Adjust therapeutic plans via proactive monitoring to ensure safe, effective, manageable, and affordable care.

1.6 Prepare and dispense prescribed medication(s) accurately and in the best interest of the patient.

1.7 Document care of a patient in a comprehensive, timely, and ethical manner.

1.8 Evaluate the quality of care as it relates to clinical, humanistic, and economic outcomes.

Domain 2: Population Health & Underserved Communities

As a promoter of public health, the pharmacist uses his/her expertise to partner with others to improve care for underserved communities or at risk populations. The pharmacist recognizes the differences between populations of individuals and seeks to alleviate disparities that exist.

2.0 Collect relevant data to identify problems and individualize care for at-risk populations.

2.1 Interpret epidemiologic, economic, and health data to identify risk reduction, disease prevention, or wellness strategies.

2.2 Design therapeutic plans individualized to culture, literacy level, and/or social determinants of health.

2.3 Implement a therapeutic plan for vulnerable communities or populations in collaboration with other health professions.

2.4 Educate patients and/or care providers regarding wellness, risk reduction, and/or disease prevention.

2.5 Adjust therapeutic plans based on cultural appropriateness, health literacy, and/or social determinants of health.

2.6 Document the care of patient populations in a comprehensive, timely and ethical manner.

2.7 Evaluate the quality of care provided to populations as it relates to clinical, humanistic, and economic outcomes.

2.8 Design and garner support for evidence-based public health-related initiatives.

Domain 3: Health Systems Management

As a manager of health system resources, the pharmacist examines critical issues, assumptions, and limitations to produce and validate ways to deliver medications safely, effectively, and in a timely manner. The pharmacist demonstrates imagination, inventiveness, and courage by undertaking new endeavors to produce improved quality, productivity, efficiency, effectiveness, and innovation.

3.0 Evince an adept knowledge of resource utilization, policy formulation, and models of care delivery within health care system.

3.1 Administer safe medication distribution and control systems for various practice settings.

3.2 Document and report new, unusual, or severe medication events.

3.3 Recommend a medication therapy management model within settings with limited or no pharmaceutical care services.

3.4 Demonstrate effective interpersonal relationships through negotiation, conflict management, and communication.

3.5 Use health informatics and information technologies to foster delivery of care within and across health systems.

3.6 Minimize drug overuse, under-use, and misuse in health care systems.

3.7 Collect and interpret data to characterize and identify health system problems and improvement opportunities.

3.8 Demonstrate an understanding of regulatory, accrediting, and quality organizations that guide pharmacy practice.

3.9 Apply principles of outcomes research to the evaluation of pharmacy services within or across health systems.

Domain 4: Leadership & Engagement

In leading, the pharmacist demonstrates integrity and is habitually resolute, focused on excellence, knowledgeable about the "big picture," strategic, focused, persuasive, open to feedback, decisive, visionary, empowering, and service-oriented.

4.0 Create a compelling vision for the role of pharmacy in producing healthier communities

4.1 Articulate the roles and responsibilities of a leader.

4.2 Articulate and demonstrate the roles and responsibilities of an effective team member.

4.3 Develop awareness of self as a leader.

4.4 Demonstrate the ability to lead positive change.

4.5 Serve as an advocate for patient welfare and the profession of pharmacy.

4.6 Address critical societal issues through collaborative partnerships within public and/or private sectors.

Domain 5: Professional & Interprofessional Development

When collaborating, the pharmacist demonstrates critical thinking, excellent communication and leadership, and is goal-oriented, cooperative, assertive, respectful, enthusiastic, and reliable. The pharmacist consistently and consciously demonstrates high ethical and moral standards by considering how and when to act, acting in a manner that is clearly consistent with those standards and exercising accountability for those actions.

5.0 Demonstrate self-awareness of personal and professional strengths, values, and opportunities for improvement.

5.1 Display professionalism through daily actions and interactions.

5.2 Demonstrate productive engagement in the profession that is well aligned with personal interests and abilities.

5.3 Evaluate own practice in relation to professional practice standards and relevant statues and regulations.

5.4 Contribute to the professional development of peers, colleagues, and others.

5.5 Create personal strategies to pursue life-long professional learning.

5.6 Demonstrate knowledge of and appreciation for the contribution and roles of other healthcare professionals.

5.7 Establish and maintain effective working partnerships with other professionals.

5.8 Perform effectively as a team member through negotiated shared goals and delegation of responsibilities.

5.9 Demonstrate effective intra- and interprofessional team skills in a variety of clinical settings.

Domain 6: Knowledge, Scientific Inquiry, and Scholarly Thinking

In making use of scientific knowledge, the pharmacist explains with thoroughly researched, evidence based accounts of facts and data, and provides interpretations based on analysis of the importance, meaning, and significance. The pharmacist applies knowledge fluently, flexibly, and efficiently in diverse contexts.

6.0 Think critically, solve complex problems, and make informed, rational, and responsible decisions.

6.1 Retrieve, analyze, and interpret professional, lay, and scientific literature to make informed, evidence-based decisions.

6.2 Apply research strategies to generate clinical, economic, humanistic, or translational knowledge applicable to patient care.

6.3 Demonstrate knowledge of content essential to providing patient care as a generalist practitioner including:

6.3.1 Molecular, biochemical, and cellular mechanisms important to disease prevention and treatment

6.3.2 Human structure, function, development, pathophysiology, and psychosocial development critical to patient care

6.3.3 Behavioral, cognitive, psychological, social and cultural factors associated with the origin and progress of disease

6.4 Comprehend, apply, and evaluate disciplinary concepts essential to providing patient care as a generalist practitioner including:

6.4.1 Invention, discovery, design, identification, and preparation of biologically active compounds including their metabolism, structure-activity relationships, and mode of action at the molecular level

6.4.2 Modes of action of drugs and medicinal substances on tissues and the body

6.4.3 Quantification and interpretation of the time course of a drug and its metabolites in the body following administration by any route

6.4.4 Relationship between drug concentrations at the site of action to the magnitude of the effects produced

6.4.5 Principles of physical, chemical, and biological properties of drug molecules and excipients with the physiology and biology of the patient in the design of formulations and drug delivery systems to achieve maximum therapeutic benefit

6.4.6 Patient-specific and population-based data to recommend the safe, appropriate, and economical use of drugs in patient care.