This course adheres to the items listed in the College of Pharmacy Central Syllabus: https://docs.google.com/a/umn.edu/document/d/1artQ5e1rbxe8lEWo7BE8k8snZAEgMMz_QcW8yJ-II/edit?pli=1

Course Web Site: https://canvas.umn.edu/courses/102897
Term: Spring 2019

Meeting Times & Locations

<table>
<thead>
<tr>
<th>Day</th>
<th>Time</th>
<th>Duluth Room</th>
<th>Twin Cities Room</th>
</tr>
</thead>
<tbody>
<tr>
<td>Thursday</td>
<td>3:35 – 5:30 pm</td>
<td>LSci 165</td>
<td>WDH 7-135 (1-451 Moos)</td>
</tr>
</tbody>
</table>

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

Target Audience

This course is intended for PD-II and III students interested in learning about hospital health system pharmacy practice, including operations, management and system issues. PD-I students may take this course with Course Directors’ approval.

Course Directors

Faculty Office Hours: by appointment

<table>
<thead>
<tr>
<th>Name</th>
<th>Office Location</th>
<th>Phone</th>
<th>Email</th>
<th>Preferred contact</th>
</tr>
</thead>
<tbody>
<tr>
<td>Christene Jolowsky, MS, RPh, FASHP</td>
<td>5-110D WDH</td>
<td>612-625-0077</td>
<td><a href="mailto:jlow001@umn.edu">jlow001@umn.edu</a></td>
<td>Email</td>
</tr>
<tr>
<td>John Pastor III, PharmD, FASHP</td>
<td>C-265A Mayo</td>
<td>612-672-5153</td>
<td><a href="mailto:jpastor1@fairview.org">jpastor1@fairview.org</a></td>
<td>Email</td>
</tr>
</tbody>
</table>

Teaching Assistants:
(Duluth):
Hoa Bui buixx093@umn.edu

(Twin Cities):
Bryan Haugen, PharmD hauge483@umn.edu
Emma Huepfel, PharmD huepf009@umn.edu

Overview of the course

Course content:

Students will gain a broader understanding of health-system pharmacy practice, with a focus on acute and ambulatory care, standards and regulations. Students will be given a list of assigned readings to be read prior to
each class session. Lecture materials will be delivered via live lectures. A tour of the University of Minnesota Medical Center (for TC students) and St. Luke’s Hospital (for Duluth students) will be scheduled early in the semester, as a requirement outside of the assigned class time. There will be various types of assignments and assessments throughout the semester.

Course format:

This course is delivered by the course directors and guest lecturers, all of who have experience in the practice of health system pharmacy. There is required reading prior to most lectures, and lectures may be presented online. Assignments are based on the course content, requiring students to apply course materials and readings to case examples. The course includes small group discussion around current topics for health-system pharmacists, two group presentations and one required tour of a hospital pharmacy, which will be scheduled after the course begins. Note: as there are many external speakers, the schedule and the assignments may change. Any changes will be posted to Canvas.

Prerequisites

Students must have satisfactorily completed all work appropriate for a P1 student.

Detailed Course Schedule

General schedule is below. Schedule is subject to change, as many presenters are guest lecturers. Not all in-class quizzes are noted in the schedule.

<table>
<thead>
<tr>
<th>Class</th>
<th>Agenda/Topics</th>
<th>Competency/ Learning Objectives</th>
<th>Activities / Assignments / Assessments</th>
</tr>
</thead>
<tbody>
<tr>
<td>Week 1 January 24, 2019</td>
<td>Class Overview, Introduction to Health System and Hospital Pharmacy Practice Medication Use Process Expectations of Health-System Executives for Pharmacy</td>
<td>1, 2, 3, 4, 5, 6, 7</td>
<td>Why I Took This Course Reflection – due Jan 31st</td>
</tr>
<tr>
<td>Jolowsky/Pastor</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Pastor/ Gina Lemke</td>
<td>Hospital Pharmacy Department Tours scheduled at St. Luke’s Hospital (Duluth) and Fairview (Mpls)</td>
<td>2, 3, 5, 7</td>
<td>Tours scheduled outside of class time -TBD</td>
</tr>
<tr>
<td>Week 2 January 31, 2019</td>
<td>PPMI/Clinical Services Models (PAI)</td>
<td>1, 2, 3, 4, 5, 7</td>
<td>Small group break-out discussions and report-outs</td>
</tr>
<tr>
<td>Carlson</td>
<td></td>
<td></td>
<td>Future of Pharmacy Practice Reflection - due Feb 7th</td>
</tr>
<tr>
<td>Week 3 February 7 2019</td>
<td>Purchasing/Procurement/Contracting Drug Shortage Management</td>
<td>2, 5</td>
<td>In class participation Assignment related to presentations and readings</td>
</tr>
<tr>
<td>Week 4 February 14, 2019</td>
<td>Drug Use Management: P&amp;T, Formulary, DUE, Cost Control</td>
<td>2,3,5</td>
<td>20” discussion on readings Group P&amp;T/Shortages</td>
</tr>
<tr>
<td>Kristi Gullickson, ANW Residents</td>
<td>Strategies</td>
<td>Project - due Feb 28th</td>
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</tr>
<tr>
<td><strong>Week 5</strong>&lt;br&gt;February 21, 2019</td>
<td>Pharmacy Technology and Medication Distribution Models&lt;br&gt;IV admixture systems, Chemotherapy and Parenteral Nutrition, Unit-Dose, Pre-packing Systems</td>
<td>2,3</td>
<td>USP 800 Reflection - due Feb 28th</td>
</tr>
<tr>
<td>Haight – in Duluth&lt;br&gt;Sommers – in TC</td>
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<tr>
<td><strong>Week 6</strong>&lt;br&gt;February 28, 2019</td>
<td>Drug Shortages and P&amp;T Scenarios/Presentations</td>
<td>2, 3, 7</td>
<td>Small group presentations; reports due at the end of class, reflection assignment</td>
</tr>
<tr>
<td>Pastor/Jolowsky</td>
<td></td>
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</tr>
<tr>
<td><strong>Week 7</strong>&lt;br&gt;March 7, 2019</td>
<td>Accreditation/Compliance – TJC, DNV, CMS, ASHP, etc.</td>
<td>2, 3, 5, 7</td>
<td>Assignment related to presentations and readings</td>
</tr>
<tr>
<td>Pastor/Jolowsky</td>
<td></td>
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<tr>
<td><strong>Week 8</strong>&lt;br&gt;March 14, 2019</td>
<td>Ambulatory Pharmacy (Specialty, 340B, Infusion, Compounding, 503A and B)</td>
<td>2, 3, 5, 6, 7</td>
<td>Assignment related to presentations and readings</td>
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<tr>
<td>Skiermont</td>
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<tr>
<td><strong>Week 9</strong>&lt;br&gt;March 21, 2019</td>
<td>Spring Break – No Class</td>
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<tr>
<td><strong>Week 10</strong>&lt;br&gt;March 21, 2019</td>
<td>Compliance: Regulatory Compliance and Billing&lt;br&gt;Drug Diversion/Mock Code N</td>
<td>2, 3, 5, 7</td>
<td>Assignment related to presentations and readings</td>
</tr>
<tr>
<td>Kelli Anderson/ Jolowsky/Pastor</td>
<td></td>
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<tr>
<td><strong>Week 11</strong>&lt;br&gt;March 28, 2019</td>
<td>Performance Improvement/QA</td>
<td>2, 3, 5</td>
<td>Scenario assignment related to presentations and readings</td>
</tr>
<tr>
<td>Phelps, Gravert</td>
<td></td>
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<tr>
<td><strong>Week 12</strong>&lt;br&gt;April 4, 2019</td>
<td>Transitions of Care&lt;br&gt;Investigational Drug Pharmacy Services</td>
<td>2,3,5</td>
<td>20&quot; discussion&lt;br&gt;Assignment related to presentations and readings</td>
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<tr>
<td>Brummel Luke</td>
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<tr>
<td><strong>Week 13</strong>&lt;br&gt;April 11, 2019</td>
<td>MSHP Annual Conference – no class</td>
<td>1, 6, 7</td>
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<tr>
<td><strong>Week 14</strong>&lt;br&gt;April 18, 2019</td>
<td>Data/Financial Management</td>
<td>7, 8</td>
<td>20&quot; discussion</td>
</tr>
</tbody>
</table>
### Weekly Readings

**Week 1 – Class Overview, Introduction to Health System and Hospital Pharmacy Practice**
- Chapter 4, Medication Management: *Introduction to Acute and Ambulatory Care Pharmacy Practice, 2nd Ed.* Holdford, DA. American Society of Health-System Pharmacists. 2017
- The Medication-Use Process and the Importance of Mastering Fundamentals [https://www.ncbi.nlm.nih.gov/pmc/articles/PMC3278147/](https://www.ncbi.nlm.nih.gov/pmc/articles/PMC3278147/)

**Week 2 – PPMI/Clinical Services Models (PAI)**
- Charles E. Myers. Opportunities and challenges related to pharmacy technicians in supporting optimal pharmacy practice models in health systems *Am J Health Syst Pharm* June 15, 2011 68:1128-1136
• Rita Shane. Critical requirements for health-system pharmacy practice models that achieve optimal use of medicines Am J Health Syst Pharm June 15, 2011 68:1101-1111

Week 3 – Purchasing/Procurement/Contracting and Drug Shortage Management
• Handbook – Chapter 12: Purchasing and Inventory Control; Milton J
• Accuracy of annual prescription drug expenditure forecasts in AJHP. Am J Health Syst Pharm October 1, 2015 72:1642-1648

Week 4 – Drug Use Management: P&T, Formulary, DUE, Cost Control
• ASHP Statement on the P&T Committee and Formulary System (2008)
• ASHP Guidelines – P&T Committee and Formulary System (2008)
• ASHP Guidelines – MUE (1996)
• ASHP Guidelines on Medication Cost management Strategies for Hospitals and Health systems (2008)

Week 5 – Pharmacy Technology and Medication Distribution Models/ IV admixture systems, chemotherapy and Parenteral Nutrition, Unit-Dose, Pre-packaging Systems
• Handbook - Chapter 7 – Medication Distribution Systems: Eckel SF and Eckel FM
• Handbook - Chapter 11 – Automation in Practice: Ludwig B and Temple J
• Handbook - Chapter 14: Sterile Product Preparation and Admixture Programs. Schneider PJ and Buchanan EC
• Handbook -Chapter 15: Parenteral Therapy. Buchanan EC.
• Mark H. Siska and Dennis A. Tribble. Opportunities and challenges related to technology in supporting optimal pharmacy practice models in hospitals and health systems Am J Health Syst Pharm June 15, 2011 68:1116-1126
• Safe Practices for Parenteral Nutrition Formulations: http://findarticles.com/p/articles/mi_qa3762/is_199803/ai_n8795686
Week 6 – Drug Shortage/P&T presentations

Week 7 – Accreditation/Compliance – TJC, DNV, CMS, ASHP, etc.
- Chapter 6: Medication Safety. Holdford DA.
- Meaningful Use Matrix http://www.healthit.gov/providers-professionals/meaningful-use-definition-objectives
- Reference Document: ASHP best practices: position statements and guidance documents

Week 8 – Ambulatory Pharmacy (Specialty, 340B, Infusion, Compounding, 503A, 503B)
- TBD

Week 9 – Spring Break

Week 10 – Compliance: Regulatory Compliance/Billing and Drug Diversion/Mock Code N
- Handbook – Chapter 8: Controlled Substances Management. Dydek GJ, Tomich DJ.

Week 11– Performance Improvement/QA
- Handbook -Chapter 5: Clinical Pharmacy. Murphy J.
- Principles of a Sound Drug Formulary System – ASHP Endorsed Document

Week 12 – Transitions of Care/ Investigational Drug Pharmacy Services
- Dennis K. Helling and Samuel G. Johnson. Defining and advancing ambulatory care pharmacy practice: It is time to lengthen our stride Am J Health Syst Pharm August 15, 2014 71:1348-1356;
- Hot Topics in Health Care, The need for a more effective approach to continuing patient care https://www.jointcommission.org/assets/1/18/Hot_Topics_Transitions_of_Care.pdf
- Hot Topics in Health Care, Issue #2 https://www.jointcommission.org/assets/1/6/TOC_Hot_Topics.pdf

Week 13 – MSHP Annual Conference

Week 14 – Data/Financial Management

Week 15 – Human Resources, Staff Development and Pharmacy Roles
• Handbook - Chapter 16: Leadership and Management. Holdford DA.
• Handbook - Chapter 17: Recruiting, Selecting, and Managing Pharmacy Personnel. Holdford DA.

Week 16 – Skills, Knowledge and Requirements for Practice, Post Graduate Education
• Who Will Sit in My Chair? Charles Edward Daniels American Journal of Health-System Pharmacy April 2015, 72 (8) 657-662; DOI: https://doi.org/10.2146/ajhp140842
• Chapter 18: Training for Careers in Hospitals and Health Systems. Reinders TP and Holdford DA.
• Chapter 19: Residency Training. Burkiewicz JS and Sincak CA
• Ashby DM. Permission Granted. Am J Health-Syst Pharm. 2011; 68:1497-504

Course Goals & Objectives

The goal of this course is for each student to appreciate the clinical and operational aspects of health-system pharmacy management. This course uses face-to-face ITV lectures and small group learning strategies.

Course Goals

1. State the importance of pharmacy leadership and professional associations, and identify the impact of involvement on personal practice.

2. List the steps of the medication use process and explain the role of pharmacy and other disciplines in the process, including a focus on transitions steps.

3. Integrate medication safety, compliance, and performance improvement into the medication use process.

4. Describe opportunities for post-doctorate pharmacy education and the impact on leadership in health system pharmacy practice.

5. State factors to take into consideration when making decisions about distributive and purchasing functions.

6. Apply the basic principles of medication management to clinical scenarios.

7. Describe basic operational principles for health system pharmacy department management, to include personnel, financial and process management.

Attendance Policy

As this class is not recorded, students are expected to attend every class session. Students are expected to attend classes on the campus where they are enrolled, unless the TA or course directors are notified and the site change is approved. Hospital pharmacy department tours will be scheduled outside of class, at a time coordinated with the students and the sites. Students must attend the tour.

Class attendance is mandatory, as the majority of this course is delivered by guest lecturers. If a student feels too ill or is unable for any reason to attend class, the student must contact the Teaching Assistant by e-mail or
phone at least **30 minutes** prior to class, with the reason for missing class. Students will not receive attendance points if absent from class for any reason.

**Statement on Penalties and Absences**

If a student is absent without notifying the Teaching Assistant, a score of zero will be recorded for attendance and any associated assignments/assessments for that week. If a student misses more than two classes (regardless of approval) they need to meet with one of the course directors to discuss the situation and potential remediation.

**Absence from class without acceptable cause**

If a student is absent without notifying the Teaching Assistant, a score of zero will be recorded for attendance and the associated assignment/quiz for that week. If a student misses more than two classes, they need to meet with one of the course directors to discuss the situation. If a student misses more than two classes, their grade will drop a letter.

**Make-up Policy for Class Periods**

A make-up assignment will be given only under the following circumstances: Students who have appropriately contacted the TA, as noted above, and have not missed more than two days total, will be given an alternate assignment to cover the class materials.

**Course Materials**

The following materials are required in this course:


Readings as assigned in the detailed course outline

**Assessments and Grading**

The grade is a combination of attendance, class preparation and participation in discussions, performance on quizzes, and the quality, completeness and timely submission of assignments/team activities, use of appropriate references, and the final reflection paper. Points will be deducted for late assignments, incomplete work and quality (including grammar). Final grades are based on a percent of total possible points; points will be rounded to the nearest tenth of a percent.

There are readings for most class times. Students are expected to come to class having read the materials assigned for that class, and be prepared for discussions.

Most lectures will have a quiz or an assignment related to the lecture material. Attendance will be taken, and students need to attend class in order to receive full credit for the quiz/assignment and complete the assignment. All assignments are due at least one hour prior to the following class time, or as stated with the assignment. Late assignments are not accepted, and students will receive a grade of zero for any late assignments. Students will be expected to use the Canvas course website to access course information. The instructor will use an email list serve to communicate with students via their university email accounts. Students are expected to check their email for class announcements and information.

**Course Letter Grades**

<table>
<thead>
<tr>
<th>Grade</th>
<th>A</th>
<th>A-</th>
<th>B+</th>
<th>B</th>
<th>B-</th>
<th>C+</th>
<th>C</th>
<th>C-</th>
<th>D</th>
<th>F</th>
</tr>
</thead>
<tbody>
<tr>
<td>%</td>
<td>100-93.0</td>
<td>92.9-90</td>
<td>89.9-87</td>
<td>86.9-83</td>
<td>82.9-80</td>
<td>79.9-77</td>
<td>76.9-73</td>
<td>72.9-70</td>
<td>69.9-60</td>
<td>59-0</td>
</tr>
</tbody>
</table>

**Statement on Extra Credit**

There is no extra credit granted in this course.
Minimum Passing Level
Per University and College Policy, students who receive a grade below D in this course must successfully repeat the course before advancing to courses which require this course as a prerequisite.

Graded Assessments
Students will be graded on attendance, class participation, in-class work, quizzes and assessments listed below. All are worth 5 points except at noted. The final score will be based on percent of total available points.

<table>
<thead>
<tr>
<th>Assigned</th>
<th>Due</th>
<th>Title/ Brief description</th>
<th>Assessment Goal</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>Weekly attendance/ quiz or discussion based on readings; class participation</td>
<td>1, 2, 3, 4, 5, 6, 7</td>
</tr>
<tr>
<td>Wk 1</td>
<td>Wk 2</td>
<td>Why I took this course reflection</td>
<td>2, 3, 6</td>
</tr>
<tr>
<td>Wk 2</td>
<td>TBD</td>
<td>Hospital Tour – St. Luke’s Hospital/ Duluth and UMMC- Fairview/ Minneapolis → pending flu season activity</td>
<td>2, 3, 5, 7</td>
</tr>
<tr>
<td>Wk 2</td>
<td>Wk 3</td>
<td>Pharmacy Practice Models – in-class work and reflection</td>
<td>1 - 7</td>
</tr>
<tr>
<td>Wk 4</td>
<td>Wk 6</td>
<td>Drug Use Management – in-class discussion, group assignment (drug monograph or drug shortage) – 20 pts</td>
<td>2, 3, 5</td>
</tr>
<tr>
<td>Wk 5</td>
<td>Wk 6</td>
<td>Technology and IV Admixture – USP 800 reflection</td>
<td>2, 3</td>
</tr>
<tr>
<td>Wk 6</td>
<td>Wk 7</td>
<td>Team P&amp;T presentation, submission; reflection assignment based on presentations</td>
<td>2, 3, 5, 6, 7</td>
</tr>
<tr>
<td>Wk 7</td>
<td>Wk 8</td>
<td>Accreditation/Compliance – assignment based on presentations and readings</td>
<td>2, 3, 5, 7</td>
</tr>
<tr>
<td>Wk 8</td>
<td>Wk 10</td>
<td>Ambulatory and specialty pharmacy – assignment based on presentations and readings</td>
<td>2, 3, 5, 6, 7</td>
</tr>
<tr>
<td>Wk 9</td>
<td></td>
<td>Spring break</td>
<td></td>
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<tr>
<td>Wk 10</td>
<td>Wk 11</td>
<td>Compliance and Diversion – in-class participation, regulatory focused assignment based on readings and presentations</td>
<td>2, 3, 5, 6, 7</td>
</tr>
<tr>
<td>Wk 11</td>
<td>Wk 12</td>
<td>Performance Improvement/ QA: scenario assignment based on medication safety</td>
<td>1, 2, 3, 5, 6, 7</td>
</tr>
<tr>
<td>Wk 12</td>
<td>Wk 13</td>
<td>Medication safety and investigational drugs – class discussion based on previous week and readings</td>
<td>2, 3, 5, 6, 7</td>
</tr>
<tr>
<td>Wk 12</td>
<td>Wk 13</td>
<td>MSHP Annual Meeting – assignments based on readings or meeting topics</td>
<td>1, 6, 7</td>
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<tr>
<td>Wk 14</td>
<td></td>
<td>Data/ Financial Management - in-class participation</td>
<td>1, 2, 3, 5, 6, 7</td>
</tr>
<tr>
<td>Wk 15</td>
<td>Wk 15</td>
<td>HR and Staff Development: In-class discussion and written assignment based on class presentations and readings</td>
<td></td>
</tr>
<tr>
<td>Wk 15</td>
<td>Wk 16</td>
<td>In-class participation, course final Assignment/ Reflection Paper. Complete course evaluation</td>
<td>1, 2, 3, 4, 5, 6, 7</td>
</tr>
</tbody>
</table>
CLASSROOM ETIQUETTE

You are expected to be good classroom "citizens" by exhibiting professional behavior towards classmates and instructors at all times. Being a good classroom citizen includes following the rules and guidelines listed below:

Attendance, Entering & Exiting the Classroom
- Students are expected to attend all classes and be in class prior to the start time. Attendance will be recorded.
- Students are expected to attend classes on the campus where they are enrolled.
- Arrive on time to class and stay for the entire class period.
- If you arrive late, quietly take a seat as close to the entrance as possible and avoid disruption.
- Should you have to leave class early, sit close to the exit door next to the aisle, so your departure will be as minimal disruptive as possible.
- When class begins, stop your conversations.
- Wait until the instructor indicates that the class is completely over before putting your materials away, standing up, or talking to classmates.

Participation & Communication between Campuses via ITV
- When you are called upon in class to give a response or ask a question, please speak loud enough so that you may be heard by students on both campuses.
- Do not talk out of turn, wait to be recognized before speaking and do not try to dominate a discussion with your questions or comments – give others a fair opportunity to participate.
- Keep on the topic at hand. If you have questions off the current topic, address these outside of class at office hours or by email with the instructor.

Other General Rules
- Do not interrupt another student who is speaking.
- No side conversations. We will ask you to take your conversations outside of the classroom if we notice that you (or a group of students) habitually talk during class.
- All cell phones and other electronic communication devices must be turned off or in silent mode during class. No talking or text messaging. Laptops may be used for note-taking but not for other purposes (browsing the net or e-mail).
- No listening to iPods or other electronic devices during class.
- Filming, photographing, or taping the class is not permitted.

Disruptive Behavior
Instructors have the authority and discretion to set rules that foster student learning. As a matter of academic freedom these rules can be tailored to the subject matter and the instructor’s teaching methods and learning objectives. For these reasons, the course instructor is the one who makes a determination about what constitutes disruptive behavior and any decisions regarding the behavior.

University of Minnesota and College of Pharmacy Policy Reference (Centralized Syllabus)
This page includes all required UMN and CoP policies, e.g., Academic Freedom; Copyright; Course Evaluations; Disability Accommodations; FERPA, etc. not listed above.