CURRICULUM COMMITTEE CHECKLIST

NAME OF PROGRAM: Pharmacy Technician  Date: ___

Step 1  Reviewed change at division meeting.  YES  NO

Step 2  Presented as informational item at Division Chair Meeting(s) and checked if it affects other departments. Like programs must meet with Division Chairs on all affected campuses (North Mankato and Faribault).  YES  NO

Division Chair's signature  

Step 3  Instructional Dean reviewed and indicated need for Curriculum Committee approval.  YES  NO

Instructional Dean's signature  

Step 4  Advisory Committee approval indicated in meeting minutes if necessary. Minutes provided to Curriculum Committee.  YES  NO

Step 5  Curriculum Committee made recommendations (changes, additional approvals, etc.). If no, skip to Step 7.  YES  NO

Step 6  Committee's recommendations completed. (Skip if not applicable.)  YES  NO

Step 7  Curriculum Committee approved.  YES  NO

Curriculum Committee Chair's signature  

Step 8  Minutes and necessary materials provided to VP of Academic Affairs.  YES  NO

Step 9  Vice President of Academic Affairs approved.  YES  NO

Vice President of Academic Affairs' signature  

Step 10 New Course Maximum Enrollment to Shared Governance.  YES  NO

Step 11 President's approval for all changes requiring MnSCU approval.  YES  NO

President's signature  

4/3/12
## Appendix C

### New Program or Program Change Proposal Form

| Date of Proposal: | 2/7/12 |
| Author:           | Summer Goiffre |
| Proposal Type:    | Program Redesign |
| Contact for the Program: | Summer Goiffre |
| Program Name:     | Pharmacy Technician |
| CIP Code:         | |
| Division in Which Program is Currently or Will Be Held: | Health Division |
| Proposal Start (Term/Year): | Fall 2012 |
| Program Description: | Pharmacy Technician AAS prepares students to work in a variety of pharmacy settings. Students will be taught professional communication, ethical standards of practice, billing, adjudication procedures, stock non-sterile compounding, pharmacology and dosage calculations. |
| Degrees Offered:  | AS x AAS x AA | Diploma x Certificate |
| Program Location: | Faribault Campus x North Mankato Campus x Online x |
| Prerequisites:    | None |
| Number of Credits: | 60 |

If There is a Program Change, Summarize Changes to the Program: Internships are being combined with x at the end of the program. Courses redesigned to give students more hands-on opportunities.

Rationale for Program Development or Program Change: Students requested more face-to-face lab time; students not as prepared for internship in the middle of schooling, losing students because of their internship sites hiring them.

What Impact Will this New Program or Change Have on Other Programs or Areas? None

Are There Articulations With Other Colleges? List College(s): ND

➤ Attach Program Design to this Form. Below are Some Recommended Items:
  a. List of program requirements (i.e.: what the catalog page shows for each program).
  b. Cross walk from previous program curriculum to new (how students already started in the old program can finish after this new program begins).
  c. All required course numbers and titles.
  d. Additional supporting information, such as minutes documenting recommendation for proposal.
Appendix B

New Course or Course Change Proposal Form

| Date of Proposal: | 2/17/12 |
| Author: | Summer Godfrey |
| Proposal Type: | *New Course | Modify Course | x | Delete Course |
| Contact for the Course: | Summer Godfrey |
| Course Designator, Number and Title (i.e.: ACCT 1800, Business Law): | PHRM 1110, Pharmacy Technician Orientation |
| Number of Credits: | 1 |
| Prerequisites: | None |

Course Description: In this course students will gain a historical perspective of the pharmacy profession along with an understanding of the role of the pharmacy technician. Emphasis is placed on the duties and responsibilities of the pharmacy technician along with an introduction to the retail pharmacy practice settings. Students will be required to complete an internship in a retail pharmacy setting.

| Grading Method: | Grade | Pass/Fail |
| Scheduling: | Fall | Spring | Summer | Alternate Years | Variable | On Demand |
| Instructional Type: | Lecture | Lab | Lecture/Lab | Internship | Seminar |

*Class Maximum: (For New Courses Only) / All Unlimited faculty members of a program or discipline must sign.

| Faculty Name | Faculty Signature | Class Max | Date |
| Dean's Name | Dean's Signature | Date |

If there is not enough space provided, please use the back of this form for additional signatures or click on a row with the right button of the mouse, select insert and then select insert rows below to add rows to the table.

Is this Course Proposed as a Liberal Arts Course: | Yes | No |

If Yes, Which MnTC Area/Areas Will it Fulfill (http://www.mntransfer.org)?

Is This Course a Requirement/Elective for a Specific Program or Programs? | Yes | No |

If Yes, Which Program(s)? Pharmacy Technician

Describe What is Changing/Being Added, and the Rationale:
PHRM 1101 is being broken apart into 2 courses so that students have a more thorough orientation to the program along with a more detailed hands-on learning experience in the retail pharmacy environment.

What Impact Will This New Course or Change Have on Other Programs or Areas?

No

> Attach Common Course Outline to this Form.
CURRICULUM COMMITTEE CHECKLIST

NAME OF PROGRAM: Pharmacy Technician Date: ____________

Step 1  Reviewed change at division meeting.  YES  NO

Step 2  Presented as informational item at Division Chair Meeting(s) and checked if it affects other departments. Like programs must meet with Division Chairs on all affected campuses (North Mankato and Faribault).  YES  NO

Division Chair’s signature _____________________________

Step 3  Instructional Dean reviewed and indicated need for Curriculum Committee approval.  YES  NO

Instructional Dean’s signature _____________________________

Step 4  Advisory Committee approval indicated in meeting minutes if necessary. Minutes provided to Curriculum Committee.  YES  NO

Step 5  Curriculum Committee made recommendations (changes, additional approvals, etc.). If no, skip to Step 7.  YES  NO

Step 6  Committee’s recommendations completed. (Skip if not applicable.)  YES  NO

Step 7  Curriculum Committee approved.  YES  NO

Curriculum Committee Chair’s signature _____________________________

Step 8  Minutes and necessary materials provided to VP of Academic Affairs.  YES  NO

Step 9  Vice President of Academic Affairs approved.  YES  NO

Vice President of Academic Affairs’ signature _____________________________

Step 10 New Course Maximum Enrollment to Shared Governance.  YES  NO

Step 11 President’s approval for all changes requiring MnSCU approval.  YES  NO

President’s signature _____________________________
Pharmacy Technician Orientation
Course Outcome Summary

Course Information
Organization South Central College
Developers Summer Gioffre
Development Date 2/2/2012
Course Number PHRM 1110
Potential Hours of Instruction 16
Total Credits 1

Description
In this course, students will gain a historical perspective of the pharmacy profession along with an understanding of the role of the pharmacy technician. Emphasis is placed upon the duties and responsibilities of the pharmacy technician along with an introduction to the various pharmacy practice settings. Students will also be required to complete the required paperwork for the pharmacy technician program. This course is intended to satisfy goals 23 and 31 of the model curriculum for pharmacy technician training, developed by the American Society of Health-System Pharmacists. Prerequisite: None.

Types of Instruction

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<thead>
<tr>
<th>Instruction Type</th>
<th>Contact Hours</th>
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</tr>
</thead>
<tbody>
<tr>
<td>Lecture</td>
<td>16</td>
<td>1</td>
</tr>
</tbody>
</table>

Prerequisites
None

Exit Learning Outcomes
Core Abilities
A. Written and oral communication
B. Foundations and skills for lifelong learning

Competencies
1. Articulate a historical perspective of the practice of pharmacy.
   Learning Objectives
   a. Describe the historical evolution of the pharmacy profession.
   b. Discuss the Ancient era and its impact on the field of pharmacy.
   c. Discuss the Empiric era and its impact on the field of pharmacy.
   d. Explain the Industrialization era and its impact on the field of pharmacy.
   e. Describe the Patient Care era as it relates to the field of pharmacy.
   f. Discuss the future of pharmacy.

2. Recognize the role of a pharmacy technician.
   Learning Objectives
a. Differentiate between the roles of the pharmacist and the pharmacy technician including the educational requirements for each role.
b. Explain various options for technician training, education, and credentialing.
c. List the tasks a pharmacy technician in Minnesota is able to do.
d. List the tasks a pharmacy technician in Minnesota is not able to do.
e. Describe at least three different practice settings where a pharmacy technician may work.
f. Explain Minnesota's laws regarding pharmacy technician CE's, education and training requirements.

3. **Identify the pharmacy technician certification process.**
   **Learning Objectives**
   a. Identify the two certification exams available.
   b. Compare the difference between registration and certification along with the importance of certification.
   c. Identify the composition and format of the PTCE

4. **Complete the Pharmacy Technician program required paperwork.**
   **Learning Objectives**
   a. Complete criminal background study paperwork
   b. Acknowledge the receipt of the educational goals and objectives of the pharmacy technician training program.
   c. Acknowledge the receipt of the pharmacy technician program handbook.
   d. Develop and document a training plan for the pharmacy technician program.
   e. Complete immunization requirements for the pharmacy technician program
Appendix B

**New Course or Course Change Proposal Form**

| Date of Proposal: | 2/17/12 |
| Author: | Summer Griffis |
| Proposal Type: | *New Course | Modify Course | X | Delete Course |
| Contact for the Course: | Summer Griffis |
| Course Designator, Number and Title (i.e.: ACCT 1800, Business Law): | PHRM 1113, Pharmacy Law and Ethics |
| Number of Credits: | 1 |
| Prerequisites: | none |
| Course Description: | This course will give students a general understanding of the laws and regulations that govern pharmacy practice. This course will also cover the ethical principles underlying the pharmacist, Technician, and the roles they play in a pharmacy setting. Statistics based on Goals 2, 3, 4, 5, 11, 14, 17, and 29. |
| Grading Method: | Grade Y | Pass/Fail |
| Scheduling: | Fall | Spring | Summer | Alternate Years | Variable | On Demand |
| Instructional Type: | Lecture | Lab | Lecture/Lab | Internship | Seminar |
| *Class Maximum: (For New Courses Only) / All Unlimited faculty members of a program or discipline must sign.* |

| Faculty Name | Faculty Signature | Class Max | Date |
| Dean's Name | Dean's Signature | Date |

*If there is not enough space provided, please use the back of this form for additional signatures or click on a row with the right button of the mouse, select insert and then select insert rows below to add rows to the table.*

Is this Course Proposed as a Liberal Arts Course: Yes | No

If Yes, Which MnTC Area/Areas Will it Fulfill ([http://www.mntransfer.org](http://www.mntransfer.org))? 

Is This Course a Requirement/Elective for a Specific Program or Programs? Yes | No

If Yes, Which Program(s)? Pharmacy Technician

Describe What is Changing/Being Added, and the Rationale: Decrease of Credits due to lack of information pertinent to the profession. Changed wording of CEO to coincide with Accreditation (ASHP) Model Curriculum Wording.

What Impact Will This New Course or Change Have on Other Programs or Areas? None

➢ Attach Common Course Outline to this Form.
Pharmacy Law and Ethics
Course Outcome Summary

Course Information
Organization South Central College
Developers Summer Gioffre
Development Date 2/1/2012
Course Number PHRM 1111
Potential Hours of Instruction 16
Total Credits 1

Description
This course will give students a general understanding of the laws and regulations that govern pharmacy practice. This course will also cover the ethical principles governing the pharmacy technician and the roles they play in a practice setting. This course is intended to satisfy goals 2, 3, 6, 7, 11, 14, 17 and 29 of the model curriculum for pharmacy technician training, developed by the American Society of Health System Pharmacists. Prerequisites: None

Types of Instruction

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</thead>
<tbody>
<tr>
<td>Lecture</td>
<td>16</td>
<td>1</td>
</tr>
</tbody>
</table>

Prerequisites
None

Exit Learning Outcomes

Core Abilities
A. Ethical Reasoning and action
B. Foundations and skills for lifelong learning
C. Analysis and inquiry

Competencies
1. Receive and screen prescriptions/medication orders for completeness and authenticity.
   Learning Objectives
   a. Explain how state laws and regulations determine what activities associated with receiving and screening prescription/medication orders for completeness and authenticity.
   b. Explain methods for securing missing pieces of information in a prescription/medication order.
   c. Organize a list of medications into their appropriate schedule.
2. Prepare medications for distribution.
   Learning Objectives
   a. Explain how state and federal laws and regulations determine what activities associated with preparing medications for distribution can be delegated by pharmacists to technicians.
b. Explain one's own state laws governing pharmacist review of medications prior to distribution.

c. Explain how state laws and regulations determine what activities associated with the administration of immunizations can be delegated by pharmacists to technicians.

d. Explain patient confidentiality issues related to data collection, transmission, and storage by pharmacy information systems and by electronic medical records.

e. State the meaning of the term "controlled substance."

f. State obligations prescribed by law in the recording of the preparation of controlled substances.

g. Explain the various levels of drug recalls.

h. Define the FDA approval process for new drugs.

3. Assist the pharmacist in the identification of patients who desire/require counseling to optimize the use of medications, equipment and devices.

Learning Objectives

a. Explain how state laws and regulations determine what activities are associated with patient counseling to optimize the use of medications, equipment, and devices can be delegated by pharmacists to technicians.

b. Describe the legal obligations for patient counseling, including documentation, as specified in OBRA 90 and in state laws and regulations.

4. Assist the pharmacist in monitoring the practice site and/or service area for compliance with federal, state and local laws, regulations and professional standards.

Learning Objectives

a. Describe the concepts of laws, regulations, and professional standards.

b. Explain the importance of the pharmacy's compliance with federal, state, and local laws, regulations and professional standards.

c. Explain the effect on pharmacy practice of laws, regulations and professional standards in the state in which the technician training program operates.

d. Demonstrate the ability to locate pharmacy practice laws.

e. Explain how state laws and regulations determine what activities associated with monitoring of medication therapy can be delegated by pharmacists to technicians.

f. Describe the legal obligations for patient counseling, including documentation, as specified in OBRA 90 and in state laws and regulations.

5. Demonstrate ethical conduct in all job-related activities.

Learning Objectives

a. Define the term "ethics".

b. Compare and contrast ethics with laws.

c. Explain ethical code which pertains to the work functions of pharmacists.

d. Explain situation which may present ethical questions for pharmacy technicians.


Learning Objectives

a. Explain situations in which the pharmacy technician must be aware and observant of the confidentiality of patient information.

b. Explain types of patient information that should and should not be shared with third party payers.

c. Explain patient confidentiality issues related to data collection, transmission, and storage by pharmacy information systems and by electronic medical records.
Appendix B

New Course or Course Change Proposal Form

**Date of Proposal:** 2/7/12

**Author:** Summer Groffre

**Proposal Type:** *New Course*  Modify Course  x  Delete Course

**Contact for the Course:** Summer Groffre

**Course Designator, Number and Title** (i.e.: ACCT 1800, Business Law):

PHRM 1112, Retail Pharmacy

**Number of Credits:** 2

**Prerequisites:**

PHRM 1110, PHRM 1111

**Course Description:** This course is designed to give students an in-depth understanding of the retail pharmacy. Emphasis is placed on the role and responsibilities of the pharmacy technician in the retail pharmacy environment. Students will be given opportunities to apply these skills as active participants in the mock retail pharmacy environment.

**Grading Method:** Grade  x  Pass/Fail

**Scheduling:** Fall  Spring  x  Summer  Alternate Years  Variable  On Demand

**Instructional Type:** Lecture  Lab  Lecture/Lab  1/1  Internship  Seminar

*Class Maximum: (For New Courses Only) / All Unlimited faculty members of a program or discipline must sign.

**Faculty Name**  **Faculty Signature**  **Class Max**  **Date**

**Dean's Name**  **Dean's Signature**  **Date**

If there is not enough space provided, please use the back of this form for additional signatures or click on a row with the right button of the mouse, select insert and then select insert rows below to add rows to the table.

Is this Course Proposed as a Liberal Arts Course:  Yes  No

If Yes, Which MnTC Area/Areas Will it Fulfill [http://www.mntransfer.org]?  

Is This Course a Requirement/Elective for a Specific Program or Programs?  Yes  No

If Yes, Which Program(s)?  

Describe What is Changing/Being Added, and the Rationale:  

PHRM 1110 is being added to include courses to give students a more in-depth retail pharmacy experience.  This will also give students the opportunity to gain greater experience in the mock retail pharmacy lab.

What Impact Will This New Course or Change Have on Other Programs or Areas?  

> Attach Common Course Outline to this Form.
CURRICULUM COMMITTEE CHECKLIST

NAME OF PROGRAM: Pharmacy Technician  Date: __________

Step 1  Reviewed change at division meeting.  YES  NO
Step 2  Presented as informational item at Division Chair Meeting(s)
        and checked if it affects other departments. Like programs must
        meet with Division Chairs on all affected campuses (North
        Mankato and Faribault).  YES  NO

Division Chair’s signature  ____________________________

Step 3  Instructional Dean reviewed and indicated need for Curriculum
        Committee approval.  YES  NO

Instructional Dean’s signature  ____________________________

Step 4  Advisory Committee approval indicated in meeting minutes if
        necessary. Minutes provided to Curriculum Committee.  YES  NO

Step 5  Curriculum Committee made recommendations (changes,
        additional approvals, etc.). If no, skip to Step 7.  YES  NO

Step 6  Committee’s recommendations completed. (Skip if not
        applicable.)  YES  NO

Step 7  Curriculum Committee approved.  YES  NO

Curriculum Committee Chair’s signature  ____________________________

Step 8  Minutes and necessary materials provided to VP of Academic
        Affairs.  YES  NO

Step 9  Vice President of Academic Affairs approved.  YES  NO

Vice President of Academic Affairs’ signature  ____________________________

Step 10 New Course Maximum Enrollment to Shared Governance.  YES  NO

Step 11 President’s approval for all changes requiring MnSCU approval.  YES  NO

President’s signature  ____________________________
Retail Pharmacy
Course Outcome Summary

Course Information
Organization    South Central College
Developers       Summer Gioffe
Development Date 2/2/2012
Course Number    PHRM 1112
Potential Hours of Instruction    48
Total Credits     2

Description
This course is designed to give students an in-depth understanding of the retail pharmacy. Emphasis is placed on the role and responsibilities of the pharmacy technician in the retail pharmacy environment. Students will be given opportunities to apply these skills as active participants in the mock retail pharmacy environment. This course is intended to satisfy goals 1, 2, 3, 5, 8, 9, 10, 24, 26 and 27 of the model curriculum for pharmacy technician training developed by the American Society of Health-System Pharmacists. (Prerequisites: PHRM 1110, PHRM 1111)

Types of Instruction
<table>
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<tr>
<th>Instruction Type</th>
<th>Contact Hours</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>Lecture</td>
<td>16</td>
<td>1</td>
</tr>
<tr>
<td>Lab</td>
<td>32</td>
<td>1</td>
</tr>
</tbody>
</table>

Prerequisites
PHRM 1110, PHRM 1111

Exit Learning Outcomes

Core Abilities
A. Teamwork and Problem Solving
B. Critical and creative thinking
C. Written and oral communication
D. Intercultural knowledge and competence

Competencies
1. Communicate clearly when speaking or writing.
   Learning Objectives
   a. Explain how the use of body language affects pharmacy communications.
   b. Explain verbal techniques that can be used to enhance listening to others.
   c. Demonstrate effective strategies for communicating with patients who are non-English speakers or who are impaired.
   d. Compare and contrast the strategies for communicating with internal and external customers.
2. Assist the pharmacist in collecting, organizing and evaluating information for direct patient care, medication use review and departmental management.

Learning Objectives
a. Explain how state laws and regulations determine what activities associated with collection of patient specific information can be delegated by the pharmacist to technicians.
b. When presented with a specific case, efficiently collect pertinent patient information from the patient profile with efficiency and accuracy.
c. Explain the purpose for which pharmacists collect patient-specific information.
d. Write the accepted abbreviation for medical terms commonly used in the retail pharmacy setting.
e. Effectively interview patients, or their representatives to collect pertinent patient information for use by the pharmacist.
f. Explain the purpose of a medication use review.
g. State specific types of questions from patients or health care providers to which an answer by the technician would be inappropriate.

3. Receive and screen prescriptions for completeness and authenticity.

Learning Objectives
a. Assess a prescription for completeness and accuracy.
b. Explain the procedure for correcting errors on received prescriptions.
c. Explain the procedure to verify the validity of a prescriber's DEA number.
d. Explain techniques to detect forged or altered prescriptions.
e. Explain the importance of alerting the pharmacist if a prescription/medication order appears to be illegitimate.
f. Explain common situations when screening refills and renewals when the technician should notify the pharmacist of potential inappropriateness.

4. Participate in the pharmacy adjudication process.

Learning Objectives
a. Describe the possible methods of payment for a prescription order.
b. Use an appropriate strategy to interview a new customer to gain patient profile information.
c. Identify the reason for a third party rejected claim and convey the information accurately to the pharmacist.
d. Explain methods for conveying third party payer responses so that they are clearly understood by the customer/patient.
e. Explain third party payer responses that may cause customer/patient distress.
f. Use effective communication techniques for diffusing strong emotional reactions to third party payment responses.

5. Prepare medications for distribution.

Learning Objectives
a. Explain the importance notifying the pharmacist when submission of a prescription reveals a non-formulary medication has been ordered.
b. Package the prescription product in the appropriate container.
c. Describe the various sizes and types of containers available for the packaging of pharmaceuticals in all pharmacy settings.
d. Describe options for the packaging of products for the physically impaired, aged, and children.
e. Follow protocol to assemble appropriate patient information materials.
f. Describe the obligations of the pharmacist for counseling as prescribed in OBRA '90.
g. Describe the types of written information that typically may be supplied with a dispensed product.
h. Explain how the quality of direct patient care can be enhanced by including written patient information at the time of dispensing.

6. Distribute medications.

Learning Objectives
a. Deliver the correct medication to the correct patient or patient's representative in an efficient manner.
b. Explain the importance of getting the right medication to the patient or patient's representative.

7. Purchase pharmaceuticals, devices, and supplies according to an established purchasing program.

Learning Objectives
a. Describe typical procedures for purchasing pharmaceuticals, devices, and supplies.
b. Describe typical procedures used to expedite emergency orders/prescriptions.

8. Control the inventory of medications, equipment, and devices according to an established plan.

Learning Objectives
a. Describe the various methods of inventory control.
b. Describe the general tasks involved in receiving and verifying the order of goods.
c. Describe methods for handling back ordered medications.
d. Define the terms "expired", "discontinued", and "recalled" as used in pharmacy.
e. Describe common reasons for discontinuing or recalling items.
f. Explain the various levels of recall and the associated responsibilities for each level.
g. Explain the importance to cash flow of returning expired or excess inventory goods.

9. Describe the importance of and resources for staying current with changes in pharmacy practice.

Learning Objectives
a. Explain the necessity for technicians to stay current with advances in pharmacy practice.
b. Discuss resources for staying current with advances in pharmacy practice.

10. Maximize work efficiency through the use of technology.

Learning Objectives
a. Demonstrate skill in the use of the internet, e-mail services, and computerized medication information databases.
b. Explain currently emerging technologies that may impact the practice of pharmacy.
c. Explain how medical information systems are used in pharmacy practice activities.

11. Efficiently solve problems commonly encountered in one's own work.

Learning Objectives
a. Demonstrate consistent use of a systematic approach to solving problems encountered in one's work as a technician.
b. Explain the kinds of problems encountered in the work of the technician that benefit from the use of a systematic problem-solving approach.
Appendix B

New Course or Course Change Proposal Form

<table>
<thead>
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<th>Date of Proposal:</th>
<th>2/17/12</th>
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<td>Author:</td>
<td>Summer Gifford</td>
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<tr>
<td>Proposal Type:</td>
<td>*New Course</td>
</tr>
<tr>
<td>Contact for the Course:</td>
<td>Summer Gifford</td>
</tr>
<tr>
<td>Course Designator, Number and Title (i.e.: ACCT 1800, Business Law):</td>
<td>PHRM 1113, Pharmacy Math</td>
</tr>
<tr>
<td>Number of Credits:</td>
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<tr>
<td>Prerequisites:</td>
<td>PHRM 1110, CHEM 108</td>
</tr>
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</table>

Course Description: Students will learn basic terminology, abbreviations and units necessary to perform pharmacy calculations. Pharmacy students will learn dosage systems, conversions and unit calculations as well as a review of pharmaceutical terminology. Students will address the role of the pharmacist in patient care and the proper considerations of dosage during the laboratory portion of the course. Students will be given an opportunity to demonstrate a practical application of the concepts.

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*Class Maximum: (For New Courses Only) / All Unlimited faculty members of a program or discipline must sign.

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<tr>
<th>Faculty Name</th>
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<th>Class Max</th>
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Dean's Name

<table>
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<tr>
<th>Dean's Signature</th>
<th>Date</th>
</tr>
</thead>
</table>

If there is not enough space provided, please use the back of this form for additional signatures or click on a row with the right button of the mouse, select Insert and then select Insert rows below to add rows to the table.

Is this Course Proposed as a Liberal Arts Course: Yes | No X

If Yes, Which MnTC Area/Areas Will it Fulfill (http://www.mntransfer.org)?

Is This Course a Requirement/Elective for a Specific Program or Programs? Yes | X | No

If Yes, Which Program(s)? Pharmacy Technician

Describe What is Changing/Being Added, and the Rationale:

Change from 3 credits to 4 credits; adding a lab credit so that students receive a more practical application of the concepts.

What Impact Will This New Course or Change Have on Other Programs or Areas? None.

Attach Common Course Outline to this Form.
Pharmacy Math
Course Outcome Summary

Course Information
Organization: South Central College
Developers: Summer Gioffre
Development Date: 2/6/2012
Course Number: PHRM 1113
Potential Hours of Instruction: 80
Total Credits: 4

Description
In this course students will learn basic terminology, abbreviations and units necessary to perform pharmacy calculations. Pharmaceutical measuring systems and conversions will be addressed as well as a review of calculations pertinent to pharmacy practice. Students will learn to calculate the correct oral and parenteral dosages of drugs and other ingredients using information from prescriptions, medication orders, and drug labels. During the laboratory portion of the course, students will be given an opportunity to demonstrate a practical application of concepts. This course is intended to satisfy goals 2, 3, 15, 25 and 27 of the model curriculum for pharmacy technician training, developed by the American Society of Health-System Pharmacists. Prerequisites: CHEM 108, PHRM 1110

Types of Instruction

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<td>3</td>
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<tr>
<td>Lab</td>
<td>32</td>
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Prerequisites
CHEM 108
PHRM 1110

Exit Learning Outcomes

Core Abilities
A. Critical and Creative Thinking
B. Teamwork and Problem-Solving
C. Written and Oral Communication

Competencies
1. Demonstrate basic mathematical functions.
   Learning Objectives
   a. Recognize the symbols used to represent numbers in the Roman numeral system.
   b. Convert and correctly write Arabic numbers as Roman numerals and Roman numerals as Arabic numbers.
   c. Describe the system of measurement accepted worldwide as well as the household system.
d. List the basic units of weight, volume, and length in the metric system.
e. Explain the rules for changing grams to milligrams and milliliters to liters.
f. Calculate equivalent measurements within the metric system.
g. Summarize metric notation.
h. Recognize the symbols for dram, ounce, grain, and drop.
i. Describe the international unit (IU).
j. Compare apothecary and household equivalents.
k. Explain the use of milliequivalents (mEq) and units in dosage calculations.
l. Describe the use of international units (IU) and milliunits (mU) in dosage calculation.

2. **Demonstrate the use of fractions and decimals.**
   
   **Learning Objectives**
   
   a. Distinguish between the various types of fractions.
   b. Compare fractions.
   c. Accurately add, subtract, multiply, and divide fractions.
   d. Convert fractions to mixed numbers and decimals.
   e. Accurately add, subtract, multiply, and divide decimals.
   f. Round decimals to the nearest tenth, hundredth, and thousandth.

3. **Demonstrate use of ratios, proportions and percents.**
   
   **Learning Objectives**
   
   a. Distinguish the numerical relationships represented by ratios.
   b. Describe the concept of proportions.
   c. Explain the relationship between percents and ratios.
   d. Solve for x using proportions.
   e. Convert percentages into ratios and fractions, and convert ratios and fractions into percentages.

4. **Calculate temperature conversions.**
   
   **Learning Objectives**
   
   a. Describe the Fahrenheit and Celsius temperature scales.
   b. Convert between Celsius and Fahrenheit temperatures.
   c. Explain the formula used to convert between Fahrenheit and Celsius temperatures.

5. **Apply ratios and proportions in pharmacy calculations.**
   
   **Learning Objectives**
   
   a. Use common fractions to express ratios and proportions in dosage calculations.
   b. Use colons to express ratios and proportions in dosage calculations.
   c. Perform calculations using different units of measure.
   d. Define the terms ratio and proportion.

6. **Apply dimensional analysis to common pharmacy calculations.**
   
   **Learning Objectives**
   
   a. Simplify units using dimensional analysis.
   b. Use dimensional analysis to calculate dosages.
   c. Convert among metric and household systems using dimensional analysis.

7. **Demonstrate use of the formula method.**
   
   **Learning Objectives**
   
   a. Explain the basic formula used in the formula method.
b. Use the formula method with metric conversions.
c. Identify the use of the formula method with units and milliequivalent calculations.

8. Interpret prescriptions and drug labels.
   Learning Objectives
   a. List the components of a prescription.
   b. Explain the parts of a drug label.
   c. List the seven rights of drug administration.
   d. Describe types of prescriptions.
   e. Explain the role of computer systems in reducing medication errors.
   f. Define verbal orders versus stat orders.

9. Explore the correlation between equipment use and error.
   Learning Objectives
   a. Calculate the smallest amount of medication to be measured by a specific device.
   b. Determine the best instrument for measuring single-dose quantities and large amounts of medications.
   c. Calculate and define percentage of error for weight and volume measurements.
   d. Describe equipment used to measure weight and volume.

10. Calculate medication concentration.
    Learning Objectives
    a. Determine final concentrations.
    b. Determine what dilution was performed.
    c. Use the formula \( V_1 \times C_1 = V_2 \times C_2 \) to solve dilution problems.
    d. Determine the ratio strength of a given product when the active ingredient remains constant and the amount of diluent is increased or decreased.

11. Perform calculations involving dilutions and solutions.
    Learning Objectives
    a. Describe how active ingredients and diluents are related if the amount of active ingredient remains constant while the amount of diluent increases or decreases.
    b. Define the term stock solution.
    c. Explain the use of alligation methods in the pharmacy setting.
    d. Determine the volume of a stock solution needed to prepare a given solution.
    e. Perform calculations using alligations.

12. Use oral medication labels to perform dosage calculations.
    Learning Objectives
    a. List the common information found on drug labels.
    c. Demonstrate how to calculate dosages for tablets and capsules.
    d. Explain the measurement of oral solutions.

13. Perform reconstitution calculations.
    Learning Objectives
    a. Calculate the volume of reconstituted medication that is required when the medication is supplied in powdered form.
    b. Determine whether an in-stock vial contains enough medication to fill an order.
    c. Demonstrate reconstitution of single and multiple strength solutions.
    d. Calculate amounts of solutes and solvents needed to prepare various desired strengths
and quantities.
e. Demonstrate reconstitution from package insert directions.
f. Define the terms diluent, solute, and solution.
g. Reconstitute and label medications supplied in powdered or dry form.

14. Use parenteral medication labels to perform dosage calculations.
Learning Objectives
a. Demonstrate the ability to read metric solution labels.
b. Demonstrate the ability to read percent and ratio solution labels.
c. Calculate solutions in international units and milliequivalents.
d. Calculate parenteral drug dosages.
e. Perform accurate insulin injection dosage calculations.

15. Perform intravenous flow rate calculations.
Learning Objectives
a. Distinguish components of intravenous solutions.
b. List common IV components and solutions.
c. Calculate the adjustment of IV flow rates.
d. Calculate flow rates in drops per minute and milliliters per hour by using the formula method.
e. Calculate infusion times and completion times.
f. Calculate IV flow rates for electronic regulation.
g. Calculate IV flow rates from units per hour ordered.
h. Calculate units per hour infusing from IV flow rate.

16. Demonstrate calculations for pediatric drug administration.
Learning Objectives
a. Convert pounds to kilograms.
b. Calculate pediatric drug dosages using two primary methods.
c. Compare the ordered dosage with the recommended safe dosage.
d. Identify the steps in calculating body surface area from a pediatric nomogram and with the square root method.
e. Determine whether the ordered dosage is safe to administer.
f. Explain the dosage inaccuracies that can occur with pediatric drug formulas.

17. Perform business math calculations.
Learning Objectives
a. Define gross and net profit.
b. Explain inventory turnover.
c. Compute discounts.
d. Describe what markup is.
e. List familiar unit costs used in pharmacy.
**Appendix B**

### New Course or Course Change Proposal Form

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<th>2/7/12</th>
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<td>Summer Gioffe</td>
</tr>
<tr>
<td>Proposal Type:</td>
<td>*New Course</td>
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<tr>
<td>Contact for the Course:</td>
<td>Summer Gioffe</td>
</tr>
<tr>
<td>Course Designator, Number and Title (i.e.: ACCT 1800, Business Law):</td>
<td>PHRM 2114, Pharmacology</td>
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<tr>
<td>Number of Credits:</td>
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<tr>
<td>Prerequisites:</td>
<td>PHRM 1110, HE 1000, HE 1914</td>
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<td>Course Description:</td>
<td>Students will gain knowledge of pharmacology including a systematic approach to medications, their indications and contraindications, mechanisms of action, side effects, drug interactions, and methods of administration. This course is intended to satisfy goal 3 of the ASHE model curriculum.</td>
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*If there is not enough space provided, please use the back of this form for additional signatures or click on a row with the right button of the mouse, select insert and then select insert rows below to add rows to the table.*

**Is this Course Proposed as a Liberal Arts Course:** Yes  No

**If Yes, Which MnTC Area/Areas Will it Fulfill (http://www.mntc.org)?**

**Is This Course a Requirement/Elective for a Specific Program or Programs:** Yes  No

**If Yes, Which Program(s)?** Pharmacy Technician

**Describe What is Changing/Being Added, and the Rationale:**

**Changing wording of (co to be more consistent with ASHE/ACRED model curriculum wording. Course will be hybrid in place of on-line to bring students into the classroom more often.**

**What Impact Will This New Course or Change Have on Other Programs or Areas?**

*Non*

> Attach Common Course Outline to this Form.
Pharmacology
Course Outcome Summary

Course Information
Organization South Central College
Developers Summer Gioffre
Development Date 2/6/2012
Course Number PHRM 2114
Potential Hours of Instruction 64
Total Credits 4

Description
Students will gain knowledge of pharmacology, including a systematic approach to the classifications medications, their indications and contraindications, mechanisms of action, side effects, drug interactions, and methods of administration. This course is intended to satisfy goals 1, 24, 25, 26, 34 of the model curriculum for pharmacy technical training, developed by the American Society of Health-System Pharmacists. Prerequisites: PHRM 1110, HC 1000, HC 1914

Types of Instruction
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</table>

Prerequisites
HC 1000, HC 1914, PHRM 1110

Exit Learning Outcomes
Core Abilities
A. Teamwork and problem-solving
B. Critical and creative thinking
C. Foundations and skills for lifelong learning

Competencies
1. Identify multiple drug classification systems
   Learning Objectives
   a. Describe different drug classification systems
   b. Demonstrate the ability to group drugs into multiple classification systems.

2. Identify how to use pharmacy reference materials
   Learning Objectives
   a. Demonstrate the use of electronic systems to reference pertinent pharmacy information
   b. Demonstrate how to find and gather printed drug information.

3. Assist the pharmacist in collecting, organizing, and evaluating information for direct patient care, medication use review, and departmental management.
   Learning Objectives
   a. State the definitions of medical terms commonly used in the range of patient care settings.
   b. Write the accepted abbreviation for commonly used medical terms.

4. Communicate clearly when speaking or writing.
Learning Objectives
a. Pronounce medication names clearly and properly.
b. Write medication names correctly.

5. Explain the use and side effects of prescription and non-prescription medications used to treat diseases of the cardiovascular system.

Learning Objectives
a. Describe the basic anatomy of the cardiovascular system
b. Explain the basic physiology of the cardiovascular system
c. Explain the therapeutic effects of prescription and non-prescription medications commonly used to treat diseases of the cardiovascular system.
d. State the brand and generic names of prescription and non-prescription medications commonly used to treat diseases of the cardiovascular system.
e. Match the corresponding brand and generic cardiovascular system medications.
f. State the dosage forms of prescription and non-prescription medications commonly used to treat diseases of the cardiovascular system.
g. State the route of administration of prescription and non-prescription medications commonly used to treat diseases of the cardiovascular system.
h. State common doses of prescription and non-prescription medications commonly used to treat diseases of the cardiovascular system.

6. Explain the use and side effects of prescription and non-prescription medications used to treat diseases of the respiratory system.

Learning Objectives
a. Describe the basic anatomy of the respiratory system
b. Explain the basic physiology of the respiratory system.
c. Explain the therapeutic effects of prescription and non-prescription medications commonly used to treat diseases of the respiratory system.
d. State the brand and generic names of prescription and non-prescription medications commonly used to treat diseases of the respiratory system.
e. Match the corresponding brand and generic respiratory system medications.
f. State the dosage forms of prescription and non-prescription medications commonly used to treat diseases of the respiratory system.
g. State the route of administration of prescription and non-prescription medications commonly used to treat diseases of the respiratory system.
h. State common doses of prescription and non-prescription medications commonly used to treat diseases of the respiratory system.

7. Explain the use and side effects of prescription and non-prescription medications used to treat diseases of the gastrointestinal system.

Learning Objectives
a. Describe the basic anatomy of the gastrointestinal system
b. Explain the basic physiology of the gastrointestinal system
c. Explain the therapeutic effects of prescription and non-prescription medications commonly used to treat diseases of the gastrointestinal system.
d. State the brand and generic names of prescription and non-prescription medications commonly used to treat diseases of the gastrointestinal system.
e. Match the corresponding brand and generic gastrointestinal system medications.
f. State the dosage forms of prescription and non-prescription medications commonly used to treat diseases of the gastrointestinal system.
g. State the route of administration of prescription and non-prescription medications commonly used to treat diseases of the gastrointestinal system.
h. State common doses of prescription and non-prescription medications commonly used to treat diseases of the gastrointestinal system.

8. Explain the use and side effects of prescription and non-prescription medications used to
treat diseases affecting the renal system.

Learning Objectives
a. Describe the basic anatomy of the renal system
b. Explain the basic physiology of the renal system
c. Explain the therapeutic effects of prescription and non-prescription medications commonly used to treat diseases of the renal system.
d. Explain the therapeutic effects of prescription and non-prescription medications commonly used to treat diseases of the renal system.
e. Match the corresponding brand and generic renal system medications.
f. State the dosage forms of prescription and non-prescription medications commonly used to treat diseases of the renal system.
g. State the route of administration of prescription and non-prescription medications commonly used to treat diseases of the renal system.
h. State common doses of prescription and non-prescription medications commonly used to treat diseases of the renal system.

9. Explain the use and side effects of prescription and non-prescription medications used to treat diseases affecting the nervous system.

Learning Objectives
a. Describe the basic anatomy of the nervous system.
b. Explain the basic physiology of the nervous system.
c. Explain the therapeutic effects of prescription and non-prescription medications commonly used to treat diseases of the nervous system.
d. State the brand and generic names of prescription and non-prescription medications commonly used to treat diseases of the nervous system.
e. Match the corresponding brand and generic nervous system medications.
f. State the dosage forms of prescription and non-prescription medications commonly used to treat diseases of the nervous system.
g. State the route of administration of prescription and non-prescription medications commonly used to treat diseases of the nervous system.
h. State common doses of prescription and non-prescription medications commonly used to treat diseases of the nervous system.

10. Explain the use and side effects of prescription and non-prescription medications used to treat diseases affecting the endocrine system.

Learning Objectives
a. Describe the basic anatomy of the endocrine system.
b. Explain the basic physiology of the endocrine system.
c. Explain the therapeutic effects of prescription and non-prescription medications commonly used to treat diseases of the endocrine system.
d. State the brand and generic names of prescription and non-prescription medications commonly used to treat diseases of the endocrine system.
e. Match the corresponding brand and generic endocrine system medications.
f. State the dosage forms of prescription and non-prescription medications commonly used to treat diseases of the endocrine system.
g. State the route of administration of prescription and non-prescription medications commonly used to treat diseases of the endocrine system.
h. State common doses of prescription and non-prescription medications commonly used to treat diseases of the endocrine system.

11. Explain the use and side effects of prescription and non-prescription medications used to treat diseases affecting the reproductive systems.

Learning Objectives
a. Describe the basic anatomy of the reproductive system.
b. Explain the basic physiology of the reproductive system.
c. Explain the therapeutic effects of prescription and non-prescription medications commonly used to treat diseases of the reproductive system.

d. State the brand and generic names of prescription and non-prescription medications commonly used to treat diseases of the reproductive system.

e. Match the corresponding brand and generic reproductive system medications.

f. State the dosage forms of prescription and non-prescription medications commonly used to treat diseases of the reproductive system.

g. State the route of administration of prescription and non-prescription medications commonly used to treat diseases of the reproductive system.

h. State common doses of prescription and non-prescription medications commonly used to treat diseases of the reproductive system.

12. **Explain the use and side effects of prescription and non-prescription medications used to treat diseases affecting the immune system.**

**Learning Objectives**

a. Describe the basic anatomy of the immune system.

b. Explain the basic physiology of the immune system.

c. Explain the therapeutic effects of prescription and non-prescription medications commonly used to treat diseases of the immune system.

d. State the brand and generic names of prescription and non-prescription medications commonly used to treat diseases of the immune system.

e. Match the corresponding brand and generic immune system medications.

f. State the dosage forms of prescription and non-prescription medications commonly used to treat diseases of the immune system.

g. State the route of administration of prescription and non-prescription medications commonly used to treat diseases of the immune system.

h. State common doses of prescription and non-prescription medications commonly used to treat diseases of the immune system.

13. **Explain the use and side effects of prescription and non-prescription medications used to treat diseases of the skeletal system (bones and joints).**

**Learning Objectives**

a. Describe the basic anatomy of the skeletal system.

b. Explain the basic physiology of the skeletal system.

c. Explain the therapeutic effects of prescription and non-prescription medications commonly used to treat diseases of the skeletal system.

d. State the brand and generic names of prescription and non-prescription medications commonly used to treat diseases of the skeletal system.

e. Match the corresponding brand and generic skeletal system medications.

f. State the dosage forms of prescription and non-prescription medications commonly used to treat diseases of the skeletal system.

g. State the route of administration of prescription and non-prescription medications commonly used to treat diseases of the skeletal system.

h. State common doses of prescription and non-prescription medications commonly used to treat diseases of the skeletal system.

14. **Explain the use and side effects of prescription and non-prescription medications used to treat disorders of the eyes, ears, nose and throat.**

**Learning Objectives**

a. Describe the basic anatomy of the eyes, ears, nose, and throat.

b. Explain the basic physiology of the eyes, ears, nose, and throat.

c. Explain the therapeutic effects of prescription and non-prescription medications commonly used to treat diseases of the eyes, ears, nose, and throat.

d. State the brand and generic names of prescription and non-prescription medications commonly used to treat diseases of the eyes, ears, nose, and throat.
e. Match the corresponding brand and generic eyes, ears, nose and throat medications.
f. State the dosage forms of prescription and non-prescription medications commonly used to treat diseases of the eyes, ears, nose, and throat.
g. State the route of administration of prescription and non-prescription medications commonly used to treat diseases of the eyes, ears, nose, and throat.
h. State common doses of prescription and non-prescription medications commonly used to treat diseases of the eyes, ears, nose, and throat.

15. Explain the use and side effects of prescription and non-prescription medications used to treat diseases affecting the dermatologic system.

Learning Objectives
a. Describe the basic anatomy of the dermatologic system.
b. Explain the basic physiology of the dermatologic system.
c. Explain the therapeutic effects of prescription and non-prescription medications commonly used to treat diseases of the dermatologic system.
d. State the brand and generic names of prescription and non-prescription medications commonly used to treat diseases of the dermatologic system.
e. Match the corresponding brand and generic dermatologic system medications.
f. State the dosage forms of prescription and non-prescription medications commonly used to treat diseases of the dermatologic system.
g. State the route of administration of prescription and non-prescription medications commonly used to treat diseases of the dermatologic system.
h. State common doses of prescription and non-prescription medications commonly used to treat diseases of the dermatologic system.

16. Explain the use and side effects of prescription and non-prescription medications used to treat diseases affecting the hematologic system.

Learning Objectives
a. Describe the basic anatomy of the hematologic system.
b. Explain the basic physiology of the hematologic system.
c. Explain the therapeutic effects of prescription and non-prescription medications commonly used to treat diseases of the hematologic system.
d. State the brand and generic names of prescription and non-prescription medications commonly used to treat diseases of the hematologic system.
e. Match the corresponding brand and generic hematologic system medications.
f. State the dosage forms of prescription and non-prescription medications commonly used to treat diseases of the hematologic system.
g. State the route of administration of prescription and non-prescription medications commonly used to treat diseases of the hematologic system.
h. State common doses of prescription and non-prescription medications commonly used to treat diseases of the hematologic system.

17. Explain the use and side effects of prescription and non-prescription medications used to treat diseases affecting the muscular system.

Learning Objectives
a. Describe the basic anatomy of the muscular system.
b. Explain the basic physiology of the muscular system.
c. Explain the therapeutic effects of prescription and non-prescription medications commonly used to treat diseases of the muscular system.
d. State the brand and generic names of prescription and non-prescription medications commonly used to treat diseases of the muscular system.
e. Match the corresponding brand and generic muscular system medications.
f. State the dosage forms of prescription and non-prescription medications commonly used to treat diseases of the muscular system.
g. State the route of administration of prescription and non-prescription medications commonly used to treat diseases of the muscular system.
to treat diseases of the muscular system.

h. State common doses of prescription and non-prescription medications commonly used to treat
diseases of the muscular system.
Appendix B

New Course or Course Change Proposal Form

Date of Proposal: 2/12/12

Author: Summer Osório

Proposal Type: *New Course  Modify Course  X  Delete Course

Contact for the Course: Summer Osório

Course Designator, Number and Title (i.e.: ACCT 1800, Business Law):

PHRM 2105  Pharmacy Non-Sterile Compounding

Number of Credits: 2

Prerequisites:

PHRM 1103  PHRM 1113

Course Description: This course will enable students to learn general preparation of non-sterile pharmacy, central dosage forms. Practical experiences in the manipulation of and record keeping functions associated with compounding and the dispensing of compounded prescriptions will be provided. Satisfies ASHPrex 3.11, 12, and 35 (PHRM 1113)

Grading Method: Grade  X  Pass/Fail

Scheduling: Fall  X  Spring  Summer  Alternate Years  Variable  On Demand

Instructional Type: Lecture  Lab  Lecture/Lab  1/1  Internship  Seminar

*Class Maximum: (For New Courses Only) All Unlimited faculty members of a program or discipline must sign.

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<th>Dean's Name</th>
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If there is not enough space provided, please use the back of this form for additional signatures or click on a row with the right button of the mouse, select insert and then select insert rows below to add rows to the table.

Is this Course Proposed as a Liberal Arts Course: Yes  No

If Yes, Which MnTC Area/Areas Will it Fulfill (http://www.mntransfer.org)?

Is This Course a Requirement/Elective for a Specific Program or Programs?  Yes  No

If Yes, Which Program(s)? Pharmacy Technician

Describe What is Changing/Being Added, and the Rationale:

decrease of lab credits due to lack of content. Change wording to coincide with accreditation (ASHP) model curriculum wording.

What Impact Will This New Course or Change Have on Other Programs or Areas? None

➢ Attach Common Course Outline to this Form.
Pharmacy Non-Sterile Compounding
Course Outcome Summary

Course Information
Organization          South Central College
Developers            Summer Glioire
Development Date      2/1/2012
Course Number         PHRM 2115
Potential Hours of    48
Instruction
Total Credits         2

Description
This course will enable students to learn general preparation of non-sterile pharmaceutical dosage forms. Practical experience in the manipulative and record keeping functions associated with compounding and the dispensing of compounded prescriptions will be provided. This course is intended to satisfy goals 3, 11, 12, and 35 of the model curriculum for pharmacy technician training, developed by the American Society of Health-System Pharmacists. Prerequisites: PHRM 1113

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Prerequisites
PHRM 1113

Exit Learning Outcomes
Core Abilities
A. Critical and Creative Thinking
B. Written and Oral Communication
C. Foundations for lifelong learning
D. Analysis and Inquiry

Competencies
1. Demonstrate the ability to use pharmacy reference materials.
   Learning Objectives
   a. Demonstrate the ability to find industry appropriate compounding related information off websites.
   b. Locate print materials within pharmacy lab.
2. Maintain pharmacy equipment and facilities.
   Learning Objectives
   a. Demonstrate the maintance of manual equipment.
   b. Demonstrate the maintenance of electronic equipment.
c. Describe the equipment and facility needs for non-sterile compounding.

3. **Demonstrate how to properly store medications.**
   
   **Learning Objectives**
   
   a. Describe packaging options for various medication forms.
   b. Demonstrate how to properly label medication with a prescription label and appropriate auxiliary label(s).

4. **Demonstrate compounding techniques.**
   
   **Learning Objectives**
   
   a. Demonstrate trituration.
   b. Demonstrate geometric dilution.
   c. Demonstrate levigation.
   d. Demonstrate spatulation.

5. **Explain the advantages and disadvantages of compounding.**
   
   **Learning Objectives**
   
   a. Define the term compounding.
   b. Discuss the role of the pharmacy technician in compounding.
   c. Discuss the advantages of compounding.
   d. Explain why compounding medications may be necessary.
   e. Discuss the disadvantages of compounding.

6. **Demonstrate weighing techniques.**
   
   **Learning Objectives**
   
   a. Demonstrate proper use of a class 2 manual torsion balance.
   b. Demonstrate proper use of an electronic balance.

7. **Compound non-sterile products using appropriate techniques.**
   
   **Learning Objectives**
   
   a. Prepare worksite according to USP<795> regulations.
   b. Apply safety procedures in regards to USP<795> regulations.
   c. Accurately interpret physician orders.
   d. Accurately calculate mathematical formulas for compounding.
   e. Compound prescriptions using appropriate equipment and supplies.
   f. Compound capsules using punch method.
   g. Compound capsules using capsule filling machine.
   h. Compound suppositories using molds.
   i. Compound lozenges using molds.
   j. Compound chewable troches using molds.
   k. Prepare oral liquid compounds.
   l. Compound topical medications.
   m. Compound lip balm.
   n. Compound cat treats.
   o. Evaluate and verify correct procedures were used during compounding.
   p. Demonstrate proper record keeping of each prescription processed.
   q. Demonstrate proper filling and labeling of final prescription.
## Appendix B

### New Course or Course Change Proposal Form

**Date of Proposal:** 2/17/12  
**Author:** Summer Goffr

### Proposal Type:
- *New Course*  
- Modify Course  
- Delete Course  

**Contact for the Course:** Summer Goffr

**Course Designator, Number and Title (i.e.: ACCT 1800, Business Law):**  
PHRM 2111U, INSTITUTIONAL PHARMACY

**Number of Credits:** 4

**Prerequisites:** PHRM 1113, 2114

**Course Description:** In this course students must learn general practices associ- 
ated with institutional pharmacy services. The student will also acquire knowledge of 
aspect technique through both demonstrations and hands-on experiences in the 
preparing pharmacy business components. [Wd. mistaking w.] Covers ASHP Goals 2, 3, 5, 10, 12, 20, 27, 30.

**Grading Method:** Grade X  
**Pass/Fail**

**Scheduling:** Fall  
**Spring** X  
**Summer**  
**Alternate Years**  
**Variable**  
**On Demand**

**Instructional Type:** Lecture  
**Lab**  
**Lecture/Lab**  
**2**  
**Internship**  
**Seminar**

*Class Maximum: (For New Courses Only) / All Unlimited faculty members of a program or discipline must sign.*

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*If there is not enough space provided, please use the back of this form for additional signatures or click on a row with the right button of the mouse, select Insert and then select Insert rows below to add rows to the table.*

**Is this Course Proposed as a Liberal Arts Course:** Yes X No

If Yes, Which MnTC Area/Areas Will it Fulfill ([http://www.mntctransfer.org](http://www.mntctransfer.org))?

**Is This Course a Requirement/Elective for a Specific Program or Programs:** Yes X No

If Yes, Which Program(s)?  
**Pharmacy Technician**

Describe What is Changing/Being Added, and the Rationale:  
Combining PHRM 2101 (INSTITUTIONAL PHARMACY) & PHRM 2106 (ASEPTIC TECHNIQUE) into 1 course to make it concepts easier to teach and learn. Incorporating new project midstation into class.

**What Impact Will This New Course or Change Have on Other Programs or Areas?**  
None

> Attach Common Course Outline to this Form.
Institutional Pharmacy
Course Outcome Summary

Course Information
Organization South Central College
Developers Summer Gioffe
Development Date 2/6/2012
Course Number PHRM 2116
Potential Hours of Instruction 96
Total Credits 4

Description
In this course students will learn general practices associated with institutional pharmacy services. The student will also acquire knowledge of aseptic technique through both demonstrations and hands on experiences in the preparation of sterile compounds and IV admixtures. This course covers the preparation, calculations, and procedures for intravenous drug admixtures, TPN compounding, and critical care admixtures. Students will also have the opportunity to participate in various pharmacy technician duties using the Pyxis Medstation. This course is intended to satisfy goals 2, 3, 5, 10, 12, 26, 27, 30, and 35 of the model curriculum for pharmacy technician training, developed by the American Society of Health-System Pharmacists. Prerequisites: PHRM 1113, 2114

Types of Instruction
<table>
<thead>
<tr>
<th>Instruction Type</th>
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<th>Credits</th>
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<td>2</td>
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<tr>
<td>Lab</td>
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Prerequisites
PHRM 1113, PHRM 2114

Exit Learning Outcomes
Core Abilities
A. Critical and Creative Thinking
B. Oral and Written Communication
C. Teamwork and problem-solving

Competencies
1. Develop a basic knowledge of sterile compounding.

   Learning Objectives
   a. List and define various routes of medication administration indicating which routes require sterile preparation.
   b. Differentiate between a peripheral and central line and when each would be indicated for use.
   c. Explain the difference between sterile and non-sterile compounding.
   d. Explain the importance of proper aseptic technique.
2. **Demonstrate the pharmacy technician’s role in sterile compounding.**

   **Learning Objectives**
   
a. Discuss the implications of USP Chapter <797>.
b. List the five rights of medication administration.
c. Describe the training process for personnel working in a sterile compounding and/or IV admixture environment.
d. Describe the documentation required in sterile compounding.
e. Compare and contrast process validation, quality assurance, and end product testing.

3. **Establish a sterile compounding environment.**

   **Learning Objectives**
   
a. Explain the different types barrier equipment used in sterile compounding including the advantages and disadvantages of each.
b. Describe the areas of a clean room environment and what is allowed or prohibited in those areas.
c. Demonstrate and explain the logic behind the proper cleaning technique of a laminar airflow hood.
d. Demonstrate and explain the logic behind the proper cleaning technique of a glove box isolator.
e. Follow policies and procedures for sanitation management, hazardous waste handling, and infection control.

4. **Demonstrate knowledge of sterile compounding supplies and their respective functions.**

   **Learning Objectives**
   
a. Identify a vial, ampule, transfer needle, filter needle, filter straw, stop cock, IV port, port adapter, and IV tubing.
b. Distinguish between single use vials and multiple dose vials.
c. Differentiate between common IV base solutions.
d. Identify the parts of a syringe and needle.

5. **Apply calculations used in sterile compounding.**

   **Learning Objectives**
   
a. Calculate diluent, powder and final volumes for reconstituted powder drugs.
b. Calculate IV dosages.
c. Calculate IV flow and drip rates.
d. Calculate the volume of electrolytes added to a TPN.
e. Calculate volumes required of stock medications to acquire physician ordered dose strength.
f. Calculate w/w, w/v, and v/v percentages.
g. Discuss and calculate dilution technique.

6. **Demonstrate ability to read medication orders.**

   **Learning Objectives**
   
a. Recognize common medication order abbreviations.
b. Determine the name of drug and desired strength ordered.
c. Identify parts of a medication order required to fill order.

7. **Apply garbing for sterile product preparation.**

   **Learning Objectives**
   
a. Demonstrate proper hand washing technique.
b. Demonstrate proper gloving technique.
c. Demonstrate proper aseptic garbing.
d. Demonstrate proper 'de-garbing' after compounding.

8. Demonstrate use of primary engineering controls.
   Learning Objectives
   a. Demonstrate proper procedure for cleaning of a horizontal laminar flow hood and barrier isolator.
   b. Explain the terms: clean air, area of turbulence, antechamber, positive pressure, negative pressure and the six inch rule.
   c. Compare and contrast the placement of items within various primary engineering controls.
   d. List the advantages and disadvantages of horizontal laminar airflow hood, a biological safety cabinet, and a barrier isolator.
   e. Describe common errors made by technicians when utilizing a horizontal laminar airflow hood and how to avoid them.

9. Demonstrate application of aseptic technique.
   Learning Objectives
   a. Demonstrate efficient preparation through hand washing, garbing, pre-calculation, and selection of materials.
   b. Demonstrate proper technique when entering a vial.
   c. Demonstrate the proper opening of a glass ampule and removing its contents.
   d. Explain how to manipulate supplies such as needles, filters, and syringes.
   e. Demonstrate how to reconstitute a powder in a vial.
   f. Demonstrate proper techniques for removing air bubbles from syringes.
   g. Demonstrate proper technique when injecting medication into an IV bag.
   h. Explain the theory of clean air.

10. Apply compounding of Total Parenteral Nutrition (TPN).
    Learning Objectives
    a. Explain why a patient receives a TPN.
    b. List the additives used in making a TPN.
    c. Describe how to admix a TPN.
    d. Discuss automatic mixing equipment.

11. Apply compounding use in Chemotherapy.
    Learning Objectives
    a. Explain safety procedures for handling chemotherapy agents.
    b. Discuss appropriate procedures for preparing chemotherapy agents.
    c. List hazards involved with preparing chemotherapy agents.
    d. Demonstrate how to clean up a chemotherapy spill.
    e. Discuss innovative products in chemotherapy compounding.

12. Assist the pharmacist in collecting, organizing, and evaluating information for direct patient care, medication use review, and departmental management.
    Learning Objectives
    a. Use knowledge of the organization of patient medical charts and records to efficiently locate a specific piece of information.
    b. State specific types of questions from patients or health care providers to which an answer by the technician would be inappropriate.
    c. Explain the purpose of a medication use review.
d. Explain why it is important for the technician to notify the pharmacist when screening of the prescription/medication order reveals a non-formulary medication has been ordered.

   Learning Objectives
   a. Describe the various systems used to distribute medications.
   b. Evaluate and process medication orders using the EHR system.
   c. Apply the reading and interpretation of physician orders.
   d. Demonstrate how to refill and charge crash carts.

14. Demonstrate the filling and operation of the Pyxis Medstation.
   Learning Objectives
   a. Describe the function of the Pyxis Medstation in an institutional setting.
   b. Demonstrate the proper filling of the Pyxis Medstation.
   c. Demonstrate proper documenting of discrepancies on the Pyxis Medstation.
   d. Recover a failed drawer on the Pyxis Medstation.
   e. Demonstrate the ability to take an inventory on the Pyxis Medstation.
   f. Demonstrate the ability to outdate medication in the Pyxis Medstation.
   g. Demonstrate placing an item in the return bin of the Pyxis Medstation.
   h. Discuss the scenarios in which a health care team member would waste a medication.
   i. Demonstrate the ability to refill medications in the Pyxis Medstation.
   j. Use reports generated by the Pyxis Medstation to evaluate tasks that need to be completed.
   k. Demonstrate the emptying of the return bin on the Pyxis Medstation.
   l. Demonstrate the ability to troubleshoot the Pyxis Medstation.

15. Control the inventory of medications, equipment, and devices according to an established plan.
   Learning Objectives
   a. Describe the various methods of inventory control.
   b. Describe the general tasks involved in receiving and verifying the order of goods.
   c. Describe methods for handling back ordered medications.
   d. Describe common reasons for discontinuing or recalling items.
   e. Explain a standard procedure for reviewing, removing and handling pharmaceuticals, equipment, devices, and supplies that have expired, been recalled, or are otherwise unfit for patient utilization.
   f. Explain the importance of maintaining an inventory system through accurate documentation.
**Appendix B**

**New Course or Course Change Proposal Form**

<table>
<thead>
<tr>
<th>Date of Proposal:</th>
<th>2/7/12</th>
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<tbody>
<tr>
<td>Author:</td>
<td>Summer Griffis</td>
</tr>
<tr>
<td>Proposal Type:</td>
<td>*New Course</td>
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<tr>
<td>Contact for the Course:</td>
<td>Summer Griffis</td>
</tr>
<tr>
<td>Course Designator, Number and Title (i.e.: ACCT 1800, Business Law):</td>
<td>PHRM 2118, Pharmacy Technician Seminar</td>
</tr>
<tr>
<td>Number of Credits:</td>
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<tr>
<td>Prerequisites:</td>
<td>Co-requisite of PHRM 2117 and instructor approval.</td>
</tr>
<tr>
<td>Course Description:</td>
<td>This course is designed to bring students who are completing their internships together to discuss pertinent topics related to the internship experience as well as their futures as pharmacy technicians. This course is also designed to aid the student in the review of materials prior to the PTC exam.</td>
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<td>Grading Method:</td>
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<td>Scheduling:</td>
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<th>Dean's Name</th>
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<td>No</td>
</tr>
<tr>
<td>If Yes, Which Program(s)?</td>
<td>Pharmacy Technician</td>
<td></td>
</tr>
</tbody>
</table>

Describe What is Changing/Being Added, and the Rationale:
We are taking a credit from the internship so that students can get together with the instructor to have discussions, review playing, interviewing opportunities in a face-to-face structure

What Impact Will This New Course or Change Have on Other Programs or Areas?

None

* Attach Common Course Outline to this Form.
Pharmacy Technician Seminar
Course Outcome Summary

Course Information
Organization South Central College
Developers Summer Gioffe
Development Date 2/6/2012
Course Number PHRM 2118
Potential Hours of Instruction 16
Total Credits 1

Description
This course is designed for students to discuss pertinent topics related to the internship experiences as well as their futures as pharmacy technicians. This course is also designed to aid the student in the review of materials prior to the PTCE exam. This course is intended to satisfy goals 1-35 of the model curriculum for pharmacy technician training, developed by the American Society of Health-System Pharmacists. Prerequisites: None

Types of Instruction

<table>
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<tr>
<th>Instruction Type</th>
<th>Contact Hours</th>
<th>Credits</th>
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<tbody>
<tr>
<td>Lecture</td>
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</table>

Prerequisites
None

Exit Learning Outcomes

Core Abilities
A. Ethical Reasoning and Action
B. Teamwork and problem solving
C. Written and Oral Communication

Competencies
1. Demonstrate an appreciation for the benefits of active involvement in local, state, and national technician and other pharmacy organizations.
   Learning Objectives
   a. Explain the benefits of membership in the range of local, state, and national pharmacy organizations.
   b. Describe the local, state, and national pharmacy organizations which offer value for the pharmacy technician.
2. Function effectively as a member of the health care team.
   Learning Objectives
   a. Use knowledge of interpersonal skills to effectively manage working relationships.
   b. Describe the types of interactions with others that occur in the work of the pharmacy technician.
c. Explain techniques for working well on health care-related teams.
d. Explain the factors that characterize good working relationships with others.
e. Explain effective methods for delegating work.
f. Explain the characteristics of collaborative interdepartmental work relationships.
g. Explain the dynamics of small groups.

3. **Develop an appreciation of technician certification.**
   
   **Learning Objectives**
   
   a. Articulate the reasons for obtaining pharmacy technician certification.
b. Articulate the laws and regulations regarding certification.
c. Describe the continuing education requirements after obtaining certification.

4. **Summarize the format and content of the PTCE exam.**
   
   **Learning Objectives**
   
   a. Describe the guidelines of the Pearson VUE testing center.
b. Outline the content of the PTCE exam.
c. Demonstrate knowledge of assisting the pharmacist.
d. Demonstrate knowledge of maintaining medication and inventory control systems.
e. Demonstrate knowledge in the participation of the administration and management of pharmacy practice.

5. **Demonstrate successful job search strategies**
   
   **Learning Objectives**
   
   a. Develop an effective resume.
b. Participate in mock-interviews with pharmacists and pharmacy technicians.
c. Articulate resources that can be used in the job search process.