Course Inventory Change Request

Date Submitted: 02/11/15 10:58 am

Viewing: MLS 3314: Advanced Clinical Microbiology

Last edit: 02/17/15 11:51 am

Changes proposed by: vhughes

Catalog Pages referencing this course

In Workflow
1. MLS Chair
2. HSC Admin
3. HSC Dean
4. University Curriculum Committee Chair
5. Banner

Approval Path
1. 02/11/15 10:59 am
   Virginia Hughes (vhughes): Approved for MLS Chair
2. 02/17/15 9:41 am
   Colleen Hales (hales): Approved for HSC Admin
3. 02/17/15 11:51 am
   Carole Grady (grady): Approved for HSC Dean

Bachelor of Science in Medical Laboratory Science

Course Prefix: MLS  Course Number: 3314
Effective Semester: Fall 2015
Department: Medical Laboratory Science (MLS)
School: School of Health Sciences
Course Title: Advanced Clinical Microbiology
Short Course Title: Advanced Clinical Microbiology
Credits: 4
<table>
<thead>
<tr>
<th><strong>Workload Factors:</strong></th>
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<tbody>
<tr>
<td><strong>Primary Grade Type:</strong></td>
<td>Standard Letter</td>
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<td><strong>Secondary Grade Type:</strong></td>
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<td><strong>Instructor Permission Required:</strong></td>
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<td><strong>Repeatable for Credit:</strong></td>
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<td><strong>Schedule Type:</strong></td>
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<tr>
<td><strong>Hrs/Wk:</strong></td>
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<tr>
<td><strong>Catalog Prerequisites?</strong></td>
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<td><strong>Catalog Prerequisites:</strong></td>
<td>Admission to the Dixie State University Bachelor of Science Program in Medical Laboratory Science.</td>
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<td><strong>Grade Required on Prerequisite(s):</strong></td>
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<td><strong>Corequisites?</strong></td>
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<td><strong>Course/Lab Fee?</strong></td>
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<td><strong>Course/Lab Fee Amount:</strong></td>
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<td><strong>Fee Deposit Index Code:</strong></td>
<td>HEA320</td>
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<td><strong>Fee Justification:</strong></td>
<td><strong>Fee increase to cover increasing costs of laboratory reagents and test kits for course.</strong></td>
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<tr>
<td><strong>Instruction Index Code:</strong></td>
<td>HEA217</td>
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<td><strong>GE Status Requested:</strong></td>
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**Catalog Description**

Required course for students in the Bachelor of Science Program in Medical Laboratory Science. Comprehensive study of clinical microbiology using the culture site approach including laboratory identification of pathogens by traditional manual methods. Molecular diagnostics will also be covered using current and evolving techniques. FA
Course Rotation:
Fall (every)

Justification for course/change:
to pay for microbiological media and reagents for molecular diagnostics

<table>
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<th>Library Resources</th>
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<td>Tech Resources</td>
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Course Learning Outcomes:
1. Define a carrier state.
2. Define bacteriocins.
3. List media used in throat cultures.
4. Perform culture workups of upper and lower respiratory infections in the laboratory.
5. List normal flora of the upper respiratory tract.
6. List three virulence factors of microorganisms in the upper respiratory tract.
7. Describe culture techniques for isolating Group A Strep.
8. Differentiate bacteremia from septicemia.
9. Compare and contrast Mycobacterium tuberculosis, M. marinum and M. leprae.
10. Describe the principle of the Bactec9000 and BacT-alert in detecting bacterial growth in blood cultures.
11. Compare and contrast HEA reactions of Salmonella and Shigella.
12. Describe PCR technology and list advantages and disadvantages of this technology.

Mycology
1. Visually recognize yeast growing on sheep blood agar and perform a gram stain to examine yeast morphology.
2. Perform a germ tube test.
3. Compare and contrast mold and yeast morphology and characteristics
4. Learn to microscopically identify common mold isolates.

Virology
13. Categorize various viruses by nucleic acid composition.
14. Describe how viruses replicate.
15. Demonstrate competency in serological testing of Cytomegalovirus by ELISA.

Parasitology
1. Illustrate the life cycle of intestinal ameba.
2. Describe procedures for diagnostic parasitology wet mounts, fecal concentration and
permanent slides.

3. Differentiate morphology of major intestinal protozoan pathogens G. lamblia and E. histolytica.

Presentation
1. Effectively prepare and communicate a discussion of microbiological significance to the class.

How do your Course Learning Outcomes align to your Program Learning Outcomes?

Define a carrier state, define bacteriocins, list media used in throat cultures, list normal flora of the upper respiratory tract, list three virulence factors of microorganisms in the upper respiratory tract, describe culture techniques for isolating Group A Strep, differentiate bacteremia from septicemia, compare and contrast M. tuberculosis, M. marinum, and M. leprae, describe the principle of the Bactec9000 and BacT-alert in detecting bacterial growth in blood cultures, compare and contrast HEA reactions of Salmonella and Shigella, describe PCR technology and list advantages and disadvantages of this technology align with PLO6 (demonstrate knowledge of microbiology and molecular diagnostics) Perform culture workups of upper and lower respiratory infections in the laboratory aligns with PLO2 (Perform accurate lab testing on body fluids, cells, and other substances).

Visually recognize yeast growing on Sheep blood agar and perform a gram stain to examine yeast morphology, perform a germ tube test align with PLO2 (perform accurate lab testing on body fluids, cells, and other substances). Compare and contrast mold and yeast morphology and learn to microscopically identify common mold isolates align with PLO6 (demonstrate knowledge of microbiology).

Categorize various viruses by nucleic acid composition, describe how viruses replicate align with PLO6 (demonstrate knowledge of microbiology)

Demonstrate competency in serological testing of Cytomegalovirus by ELISA align with PLO2 (perform accurate lab testing of body fluids, cells, and other substances).

Illustrate the life cycle of intestinal ameoba, describe procedures for diagnostic parasitology wet mounts, fecal concentration, and permanent slides, differentiate morphology of major intestinal protozoan pathogens G. lamblia and E. histolytica align with PLO6 (demonstrate knowledge of microbiology), effectively prepare and communicate a discussion of microbiological significance to the class align with PLO10 (demonstrate effective written and oral communication skills).

Schedule of lesson activities that meet Course Learning Outcomes

lectures, student labs, case studies, lecture exams, lab practicals, oral presentations.
Assessment activities that provide evidence of student learning

**Three lecture exams, one final exam, two lab practicals, one oral presentation**

<table>
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<tr>
<th>Course Reviewer</th>
<th>Comments</th>
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<tr>
<td><strong>dwade (02/02/15 11:40 am)</strong>:</td>
<td>Rollback: Virginia asked for rollback</td>
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<tr>
<td><strong>dwade (02/10/15 9:42 am)</strong>:</td>
<td>Rollback: DW made changes to workflow and require a rollback. Pls resubmit.</td>
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