Course Title: Survey in Advanced Extracorporeal Science I

Course Number: CLPR 775

Credit Hours: 2 Semester Hours

Contact Hours: 9 hours Classroom; 24 hours Independent; 9 hours Examination

Prerequisites: Enrollment in the UNMC DAO program or permission from the Program Director.

Semesters Offered: Variable

Instructor(s)/Faculty:
David W. Holt, MA CCT
UNMC CPE Program Director
e-mail: dwholt@unmc.edu
UNMC Office: 402-559-7227
Cellular: 614-406-2893

Office hours by appointment and TBA

Class Days, Times, Location:
Course delivered in entirety ONLINE
IP Audio/Video or Live as scheduled
BlackBoard activities as scheduled

See CPE Academic Calendar for specific dates and times

Clinical Expectation
None

Course Description:
Survey in Advanced Extracorporeal Science I is a distance-delivered course within the Clinical Perfusion Science curriculum offered to MDCP students. The students participate in a comprehensive review of the complex issues of extracorporeal circulation, exploring its controversies, which seemingly drive clinicians away from widespread use of the technology. The course is intended for those students who have experience in ECC science and a practical or developing managerial perspective. The student will seek to understand assigned complexities by review of scientific literature, interviews with content experts, and combine these with contributions from their personal experiences.
Survey in Advanced Extracorporeal Science I is an exploratory course seeking solutions under the guidance of staff and faculty. By class participation, presentations, and interviews the students will be encouraged to interact with individuals from multiple allied health specialties. Emphasis is placed on using scientific inquiry in exploring the real meaning and presence of the problems, as well as seeking potential solutions, if at all realistically possible.

**Instruction:**

The class will consist of regular classroom asynchronous activity. At a minimum, weekly contributions are expected. Weekly contributions, however, will only ensure a grade level of “C”. Any literature used, examinations, or projects will be in electronic format to accommodate a distance-learning design. Participation in asynchronous discussion is expected and is measured utilizing the BlackBoard. IP class activity will be as announced.

**Course Goals:**

Upon successful completion of this course, the student should be able to

1. apply skills in employing the processes involved with scientific methodology.

2. demonstrate ethical high quality research that should have applications towards improved patient care.

3. synthesize peer reviewed research trials under the tutelage of faculty perfusion staff and medical staff from the departments of Surgery, Thoracic Surgery, Anesthesiology, Clinical Pathology, and others.

4. Identify unique "problems" related to extracorporeal science.

5. comprehensively review these unique "problems" utilizing peer-reviewed research seeking background foundation isolating the source of the "problems."

6. demonstrate a comprehensive knowledge of the current and relevant literature on the identified "problems" and related areas.

7. Effectively formulate discussion with faculty and collaborative investigators on exploration of the "problems."

8. suggest solutions to "problems" based upon isolating facts surrounding the true clinical issues.
Required Textbook/Materials:
Access to internet-based medical search engines providing ECC resources such as those provided by PubMed, AmSECT JECT, or AACP Perfusion. Retrieval of hard copy then converted to pdf or pdf downloaded from the library is necessary to share the material with fellow classmates and the course instructor.

Suggested Resources:


Hensley, FA (Editor), Martin, DE (Editor); Practical Approach to Cardiac Anesthesia (4th Ed); ISBN-13: 978-0-7817-9533-3; Lippincott Williams & Wilkins; 2007

Hillyer, Christopher D. (Editor), Frank Strobl (Editor), Krista Hillyer (Editor), Leslie E. Silberstein (Editor), Leigh C. Jefferies (Editor); Handbook of Transfusion Medicine; ISBN: 0123487757; Elsevier Science & Technology Books; 2001


Mora, CT, Cardiopulmonary Bypass: Principles and Techniques of Extracorporeal Circulation (2nd Ed); Springer-Verlag, NY. 1995

Spiess, Bruce (Editor), Steven Gould (Editor), Richard Counts (Editor); Perioperative Transfusion Medicine; ISBN: 0781737559; 2005


Grading System:

Students will be graded by completing all assignments by the scheduled due date/time. Incomplete or unexcused tardy assignments will be given a score of 0. Make-up assignments for missed deliverables are not generally permitted.

The instructor reserves the right to alter the schedule as necessary with all students informed via email and the Blackboard announcement system.

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<tr>
<td>100</td>
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<tr>
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Each CPE student will maintain for the duration of the semester his or her own “Forum” under BlackBoard’s “Discussion” section. Each assignment, progress report, and presentation will be posted here for public comment and instructor evaluation.

Grading Scale:

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<td>A-</td>
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<td>B+</td>
<td>87.00-89.99</td>
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<td>B</td>
<td>83.00-86.99</td>
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<tr>
<td>B-</td>
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<td>C+</td>
<td>77.00-79.99</td>
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<tr>
<td>C</td>
<td>73.00-76.99</td>
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<tr>
<td>C-</td>
<td>70.00-72.99</td>
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<td>D+</td>
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<tr>
<td>D</td>
<td>63.00-66.99</td>
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<tr>
<td>D-</td>
<td>60.00-62.99</td>
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<tr>
<td>F</td>
<td>Below 60</td>
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</table>

Grade Requirements:

Attendance in this course is mandatory and full participation is expected. The instructor must approve any non-emergent absence in advance of any missed scheduled activity. Unexcused absences will result in disciplinary action.

A minimum grade of **C (73.00)** must be achieved in this and all courses in order to proceed to the next semester. Failure to achieve this grade will result in review by the Competency Committee who will make a recommendation to both the Program and Medical
Directors concerning their findings. Final determination will be made by the Program and Medical Directors of Clinical Perfusion Education with consultation from the CAHP Dean.

**Deliverables:**

**“World” Productions:**

References to “World” imply engaging the global general ECC community into scholarly discussions by the use of listservs such as “PerfList” or “PerfMail” or both. Others are acceptable ONLY after approval by the course instructors.

World Poster of problem set” (description A) defines the responsibility by composing a scholarly question for global inquisition. “World Poster of observations” (description B, C) will back up A by answering the question on the posted listserv using scholarly references (evidence-based solutions). Thus, EVERY publically posted question MUST have TWO posted evidence-based responses as a minimum, though collective dialogue is encouraged. The intent of this exercise is to engage and guide a scholarly discussion among Perfusionists of the world by answering the problems of ECC science and conducting the inquiry on the public stage to encourage random participation by others.

**Project:**

The goal of the projects produced by this course is to produce engaging and durable inquisitions addressing known and subtle issues associated with extracorporeal circulation. This project has several expected pillars as components for submission of deliverable. These include (1) PowerPoint with dictated readers notes of the presentation and (2) audio MP3 per CPE standards, (3) a literature summary, (4) questions submission, (5) Standard Operating Procedure per CPE template addressing context of project, and (6) self analysis of performance and review of jobs A, B, and C. As a model example, please review Cryoproteins / 2009. Finally (7), the project will be delivered “live” to the class (and other invited guests) on the scheduled date.

1. **PowerPoint:**
   The capstone submitted deliverable of the project must include a PowerPoint presentation with succinctly relays the discovery of the team in the exploration of the topic. It will be from this presentation that the project leader (Job A) will deliver the “live” presentation on the scheduled delivery date. Included in the PowerPoint will be the printed lecture notes in the “Speakers Note” section outlining the audio content.

2. **Audio:**
   The audio of the presentation will be the recorded voice of the
leader delivering the content of the presentation for future use of the material. This audio content MUST be constructed in standard CPE format (15-minute files, MP3 format, mono, bitrate limited to keep each file < 4 megabytes. NOTE: multiple sequential audio files are permitted to allow the audio presentation to be whatever length is necessary to deliver the project).

3. Literature summary:
The lit summary is a courtesy delivery of the published materials necessary to draw the conclusions the team made. The purpose of the summary is for fellow classmates to use the literature components as necessary to perform as needed on the course midterm and final examinations.

4. Question submission:
Questions shall be submitted as part of the project deliverables, which may be used (in whole, in part, or as framework) for the course examinations. At a MINIMUM, this submission must include six (6) multiple-choice questions, two (2) true/false questions, and two (2) short answer or essay questions for ten (10) submitted questions. This submission MUST include the questions with answers, the author of the question, and the referenced source of the question.

5. Standard Operating Procedures (SOP):
Efforts this semester center on classifying and quantifying the “types” of perfusion issues we may encounter, generalizing from the classification a “root” cause and thus building a framework to address them. We intend to develop a Standard Operating Procedure (SOP) to implement these strategies. Each SOP shall take the form (as a minimum):
   I. Purpose
   II. Scope
   III. Definitions
   IV. Safety
   V. Responsibilities
   VI. Procedure
      a. Precautions included
   VII. Associated Materials
   VIII. Additional Information

6. Analysis of performance:
The analysis of performance will be a summary suggestion from the project leader of (1) the performance of team member B / C / D (Job Description B/C/D), (2) the performance of the team as a unit (3) the suggested grade of the project encompassing analysis of deliverables 1 – 5 above.
Additionally, a (4) self-reflection of the performance of the leader including the success of completion of Job Description A and the performance of that position as an effective team leader must be included.

7. Live delivery:
The project leader will deliver to the class members (and other invited guests) the content of the project and offer discussion and defense of conclusions on the scheduled date.

**Job Description A:**
Topic coordinator/leader, "World" poster of problem set, contemplator of personal observations, summarizer of classmates BlackBoard observations, describer of perceived solutions, author of action plan to resolve problems, poster of plan draft to BlackBoard discussion forum for draft discussions and final published solution to BlackBoard (WORD, HTML, or preferably a WEBQUEST (see the BlackBoard External Links for examples)).

The posted “world” question will be an agreed upon solution by the group. A “staged” discussion is intended to allow review for accuracy by the group and increase the personal comfort in the world stage postings.

The published solution will include “delivery” of the final product AND an audio file to accompany the solution. Directions for the audio file TBA. “A” will defend the final product to the audience.

**Job Description B:**
JECT / Perfusion literature source retriever. "World" poster of observations. “B” will answer the posted group world question with an evidence-based solution from their literature findings. Team contributions ARE MEASURED IN BLACKBOARD. Points are awarded accordingly.

**Job Description C:**
Balance of references from ALL OTHER sources, compiler of all lit review references to standard format, "World" poster of observations. “C” will answer the posted group world question with an evidence-based solution from their literature findings. Team contributions ARE MEASURED IN BLACKBOARD. Points are awarded accordingly.

**Job Description D:**
First Assistant to A, Will be the primary editor / reviewer for pre-publication to BlackBoard and presentation to the group. Job "D" will respond to "A" in providing services necessary to the success of
the project as interpreted by project leadership. Additionally, “D” will summarize the references collected into the LITERATURE SUMMARY for distribution to the class. Also, “D” is a "World" poster of observations. “D” will answer the posted group world question with an evidence-based solution from group literature findings. Points are awarded accordingly.

Units/Modules/Course Topics:
See CPE Academic Calendar for course topics and schedules
ADA Accommodations:

It is the policy of the University of Nebraska Medical Center to provide flexible and individualized accommodation to students with documented disabilities. To receive reasonable accommodations, students must complete a Request for Services application and provide documentation to the Services for Students with Disabilities office. Information is available at the Counseling and Student Development Center website at www.unmc.edu/stucouns/ You may contact Ronda Stevens, MSW, Coordinator of Services for Students with Disabilities at 402-559-5553 or rstevens@unmc.edu. The office is located in Bennett Hall, 6001 within the Counseling and Student Development Center. Meetings are by appointment. Adequate time for processing, up to four weeks, is recommended.
Statement of Academic Integrity:

The University of Nebraska Medical Center has established a policy on academic integrity and professional conduct. This policy may be found in the UNMC Student Handbook. All students are expected to adhere scrupulously to this policy. Cheating, academic misconduct, fabrication, and plagiarism are viewed as serious matters and will lead to disciplinary action as described in the UNMC Student Handbook under Procedural rules Relating to Student Discipline. Additional materials related to Responsible Conduct in Research can be found in the UNMC Student Handbook. Selected sections from the UNMC Student Handbook follow:

CHEATING: A general definition of cheating is the use or attempted use of unauthorized materials or information for an academic exercise. Examples of cheating include but are not limited to:
1. using unauthorized materials such as books, notes, calculators or other aids during an examination or other academic exercises;
2. receiving unauthorized assistance from another person during an exam or exercise such as copying answers, receiving answer signals, conversation or having another person take an examination for you;
3. providing assistance to another person during an exam or exercise, such as allowing your answers to be copied, signaling answers or taking an exam for someone else;
4. obtaining answers and/or other information without authorization from someone who has previously taken an examination;
5. including all or a portion of previous work for another assignment without authorization;
6. appropriating another person’s ideas, processes, result, or words without giving appropriate credit, i.e. an appropriate attribution or citation (plagiarism). For example, a student who quotes verbatim the results of a previous student's work in a required term paper, but fails to credit the individual through citation. The work is recent and thus cannot be considered common knowledge.

ACADEMIC MISCONDUCT: Academic misconduct is defined as the falsification of official documents and/or obtaining records, examinations or documents without authorization. Several examples of academic misconduct are:
1. the unauthorized acquisition of all or part of an unadministered test;
2. selling or otherwise distributing all or part of an unadministered test;
3. changing an answer or grade on an examination without authorization;
4. falsification of information on an official university document such as a grade report, transcript, an instructor's grade book or evaluation file or being an accessory to an act of such falsification;
5. forging the signature of an authorizing official on documents such as letters of permission, petitions, drop/add, transcripts, and/or other official documents;
6. unauthorized entry into a building, office, file or computer data base to view, alter or acquire documents.

Research misconduct has been defined by the Federal DHHS Office of Research Integrity (ORI) and UNMC subscribes to this definition: “Research misconduct is defined as fabrication, falsification, or plagiarism in proposing, performing, or reviewing research, or in reporting research results.” Research misconduct does not include honest error or differences of opinion. It is important that every student understand the meaning of fabrication, falsification, and plagiarism.

Fabrication is making up data or results and recording or reporting them. Some examples are:
1. indicating a laboratory experiment had been repeated numerous times or
2. done in a controlled environment when it had not, thus leading to an invented or uncorroborated conclusion.

Falsification is manipulating research materials, equipment, or processes, or changing or omitting data or results such that the research or academic performance is not accurately represented in the research or academic records. Some examples are:
1. altering an original source document, misquoting or misrepresenting a source to support a point of view or hypothesis;
2. Using computer software to change research images so they show something different than the original data.

Plagiarism is the appropriation of another person's ideas, processes, results, or words without giving appropriate credit, i.e. an appropriate attribution or citation. An example is:
1. In the methods section of a thesis, a graduate student describes a procedure used in research for the thesis. The procedure was developed by a fellow graduate student in the laboratory of their major professor; however, neither the student who developed this procedure nor the major professor was given credit in the thesis. This implies that the author had himself developed the procedure.

2. In the background section of a thesis, a graduate student quotes verbatim the results of a previous investigator’s work but fails to credit the individual through citation. The work is recent and thus cannot be considered common knowledge.
CLPR 775 Summer Schedule

<table>
<thead>
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<th>Date</th>
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<th>Day</th>
<th>Who</th>
<th>Topic</th>
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<tr>
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<td>1</td>
<td>Tue</td>
<td>Holt</td>
<td>GTM synchronous chat 8PM Eastern Time</td>
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<td>2</td>
<td>Mon</td>
<td>Student</td>
<td>START - Project I, II</td>
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<td>Project I, II: LIVE Delivery: GTM 8PM ET</td>
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<td>Mon</td>
<td>Holt</td>
<td>EXAM</td>
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CLPR 775 Events Schedule
Summer 2016
ver 5/13/2016