WINONA STATE UNIVERSITY
CHECKLIST FOR CURRICULAR CHANGE PROPOSALS

This checklist enables A2C2 representatives to endorse that their departments have accurately followed the Process for Accomplishing Curricular Change. For each course or program proposal submitted to A2C2, this checklist should be completed and signed by the submitting department's A2C2 representative. Peer review of proposals is also strongly advised, e.g., departments should discuss and vote on the proposals as submitted to A2C2, rather than on the ideas proposed or drafts of proposals.

If a proposal fails to follow or complete any aspect of the process, the Course and Program Proposal Subcommittee will postpone consideration of the proposal and return it to the department's A2C2 representative for completion and resubmission. Resubmitted proposals have the same status as newly submitted proposals.

Note: This form need not be completed for notifications nor should it be included in proposal copies.

1. The appropriate forms and the “Approval Form” have been completed in full for this proposal. All necessary or relevant descriptions, rationales, and notifications have been provided.
   ________ Completed

2a. The “Financial and Staffing Data Sheet” has been completed and is enclosed in this proposal, if applicable.
   ________ Completed ________ NA

2b. For departments that have claimed that "existing staff" would be teaching the course proposed, an explanation has been enclosed in this proposal as to how existing staff will do this, e.g., what enrollment limits can be accommodated by existing staff. If no such explanation is enclosed, the department's representative is prepared to address A2C2's questions on this matter.
   ________ Completed ________ NA

3. Arrangements have been made so that a department representative knowledgeable of this proposal will be attending both the Course and Program Proposal Subcommittee meeting and the full A2C2 meeting at which this proposal is considered.
   ________ Completed
   Name and office phone number of proposal's representative: ________________________________

4. Reasonable attempts have been made to notify and reach agreements with all university units affected by this proposal. Units still opposing a proposal must submit their objections in writing before or during the Course and Program Proposal Subcommittee meeting at which this proposal is considered.
   ________ Completed ________ NA

5. The course name and number is listed for each prerequisite involved in this proposal.
   ________ Completed ________ NA

6. In this proposal for a new or revised program (major, minor, concentration, etc.), the list of prerequisites provided includes all the prerequisites of any proposed prerequisites. All such prerequisites of prerequisites are included in the total credit hour calculations. ________ Completed ________ NA

7. In this proposal for a new or revised program, the following information for each required or elective course is provided:
   a) The course name and number.
   b) A brief course description.
   c) A brief statement explaining why the program should include the course.
      ________ Completed ________ NA

8. This course or program revision proposal:
   a) Clearly identifies each proposed change.
   b) Displays the current requirements next to the proposed new requirements, for clear, easy comparison.
      ________ Completed ________ NA

9. This course proposal provides publication dates for all works listed as course textbooks or references using a standard form of citation. Accessibility of the cited publications for use in this proposed course has been confirmed.
   ________ Completed ________ NA

Department's A2C2 Representative
______________________________

Date
2/1/06
## WINONA STATE UNIVERSITY
### APPROVAL FORM

Routing form for new and revised courses and programs.

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Please forward to Registrar.

Registrar:  
Date entered:  
Please notify department chair via e-mail that curricular change has been recorded.
WINONA STATE UNIVERSITY
PROPOSAL FOR NEW COURSES

Department: BIOLOGY

BIOL 324
Course No.

GENERAL PHYSIOLOGY LABORATORY
Course Name

This proposal is for a(n) Undergraduate Course Graduate Course

Credits

X 2

Applies to: X Major Minor

X Required Required

Elective Elective

Prerequisites: BIOL 323

Grading method Grade only P/NC only Grade and P/NC Option

Frequency of offering annually (fall)

For University Studies Program course approval, the form Proposal for University Studies Courses must also be completed and submitted according to the instructions on that form.

Provide the following information (attach materials to this proposal):

A. Course Description
   1. Catalog description.
   2. Course outline of the major topics and subtopics (minimum of two-level outline).
   3. Basic instructional plan and methods.
   4. Course requirements (papers, lab work, projects, etc.) and means of evaluation.
   5. Course materials (textbook(s), articles, etc.).
   6. List of references.

B. Rationale
   1. Statement of the major focus and objectives of the course.
   2. Specify how this new course contributes to the departmental curriculum.
   3. Indicate any course(s) which may be dropped if this course is approved.

C. Impact of this Course on other Departments, Programs, Majors, or Minors
   1. Does this course increase or decrease the total credits required by a major or minor of any other department? If so, which department(s)?
   2. List the departments, if any, which have been consulted about this proposal.

D. University Studies Course Proposals
   The form Proposal for University Studies Course must also be completed and submitted according to the instructions on that form.

Attach a Financial and Staffing Data Sheet.

Attach an Approval Form.

Department Contact Person for this Proposal:

Dr. Frances Ragsdale

5462 fragsdale@winona.edu

Name (please print) Phone e-mail address
A. Course Description: GENERAL PHYSIOLOGY LAB BIOL 324

1. Catalog description

An intensive laboratory course intended to introduce students to the “classic” physiological exercises, as well as new techniques used to address questions about how a body operates. Exercise topics may include: muscle physiology (skeletal, smooth and cardiac), neurophysiology, ECG and blood pressure, sensory investigations, respiratory function, diving response. Prerequisites: BIOL 323 or concurrent enrollment. Offered yearly.

2. Course outline of the major topics and subtopics (minimum of two-level outline)

i. Introduction to instrumentation using Blood
   a) Protocol
      1) Background Information
         a. Objectives
         b. Osmosis information for cell volume regulation
         c. Blood and its cellular composition
      2) Equipment
      3) Procedures
      4) Analysis
   b) sample data
   c) conduct experiment
   d) Report

ii. Clinical Chemistry
   a) Protocol
      1) Background Information
         a. Objectives
         b. Making solutions – just knowing the math
         c. actual practice
      2) Equipment
      3) Procedures
      4) Analysis
   b) sample data
   c) conduct experiment
   d) Report

iii. Action potentials in earthworm giant nerve fibers
    a) Protocol
       1) Background Information
          a. Objectives
          b. General Nervous System Review
          c. specifics of earthworm nervous systems
       2) Equipment
       3) Procedures
       4) Analysis
    b) sample data
    c) conduct experiment
    d) Report

iv. Earthworm smooth muscle
    a) Protocol
       1) Background Information
          a. objectives
b. General information about smooth muscle
c. specifics of earthworm smooth muscle
2) Equipment
3) Procedures
4) Analysis
b) sample data
c) conduct experiment
d) Report
v. ECG from isolated frog heart
a) Protocol
  1) Background Information
     a. Objectives
     b. General information about ECG's
     c. specifics about frog heart and chemicals being used
  2) Equipment
  3) Procedures
  4) Analysis
b) sample data
c) conduct experiment
d) Report
vi. in situ Amphibian heart physiology
a) Protocol
  1) Background Information
     a. Objectives
     b. General information about frog heart
     c. specifics about drugs being used
  2) Equipment
  3) Procedures
  4) Analysis
b) sample data
c) conduct experiment
d) Report
vii. Physiology of skeletal muscle
a) Protocol
  1) Background Information
     a. objectives
     b. general information about skeletal muscle
     c. specific terminology review
  2) Equipment
  3) Procedures
  4) Analysis
b) sample data
c) conduct experiment
d) Report
viii. Electromyogram
a) Protocol
  1) Background Information
     a. Objectives
     b. General muscle physiology
  2) Equipment
  3) Procedures
  4) Analysis
b) sample data
c) conduct experiment
d) Report

ix. ECG, peripheral circulation, and heart sounds
   a) Protocol
      1) Background Information
         a. Objectives
         b. Review of ECG, circulation and generation of heart sounds
      2) Equipment
      3) Procedures
      4) Analysis
   b) sample data
c) conduct experiment
d) Report

x. Blood pressure
   a) Protocol
      1) Background Information
         a. Objectives
         b. Review of controllers of blood pressure
      2) Equipment
      3) Procedures
      4) Analysis
   b) sample data
c) conduct experiment
d) Report

xi. Diving response
   a) Protocol
      1) Background Information
         a. Objectives
         b. Stories about survival of young children falling into cold water
         c. Specifics about sensory information and cardiovascular control
      2) Equipment
      3) Procedures
      4) Analysis
   b) sample data
c) conduct experiment
d) Report

xii. Respiration
   a) Protocol
      1) Background Information
         a. Objectives
         b. Review ventilation and gas exchange
      2) Equipment
      3) Procedures
      4) Analysis
   b) sample data
c) conduct experiment
d) Report

xiii. Additional Experiment 1
   a) Protocol
      1) Background Information
      2) Equipment
      3) Procedures
      4) Analysis
b) sample data
c) conduct experiment
d) Report
xiv. Additional Experiment 2
a) Protocol
   1) Background Information
   2) Equipment
   3) Procedures
   4) Analysis
b) sample data
c) conduct experiment
d) Report

3. Basic instructional plan and methods

This course is designed to include a three hour lab and a one hour recitation period per week. The lab is designed to give a student hands-on experience using animal and human model systems to elucidate physiological function. The exercises are designed to provide the students with data that can be empirically analyzed. And upon analysis, their results should be comparable to those found in the literature.

The recitation period is designed to allow students to review and complete data analysis as well as discuss findings in light of relevant literature. All of the exercises have modern day correlates in scientific literature. This will not be a lecture time per se, rather it will be a discussion time where students and the faculty member will explore what their results mean in a physiological context. This will also be a time to introduce the lab for the following week.

This is a unique lab experience for although physiological research may utilize techniques typically associated with other biological disciplines (molecular biology -- PCR, immunology -- ELISA, etc), the lab is intended to address systemic questions about how a given body works.

4. Course requirements (papers, lab work, projects, etc.) and means of evaluation.

Each exercise has a lab report associated with it. These lab reports will be handed in one week after the exercise is completed. Points will be earned for how complete the report is. For example, simply filling out the necessary boxes, diagrams, tables, graphs etc will earn students 25 points. For additional effort (class data analyses, literature citations different from the ones discussed, stimulating questions for discussion) additional points may be earned. If a student analyzes information from additional groups and compares that information to published values they will earn 10 additional points. If a student incorporates relevant literature citations into their report 5 additional points will be earned. Generating stimulating discussion questions will earn a student 1 additional point for up to 5 pts total.

Student groups will also be asked to lead in the discussion for a given week. This means keeping the group on task as well as facilitating in the flow of the conversation. The groups will also be responsible for finding at least three relevant literature citations worthy of discussion. (Prior faculty approval is necessary which also adds in a component of time management.) These citations will be made
available at the start of the week (Monday) for the later recitation period. Students are responsible for critically reading these papers.

Each discussion session will be worth 100 pts: 30 pts from the literature search (on time and relevant), 30 pts for discussion of literature (hypothesis of literature, experimental design, summary of findings, additional information), 30 pts for facilitating group dynamics (general flow as well as prepared questions and discussion topics) and 10 pts for creativity (as determined subjectively by the instructor)

Each portion of the class is required, therefore I expect 14 reports (25 pts each for a total of 350 pts) and two discussion grade for each student (200 pts). No makeup labs will be provided, no matter the excuse. If a student misses a lab, they must make up those points utilizing the point scheme described above.

The grades will be determined as a percentage of the total point distribution according to the standard grading scale of 90-100% A, 80-89% B, 70-79% C etc.

5. Course materials (textbook(s), articles, etc.)

There is no official textbook for the course. Handouts will be modified from those available from PowerLab and ADInstruments. Literature information will be available through our library.

Students will be asked to keep a group lab notebook (one with duplicate pages) so that I may chart how student groups are conducting these exercises.

There are many outstanding physiology textbooks available and it will be recommended that the students select at least one book to have on hand for clarification of information.

6. List of some of the relevant references:
   PowerLab ADInstruments. Teaching Resources.
B. Rationale

1. Statement of the major focus and objectives of the course.

The primary goal of this course is to provide students with a practical physiology laboratory experience to prepare them for future studies and postgraduate opportunities.

Specific Objectives: The student will be able to
a) conduct experiments in a safe and organized fashion. In doing so, students will also treat each other and all experimental organisms with respect and dignity.
b) develop investigative techniques that are commonly used to address scientific question outside the academic arena.
c) develop analytical skills for deciphering experimental data.
d) demonstrate independent learning in response to questions raised in the laboratory setting by using textbooks, journal articles, media, computer-based tools, and other resources.
e) demonstrate cooperation by assisting and facilitating group members with tasks that ultimately result in successful data collection.

2. Specify how this new course contributes to the department’s curriculum.

This is not a new course per se, much of the content was taught in a course, General Physiology (BIOL 323), that is in the process of being separated into an independent lecture course and laboratory component. This laboratory experience will be an elective rather than a mandatory component of the course. There will be a change in the total credit hours for the lecture portion (from 5 to 4) which will aid in scheduling and will also decrease the total number of required credits for the Allied Health Option for a Biology Degree.

3. Indicate any course(s) which may be dropped if this course is approved.

No courses will be dropped at this time.

C. Impact of this Course on other Departments, Programs, Majors and Minors

1. Does this course increase or decrease the total credits required by a major or minor of any other department? If so, which department(s)?

The total semester hours for the Allied Health Major will not change because the number of elective credits will be reduced.

2. List the departments, if any, which have been consulted about this proposal.

None.
Include a Financial and Staffing Data Sheet with any proposal for a new course, new program, or revised program.

Please answer the following questions completely. Provide supporting data.

1. Would this course or program be taught with existing staff or with new or additional staff? If this course would be taught by adjunct faculty, include a rationale.

   Existing staff will teach course. The present instructor is teaching the course under her current course load. Separating the lab from the lecture was a calculated move that frees up elective credits for students from all degree options, such that many students would like to take the lecture without the lab component.

2. What impact would approval of this course/program have on current course offerings? Please discuss number of sections of current offerings, dropping of courses, etc.

   The number of sections would probably drop from 2 sections to 1 section.

3. What effect would approval of this course/program have on the department supplies? Include data to support expenditures for staffing, equipment, supplies, instructional resources, etc.

   This is a costly lab because it requires animals and computerized technically-savvy equipment. A reduction in sections offered would free up monies for department.