1. LOCATOR INFORMATION

Semester Spring          Year  2007
Credit Hours             3.00
Course Number and Name:  BIOL 670 Physiology
Course Location & Meeting Time: Lecture Online with Discussion Boards
from 6-8 PM on Tuesday evenings (see schedule)
Office Hours             MR 10:00-12:00, T 6:00-9:00 online W 10:30-12:00
Instructor               Dr. Stephen J. Salek
Office Location          LS 307
Office Telephone         (910) 672-1050
E-mail                   stephen.salek@uncfsu.edu

Course Website: You must log on through FSU’s Blackboard Gateway @ http://blackboard.uncfsu.edu/. You will need your network login and password for access.

FSU Policy on Electronic Mail: Fayetteville State University provides to each student, free of charge, an electronic mail account that is easily accessible via the Internet. The university has established email as the primary mode of communicating with enrolled students about impending deadlines, upcoming events, and other information important to student progression at the university. Students are responsible for reading their email on a regular basis to remain aware of important information disseminated by the university. The university maintains open-use computer laboratories throughout the campus that can be used to access electronic mail.

Students making inquiries via email to FSU faculty and staff about academic records, grades, bills, financial aid, and other matters of a confidential nature are required to use their FSU email account.

Rules and regulations governing the use of FSU email may be found at: http://www.uncfsu.edu/PDFs/EmailPolicyFinal.pdf

2. COURSE DESCRIPTION

Biology 670, Physiology Online is a course that requires 6-8 hours per week on the computer in addition to time spent reading from your text. An undergraduate
course in physiology or consent of instructor is the prerequisite for this course. This course analyses the functions of major organ systems especially in mammals with an emphasis on humans. Theoretical concepts learned in the lecture will be investigated in the laboratory. Prerequisite: Undergraduate or graduate course in physiology and a willingness to put in plenty of study time.

This course requires you to access the course website through blackboard in order to view online lectures and all other course materials. The review sheets linked on your blackboard page will help you prepare for exams. You are expected to have viewed the online lectures, completed the assigned readings, completed review sheets and completed the discussion boards before each exam.

3. TEXTBOOKS

** Text books can be purchased online at Barnes and Noble or Amazon.com, please order your books as soon as you decide to register for the class**

4. THE CONCEPTUAL FRAMEWORK OF THE SCHOOL OF EDUCATION

The conceptual framework defines the vision of the Department of Natural Sciences which underscores the purpose of the School of Education in preparing its candidates for teaching and leadership roles in a global society. The unit prepares candidates who support student learning within the context of family and community participation for a diverse, technological, and global society. We achieve this vision through teaching, research, and service. Our conceptual framework serves as a lens through which we view our education professionals in the secondary education program. The themes of our conceptual framework include knowledgeable and reflective education professionals; working with families and communities; respect for diversity and individual worth; technological competence and educational applications; and caring dispositions and ethical responsibility.
5. COURSE GOALS AND OBJECTIVES
   A) At the completion of the course students should be able
to demonstrate their knowledge and understanding of:
After successful completion of the course students should be able to demonstrate
their knowledge and understanding of:

   1. Functional organization and integration of nervous, endocrine, circulatory,
      respiratory, excretory, digestive and reproductive, and muscular systems.

   2. Integrated nervous and endocrine control of body functions.


   B) The following DPI competencies needed by teachers will be
   acquired from this course. These competencies also meet
   NSTA guidelines.
   1.3 The chemical process of life including respiration,
digestion, protein synthesis, and
methods for the study of cells.
1.4 Homeostasis at the cell and organism levels.
1.5 Anatomy and physiology of vertebrates
1.8 The response of organisms to environmental variations.
1.10 The relationship of biology to human health.
1.12 Human development and reproduction with emphasis on
related health issues.
4.0 Relate the concepts and principles of biology to
contemporary, historical, environmental, technological,
and societal issues.
5.0 Locate resources; design and conduct inquiry-based,
open-ended investigations in biology; interpret
findings, communicate results and make judgments based
on evidence.

6. NCDPI, NCATE OR SPECIALTY AREA STANDARDS

<table>
<thead>
<tr>
<th>Standards Used in this Course</th>
<th>NCDPI Specialty Area Standards</th>
<th>NCATE Standard(s)</th>
<th>Assessment(s)</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Science teachers understand the unifying concepts of science.</td>
<td><strong>Standard 1:</strong> Candidates preparing to work in schools as teachers or other school personnel demonstrate the content, pedagogical and professional</td>
<td>Lecture exams and quizzes.</td>
</tr>
</tbody>
</table>
knowledge, skills and disposition necessary to help all students learn.

<table>
<thead>
<tr>
<th></th>
<th>Science teachers understand the nature of science and the development of scientific thought.</th>
<th>Standard 1</th>
<th>Lecture exams and quizzes.</th>
</tr>
</thead>
<tbody>
<tr>
<td>2</td>
<td>Science teachers understand the historical development of scientific thought and the application of science in society.</td>
<td>Standard 1</td>
<td></td>
</tr>
<tr>
<td>3</td>
<td>Science teachers understand the math concepts and processes and the technologies that are used in science.</td>
<td>Standard 1</td>
<td>Lecture exams and quizzes.</td>
</tr>
</tbody>
</table>

### 7. CORE STANDARDS

Include the NCDPI Core Standards and the assessment(s). Only include the standard or standards you will address in this course.

<table>
<thead>
<tr>
<th>Standards Used in this Course</th>
<th>NCDPI Core Standards</th>
<th>Assessment(s)</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Teachers know the content they teach.</td>
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<tr>
<td>2. Teachers know how to teach students.</td>
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<tr>
<td>3. Teachers are successful in teaching a diverse population of students.</td>
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<tr>
<td>4. Teachers are leaders.</td>
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<tr>
<td>5. Teachers are reflective about their practice</td>
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<tr>
<td>6. Teachers respect and care about students.</td>
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</tbody>
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### 8. DIVERSITY

<table>
<thead>
<tr>
<th>Diversity Standards Used in this Course</th>
<th>NCDPI Diversity Standards</th>
<th>Assessment(s)</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Teachers understand the central concepts, tools of inquiry, and structures of the discipline(s) they teach and can create classroom environments and learning experiences that make these aspects of subject matter accessible, meaningful and culturally relevant for diverse learners.</td>
<td></td>
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<tr>
<td>2. Teachers understand how students’ cognitive, physical, socio-cultural, linguistic, emotional, and moral development influences learning and address these factors when making instructional decisions.</td>
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</tbody>
</table>
3. Teachers work collaboratively to develop linkages with parents/caretakers, school colleagues, community members and agencies that enhance the educational experiences and well being of diverse learners.

4. Teachers acknowledge and understand that diversity exists in society and utilize this diversity to strengthen the classroom environment to meet the needs of individual learners.

5. Teachers of diverse students demonstrate leadership by contributing to the growth and development of their colleagues, their school and the advancement of educational equity.

6. Teachers of diverse students are reflective practitioners who are committed to educational equity.

8. TECHNOLOGY
This course will help strengthen and enhance the candidates’ technological competence and skill in using technology. Candidates will use a variety of technologies to enhance their knowledge of technology in this course.

<table>
<thead>
<tr>
<th>Technological Applications for this Course</th>
</tr>
</thead>
<tbody>
<tr>
<td>x  Productivity tool (Power Point)</td>
</tr>
<tr>
<td>x  Presentation software</td>
</tr>
<tr>
<td>x  Internet</td>
</tr>
<tr>
<td>Web page construction</td>
</tr>
<tr>
<td>x  e-mail</td>
</tr>
<tr>
<td>x  On-line applications</td>
</tr>
<tr>
<td>x  Grade book</td>
</tr>
<tr>
<td>Video camera</td>
</tr>
<tr>
<td>Scanner</td>
</tr>
<tr>
<td>Excel</td>
</tr>
<tr>
<td>Smart board</td>
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<tr>
<td>Lap Top and LCD panel</td>
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<tr>
<td>Music Stereo and CD</td>
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</tbody>
</table>

<table>
<thead>
<tr>
<th>Technology Standards Used in this Course</th>
<th>NCDPI Technology Standards</th>
<th>Assessment(s)</th>
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</thead>
<tbody>
<tr>
<td>1. Teachers demonstrate a sound understanding of technology operations and concepts.</td>
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<tr>
<td>2. Teachers plan and design effective learning environments and experiences supported by technology.</td>
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<tr>
<td>3. Teachers implement curriculum plans that include methods and strategies for</td>
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</tbody>
</table>
applying technology to maximize student learning.

4. Teachers apply technology to facilitate a variety of effective assessment and evaluation strategies.

5. Teachers use technology to enhance their productivity and professional practice.

6. Teachers understand the social, ethical, legal and human issues surrounding the use of technology in PK-12 schools and apply those principles in practice.

10. DISPOSITIONS

<table>
<thead>
<tr>
<th>Professional Competence</th>
<th>Professional Responsibilities</th>
</tr>
</thead>
<tbody>
<tr>
<td>Appreciates and engages in self-reflection</td>
<td>Dresses appropriately for the setting</td>
</tr>
<tr>
<td>Shows a commitment to ongoing learning</td>
<td>Is punctual</td>
</tr>
<tr>
<td>Desires to learn and apply new technologies</td>
<td>Attends class regularly and participates in the class</td>
</tr>
<tr>
<td>Is receptive to new ideas and feedback</td>
<td>Completes assignments and tasks in a timely manner</td>
</tr>
<tr>
<td>Writes and speaks clearly and effectively</td>
<td>Willing to go beyond required assignments</td>
</tr>
<tr>
<td>Uses culturally sensitive language when communicating with families</td>
<td>Shows initiative and motivation</td>
</tr>
<tr>
<td>Respects the privacy of students and their families</td>
<td>Assumes fair share of responsibilities</td>
</tr>
</tbody>
</table>

**Professional Dispositions and Qualities**

<table>
<thead>
<tr>
<th><strong>Professional Integrity</strong></th>
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</thead>
<tbody>
<tr>
<td>Believe all children can learn</td>
</tr>
<tr>
<td>Understands the culture of students and their families</td>
</tr>
<tr>
<td>Values and respects diversity and individual differences</td>
</tr>
<tr>
<td>Demonstrates flexibility and adaptability</td>
</tr>
<tr>
<td>Treats all students fairly and equitably</td>
</tr>
<tr>
<td>Is sensitive to the feelings of others</td>
</tr>
<tr>
<td>Interacts appropriately and positively with others</td>
</tr>
</tbody>
</table>

11. GENERAL REQUIREMENTS

ATTENDANCE AND WITHDRAWAL

Participation in all discussion boards in lecture is EXPECTED (selected Tuesday evenings 6:00-8:00PM see schedule for dates).
Students who know they will miss a test or quiz for an excusable reason must inform the instructor BEFORE or ON THE DAY of the test through phone or e-mail. If you must withdraw from the course it is YOUR responsibility to complete the necessary paperwork for the withdrawal. If you stop participating in discussion boards, turning in quizzes and completing exams without officially withdrawing from the course, you will receive the grade earned based on your point total (at the time you stop participating) divided by the maximum points (as if you had completed ALL work). This usually means a grade of F will be recorded.

CLASS FORMAT

Lectures:
Class will be a combination of streaming video lectures by the instructor, and discussion boards about weekly readings from Guyton, PhysioEx, or webmaterial I select.

Discussion boards
Selected Tuesday evenings 6:00-8:00 PM, see schedule for dates. You are expected to read your weekly assignment. I will post discussion questions several days before the discussion board is scheduled. Each student must write minimum of 8 sentences to respond to each question and make one additional comment or response to one classmate’s submission. The goal of this is to generate interaction with other students in the course. If this is completed with care and in a timely manner, you will receive 25 points per discussion. It is expected that students read all threads in each discussion. I will not answer questions that I have answered in previous a posting, so if you don't receive an answer to a question, search through the discussion to find it.

Laboratory exercises
Your laboratory exercises will consist of PhysioEx exercises ON CD-ROM. This is an excellent laboratory simulation program that will reinforce our lecture topics. I plan to use the discussion board at times to help you with this as well as test your knowledge. You will purchase the lab book and CD together (see above for ISBN). PhysioEx requires:

For a PC: 266 mHz, Windows-95/98/NT/2000/ME/XP, 64 MB RAM (128 MB recommended), 1024 x 768 screen resolution, Millions of colors, Browsers: Internet Explorer 5.0; Netscape 4.6, Plug Ins: Flash 7, Acrobat Reader 7

For a MAC: 240 mHz PowerPC, OS 9.2.2, 10.2.6, 10.2.8, 10.3.5, 10.3.6, or 10.3.7, 64 MB RAM (128 MB recommended), 1024 x 768 screen resolution, Millions of colors, Browsers: OS 9: Internet Explorer 5.1.7 or higher; OS X:
Safari 1.x, Netscape 7.2 or higher, Internet Explorer 5.2.3, Plug Ins: Flash 7, Acrobat Reader 7

**Lab Exams**
You must complete the exercises in each lab and answer the questions at the back of each lab. Once you have completed the lab, you will take an open book quiz on the lab. You may access the quiz under “assignments” on your blackboard page. The quiz runs similar to the exams that will be given.

### 12. EVALUATION CRITERIA

Evaluation will be based on examinations, quizzes, exams and discussion boards.

<table>
<thead>
<tr>
<th>Evaluation Area</th>
<th>Points</th>
</tr>
</thead>
<tbody>
<tr>
<td>3 online exams (100 ea)</td>
<td>300 points</td>
</tr>
<tr>
<td>12 Weekly online discussion boards (25 ea)</td>
<td>300 points</td>
</tr>
<tr>
<td>12 Weekly online lecture quizzes (10 ea)</td>
<td>120 points</td>
</tr>
<tr>
<td>Final online examination</td>
<td>100 points</td>
</tr>
<tr>
<td>Lab Exams (8b@ 10 ea)</td>
<td>80 points</td>
</tr>
<tr>
<td><strong>Total points</strong></td>
<td>900</td>
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</table>

**Grading Scale**

- A = 92-100%
- B = 83-91%
- C = 73-82%

Students are advised to familiarize themselves with the policies of the graduate school regarding grades and grade point average and are required to maintain in order to be in good standing.

**Exam Format:** A timed 120 minute online exam. A combination of true/false, matching, multiple choice, fill in the blanks, short and long essays.

**Quiz format:** Students will view weekly streaming audio presentations. The quiz will be located randomly in one of these presentations. To submit answers to quizzes, click on the quiz under “assignments” in Blackboard and submit your answer.
13. COURSE OUTLINE***

Weekly course activities must be completed in the following order:

Guyton Readings, PhysioEX laboratory, Discussion boards, Online notes, **Online Lectures or Worksheets**, Online Quizzes, Exams

<table>
<thead>
<tr>
<th>Date</th>
<th>Topic</th>
<th>Assignments</th>
<th>Laboratory Assignment</th>
</tr>
</thead>
<tbody>
<tr>
<td>Week 1</td>
<td>Introduction</td>
<td>Guyton 1-4</td>
<td><strong>PhysioEx 1</strong></td>
</tr>
<tr>
<td>Jan 10</td>
<td>The Cell and General Physiology</td>
<td>Discussion Board 1</td>
<td>Check under &quot;assignments&quot;</td>
</tr>
<tr>
<td></td>
<td></td>
<td><strong>Worksheet</strong></td>
<td>Take the assessment entitled &quot;PhysioEx 1&quot;</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Quiz (sketch a skeletal muscle)</td>
<td>This is an open book assessment with no time limit.</td>
</tr>
<tr>
<td>Week 2</td>
<td>Membrane and and Action Potentials</td>
<td>Guyton 5</td>
<td><strong>PhysioEx 3</strong></td>
</tr>
<tr>
<td>Jan 15</td>
<td></td>
<td>Discussion Board 2</td>
<td>Check under &quot;assignments&quot;</td>
</tr>
<tr>
<td></td>
<td></td>
<td><strong>Online Notes</strong></td>
<td>Take the assessment entitled &quot;PhysioEx 3&quot;</td>
</tr>
<tr>
<td></td>
<td></td>
<td><strong>Online Lectures</strong></td>
<td>This is an open book assessment with no time limit.</td>
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<tr>
<td></td>
<td></td>
<td><strong>Animation link</strong></td>
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<tr>
<td></td>
<td></td>
<td><strong>Worksheet</strong></td>
<td></td>
</tr>
<tr>
<td>Week 3</td>
<td>Neuromuscular Transmission Smooth and Skeletal Muscle Contraction</td>
<td>Guyton 6,7</td>
<td><strong>PhysioEx 2</strong></td>
</tr>
<tr>
<td>Jan 22</td>
<td></td>
<td>Discussion Board 3</td>
<td>Check under &quot;assignments&quot;</td>
</tr>
<tr>
<td></td>
<td></td>
<td><strong>Online Notes</strong></td>
<td>Take the assessment entitled &quot;PhysioEx 2&quot;</td>
</tr>
<tr>
<td></td>
<td></td>
<td><strong>Online Lectures</strong></td>
<td>This is an open book assessment with no time limit.</td>
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<tr>
<td></td>
<td></td>
<td><strong>Worksheet</strong></td>
<td></td>
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</tbody>
</table>
| Week 4 | Jan 29 | The Heart and Electrocardiogram | EXAM 1 | Guyton 8-10
Discussion Board 4
Online Notes
Online Notes 2
Online Lectures
Worksheet
Quiz (skeletal muscle heart) | PhysioEx 6
Check under "assignments"
Take the assessment entitled "PhysioEx 6"
This is an open book assessment with no time limit. |
|-------|-------|--------------------------------|--------|--------------------------------------------------|
| Week 5 | Feb 5 | Circulation Capillary Dynamics | Guyton 11-18
Discussion Board 5
Online Notes
Online Lectures
Worksheet (very long)
Quiz (cooling system) | PhysioEx 5
Check under "assignments"
Take the assessment entitled "PhysioEx 5"
This is an open book assessment with no time limit. |
| Week 6 | Feb 12 | The Lymphatic System | Guyton 13
Discussion Board 6
Online Notes
Animations from UMD
(watch both about the lymphatic system)
See worksheet for week 5 | Continue PhysioEx5
Check under "assignments"
Take the assessment entitled "PhysioEx 1"
This is an open book assessment with no time limit. |
| Week 7 | Renal Physiology I | Guyton 20-21  
Discussion Board 7  
Online Notes  
Online Lectures  
Worksheet  
Quiz (Tubuloglomerulo feedback) | **EXAM II**  
PhysioEx 9  
Check under "assignments"  
Take the assessment entitled "PhysioEx 9"  
This is an open book assessment with no time limit. |
|---|---|---|
| Week 8 | Renal Physiology II | Guyton 22-23  
Discussion Board 8  
Online Notes  
Online Lectures  
Worksheet  
Quiz (osmolarity) | PhysioEx 10  
Check under "assignments"  
Take the assessment entitled "PhysioEx 10"  
This is an open book assessment with no time limit. |
| Week 9 | Respiratory Physiology I | Guyton 27-29  
Discussion Board 9  
Online Notes  
Online Lectures  
Worksheet  
Quiz (respiratory volumes) | PhysioEx 7 |
| Week 10 | Respiratory Physiology II | Guyton 28-29  
Discussion Board 10  
Online Notes  
Online Lectures  
Worksheet | PhysioEx 7  
Check under "assignments"  
Take the assessment entitled "PhysioEx 7"  
This is an open book assessment with no time limit. |
| Week 11 | Nerve Physiology I | Guyton 31,32  
Discussion Board 11  
[Online Notes](#)  
[Online Lectures](#)  
Quiz (golgi tendon) | [Neuroscience Interactive](#)  
Complete the exercise on this web page and take the assessment entitled neuroscience interactive |
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<tr>
<td>Mar 19</td>
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</table>
| Week 12 | Nerve Physiology II | Guyton 37,38  
Discussion Board 12  
[Online Notes 1](#)  
[Online Notes 2](#)  
[Online Lectures](#)  
Worksheet | [PhysioEx 8](#) |
| Mar 26 | **EXAM III** |  |  |
| Week 13 | Gastrointestinal Physiology | Guyton 42-44  
Discussion Board 10  
[Online Notes](#)  
[Online Lectures](#)  
Worksheet  
Quiz (Hormone system) | Continue [PhysioEx 8](#)  
Check under "assignments"  
Take the assessment entitled "PhysioEx 8"  
This is an open book assessment with no time limit. |
| Apr 2 |  |  |  |
| Week 14 | Endocrinology | Guyton 49-53  
Discussion Board 11  
[Online Notes 1](#)  
[Online Lectures 1](#)  
[Online Notes 2](#)  
notes part 2 A  
[Online Lectures 2](#) | [PhysioEx 4](#) |
| Apr 9 |  |  |  |
| Week 15 | Reproductive Physiology | Worksheet
Quiz (Endocrine/Nervous) | Guyton 54-56
Discussion Board 12
Online Lectures 1
Online Lectures 2
Online Lectures 3
Online Lectures 4
Online Lectures 5
Online Lectures 6 | Continue PhysioEx 4
Check under "assignments"
Take the assessment entitled "PhysioEx 4"
This is an open book assessment with no time limit |
| Week 16 | Review and Final Exam | |

*** This is a tentative schedule. The instructor reserves the right to alter it at any time. It is your responsibility to be in class and check your blackboard page in order to keep pace with any changes made to the schedule or assignments.***

15. UNIVERSITY POLICIES

Division of Student Affairs
Services for Students with Disabilities
http://www.uncfsu.edu/studentaffairs/CFPD/cfpdservices.htm
Phone: 910.672.1222

The university continues to be sensitive to the identification of possible barriers to students with disabilities and attempts to make reasonable accommodations for these students. Students with physical disabilities who need assistance in utilizing university services should register with the Center for Personal Development as soon as they are admitted to the university.
16. REFERENCES

Books

Journals
Electronic journals and databases may be accessed through the Charles Chestnutt Library or through external links from our blackboard page:
http://blackboard.uncfsu.edu/
http://library.uncfsu.edu/

17. STUDENT RESPONSIBILITY

Students are expected to view all lectures, complete all quizzes, tests and assignments. It is the student's responsibility to make up any and/or all missed work. The student is expected to contact the instructor if there is any difficulty with the online format of the course.

18. DISCLAIMER

To accommodate emergent circumstances, the professor reserves the right to make reasonable changes in the syllabus while the course is in progress. Any understandings between the student and the professor including but not limited to, changes, expectations, or modification to course requirements or procedures must be in writing and must be signed by both parties. Any questions of the interpretation of course requirements or of understandings between a student and the professor will be at the discretion of the professor.