APPENDIX.
Supplementary Information to selected Proposals
CLAS Committee on Curricula and Courses
October 14, 2003

2003-89

Audit Sheet: Minor in Political Science Plan of Study

See the minor advisor when you begin preparing your plan of study.

• Students must begin preparation by taking at least one introductory 100-level course selected from among POLS 106; 121; *or* 132; 143; or 173. At least one additional 100-level course is recommended. (It is advisable to build upon this foundation when selecting 200-level courses.)
• Students must complete at least 15 credits of course work at the 200 level (or higher, with consent of instructor and minor advisor). A W or Q course may be substituted for the same numbered course.
• POLS 296 and 298 may be counted toward the minor only with consent of the adviser. POLS 297 and 299 may not be counted toward the minor.
• Courses must be selected from at least three of the six disciplinary subdivisions.

The introductory 100-level course offered for the minor: POLS _____
Recommended second l00-level course, if taken: POLS _____

Circle each course offered for the minor in at least three subdivisions. **Cross-listed courses may count only once**.

1. **Theory and Methodology**: 201, 202, 204, 205, 206W, 207, 291

2. **Comparative Politics**: 203W, 223, 228, 230, 231, 232, 233, 235, 237, 239W, 244, 258

3. **International Relations**: 211, 212, 215, 216, 217, 218, 219, 220, 221, 222, 224, 225, 226, 227, 279

4. **American Politics**: 241, 242, 247, 248, 249, 263, 270, 274, 275

5. **Public Administration, Policy and Law**: 250, 251, 252, 253, 255, 256, 260, 261, 264, 266, 276, 277

6. **Race, Gender, and Ethnic Politics**: 203W, 204, 225, 239, 247, 248, 249, 256, 263

Two additional courses offered for the minor in political science

Obtain approval of your final plan of study by getting the signature of either the minor advisor or department head. Give one copy to your advisor, one copy to the Department of Political Science, and include one signed copy when you submit your final plan of study to the Registrar.
Name of Student _____
Student ID _____
Major _____

I approve the above program for the Minor in Political Science.

_____ or _____ _____
Political Science Minor Advisor Department Head Date Rev. 9/2003

2003-90
PHYS 2XXV. Computational Physics

Text Book Candidates:1. A. L. Garcia, Numerical Methods for Physics, Prentice Hall, 1994. This book first teaches the use of MATLAB, and, after mathematical algorithms are described, utilizes both MATLAB and FORTRAN to solve problems in physics. This is one of the two books closest to the aim of the proposed course.

2. M. L. Boas, Mathematical Methods in the Physical Sciences, John Wiley and Sons, 1966. This book introduces theoretical methods of mathematical physics and associated functions (such as Bessel functions), at a level appropriate to our undergraduate Physics majors.

3. R. H. Landau and M. J. Paez, Computational Physics; Problem Solving with Computers, John Wiley and Sons, Inc. 1997. This book provides an excellent introduction to numerical methods. It is based on FORTRAN and C, with a strong orientation towards solving physics problems. First, however, it presents a good introduction to errors, to finite difference techniques for integration, differentiation and interpolation, matrices, etc. This book is probably better suited as an introductory graduate course.

4. F. J. Veseley, Computational Physics, An Introduction, Plenum Press, 1994. This is a more advanced book, focused on the mathematical nature of numerical algorithms. It is similar to Landau's book, and could be used for a second semester extension of this course, if such is desired.
5. P. L. DeVries, A First Course in Computational Physics, Wiley, 1993. It is probably better suited for a low-level graduate course. It is based on FORTRAN, addresses many numerical algorithms, such a finite difference techniques for solving ordinary differential equations or partial differential equations, fast Fourier transforms, etc. It is not as strongly oriented towards solving physics problems as Landau's book.
6. C. Van Loan, Introduction to Scientific Computing, MATLAB Curriculum Series, 2nd Edition, Prentice Hall. This book is very mathematically oriented, and could be used as a reference for the other books.
7. S. E. Koonin and D. C. Meredith, Computational Physics: FORTRAN Version, Addison Wesley, 1986. This is a classic, but may be too advanced to serve as a first introduction.

Proposed Syllabus: (based on the books by A. L. Garcia, Numerical Methods for Physics, Prentice Hall, 1994, and M. L. Boas, Mathematical Methods in the Physical Sciences, John Wiley and Sons, 1966.)

Week 1: Computer numbers, their nature and their errors; use of MATLAB

Week 2: Numerical differentiation and integration; use of MATLAB

Week 3: Complex numbers; Boas, Chapter 2

Week 4: Vector analysis, divergence, divergence theorem, curl, Stoke's theorem; Boas, Chapter 5

Week 5: Fourier series; Boas, Chapter 6

Week 6: Legendre polynomials, Bessel functions, orthogonal polynomials; part I; Boas, Chapter 12

Week 7: Legendre polynomials, Bessel functions, orthogonal polynomials, part II; Boas, Chapter 12

Week 8: Ordinary differential equations, matrices, eigenvalues, applications to Projectile motion with air friction and a pendulum with large amplitude, part I; Garcia, Chapter 3

Week 9: Ordinary differential equations, matrices, eigenvalues, applications to projectile motion with air friction and a pendulum with large amplitude, part II; Garcia, Chapter 3

Week 10: Systems of equations, matrices, eigenvalues, part I, application to coupled oscillators; Garcia, Chapter 4

Week 11: Systems of equations, matrices, eigenvalues, part II, application to coupled oscillators; Garcia, Chapter 4

Week 12: Physics applications, part I, heat conduction, waves on a string, electrostatic potentials for various charge distributions

Week 13: Physics applications, part II, heat conduction waves on a string, electrostatic potentials for various charge distributions

Week 14: Finish up, review

Comparison of the Proposed Course with Already Existing Computational Courses:
CSE 123: Introduction to Computing. No prerequisites. Description - Problem solving with the computer, basics of data representation and computer organization, procedural and-object

oriented programming. Comment - The course is too computer oriented and not enough physics oriented.
CSE 257 and EE 257: Numerical Methods in Scientific Computing. Prerequisites - Either CSE 123 or consent of the instructor. Description - Introduction to the numerical algorithms fundamental to the solution of equations that model scientific phenomena, function approximation, integration, etc. Emphasis on optimizing speed and accuracy. Comment - The course is too algorithm oriented, and not enough physics oriented.
MATH 204: Introduction to Mathematical Modeling. Prerequisites - MATH 221, or MATH 211. Description - Construction of mathematical models in the social, physical, life, and management sciences. Comment - The course is too elementary and not oriented towards physics applications.

MATH 281: Numerical Analysis I. Prerequisites - MATH 210, 211, and either MATH 215 or 227, and knowledge of at least one programming language. Description - Analysis of numerical methods associated with linear systems, eigenvalues, inverses of matrices, etc., roundoff errors and computational speed. Comment - Similar to CSE 257, the course is too algorithm oriented, and is very mathematical, with hardly an application to physics.

ME 253: Linear Systems Theory. Prerequisites - ME205, CE 212, and MATH 211. Description - Mathematical modeling of dynamic systems, linearization of nonlinear behavior, Laplace domain representation of dynamics, etc. Comment - The course emphasizes methods that are appropriate to engineering applications, but which are not commonly used for physics applications.

ME 255: Computational Mechanics. Prerequisites - MATH 211 and CE 287. Description - Topics include elementary numerical analysis, finite differences, initial value problems, ordinary and partial differential equations and finite element techniques. Applications include structural analysis, heat transfer and fluid flow. Comment - This course would be suitable for physics majors if the prerequisite of CE 287 (Mechanics of Materials) could be waved, and if more emphasis were placed on physics applications.

ME 257: Mechanical Engineering Analysis. Prerequisites - MATH 211. Similar to ME 255, but using more advanced mathematical equations. Comment - This course is oriented towards mechanical engineering applications.

Conclusion: None of the above-mentioned courses are suitably tailored towards the needs of the physics majors.

2003-103

CAMS 2xy: Ancient World in Cinema
University of Connecticut (Storrs)
Department of Modern & Classical Languages
Fall 2004

Sara Johnson
Stuart Miller
Roger Travis

Please note that this syllabus is a working draft and will undergo substantial revision before the course is taught in 2004, particularly in the area of adding & revising the readings to accompany the films.

Required Texts

Classical Myth and Culture in the Cinema, M. Winkler
The Ancient World in the Cinema, J. Solomon
Projecting the Past: Ancient Rome, Cinema, and History, M. Wyke

Coursepack (to contain excerpts from relevant ancient texts)

Course Requirements

Class Participation (20%), Midterm (25%), 3 short papers (10% each), Final (25%)

Procedures

As part of their homework assignment, students will be required to attend a viewing of the film(s) to be discussed that week. The normal viewing time will be Monday night at 7; the film(s) will also be available for independent review in the Multimedia lab. The primary format of the class will be discussion-based, so students come to each class section fully prepared to discuss both the film(s) and the associated readings.

Assignments

Week 1 (Miller)

Film: The Ten Commandments
Readings: Selections from midrashic passages in L. Ginzberg, Legends of the Jews
Solomon, ch. 4

Week 2 (Miller)

Film: Prince of Egypt
Readings: Selections from midrashic passages in L. Ginzberg, Legends of the Jews

Week 3 (Travis)

Film: Jason and the Argonauts
Solomon, ch. 3

Week 4 (Travis)

Film: Clash of the Titans

Week 5 (Travis)

Film: Hercules and Hercules Unchained
Solomon, ch. 9

Week 6 (Travis)

Film: Hercules (Disney version)

Week 7 (Travis)

Film: Troy (forthcoming miniseries)

Week 8 (Johnson)

Film: Spartacus
Reader: selections from Plutarch, Life of Crassus, and Appian, Civil Wars
Wyke, Ch. 3
Solomon, Ch. 2

Week 9 (Johnson)

Film: Cleopatra
Reader: selections from Suetonius, Life of Caesar; Plutarch, Life of Antony, Life of Caesar; Josephus, Jewish Antiquities
Wyke, ch. 4

Week 10 (Johnson)

Film: The Robe

Week 11 (Johnson)

Film: Ben Hur
Reader: selections from Josephus

Week 12 (Johnson)

Film: Quo Vadis
Reader: selections from Petronius' Satyricon, Tacitus' Annals; Suetonius, Life of Nero
Wyke, ch. 5

Week 13 (Miller)

Film: Masada
Reader: selections from Josephus, Jewish War; Y. Zerubavel, Recovered Roots: Collective Memory & the Making of Israeli National Tradition, chs. 5, 8 & 11

Week 14 (Thanksgiving break, no classes)

Week 15 (Johnson)

Film: Gladiator (2002)

Week 16

LAST DAY OF CLASSES/REVIEW

2003-106

Appendix: Syllabus for **MATH** 225. Differential Geometry
(by Kinetsu Abe, Professor of Mathematics)

This course covers geometry of curves and surfaces, and, if time permits, its generalization to manifolds and their applications to such areas as computer science and the biological sciences . The characteristic of this course is the use of more modern approaches to the classical geometry of curves and surfaces. The major prerequisite for this course is multi-variable calculus. A good understanding of linear algebra and elementary analysis is desirable but not required.

A precise week by week course outline at this stage is not really productive in that this type of course has not been offered at UConn for a while and the compositions of backgrounds and interests among students who take the course have much changed since; hence the instructor will have to be prepared to adopt a number of variant syllabi, at least for the first few years. However, the course in general should cover the majority of the topics listed below.

This course begins with discussions on the extrinsic geometry of curves and surfaces. In this context, the course covers the following topics on curves: parameterized curves, regular curves, local theory of curves parametrized by arc-length, local canonical forms such as Frenet frames, global properties of plane curves such as the isoperimetric inequality, the Cauchy-Crofton formula.

On surfaces, it covers: regular surfaces, changes of parameters,

differentiable functions on surfaces, the tangent plane, differentials of maps, orientation of surfaces, characterization of compact orientable surfaces, geometric definition of area.

As a more contemporary approach to the extrinsic geometry, the following are covered: the Gauss map, the first and second fundamental forms, the fundamental theorem of submanifolds, higher codimensions, some typical examples of curves and surfaces including knots, ruled surfaces, minimal surfaces and possible applications.

The course ends with an introduction to the intrinsic geometry of surfaces and manifolds.

2003-109

Syllabus for **PNB 2XX. Molecular Neuroanatomy.** (Offered Fall 2003 as PNB 295 Special Topics)

Instructors:

Randall Walikonis, Ph.D. Maria E. Rubio, M.D./Ph.D.
Office: Bldg 4 Annex, Room 154 Office: Bldg 4 Annex, Room 189
486-9031 486-9032
randall.walikonis@uconn.edu maria.rubio@uconn.edu

This class will introduce students to molecular neurobiology and the anatomy of the brain, and integrate the molecular systems with anatomical structure and function.

Date Topic
Aug 26 (Walikonis) Introduction to the Neuron

1. 28 Introduction to the Neuron, Cont.

Sept 2 Voltage Gated Channels
4 Neurotransmitter release
9 Neurotransmitter
11 Neurotransmitter receptor families
16 Postsynaptic Signaling Apparatus
18 Second Messenger Systems

23 Exam I

25 Growth Factors
30 Synaptic Plasticity
Oct 2 Transport Systems

7 Glia and Myelination
9 (Rubio) Gross Anatomy
14 General Cytoarchitecture of the Brain
16 Cytoarchitecture of the Cortex
21 Cytoarchitecture of the Hippocampus
23 Exam II

28 Cytoarchitecture of the Cerebellum

30 Spinal Cord: Gross Anatomy
Nov 4 Spinal Cord: Cytoarchitecture; Circuits
6 Pathways: Somatosensory

1. 11 No class

13 Paper Discussion

1. 18 Pathways: Motor

20 Pathways: Clinical

1. 25-27 Thanksgiving Break

Dec 2 Paper Discussion

1. 4 Laboratory: Brain Dissection

TBA Final Exam

2003-110

PNB 2XY. Integrative Biology. **Proposed syllabus**
Advanced undergraduate physiology course.
Spring semesters
Title: Integrative Biology
Time: 10:00 to 10:50 a.m., MWF
Enrollment: limited to 50-60
Instructors: Renfro & Crivello
Guest Instructors: Moiseff & Chapple, also external guest lecturers, tied in with the Departmental Seminar Series
Pedagogy: enhancement of problem solving skills along with traditional lecture class pedagogy.

Potential Syllabus

Physiology of Oxygen transport

Physical Characteristics of respiration
Respiration in water
Respiration in air
Respiration in animals (examples)
Gas transport/Facilitated diffusion
Phylogeny
Circulation/Pigments
Circulation/Hemodynamics

Physiology of Water

Osmotic regulation
Vertebrates & invertebrates
Terrestrial animals
Excretory organs
Renal systems
Nitrogen excretion
Volume regulation
Cardiovascular concepts

Physiology of Food & Energy

Food & fuel; feeding
Digestion
Nutrition & Energy Metabolism
Energy Storage & Effect of O_2
Scaling issues (Allometry)
Energetics of locomotion

Physiology of Movement

Movement, muscle & biomechanics
Physiology of muscle
Locomotion, biomechanics
Buoyancy
Control systems

Temperature regulation

Physiology of temperature adaptation
Temperature tolerances
Temperature regulation
Heat Balance
Cold-blooded animals
Lethal limits

? book – look around

2003-114/115

Part 1: Semester Schedule for African Field Ecology and Renewable Resources Management. Spring 2003.

Jan 29 Film “Zulu” Anglo-Zulu wars of 1879 (Silander)

Feb 5 Students from University of Fort Hare lead discussion (Ortega)

Feb 12 Overview of African animals (Ortega)

Feb 19 Film “Breaker Morant” and the Anglo-Boer War of 1899-1902 (Silander)

Feb 26 Overview and discussion of South African History, Culture, geography (South Africa visitor)

Mar 5 Film: “the Power of One” conflicts among ethnic groups in South Africa – 1930’s and 1940’s. (Silander)

Mar 12 Natural History films – Grassland biome and Zebra as grazers (Ortega)

Mar 26 Overview of South African biomes, and plant indicators. (Silander)

Apr 2 Film “Cry Freedom” – apartheid struggle from the European perspective in South Africa. (Silander)

Apr 9 Past students present perspectives on the course and an overview of the field project they did (Ortega)

Apr 16 Film: “Bopha!” – apartheid struggle from the black perspective. (Silander)

Apr 23 Discussion of social and racial conflict in South Africa (UFH students)

Apr 30 African Elephants (Ortega)

Part 2: Schedule for Field Component of African Ecology Short Course (May-June 2003)

18 May 03 –Sunday
Travel to South Africa

19 May 03 - Monday
AM - Arrival in East London, South Africa at 12:05 PM Travel to Grasslands (Kent Field Station)
PM - Introductions, Orientation, incl. History of area & bldgs. &
Safety and health briefings
Fike and Lent
Evening festivities & welcome -J. Raats, Dean

20 May 03 - Tuesday
AM - Orientation: Course objectives, resources and facilities.
Introd. to general ecol. & vegetation of area, in context of African biomes.
Introd. to geology, geomorphology, soils of area
PM - Palmer & Cowling
Initial reconn. drive
Viewing geology, vegetation types etc.

21 May 03 - Wednesday
AM - Discussion with reserve manager Fike Management plan/objectives for reserves - Monitoring for adaptive mgmt.

PM - Discussion of mini-projects.
Introd. to GIS as mgmt. & res. tool,
use of GPS- short field trip-Lent

EVENING - Game drives

22 May 03 - Thursday
AM - Game drives Biodiversity:
What is it?
How to measure it?
How to sustain it?
South African context, thicket, specifically. Practical vegetation. Monitoring experience.(Trollope, Sibanga
Small mammal trapping Baxter

23 May 03 - Friday
Small mammal trapping cont.
Rock Art & a long hike to get people familiar with the Great Fish River Ecosystem, fresh water biology
Kopke?
Evening:
Bats - R. Bernard

24 May 03 - Saturday
All day away:. Nyathi game viewing,Adams Krantz and local rural community and school visit (Sheshego village)
Odindi

25 May 03 – Sunday
AM -- individual project development
PM--Free time
(e-mail possibilities we hope!)

26 May 03 – Monday
AM -game drive Multiple species management concepts:
Ecological carrying capacity?
Behavioural aspects etc.
PM - The biology of megaherbivores (Lent, Brown)
The biology of ruminants Raats
Night drives

27 May 03 – Tuesday
AM Visit Univ. Fort Hare - art gallery, ANC archives, talk by ANC archives director.
Lunch on UFH campus
PM Travel to Hogsback - overnight at Hobbiton

Explore Afro-montane areas
Baxter et al.

28 May 03 – Wednesday
AM More Hogsback, Visit Guquka, (Mupakati) rural village conservation project
PM: Return to UFH
Visit Nguni (indigenous cattle) Project
(Magadlala)
Return to Kent Field Station late

29 May 03 – Thursday
Fieldwork, Black rhino habitat eval., feeding studies (small group)
Projects &
Data entry
Night game drives

30 May 03 – Friday
Visit commercial farms, history of the region
Bucklands (Tony Phillips)
Lunch at swimming pool
Fort Brown
Kwandwe Game Farm/Reserve

31 May 03 – Saturday
All day
Work on Individual Projects
Data entry

1 June 03 – Sunday
Depart early, All day at Addo National Park
Hike if possible
Evening game drive
Overnight at Addo

2 June 03 – Monday
Early AM game drive then on to Zuurberg Fynbos
Lunch at Zuurberg Inn. Field lecture by Bond
Evening - Return to Grasslands

3 June 03 – Tuesday
Black rhino habitat eval., feeding studies (small group)
Others AM - Free morning/projects
EVENING - Game drives

4 June 03 – Wednesday

Park and game mgmt. - comparison of US/ South African philosophies, legal systems etc. More on environmental ethics. Group Discussion (Ayirebi, Odiambo et al)
Follows
PM - work on projects
Evening and Night drives

5 June 03 – Thursday
Black rhino obs. (small group)
Insects ecology
Projects

6 June 03 – Friday
Work on Projects
Data entry

7 June 03 – Saturday

All day
Coastal Ecology: All day trip to the coast sandy, rocky, estuarine environments - Indian Ocean

8 June 03 – Sunday
Free day
Project wrap-ups and reports to group
Packing - Final dinner

9 June 03 – Monday
Depart South Africa

10 June 03 – Tuesday
Arrive USA

End of Appendix for Oct. 14, 2003