

**Western Connecticut State University**  
**General Education Committee**  
**2008-2009**

**Members:** Daryle Brown (PS), Ron Drozdenko (Ansell), Robin Flanagan (At-Large, Chair), Veronica Kenausis (Library, Webmaster), Patty O’Neill (First Year Coordinator), Chuck Rocca (A&S), Alba Skar(A&S), Linda Vaden-Goad (Dean), Kerry Walker (VPA), Alan Anderson (CUCAS rep), Matt Buchta (SGA rep)

**Meeting Time:** First Friday of the month at **8:30 am**. September 5, 2008, October 3, 2008, November 14 (rescheduled), 2008, December 5, 2008, February 6, 2009, **March 13 (an exception), 2009**, April 3, 2009, May 1, 2009.

**Meeting Place:** Haas Library 2<sup>nd</sup> floor conference room

**Agenda**

**Friday, May 1**

**Recording: Brown**

- I. New Gen Ed Committee (2009-2010): Daryle Brown (PS), Ron Drozdenko (Ansell), Veronica Kenausis (Library, Webmaster), Chuck Rocca (A&S), Alba Skar(A&S), Linda Vaden-Goad (Dean), Kerry Walker (VPA)
  - a) Welcome new member
  - b) Elect a Chair for 2009-2010
- II. Old Gen Ed Committee (2008-2009)
- III. Minutes of March meeting (Walker)
- IV. Input from community (15 minutes)
- V. Old business
  - a) Update on FYE (O’Neill)
- VI. New business
  - a) Proposal from PAM Department
  - b) Proposal from History and Non-Western Cultures Department
  - c) Proposal from Math Department
  - d) End the University as We Know it
- VII. Adjourn (by 10:00)

## Minutes

*Western Connecticut State University General Education Committee 2008-2009*

*Minutes for Friday, March 13*

*Attendance: Chuck Rocca, Abbey Zink, Daryle Brown, Robin Flanagan, Alba Skar, Patty O'Neill, Kerry Walker-recorder*

- I. Minutes of February meeting (Motion to approve: Rocca/Brown): Approved with minor corrections. 1 abstention.*

### *II. Input from Community*

*Alba thought it was positive to focus on assessment for the summer since we are all full loads. Daryle agreed that assessment is not free and it cannot be an add-on.*

#### *II. Old Business*

- a) FYE update (O'Neill)*

*Patty had spoken to Linda Vaden-Goad about Southern's three-way approach to FYE;*

*Track 1. Inquiry courses- the value of higher Ed is taught. Only FT (full-time faculty), 20 students maximum per section, faculty advise for the entire year.*

*Track 2. Honors College-First year seminar*

*Track 3. Links Track-two General Education courses are linked. For example, Psi 100 taken with a writing class and faculty loosely collaborate.*

*Retention rate is similar to ours for all 3 tracks. At Southern all three approaches reach all the FY (First Year) students. At Western we reach 1/3 with 2/3rds encountering FY in the traditional manner. The links approach may be an option worth exploring as the students will be taking the GE courses any way. Inquiry teachers get 1.5 extra credit because of additional advisement. (3 credit course, plus 1.5= 4.5 for the Inquiry course). GE courses would be most appropriate over higher Education. Alba commented on the benefits being connection from advisement and retention. (Patty pointed out our current retention is 72%)Patty handed out a graph of what sections of GE courses are offered by Depts. And then what % is taught by FT. To be an FY course it has to be a 100 level course and be offered more than once per week. Patty would like to talk to Nicole Henderson at Southern and draft a proposal.*

- b) Update on assessment of GE Curriculum (Flanagan)*

*Robin discussed results of MAP. Relative to the rest of the country our FY students are coming in better in writing, critical thinking and natural sciences. Robin suggested that the scores of the seniors is where we will see the value of the GE program by comparing to freshman scores.*

4/30/2009

*Advantage of MAP is that it is scored by someone else, the test is already created and the national comparison is important. The budget for the Oklahoma assessment will be ready for the next meeting.*

*c) Writing Requirement (Flanagan)*

*Veronica spoke with Patrick Ryan in the writing dept. who recommended that another course would be needed in the major to improve writing. Robin's response is that the GE committee only has authority over GE curriculum. Abby responded that each individual dept. can opt for a "W" for their capstone project in their major by filling out paper work. Most people have the capstone but have not formalized the process. Discussion led the committee to believe that attempts to formalize the process further would only discourage faculty from the opportunity. Robin suggested that the discussion focusing on "writing" as a target could now close.*

*IV. New Business*

*a) WLL SPA 226 Global Immersion: Sain for Gen Ed (Bakhtarova/Skar)*

*Motion to approve (Rocca/Brown) Unanimous approval*

*B) List of GE requirements (Carvalho/Duffy)*

*A new list was created from the advising center*

## **New Proposals**

PAM proposal was distributed by school mail separately.

History and Non-Western Cultures and Math department proposals follow this page.

Department of History and Non-Western Cultures

Western Connecticut State University

February 2009

## **Proposal to Revise the History Undergraduate Major Curriculum**

### **Background**

Since 2005 the full-time faculty of the Department of History and Non-Western Cultures has assessed the performance of its undergraduate majors in the three required core courses:

HIS 294	Introduction to Historical Research
HIS 350	Historiography
HIS 490	Senior Seminar

The department's annual assessment reports from 2005 to 2008 address our findings (see appendices). In short, our examination of student cohorts' written work as they move through the three core courses indicates that while they show some improvement in historical writing, many of our majors are not prepared to write the research term paper required of them in HIS 490. In the past two years our faculty has discussed intensively how we could best serve our large population of students who view the History major as an excellent liberal arts degree, but do not appear likely to continue to research and write on historical topics after they graduate from WCSU.

In 2007-2008 the History faculty dedicated three department meetings to undergraduate curriculum revision. This work also continued in the summer of 2008. In April 2008 the department unanimously approved a general blueprint for revised major requirements for our three undergraduate degrees (BA History, BS History/Elementary Education certification, BS History/Secondary Education certification). The department revised

4/30/2009

drafts of curriculum revision documents and approved final drafts during the Fall 2008 semester.

## Summary

As the attached current program sheets indicate, our three undergraduate majors now require the following History and Non-Western Cultures (NWC) courses (each 3 semester hours):

HIS 148 American History to 1877

HIS 149 American History since 1877

HIS 186 Europe: Ancient and Medieval

HIS 187 Modern Europe

Two (2) HIS courses at the 200 level

Two (2) HIS courses at the 300 level

HIS 294 Introduction to Historical Research

HIS 350 Historiography

HIS 490 Senior Seminar

Two (2) NWC courses 13 courses = 39 semester hours

Our proposed curriculum revision contains two major parts:

1. Change the HIS/NWC requirements to the following:

HIS 1XX Introduction to History (**new course**)

HIS 148 American History to 1877

HIS 149 American History since 1877

HIS 186 Europe: Ancient and Medieval **or** HIS 187 Modern Europe

Three (3) HIS elective courses at the 200 level\*

Two (2) HIS elective courses at the 300 level\*

Two (2) HIS elective courses at the 400 level\*

HIS 490 Senior Seminar: Topics in History (**revised course**)

One (1) NWC course

13 courses = 39 semester hours

\*at least two of the HIS elective courses must be in non-US and non-Europe fields

2. Create the award of Distinction in History, with the following requirements:

All requirements listed above, plus completion with a grade of B or higher of:

HIS 49X Research Seminar (**new course**).

Prerequisites for admission to HIS 49X: History major status, Junior or Senior standing, and 3.2 overall GPA at WCSU; or special permission from the department

Further changes also include:

Eliminating HIS 294 (Introduction to Historical Research)

Retaining HIS 350 (Historiography) as an elective and renumbering it HIS 450, with these new prerequisites: HIS 1XX; Junior or Senior standing

Eliminating HIS 294 as a requirement for the Minor in American History and the Minor in European History

**Summary of Rationales** (please see the more detailed separate proposals as well)

4/30/2009

## **HIS 1XX**

This would be a basic skills course that students must enroll in one semester of declaring the History major at WCSU. They would learn: geography, writing, footnoting/citing, methodology, technology, library skills, etc.—all of the basics that they will need to be majors. This course will also include an introduction to historiography (the literature of history). This is a 3-credit course.

## **HIS 490**

Modified from the present HIS 490 (Senior Seminar), this would be the capstone course that all the majors would take. We would offer several sections each semester designating particular geographical or temporal field, such “Senior Seminar: Topics in *US History*” or “Senior Seminar: Select Topics in *Ancient History*.” Unlike the current HIS 490, the course would not require students to write a thesis. This is a 3-credit course. Prerequisite: HIS 1XX and Junior or Senior Standing.

## **HIS 49X**

Research Seminar (Spring semesters only). This seminar will explore a general theme or topic in history and develop distinctive skills in historical reasoning, discussion, and scholarship. Each student will produce a research paper on a topic relating to the theme of the course. Students who receive a grade of B or higher in this course and satisfy other History major requirements will graduate with Distinction in the major.

Prerequisites for admission to HIS 49X: History major status, Junior or Senior standing, and 3.3 overall GPA at WCSU; or special permission from the department.

In addition to these new and revised courses, the department will establish skill requirements for all courses at the 200, 300, and 400 level, to ensure that all History majors will receive training in research, the use of primary sources (i.e. sources deriving from a historical time period), and historiography currently taught in the core courses HIS 294 and HIS 350.

## **HIS 200s**



These courses emphasize methodologies, critical thinking and primary source analysis.

This will enable students to acquire the skills that are currently taught in HIS 294 from at least 3 different people in at least 3 different courses. They will learn about methods within the context of a content course and will see them integrated and applied.

### **HIS 300s**

300 level history courses further develop the above skills with the aim of enabling students to plan and write extended research papers (minimum length 10 pages each). In addition, each 300s courses would be required to explore the historiography of the class topic (i.e. the literature and often conflicting conclusions of historians working on the topic).

### **HIS 400s**

The History department is dedicated to creating a stable of topical courses at the 400 level, in addition to the core major requirement HIS 490 and the new Research Seminar HIS 49X. These courses would require advanced historiographical reading, research, conceptualization, and writing almost comparable to those required in 500-level graduate courses. (Up to two of these courses may also be used as electives in our History M.A. program, as the Graduate Catalog already permits.)

### **Impact on staffing**

As the attached course proposals indicate, the deletion of HIS 294 and HIS 350 from the schedule each semester, as well as the reduced requirement in European history (from 186 and 187 required to just one of those courses) will allow full-time faculty to teach sections of HIS 1XX, 490, and 49X (the latter in Spring semester only).

A reduction of one or two 200- or 300-level HIS elective courses per semester, if needed, will also allow us to offer the new courses for majors while continuing to offer a sufficient number of the elective courses.

The reduction in the requirement of NWC courses for majors, from two courses to one, will not affect the number of NWC sections taught each semester by History faculty.

### **Impact on resources and library**

No significant impact on technology, library holdings, or other campus resources is expected. These resources are sufficient for the proposed revisions.

## Course Proposal

Department: History and Non-Western Cultures

Course Number: HIS 1XX

Course Name: Introduction to History

Course Credits: 3

Enrollment cap: 38 per section

Prerequisites: declared History major

Rationale: This course prepares History majors to succeed in college level History

courses and to learn the skills of historians. This course will teach students

fundamental skills that they will use in all their upper level History courses. It will present at a more basic level the content of the current core courses, HIS 294 (Introduction to Research) and HIS 350 (Historiography), so that History majors will be introduced to these skills earlier in their careers.

Course Description: HIS 1XX is a basic skills course that does not focus on any one geographical or chronological area. Students would learn: geography, writing, footnoting/citing, methodologies, technology, library skills, etc.- all the fundamentals that they will need to be majors. This course also includes a brief introduction to historiography. Students must enroll in this course within one semester of declaring the History major.

Grading/Assessment: Standard Grading will apply

Learning Outcomes: Upon completion of this course, students will be able to:

- a. read primary sources from historical time periods
- b. analyze primary and secondary (historical literature)
- c. be able to use the WCSU library resources
- d. master basic geographical skills
- e. understand proper footnoting and citations
- f. develop writing skills
- g. develop public speaking skills

critically  
sources  
methods.

These skills will be measured by existing department assessment

Resources:

a. Staffing

Any qualified HIS faculty member can teach this course. The addition of this course will not have an impact on the teaching demands of current faculty as the department is revising the HIS undergraduate majors, deleting HIS 294 and HIS 350 from the major requirements and replacing them with HIS 100 .

b. Equipment There is no special equipment required for this course.

c. Facilities Our classrooms are adequate for this course.

d. Library The library holdings and Inter-Library Loan are adequate for this course.

e. Students This course offers students an important introduction to the

“tools of the trade” for any historian.

General Course Outline:

## **I. Introduction**

This section of the course focuses on explaining what it is that historians do and provides

students with an opportunity to examine why they have chosen this major

The following are suggestions of discussion topics appropriate for this section of class:

- a. Introduction: What is history?
- b. Introduction: What is an historian?
- c. Introduction: What do historians do? Why?
- d. Introduction: How has the practice of History developed and changed?

## **II. Study Skills**

This section of the class focuses on helping students develop necessary study skills to

prepare them for college level History courses.

The following are suggestions of lessons appropriate for this section of class:

- a. Geography
- b. Library skills
- c. Technology in the classroom
- d. Databases and Research methods

- e. Historical sources
- f. Primary sources
- g. Trends in methodologies

### **III. Writing Skills**

This section of the class focuses on helping students develop necessary writing skills to

prepare them for college level History courses.

The following are suggestions of lessons appropriate for this section of class:

- a. Grammar reviews
- b. Constructing an argument
- c. Footnoting/Citing
- d. Plagiarism
- e. Quoting
- f. Style

Cross Listing: This course will not be cross-listed

Time Provision: This course will be offered every semester.

### Revised Course Outline

Course Number: History 450  
Course Name: Historiography  
Course Credits: 3  
Enrollment cap: 25  
Prerequisites: HIS 1XX and Junior or Senior standing

Description: An intensive analysis of historians whose writings have presented differing interpretations of the past.

Rationale: The History faculty proposes that the current HIS 350, Historiography, be renumbered HIS 450 and be made an optional, not a required, course for undergraduate History majors.

Historiographical analysis is an essential skill for all historians. While all courses deal with problems of interpretation, the specific goal of this course is to sharpen analytical skills in evaluating historical data by focusing more on methodology than on content. Students will use the course to strengthen their critical abilities and be more fully prepared to understand and contend with the major challenges that confront the historical profession.

The department believes that Historiography should be an optional course that would serve undergraduate seniors and graduate students in History who are prepared and inclined to explore the varieties of historical writing across the centuries. For the vast majority of our students, the discussion about and reading of

historians in various fields and eras in lecture courses will provide a sufficient basis in historiography. Assessment of the current Historiography course, HIS 350, leads us to conclude that the course does not serve our less-skilled students well, and is most appropriate for major students who can handle large amounts of reading and are capable of the levels of conceptualization and argument (spoken and written) that are demanded in the course.

In addition, we concluded that renumbering the course to 450 would allow our interested graduate students to take the course as an elective in their MA program. There is no graduate course in Historiography. HIS 450 would be offered in the evenings to serve both our undergraduate and graduate students.

Impact on staff: Because this course is now a requirement, since 2005 it has been offered every semester, and occasionally during the summer. However, in the future it will only be offered every Fall. This will allow full-time faculty to teach other courses more often and have no negative impact on our ability to offer required courses and diverse electives.

#### General Course Outline:

- I. Ancient historical traditions and global oral transmission of history
- II. Talmud/Bible/Quran as historical texts
- III. Historiography in medieval Europe and the Far East



- IV. Origins of modern European historiography: Gibbon, Michelet, et al.
- V. German historical methods of the 1800s: Ranke, Burkhardt, Marx, et al.
- VI. Growth of the historical profession and historiography in the United States
- VII. U.S. progressive and European socialist and Marxist historians, 1900-1940
- VIII. Comparative modern historiographical traditions outside the U.S. and Europe
- IX. Social history and quantitative historical methods
- X. Historiographies of traditionally neglected groups: women, minorities, GLBT, et al.
- XI. Postmodernism and poststructuralist theory and historiography
- XII. The “return to narrative,” the “new historicism,” and partial return to tradition

Time Provision: To be offered every Fall semester.

Bibliographical Materials: Haas Library contains acceptable resources for the teaching of this course, to be supplemented by material in CSU libraries and on the Internet.

### Revised Course Outline

Course Number: History 490  
Course Name: Senior Seminar  
Enrollment cap: 25 per section  
Prerequisite: HIS 1XX and Junior or Senior standing

Description: This is the final course for all History majors, except for those pursuing Distinction in History. Each section will be devoted to a particular geographic region, time period, or theme. Intensive reading and class discussion will result in writing assignments that will demonstrate students' command of historical sources, inquiry, and argument. A research term paper will not be required.

Rationale: For three years, the Assessment committee of the WCSU History Department has examined research papers from the HIS 490 seminar. The examination led the committee to conclude that more than half of the students were not prepared to write a senior-level research paper. This conclusion has inspired the present effort to revise the History undergraduate curriculum.

Under the new curriculum, students will receive enhanced training and practice in research and writing in their 200-, 300-, and 400-level lecture courses. Majors who believe they are ready to write a substantial research paper, based substantially on primary sources (from the historical time period), may pursue the new award of Distinction in History by completing the Research Seminar (the proposed new HIS 49X) in addition to the new HIS 490. Students who will not pursue Distinction will take HIS 490 as their "capstone" course. HIS 490 will give them the opportunity to

demonstrate their final undergraduate skill levels in reading, reasoning, discussion, research, and writing, in class meetings and in assignments such as short essays and research papers.

Impact on staff: Currently HIS 490 is offered in Fall and Spring in one or two sections per semester. About the same number of sections will be offered of the new HIS 490 each semester. Like the old HIS 490 the course will be capped at 25 students. Therefore there will be no or minimal impact on staff.

#### General Course Outline:

- I. Statement of the major problems or issues to be explored in the course
- II. Intensive reading and discussion of historical literature concerning course topics
- III. Execution of written, multimedia, or electronic assignments that demonstrate students' command of the course's concepts and subject matter, ability to make an independent inquiry into this subject matter, and skill at crafting essays or comparable finished products that meet the department's standards of undergraduate scholarship in History. (Note: these standards include, but are not limited to, the following:
  - Ability to form a thesis and support it with historical evidence;
  - Ability to use both primary (from the time period) and secondary (historian's work) sources as evidence;
  - Correct use of the Chicago Manual of Style citation methods in notes and bibliography.

Time Provision: To be offered every Fall and Spring semester.

Bibliographical Materials: Haas Library contains acceptable resources for the teaching of this course, to be supplemented by material in CSU libraries and on the Internet.

## New Course Proposal

Course Number: History 49X

Course Name: Research Seminar

Enrollment cap: 25

Prerequisites: History major status, Junior or Senior standing, and 3.2 overall GPA at WCSU; or special permission from the department.

Description: This seminar will explore a general theme or topic in history and develop distinctive skills in historical reasoning, discussion, and scholarship. Each student will produce a research paper on a topic relating to the theme of the course. Students who receive a grade of B or higher in this course and satisfy other History major requirements will graduate with Distinction in their degree program.

Rationale: For three years, the Assessment committee of the WCSU History Department has examined research papers from the HIS 490 seminar. The examination led the committee to conclude that while more than half of the students were not prepared to write a senior-level research paper, a good number of students produced excellent work.

The Department believes that these students should receive the special recognition and attention that Distinction in History would provide. HIS 49X will be designed to provide qualified students with historical concepts and practices similar to those found in graduate training. It will also inform them about their possible future options in graduate programs and the historical profession.

Impact on staff: This course would be offered in one or two sections in the Spring semester. Since 2004 the Department has expanded from six to ten members. In addition, one required course for the majors, HIS 294, will be eliminated (see related proposal). Therefore, we believe that we have the staff to maintain our current lecture course offerings and to provide two sections of HIS 49X (as well as sections of the proposed new introductory course, HIS 1XX) in the future.

General Course Outline:

- I. Statement of the general problem or theme that will be explored in the course
- II. Readings and discussion concerning the general theme and the production of a research paper
- III. Execution of a major written, multimedia, or electronic research assignment that demonstrates the student's strong command of historians' conceptual, research, and writing skills, at an advanced undergraduate level. A traditional research paper would be 25 pages minimum, and the Department would ensure that multimedia or electronic projects would entail the same level of research and craftsmanship as the traditional written paper. In all media, citations are required, in the format found in the Chicago Manual of Style.

Time Provision: To be offered every Spring semester.

Bibliographical Materials: Haas Library contains strong reference materials and some print and electronic research materials for this course, and will be supplemented by other CSU libraries and by archival materials in nearby research libraries such as

Yale's, Columbia's, the FDR Presidential Library, etc., and  
by reputable digital archives on the Internet.

## Elimination of HIS 294 as a Major Requirement - Rationale

The current proposed revision of the History undergraduate curriculum includes the elimination of HIS 294, Introduction to Historical Research. The course was first approved in 1976 as HIS 151, and its renumbering to 294 was approved in 2002. HIS 294 is now required as one of the three (3) core courses for the B.A. and B.S. degrees in History.

On the basis of student outcomes assessment and comments by students who have taken this course, the History department concludes that HIS 294 provides too much detail about historical research techniques that is independent of specific course content. It also believes that our majors will not be able to utilize many of the research techniques in the remainder of their undergraduate careers, even in the HIS 490 senior seminar.

The current proposal for undergraduate curriculum revision will require that History instructors will introduce some research techniques (such as use of the Internet and Haas Library) in their 100-level lecture courses, incorporate more advanced techniques (such as use of primary and archival sources) in 200-level lecture courses, and assign papers involving more complex and diverse research strategies in their 300- and 400-level HIS courses. In this way, students will continue to learn the skills currently taught in HIS 294, but they will always be applied to the subject matter of the courses and seminars in which they are enrolled. Majors who desire to do a major research paper in the new Research Seminar, HIS 49X, thus will have received the necessary training in research techniques in their earlier lecture courses.

In addition, the Department believes that HIS 294 should not be retained as an elective in the HIS course inventory. As an elective, it probably would not attract enough enrollment to be offered regularly, or even to “make” if it was offered occasionally.

The department anticipates that these changes will cause no impact on staffing or scheduling. The elimination of HIS 294, which is currently taught one section in Fall and in Spring, would free up one faculty member per semester to teach a section of the proposed new HIS 1XX or, in the Spring semester, the proposed new HIS 49X.





## Revision of History minors - Rationale

The current proposed revision of the History undergraduate curriculum includes the elimination of HIS 294, Introduction to Historical Research. HIS 294 is now required as one of the six (6) courses for the Minor in American History and for the Minor in European History. (It is not, however, required for the Minor in History.)

Here are the **current requirements** for the two concentrations, as stated in the Undergraduate Catalog:

### **MINOR IN AMERICAN HISTORY**

HIS 294, HIS 148, 149

Three advanced courses in American History

### **MINOR IN EUROPEAN HISTORY**

HIS 294, HIS 186, 187

Three advanced courses in European History

Here are the **proposed requirements** for the two concentrations:

### **MINOR IN AMERICAN HISTORY**

HIS 148, 149

Four advanced courses in American History

### **MINOR IN EUROPEAN HISTORY**

4/30/2009

HIS 186, 187

Four advanced courses in European History

The department anticipates that these changes will cause no impact on staffing or scheduling.

Proposal for revision of MAT 170: Calculus of Polynomials

Rationale for Revision: The Calculus I course description and outline was revised in response to the Mathematics Departments 2007-2008 assessment. These changes are proposed in order to keep MAT 170 in line with that curriculum.

Impact on Resources: This is a change to an existing course. There will not be a change to our existing offerings nor is there any request for additional credit hours.

Assessment:

- The Mathematics Department's goals and objectives pledge "Department support of the University Mission with regards to service to other departments." We will determine if the course satisfies this goal through continued dialogue with affected departments.
- Further the goals and objectives affirm our commitment to making sure that "Students will demonstrate a breadth of knowledge of mathematics..." This course contributes to math majors breadth of knowledge which is tested in their junior or senior year via standardized testing.

# OLD OUTLINE

Course Title: Calculus of Polynomials

Course No.: Mat 170

Credits: 3 S.H.

Prerequisites: B in Mat 100 or placement in general education math

Grading: Standard letter grade A-F

Misc. Satisfies mathematics general education requirement.

## **Rationale:**

Many colleges and universities are finding that Precalculus is not adequately preparing students for Calculus and consequently students are not succeeding as well as they might. A solution that has been adopted at other institutions is to do away with the traditional Precalculus course all together and teach the material of a traditional Calculus I course over the span of two semesters with the necessary Precalculus integrated into the material. This has the following advantages: students are taught Precalculus in context with the Calculus so that the material is immediately relevant and practiced; the extra time afforded by a two semester sequence allows students to learn material at a more manageable pace; by the end of the two semesters these students will have had opportunity to bring their mathematical skills up to speed with their better prepared peers and so are better prepared to enter Calculus II, or any subsequent math class, and succeed.

These courses are intended for students who need or would like to take Calculus but are not adequately prepared to go directly into Calculus I, Math 181.

## **Description:**

An introduction to the concept of a function and its derivative from algebraic, graphical, and data-based points of view. The concentration in this course will be on linear, polynomial, and power functions. Technology, such as graphing calculators and computer algebra systems, will be used in this course. Prerequisite: B in Mat 100 or placement in general education math.

Course Outline:

- I. Functions
  - a. Concept of a Function
  - b. Linear Functions
  - c. Polynomials
- II. Rates of Change
  - a. Average Rate of Change
  - b. Limits and Instantaneous Rates of Change
  - c. Secant and Tangent Lines
- III. Derivative at a Point
- IV. Derivative Function
- V. Short-Cuts to Differentiation
  - a. Powers and Polynomials
    - i. Review of Polynomials
    - ii. Powers and Power Functions
  - b. Products and Quotients
  - c. Powers of Polynomials: The General Power Rule (A first look at the chain rule)
- VI. Applications of the Derivative
  - a. Graphing Equations
    - i. Common Graphs
    - ii. Shifting Graphs
    - iii. Using the Derivative
  - b. Solving Equations
    - i. Linear Equations
    - ii. Quadratic Equations
    - iii. Polynomials, Powers and Rational Functions
    - iv. Optimization using the Derivative

Course Title: Calculus of Polynomials

Course No.: Mat 170

Credits: 3 S.H.

Prerequisites: B in Mat 100 or placement in general education math

Grading: Standard letter grade A-F

Misc. Satisfies mathematics general education requirement.

### **Objectives:**

After successful completion of this course a student will be able to demonstrate:

- Knowledge of the concept of function. In particular knowledge and facility with algebraic functions.
- Knowledge of the fundamental concepts behind differential calculus, i.e. limits, continuity, and differentiability with respect to algebraic functions.
- Procedural facility with the rules of differential calculus with respect to algebraic functions.
- An ability to use calculus to solve some basic applied problems.
- An ability to use technology in an appropriate manner in the course.

### **Description:**

An introduction to the concept of a function and its derivative from algebraic, graphical, and data-based points of view. The concentration in this course will be on linear, polynomial, and power functions. Appropriate technology will be used in this course. Knowledge and proficiency with algebra will be assumed. Prerequisite: B in Mat 100 or placement in general education math.

### **Course Outline:**

- I. Prerequisite Material:
  - A. Linear functions and their graphs
  - B. Solving linear equations
  - C. Quadratic functions and their graphs
  - D. Solving quadratic equations
  - E. Rules of exponents
  - F. Solving/Simplifying basic equations involving powers
- II. Requisite Material
  - A. Functions
    - i. Concept of a Function
    - ii. Linear Functions
    - iii. Polynomials
    - iv. Composition of Functions
    - v. Piecewise Defined Functions
    - vi. Transformations of Functions

- vii. Common Graphs
- B. Solving Equations Involving Polynomial, Power and Rational Functions
- C. Concept and Definition of Limits
- D. Concept and Definition of Continuity

- E. Rates of Change
  - i. Slopes of secant lines and average rate of change
  - ii. Slopes of tangent lines and instantaneous rates of change
- F. Derivative at a Point
- G. Derivative as a Function
- H. Derivative Rules
  - i. Powers and Polynomials
    - a. Review of Polynomials
    - b. Powers and Power Functions
  - ii. Product and quotient rule
  - iii. Powers of Polynomials: The General Power Rule (A first look at the chain rule)
- I. Position, Velocity, and Acceleration
- J. Applications of the Derivative
  - i. Linearization: Equations of Tangent Lines
  - ii. Graphing Equations
    - a. Graphing using the Derivative
    - b. General Analysis of Curves
  - iii. Optimization using the Derivative
- III. Additional Material
  - A. Newton's Method
  - B. Numerical Differentiation
  - C. Related Rates



## Proposal for revision of MAT 171: Calculus I with Review

Rational for Revision: The Calculus I course description and outline was revised in response to the Mathematics Departments 2007-2008 assessment. These changes are proposed in order to keep MAT 171 in line with that curriculum.

Impact on Resources: This is a change to an existing course. There will not be a change to our existing offerings nor is there any request for additional credit hours.

### Assessment:

- The Mathematics Department's goals and objectives pledge "Department support of the University Mission with regards to service to other departments." We will determine if the course satisfies this goal through continued dialogue with affected departments.
- Further the goals and objectives affirm our commitment to making sure that "Students will demonstrate a breadth of knowledge of mathematics..." This course contributes to math majors breadth of knowledge which is tested in their junior or senior year via standardized testing.

# OLD COURSE OUTLINE

Course Title: Calculus I with Review

Course No.: Mat 171

Credits: 4 S.H.

Prerequisites: Mat 170: Calculus of Polynomials

Grading: Standard letter grade A-F

Misc. Satisfies mathematics general education requirement and counts as Math 181 with regard to prerequisites in subsequent courses.

## **Rationale:**

Many colleges and universities are finding that Precalculus is not adequately preparing students for Calculus and consequently students are not succeeding as well as they might. A solution that has been adopted at other institutions is to do away with the traditional Precalculus course all together and teach the material of a traditional Calculus I course over the span of two semesters with the necessary Precalculus integrated into the material. This has the following advantages: students are taught Precalculus in context with the Calculus so that the material is immediately relevant and practiced; the extra time afforded by a two semester sequence allows students to learn material at a more manageable pace; by the end of the two semesters these students will have had opportunity to bring their mathematical skills up to speed with their better prepared peers and so are better prepared to enter Calculus II, or any subsequent math class, and succeed.

These courses intended for students who need or would like to take Calculus but are not adequately prepared to go directly into Calculus I, Math 181.

## **Description:**

A continued exploration of the fundamental tools of calculus. This second course in a sequence introduces more functions and their derivatives, and also introduces integrals. There is a continued emphasis on graphical, algebraic and data based viewpoints. Technology, such as graphing calculators and computer algebra systems, will be used in this course. Prerequisite: MAT 170: Calculus of Polynomials

## Course Outline:

- I. Composing Functions
  - A. Review the Definition of a Function
  - B. Composing Functions
  - C. Chain Rule
    - i. Derivatives of Compositions of Functions
    - ii. Inverse Functions and their Derivatives
    - iii. Implicit Differentiation
    - iv. Related Rates of Change
- II. Exponentials and Logarithms
  - A. Exponential Growth and Decay
  - B. Derivative of the Exponential Function
  - C. Logarithmic Functions and Scales
  - D. Derivatives of Logarithms
  - E. Applications of the Derivative with Logs and Exponents
- III. Trigonometry
  - A. Sine and Cosine
    - i. Unit Circle Definition
    - ii. Triangle Definition
  - B. Other Trigonometric Functions
    - i. Triangle Definitions
    - ii. In Terms of Sine and Cosine
  - C. Basic Trigonometric Identities
  - D. Derivatives of Trigonometric Functions
  - E. Applications of the Derivative with Trigonometry
- IV. Local Linearity
  - A. Linear Approximations
  - B. L'Hopital's Rule
- V. Integrals
  - A. Definite Integrals
    - i. Area Under a Curve
    - ii. Total Change
    - iii. Riemann Sums
    - iv. Fundamental Theorem of Calculus (a first look)
  - B. Indefinite Integrals
    - i. Antiderivatives
    - ii. Indefinite Integrals
    - iii. Fundamental Theorem of Calculus (a second look)
    - iv. Initial Value Problems

Course Title: Calculus I with Review

Course No.: Mat 171

Credits: 4 S.H.

Prerequisites: Mat 170: Calculus of Polynomials

Grading: Standard letter grade A-F

Misc. Satisfies mathematics general education requirement and counts as Math 181 with regard to prerequisites in subsequent courses.

### Objectives:

After successful completion of this course a student will be able to demonstrate:

- Knowledge and facility with transcendental functions.
- A basic knowledge of the fundamental concepts behind definite and indefinite integration, i.e. Riemann Sums and the Fundamental Theorem of Calculus.
- Procedural facility with the rules of differential calculus and with basic techniques for anti-differentiation with both algebraic and transcendental functions.
- An ability to use calculus to solve some basic applied problems with both algebraic and transcendental functions.
- An ability to use appropriate technological tools to represent some fundamental concepts of calculus and to solve basic problems of application.

### Description:

This course is a continued exploration of the fundamental tools of calculus. The second course in a sequence introduces more functions and their derivatives, and also introduces integrals. There is a continued emphasis on graphical, algebraic and data based viewpoints. Appropriate technology will be used in this course. Knowledge and proficiency with algebra will be assumed. Prerequisite: MAT 170: Calculus of Polynomials

### Course Outline:

- I. Prerequisite Material:
  - A. General knowledge of the concept of a function
  - B. Facility with algebraic functions (linear, power, polynomial etc.)
  - C. Facility with the differential calculus with respect to algebraic functions.
- II. Requisite Material:
  - A. Review the Definition and Composition of Functions
  - B. Chain Rule
    - i. Derivatives of Compositions of Functions
    - ii. Inverse Functions and their Derivatives

- C. Exponentials and Logarithms
    - i. Exponential Growth and Decay
    - ii. Applications of Exponential Functions
    - iii. Derivative of the Exponential Function
    - iv. Logarithmic Functions and Scales
    - v. Applications of Logarithmic Functions
    - vi. Derivatives of Logarithms
    - vii. Solving Equations
    - viii. Application of differentiation with Exponents and Logs
      - a. Analysis of curves
      - b. Optimization problems
  - D. Trigonometry
    - i. Sine and Cosine
      - a. Unit Circle Definition
      - b. Triangle Definition
      - c. Graphs
    - ii. Other Trigonometric Functions
      - a. Triangle Definitions
      - b. Sine and Cosine Definitions
      - c. Graphs
    - iii. Inverse trigonometric functions
    - iv. Important Identities
    - v. Solving Equations
    - vi. Laws of sines and cosines
    - vii. Applications
    - viii. Derivatives of Trigonometric Functions
    - ix. Application of differentiation with Trigonometric Functions
      - a. Analysis of curves
      - b. Optimization problems
  - E. Parametric Curves, Functions, and their Derivatives
  - F. l'Hopital's Rule
  - G. Integrals
    - i. Definite integral as a limit of Riemann sums
    - ii. Definite integral as a function
    - iii. Anti-differentiation
    - iv. Fundamental Theorem of Calculus
- III. Additional Material:
- A. Implicit Functions and their Derivatives
  - B. Related Rates
  - C. Linearization and the Differential
  - D. Area between curves
  - E. Systems of Equations

## Proposed Change in Course Description and Outline for MAT 181: Calculus I:

Rationale for Change: As part of the departmental assessment for the 2007-2008 school year the Mathematics Department surveyed its own instructors as well as those from other departments about what they taught or felt should be taught in MAT 181: Calculus I. The purpose of this was to produce a course description and outline that is an accurate reflection of what is being taught and to provide a course that better supports the departments stated goal of “supporting the University Mission with regards to service to other departments.”

Impact on Resources: This is not a new course and the number of sections taught will not change so there is no impact on resources.

### Assessment:

- The Mathematics Department’s goals and objectives pledge “Department support of the University Mission with regards to service to other departments.” We will determine if the course satisfies this goal through continued dialogue with affected departments.
- Further the goals and objectives affirm our commitment to making sure that “Students will demonstrate a breadth of knowledge of mathematics...” This course contributes to math majors breadth of knowledge which is tested in their junior or senior year via standardized testing.

## **OLD COURSE DESCRIPTION AND OUTLINE**

Course Number: MAT 181  
Course Title: Calculus I  
Credits: 4 Semester Hours  
Prerequisites: MAT 133 - Precalculus

Catalog Description: An introduction to the two fundamental tools of calculus -- derivatives and integrals -- from algebraic, graphical, and data-based points of view. Calculus is presented as a problem-solving tool with applications to the physical and social sciences. Graphing and symbolic-manipulating calculators and computer tools are used throughout the course.

### Course Outline:

- I. A Collection of Functions
  - A. Linear Functions
  - B. Exponential Functions
  - C. Power Functions
  - D. Logarithmic Functions
  - E. Trigonometric Functions
  - F. Polynomial, Rational and Other Composite Functions
  - G. Inverse Functions
- II. Concepts of the Derivative
  - A. The Derivative as a Function
  - B. Interpretations of the Derivative
  - C. Numerical Approximations of the Derivative
- III. Concepts of the Definite Integral
  - A. The Definite Integral as a Function
  - B. Interpretations of the Definite Integral
  - C. Fundamental Theorem of Calculus
- IV. Techniques of Differentiation
  - A. Elementary Derivative Formulas
  - B. Product and Quotient Rules
  - C. Chain Rule
  - D. Implicit Differentiation
- V. Applications of the Derivative
  - A. Analysis of Curves
  - B. Optimization
  - C. Motion
  - D. Antiderivatives

Course Number: MAT 181  
Course Title: Calculus I  
Credits: 4 Semester Hours  
Prerequisites: MAT 133: Precalculus or appropriate placement.

Objectives:

After successful completion of this course a students will be able to demonstrate:

- Knowledge of the fundamental concepts behind differential calculus, i.e. limits, continuity, and differentiability.
- A basic knowledge of the fundamental concepts behind definite and indefinite integration, i.e. Riemann Sums and the Fundamental Theorem of Calculus.
- Procedural facility with the rules of differential calculus and with basic techniques for anti-differentiation.
- An ability to use calculus to solve some basic applied problems.
- An ability to use technological tools to represent some fundamental concepts of calculus and to solve basic problems of application.

Course Description:

Calculus I will introduce students to the ideas and applications of single variable differential calculus and to the foundations of single variable integral calculus. This will include, but not be limited to, the definitions and applications of limits, continuity, the derivative, and the definite and indefinite integral. Students will be expected both to become proficient with basic skills and to demonstrate an understanding of the underlying principles of the subject. Students should expect to make appropriate use of technology in this course. Knowledge of Precalculus will be assumed, in particular knowledge of lines, polynomials, rational functions, trigonometric functions, and exponential and logarithmic functions. Students are also expected to be proficient with algebra. Prerequisite: MAT 133: Precalculus or appropriate placement.



## Course Outline:

- I. Prerequisite Material (not covered or only briefly reviewed)
  - a. Understanding or knowledge of the concept of function.
  - b. Algebraic Functions: Linear, Polynomial, Rational, etc.
  - c. Transcendental Functions: Trigonometric, Exponential, and Logarithmic.
  - d. Basic knowledge of inverse functions
  - e. An ability to solve basic equations with the above types of functions.
- II. Requisite Material (core subjects necessary to the course)
  - a. Concept and Definition of Limit
  - b. Concept and Definition of Continuity
  - c. The Derivative:
    - i. Slopes of secant lines and average rates of change
    - ii. Slopes of tangent lines and instantaneous rates of change
    - iii. Derivative at a point
    - iv. Derivative as a function
    - v. Elementary derivative formulas
    - vi. Product and quotient rule
    - vii. Chain rule
    - viii. Parametric Curves
    - ix. Parametric Functions and their derivatives
    - x. Implicit functions and their derivatives
    - xi. Position, Velocity, and Acceleration
    - xii. l'Hopital's Rule
    - xiii. Application of differentiation
      1. Analysis of curves
      2. Optimization problems
  - d. The Integral:
    - i. Definite integral as a limit of Riemann sums
    - ii. Definite integral as a function
    - iii. Anti-differentiation
    - iv. Fundamental Theorem of Calculus
- III. Additional Material (topics covered at the discretion of the instructor)
  - a. Newton's Method
  - b. Related Rates
  - c. Numerical derivatives
  - d. Linearization and the Differential
  - e. Area between curves

## Proposed Change in Course Description and Outline for MAT 182: Calculus II:

Rationale for Change: As part of the departmental assessment for the 2007-2008 school year the math department surveyed its own instructors as well as those from other departments about what they taught or felt should be taught in MAT 182: Calculus II. The purpose of this was to produce a course description and outline that is an accurate reflection of what is being taught and to provide a course that better supports the departments stated goal of “supporting the University Mission with regards to service to other departments.”

Impact on Resources: This is not a new course and the number of sections taught will not change so there is no impact on resources.

### Assessment:

- The Math Department’s goals and objectives pledge “Department support of the University Mission with regards to service to other departments.” We will determine if the course satisfies this goal through continued dialogue with affected departments.
- Further the goals and objectives affirm our commitment to making sure that “Students will demonstrate a breadth of knowledge of mathematics...” This course contributes to math majors breadth of knowledge which is tested in their junior or senior year via standardized testing.

## **OLD COURSE DESCRIPTION AND OUTLINE**

Course Number: MAT 182  
Course Title: Calculus II  
Credits: 4 Semester Hours  
Prerequisites: MAT 181

Catalog Description: An extension of the study begun in Calculus I with greater emphasis on differentiation and integration skills and techniques. Topics include methods of integration, approximating methods, and an introduction to differential equations. Graphing and symbolic-manipulating calculators and computer tools are used throughout the course.

### Course Outline:

- I. Techniques of Integration
  - A. Properties of the Definite Integral
  - B. Integration by Substitution
  - C. Integration by Parts
  - D. Use of Tables of Integration
  - E. Numerical Approximations
  - F. Improper Integrals
- II. Applications of the Definite Integral
  - A. Geometry
  - B. Economics
  - C. Physics
  - D. Probability
- III. Solutions of Elementary Differential Equations
  - A. Slope Fields
  - B. Euler's Methods
  - C. Separation of Variables
  - D. Applications
- IV. Approximation of Functions by Series
  - A. Taylor Series
  - B. Fourier Series
  - C. Errors in Approximations

Course Number: MAT 182  
Course Title: Calculus II  
Credits: 4 Semester Hours  
Prerequisites: MAT 181: Calculus I or appropriate placement.

Objectives:

After successful completion of this course a students will be able to demonstrate:

- Basic knowledge of the fundamental concepts behind definite and indefinite integration, i.e. Riemann Sums and the Fundamental Theorem of Calculus.
- Procedural facility with the rules of integral calculus and with techniques for anti-differentiation.
- Basic knowledge of numerical sequences and series including tests for convergence and methods of approximation of sums.
- Basic knowledge of power and Taylor series including test for convergence and methods of approximation of sums.
- An ability to use calculus to solve some basic applied problems.
- An ability to use technological tools to represent some fundamental concepts of calculus and to solve basic problems of application.

Course Description:

Calculus II will introduce students to a variety of new techniques of integration, to some applications of integration, and to sequences and series. Students will be expected both to become proficient with basic skills and to demonstrate an understanding of the underlying principles of the subject. Students should expect to make appropriate use of technology in this course. Knowledge of Calculus I will be assumed, in particular knowledge of the rules and concepts behind differentiation and basic integration. Prerequisite: MAT 181: Calculus I or appropriate placement.

Course Outline:

- IV. Prerequisite Material (not covered or only briefly reviewed)
- a. Knowledge of functions: algebraic, transcendental, explicit, implicit, and parametric.
  - b. An understanding of the concept of limits and continuity.
  - c. Facility with the rules for differentiation.
  - d. Definition of the definite integral as a limit of Riemann sums.
  - e. Facility with basic rules for anti-differentiation.

- V. Requisite Material (core subjects necessary to the course)
  - a. Integration
    - i. Definite integral as a limit of Riemann Sums
    - ii. Fundamental Theorem of Calculus
    - iii. Techniques of Integration
      - 1. Integration by substitution
      - 2. Integration by parts
    - iv. Applications of Integration
      - 1. Areas between curves
      - 2. Volumes by slicing and revolution
    - v. Improper Integrals
  - b. Sequences and series
    - i. Basic introduction to sequences and the meaning of their convergence
    - ii. Series
      - 1. Convergence in terms of sequences of partial sums
      - 2. Geometric series
      - 3. Convergence tests
      - 4. Alternating series
  - c. Power and Taylor series
    - i. Center and radius of convergence
    - ii. Functions as infinite series
    - iii. Approximating functions by Taylor Polynomials
- VI. Additional Material (topics covered at the discretion of the instructor)
  - a. Integration
    - i. Techniques of Integration
      - 1. Use of tables of integration
      - 2. Integration by partial fraction decomposition
      - 3. Integration by trigonometric substitution
      - 4. Numerical approximations of the definite integral
    - ii. Applications of Integration
      - 1. Arclength
      - 2. Work and center of mass
      - 3. Probability
      - 4. Economics
  - b. Differential Equations
    - i. Slope fields
    - ii. Euler's method
    - iii. Separation of variables
    - iv. General applications
  - c. Series
    - i. Introduction to Fourier Series
    - ii. Errors in series approximations



April 27, 2009

Op-Ed Contributor

## End the University as We Know It

By MARK C. TAYLOR

GRADUATE education is the Detroit of higher learning. Most graduate programs in American universities produce a product for which there is no market (candidates for teaching positions that do not exist) and develop skills for which there is diminishing demand (research in subfields within subfields and publication in journals read by no one other than a few like-minded colleagues), all at a rapidly rising cost (sometimes well over \$100,000 in [student loans](#)).

Widespread hiring freezes and layoffs have brought these problems into sharp relief now. But our graduate system has been in crisis for decades, and the seeds of this crisis go as far back as the formation of modern universities. Kant, in his 1798 work “The Conflict of the Faculties,” wrote that universities should “handle the entire content of learning by mass production, so to speak, by a division of labor, so that for every branch of the sciences there would be a public teacher or professor appointed as its trustee.”

Unfortunately this mass-production university model has led to separation where there ought to be collaboration and to ever-increasing specialization. In my own religion department, for example, we have 10 faculty members, working in eight subfields, with little overlap. And as departments fragment, research and publication become more and more about less and less. Each academic becomes the trustee not of a branch of the sciences, but of limited knowledge that all too often is irrelevant for genuinely important problems. A colleague recently boasted to me that his best student was doing his dissertation on how the medieval theologian Duns Scotus used citations.

The emphasis on narrow scholarship also encourages an educational system that has become a process of cloning. Faculty members cultivate those students whose futures they envision as identical to their own pasts, even though their tenures will stand in the way of these students having futures as full professors.

The dirty secret of higher education is that without underpaid graduate students to help in laboratories and with teaching, universities couldn't conduct research or even instruct their growing undergraduate populations. That's one of the main reasons we still encourage people to enroll in doctoral programs. It is simply cheaper to provide graduate students with modest stipends and adjuncts with as little as \$5,000 a course — with no benefits — than it is to hire full-time professors.

In other words, young people enroll in graduate programs, work hard for subsistence pay and assume huge debt burdens, all because of the illusory promise of faculty appointments. But their economical presence, coupled with the intransigence of tenure, ensures that there will always be too many candidates for too few openings.

The other obstacle to change is that colleges and universities are self-regulating or, in academic parlance, governed by peer review. While trustees and administrations theoretically have some oversight responsibility, in practice, departments operate independently. To complicate matters further, once a faculty member has been granted tenure he is functionally autonomous. Many academics who cry out for the regulation of financial markets vehemently oppose it in their own departments.

4/30/2009

If American higher education is to thrive in the 21st century, colleges and universities, like Wall Street and Detroit, must be rigorously regulated and completely restructured. The long process to make higher learning more agile, adaptive and imaginative can begin with six major steps:

1. Restructure the curriculum, beginning with graduate programs and proceeding as quickly as possible to undergraduate programs. The division-of-labor model of separate departments is obsolete and must be replaced with a curriculum structured like a web or complex adaptive network. Responsible teaching and scholarship must become cross-disciplinary and cross-cultural.

Just a few weeks ago, I attended a meeting of political scientists who had gathered to discuss why international relations theory had never considered the role of religion in society. Given the state of the world today, this is a significant oversight. There can be no adequate understanding of the most important issues we face when disciplines are cloistered from one another and operate on their own premises.

It would be far more effective to bring together people working on questions of religion, politics, history, economics, anthropology, sociology, literature, art, religion and philosophy to engage in comparative analysis of common problems. As the curriculum is restructured, fields of inquiry and methods of investigation will be transformed.

2. Abolish permanent departments, even for undergraduate education, and create problem-focused programs. These constantly evolving programs would have sunset clauses, and every seven years each one should be evaluated and either abolished, continued or significantly changed. It is possible to imagine a broad range of topics around which such zones of inquiry could be organized: Mind, Body, Law, Information, Networks, Language, Space, Time, Media, Money, Life and Water.

Consider, for example, a Water program. In the coming decades, water will become a more pressing problem than oil, and the quantity, quality and distribution of water will pose significant scientific, technological and ecological difficulties as well as serious political and economic challenges. These vexing practical problems cannot be adequately addressed without also considering important philosophical, religious and ethical issues. After all, beliefs shape practices as much as practices shape beliefs.

A Water program would bring together people in the humanities, arts, social and natural sciences with representatives from professional schools like medicine, law, business, engineering, social work, theology and architecture. Through the intersection of multiple perspectives and approaches, new theoretical insights will develop and unexpected practical solutions will emerge.

3. Increase collaboration among institutions. All institutions do not need to do all things and technology makes it possible for schools to form partnerships to share students and faculty. Institutions will be able to expand while contracting. Let one college have a strong department in French, for example, and the other a strong department in German; through teleconferencing and the Internet both subjects can be taught at both places with half the staff. With these tools, I have already team-taught semester-long seminars in real time at the Universities of Helsinki and Melbourne.

4. Transform the traditional dissertation. In the arts and humanities, where looming cutbacks will be most devastating, there is no longer a market for books modeled on the medieval dissertation, with more footnotes than text. As financial pressures on university presses continue to mount, publication of dissertations, and with it scholarly certification, is almost impossible. (The average university press print run of a dissertation that has been converted into a book is less than 500, and sales are usually considerably lower.) For many years, I have taught undergraduate courses in which students do not write traditional papers but develop analytic treatments



in formats from hypertext and Web sites to films and video games. Graduate students should likewise be encouraged to produce “theses” in alternative formats.

5. Expand the range of professional options for graduate students. Most graduate students will never hold the kind of job for which they are being trained. It is, therefore, necessary to help them prepare for work in fields other than higher education. The exposure to new approaches and different cultures and the consideration of real-life issues will prepare students for jobs at businesses and nonprofit organizations. Moreover, the knowledge and skills they will cultivate in the new universities will enable them to adapt to a constantly changing world.

6. Impose mandatory retirement and abolish tenure. Initially intended to protect academic freedom, tenure has resulted in institutions with little turnover and professors impervious to change. After all, once tenure has been granted, there is no leverage to encourage a professor to continue to develop professionally or to require him or her to assume responsibilities like administration and student advising. Tenure should be replaced with seven-year contracts, which, like the programs in which faculty teach, can be terminated or renewed. This policy would enable colleges and universities to reward researchers, scholars and teachers who continue to evolve and remain productive while also making room for young people with new ideas and skills.

For many years, I have told students, “Do not do what I do; rather, take whatever I have to offer and do with it what I could never imagine doing and then come back and tell me about it.” My hope is that colleges and universities will be shaken out of their complacency and will open academia to a future we cannot conceive.

Mark C. Taylor, the chairman of the religion department at Columbia, is the author of the forthcoming “Field Notes From Elsewhere: Reflections on Dying and Living.”

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