FACULTY SENATE CURRICULUM COMMITTEE Rev 5-78

APPROVAL FORM

1) An approval Form must accompany each proposal.

2) A proposed catalogue description of the course must accompany the proposal as a separate page.

3) Results of all consultations must be attached to the proposal.

Proposal Title Stratigraphy and Sedimentation

Sponsor(s) Dr. Donald W. Zalusky Dept. Physical Sciences

Check One { Course X Credit/Level/Title Change _____ Other _____

Concentration _____ Specialization _____ Major Program ____ Certification _____

Graduate _____ Undergraduate X No. of Credits 4

REVIEWS		
Department Curr. Comm.	Division Curr. Comm	Dean of Division
Reviewed 4/6/77 Date	Reviewed _____ Date	Reviewed _____ Date
Approved ~~Not Approved~~ 4/6/77 Date	Approved Not Approved _____ Date	
[signature] Chairperson Dept.	[signature] Chairperson Div. Curr Comm.	_____ Signature

SENATE CURRICULUM COMMITTEE

SCC # 78-79-76 Proposal Received 4/6/77 Open Hearing Held 4/11/77

Returned to the department for the following reason(s):

all note [illegible]

Approved by the Curriculum Committee: Date 5/11/77

Presented to Executive Committee of the Faculty Senate as information: Date 4/5/77

Notifications forwarded: Vice President for Academic Affairs: Date 4/21/77

[signature]
Signature: Chairperson, Curriculum Committee

[illegible] 1111.425

G L A S S B O R O S T A T E C O L L E G E

DEPARTMENT OF PHYSICAL SCIENCES

COURSE PROPOSAL

1. COURSE TITLE: Stratigraphy and Sedimentation

   DEPARTMENT: Physical Sciences

   SPONSOR: Dr. Donald W. Zalusky

2. a. Undergraduate; 400

   b. 4 Cr. Hrs. (Lecture and Laboratory) Elective

   c. Junior/Senior Level

   d. Geology I, Geology II (1914.100 and 1914.101) Prerequisites

   e. In addition to the preparation of Earth Science teachers, the Physical Sciences Department Concentration in Earth Science currently serves as a springboard to the profession of Geology for those desiring this vocation. Upon completion of the required core courses of the Earth Science Concentration, students may select additional offerings in geology which permit them to achieve the same course background generally proscribed in institutions which grant a Liberal Arts degree in Geology with the exception of a course in sedimentation and stratigraphy. The addition of this course as an elective will permit a G.S.C. student to achieve the broad background in the various branches of geology required by most graduate schools, or permit entry level into the profession of geology.

   f. We are capable of presenting this course upon approval; and, therefore, if approved, would offer it in the Spring of 1980 and on a continuing basis once each academic year thereafter. It is anticipated that the initial class enrollment would be from eight to twelve students and future growth is not seen to exceed one section.

3. a. Dr. Donald Zalusky, the proposer, will teach this course and is well acquainted with the theory, practices, and techniques of sedimentation and

The processes, in broad terms, of weathering, erosion, transport and deposition of sediments which result in the stratified rocks is a continuum of nature and permits the rational combination of these two topics into one course, and is the modus operandi of most colleges and universities at the undergraduate level.

The inclusion of Sedimentation and Stratigraphy in the Earth Science curriculum closes a gap in our program to provide well rounded Earth Science teachers or professional training for those pursuing a career in geology.

c. Specific objectives of the course are to:

1. Develop an understanding of the clastic and nonclastic sediments, their origin, mode and method of transport, deposition, diagenesis and lithification.
2. Develop the ability to analyze and classify sedimentary rocks through laboratory activities.
3. Develop the ability to reconstruct environments of deposition.
4. Utilize the preceding objectives to correlate rocks and interpret earth history.
5. Provide field experience as an actualistic component to supplement and reinforce lecture and laboratory experiences.
6. Provide an entry to geologic literature, scientific investigation and the scientific method.
7. To introduce the student to the techniques of quantifying natural phenomena and geological applications on the computer.

4.

TOPICAL OUTLINE

1. Introduction

   Scope of Stratigraphy and Sedimentation

2. The Stratigraphic Column

   Evolution of Stratigraphic Classification
   Present-day Classification
   The Stratigraphic Commission

3. Stratigraphic Procedures

   Outcrop Procedures
   Subsurface Procedures

4. Properties of Sedimentary Rocks

   Texture of Sedimentary Rocks
   Texture of Clastic Rocks
   Textural Elements of Nonclastic Rocks
   Mass Properties of Sedimentary Aggregates
   Color of Sediments
   Sedimentary Structures
   Composition of Sedimentary Rocks
   Chemical Composition of Sediments

5. Classification and Description of Sedimentary Rocks

   Modern Classifications
   Common Sedimentary Families
   Descriptions of Selected Clastic Sedimentary Rocks
   Nonclastic Sedimentary Rocks

6. Sedimentary Processes

   Weathering
   Transportation
   Classification of Stream Loads
   Selective Transportation and Abrasion
   Deposition of Clastics
   Deposition of Nonclastics
   Process and Response in Sedimentary Transportation and Deposition

7. Sedimentary Environments

   Importance of Sedimentary Environments in Stratigraphy
   Sedimentary Processes and Their Products
   Elements and Factors of the Environment
   Environmental Patterns
   Applications of Environmental Patterns in Stratigraphy
   Classification of Sedimentary Environments
   Post-depositional Changes in Sediments
   Reconstruction of Ancient Environments

5. As indicated earlier, the addition of Stratigraphy and Sedimentation to the Earth Science offerings completes the list of offerings generally required in most Geology degree programs. This course will permit the preparation of career bound students either to graduate programs or entry level in the profession. To the student committed to a career in the education field this course is a very valuable complement to previous courses in Geology as it not only presents new information and concepts but unifies much of what has gone before.

6. Professor Paul Dike of the Physical Sciences Department was consulted about the wisdom of unifying Stratigraphy and Sedimentation into one course and agrees that this is a natural marriage and one that has ample successful precedent.

7. The need for this course has been reviewed by the Earth Science Section of the Physical Sciences Department and received unanimous support.

8. CATALOGUE DESCRIPTION

Stratigraphy and Sedimentation 1914.425

A study of the processes and products of sedimentation, diagenesis, lithification and the mass relationships of strata. Emphasis is placed on interpreting earth history through the study of sedimentary rocks utilizing laboratory analysis, field observation, and computer applications. Includes at least one three-day field trip under canvas.

Prerequisites - 1914.100 and 1914.101