

NEW JERSEY MARINE SCIENCES CONSORTIUM

COURSES

Glassboro State College is a member of the N.J.M.S.C.

All proposals for courses taught through the N.J.M.S.C. are first submitted to and passed by the curriculum committee of the home institution of the individual proposing the course. They are then evaluated and acted on by the N.J.M.S.C. Academic Committee. Once accepted by the Consortium, course proposals are then sent to member institutions for action by the individual college's curriculum committee for credit by that member institution.

Dr. C. Joseph Waring,
Glassboro State College
Representative to the
New Jersey Marine Sciences Consortium.

NEW JERSEY MARINE SCIENCES CONSORTIUM

COURSE OUTLINE

500 Level

THE NEW YORK BIGHT: The MESA
Monographs as an educational resource

2 credits

I Brief Outline of the Course

A series of lectures and a field trip will introduce teachers to the MESA monographs, and through them to the ecology, resources and problems of the New York Bight.

Prerequisite: Bachelor of Arts or Sciences. No particular courses are required, but students should be aware that considerable reading will be required for successful completion of the course.

II General Aim of the Course

To introduce pre-college teachers to the MESA (Marine Ecosystems Analysis) New York Bight Atlas Monographs, and their value as educational materials.

III Specific Objectives of the Course

- A. To enable teachers to use the MESA monographs as texts in a wide variety of courses from social studies to the natural sciences, or to use them effectively as resource materials.
- B. To inform teachers about the New York Bight, and increase their awareness of the interaction of this marine area with the lives of the people living in surrounding land areas.
- C. To increase teachers' skills in leading field trips and in using marine related materials in their teaching.

IV Content and Scope of the Course

- A. Introduction to the Monographs: where to go to obtain the information you need, the titles in the series.
- B. Water movement in the Bight: circulation, tides, storm sur climate.
- C. Geology of the Bight: sediments, beaches, erosion.

IV Content and Scope of the Course (continued)

- D. Biology of the Bight: plankton, benthos, fishes..
- E. Uses of the Bight: maritime operations, mining, demographic patterns, waste disposal.
- F. Cruising the Bight: a one day field trip on a research vessel to sites representative of both the values and problems of the Bight.

V. Procedures, Techniques and Methods

Lectures and demonstrations, field work.

VI Instructional Materials

MESA New York Bight Atlas Monographs; audio-visual equipment and materials.

VII Basic Requirements for Completion of the Course

VIII Texts

The MESA New York Bight Atlas Monograph Series

- Hydrographic Properties Malcolm J. Bowman, with cartographic assistance by Lewis D. Wunderlich, Marine Sciences Res. Ctr., SUNY
- Chemical Properties James and Elizabeth Alexander, Institute of Oceanography, SUS Florida
- Circulation Donald Hansen, Atlantic Oceanographic and Meteorological Laboratories
- Tides R. L. Swanson, MESA New York Bight Project
- Storm Surge N. Arthur Pore and Celso S. Barrientos, National Weather Service
- Marine Climatology Bernhard Lettau, National Science Foundation, William A. Brower, Jr., and Robert G. Quayle, National Climatic Center
- Gravity, Magnetism, and Seismicity James R. Cochran and Manik Talwani, Lamont-Doherty Geological Observatory
- Surficial Sediments George Freeland and Donald J. P. Swift, Atlantic Oceanographic and Meteorological Laboratories

VIII Texts (continued)

- Beach Forms and Coastal Processes
Warren E. Yasso, Columbia University, and
Elliott M. Hartman, Jr., Westchester Community College
- Plankton Production
Charles S. Yentsch, Bigelow Laboratory for
Ocean Sciences
- Plankton Systematics and Distribution
Thomas C. Malone, City University of New York
- Benthic Fauna
John B. Pearce and David Radosh, National Marine
Fisheries Service
- Fish Distribution
Marvin D. Grosslein and Thomas Azarovitz,
National Marine Fisheries Service
- Fisheries
J. L. McHugh, Marine Sciences Research Center,
SUNY, and Jay J. C. Ginter, NY Sea Grant Institute
- Aquaculture
Orville W. Terry, Marine Sciences Research Center,
SUNY
- Artificial Fishing Reefs
Albert C. Jensen, NYS Department of Environ-
mental Conservation
- Recreation
E. Glenn Carls, University of Waterloo, Ontario
- Port Facilities and Commerce
Alfred Hammon, The Port Authority of New York
and New Jersey
- Sand and Gravel
John S. Schlee, US Geological Survey, with a
section by Peter T. Sanko, NY Sea Grant Advisory Service
- Jurisdictional Zones and Governmental Responsibilities
Paul Marr, SUNY at Albany
- Demographic Patterns
Charles Koebel and Donald Krueckeberg,
Rutgers University
- Transportation
Richard K. Brail and James W. Hughes,
Rutgers University
- Electricity Generation and Oil Refining
H. G. Mike Jones, Harold Bronheim, and
Philip F. Palmedo, Brookhaven National Laboratory
- Waste Disposal
M. Grant Gross, Chesapeake Bay Institute,
Johns Hopkins University
- Water Quality
Donald J. O'Connor, Robert V. Thomann, and
Henry J. Salas, Hydroscience, Inc.
- Air Quality
Volker A. Mohnen, Atmospheric Sciences
Research Center, SUNY
- The Lower Bay Complex
Iver Duedall, Harold O'Connors, Robert Wilson,
and Jeffrey H. Parker, Marine Sciences Research Center, SUNY

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VIII Texts (continued)

Industrial Wastes
Manhattan College

James A. Mueller and Andrew R. Anderson,

Marine and Coastal Birds Marshall A. Howe, Roger B. Clapp, and
John S. Weske, US Fish and Wildlife Service

Environmental Health Joseph M. O'Connor, Chun Chi Lee, and Merrill
Eisenbud, Institute of Environmental Medicine, NYC Medical Center

NEW JERSEY MARINE SCIENCES CONSORTIUM

COURSE OUTLINE

400 Level

SCIENTIFIC PHOTOGRAPHY

2 Credits

4999-0412

I Brief Description of the Course

Application of photography to scientific subject matter, including macrophotography and microphotography.

Prerequisite: A course in introductory photography or equivalent experience.

II General Aim of the Course

To instruct the student in the proper techniques of scientific photography.

III Specific Objectives of the Course

To acquaint the student with the value of photography in the visualization and solution of scientific problems at macroscopic and microscopic levels of investigation.

IV Content and Scope of the Course

A. Review of General Photography:

1. Photographic emulsion: composition and sensitivity
2. Photographic optics: nature of illumination; lens construction and limitations (aberration)
3. Camera construction and operation
4. Exposure criteria: illumination regulation; exposure guide devices
5. Film processing
6. Printing: standard enlarger types/construction

B. Macrophotography:

1. Selection of film type versus subject illumination: (e.g. artificial vs. natural illumination; necessity for use of filters)
2. Proper orientation of subject (or endpoint)

Scientific Photography

3. Nature (or endpoint) of the subject as related to both lens and film selection: panoramic subjects (e.g. landscapes); animated subjects (e.g. living organisms); inanimate subjects (e.g. scientific apparatus)
4. Specific advantages of color vs. black and white film selection.

C. Microphotography:

1. Construction and operation of the bright-field microscope: including attachments necessary to permit photography; specific limitations.
2. Subject considerations: differential staining and contrast; specimen-background ratio.
3. Film selection vs. subject (endpoint): rationale for color vs. black and white films
4. Exposure criteria

VI Instructional Materials

Various conventional cameras, ortholux-orthomat light microscope and associated equipment and supplies. Darkroom facilities, chemicals and supplies.

VII Basic Requirements for the Completion of the Course

Written examination and individual project.

VIII Text

Blaker, A. 1976. Field Photography. W. H. Freeman and Co., San Francisco, Cal.

Eastman Kodak Company. 1974. Photography Through the Microscope. Kodak Publication No. P-2. Rochester, N. Y.

IX Bibliography

Chamot, E. and F. Mason. 1958. Handbook of Chemical Microscopy. John Wiley and Sons, Inc. N.Y.

Clark, G. L. 1961. The Encyclopedia of Microscopy. Reinhold Publishing Corp. N.Y.

Eastman Kodak Company. 1971. Processing Chemicals and Formulas. Kodak Publ. No. J-1. Rochester, N.Y.

_____. 1973. Ultraviolet and Fluorescence Photography. Kodak Publ. No. M-27 Rochester, N.Y.

Scientific Photography

- _____. 1973. Applied Infrared Photography. Kodak
Publ. No. M-28 Rochester, N.Y.
- _____. 1969. Kodak Plates and Papers for Science and
Industry. Kodak Publ. No. P-9. Rochester, N.Y.
- _____. 1974. Enlarging in Black and White and Color.
Kodak Publ. No. AG-16. Rochester, N.Y.
- _____. 1970. Kodak Master Darkroom Dataguide.
Kodak Publ. No. R-20. Rochester, N.Y.
- Engel, C. E. 1968. Photography for the Scientist. Academic Press,
Inc. New York.
- Gander, R. 1969. Photomicrographic Techniques. Hafner Publishing
Co., Inc. New York.
- Gumpertz, W. E. 1967. How to Get Photomicrographs. Laboratory
Management 5:1-28.
- James, T. H. and G. C. Higgins. 1970. Fundamentals of Photographic
Theory. Morgan and Morgan. New York.
- Lawson, D. F. 1960. The Techniques of Photomicrography. MacMillan Co.
New York.
- Loveland, R. P. 1970. Photomicrography, A Comprehensive Treatise.
Vol. I and II. John Wiley and Sons, Inc. New York.
- _____. 1971 Characteristics and Choice of Photographic
Materials for Photomicrography. The Microscope 19:177-203.
- Mess, C. K. and T. H. James. 1966. The Theory of the Photographic
Process. Macmillan Co. New York.

MEMO

Glassboro State College

To All concerned
Re Curriculum Proposals and Changes
Date May 12, 1981 From Dr. Lawson J. Brown *LJB*

The following course proposals have been approved by the Curriculum Committee and the appropriate Dean. HEGIS and course numbers have been assigned by the Registrar; therefore, these additions are approved for scheduling.

NEW COURSES

NEW JERSEY MARINE SCIENCES CONSORTIUM COURSES

1901.405	Scientific Photography	2 Undergraduate
0418.530	The New York Bight: The MESA	2 Graduate
0704.410	Compiler Design	3 Undergraduate

egc

cc: Deans
Chairpersons
Registrar
Sponsor
Faculty Senate
D. Gardiner



State of New Jersey

FACULTY SENATE

GLASSBORO STATE COLLEGE
GLASSBORO, NEW JERSEY 08028

May 5, 1981

To: Dr. Lawson Brown, Vice Pres.,
for Academic Affairs

From: Dr. Dickinson Gardiner, Chairperson
Senate Curriculum Committee

The following course proposals and specialization were approved by the Curriculum Committee and reported to the Faculty Senate:

1. Two New Jersey Marine Sciences Consortium Courses:
 - a. Scientific Photography
 - b. The New York Bight: The MESA Monographs
2. Compiler Design
3. Dance Specialization

DG/bc
Encls.

OFFICE OF THE VICE-PRESIDENT
FOR ACADEMIC AFFAIRS

MAY 6 1981

GLASSBORO STATE COLLEGE