

ACADEMIC SENATE PROPOSAL TRACKING SHEET

(Document To Be Originated By Academic Senate Secretary On Canary Color Paper)

All proposals MUST have their originating college faculty body (Ex. Nursing, Technical Sciences, Arts & Sciences, Education) approval and must be signed by the submitter and the college chair/dean before being submitted to the academic senate secretary.

1. Submit all proposals (using the appropriate Academic Senate program/degree and/or course revision forms) to the Academic Senate Secretary.
2. The Academic Senate Secretary logs and numbers items and forwards them to the appropriate Academic Senate subcommittee(s): Teacher Education (if applicable), General Education (if applicable), or Curriculum.
3. The Academic Senate subcommittee(s) consider(s) the proposal. If approved, the proposal is forwarded to the next committee. If a committee disapproves the proposal, the originator may request that the item be forwarded to the next body for consideration. The committee will provide written rationale to the originator when a proposal is disapproved and the proposal is returned to the originator.
4. The Academic Senate considers the proposal and approves or disapproves. If approved, the proposal is forwarded to the Full Faculty for consideration. If the Academic Senate disapproves the proposal, the originator may request that the item be forwarded to the Full Faculty for consideration. The Academic Senate will provide written rationale to the originator when proposals are disapproved and the proposal is returned to the originator.
5. The Full Faculty considers academic senate approved proposals. If faculty approve, the proposal will then be forwarded to the Provost. The Provost approves or disapproves the proposal. If approved, the proposal is then forwarded to the Chancellor.
7. The Chancellor approves or disapproves the proposal.

Subcommittee and Academic Senate college representatives will notify their respective colleges' of the progress of submitted proposals or the proposal may be tracked via the web page --

<http://www.msun.edu/admin/provost/asproposals.htm>

Documentation and forms for the curriculum process is also available on the web page:

<http://www.msun.edu/admin/provost/asforms.htm>

***** (If a proposal is disapproved at any level, it is returned through the Academic Senate secretary to the Chair/Dean of the submitting college who then notifies the originator.)

Proposal # <u>0218</u>	Title: <u>Clarification lab science reqs - TSCJ and ESCJ</u>
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(proposal explanation, submitter and college chair/dean signatures on attached program/degree or course revision form)

Received by ACAD Senate Forwarded to Teacher Ed Council	Date <u>12/16/02</u>	Approved _____ Disapproved _____	
Forwarded to Gen Ed Committee	<u>1/21/03 NA</u>	Signature _____ Date _____ Approved <u>[Signature]</u> Disapproved _____ Signature <u>[Signature]</u> Date _____	
Returned to ACAD Senate Forwarded to Curriculum Committee	<u>12/18/02</u> <u>2/14/03</u> <u>12/18/02</u> <u>2/14/03</u>	Approved _____ Disapproved _____ Signature _____ Date _____ Approved <u>[Signature]</u> Disapproved _____ Signature _____ Date _____	
Returned to ACAD Senate for Vote Sent to Provost's office for Full Faculty vote Voted on at Full Faculty meeting	<u>1/21/03</u> <u>3/4/03</u> 3/12/03 MAR 25 2003	Approved _____ Disapproved _____ Signature _____ Date _____ Approved <u>[Signature]</u> Disapproved _____ Signature _____ Date _____	
Forwarded to Provost for Approval/Disapproval Forwarded to Chancellor for Approval/Disapproval	MAR 26 2003 APR 7 2003	Approved _____ Disapproved _____ Signature _____ Date _____ Approved <u>[Signature]</u> Disapproved _____ Signature _____ Date _____	
Copies sent to originating college and registrar's office C:/data/proposaltracking sheet ACAD 10 10 01	APR 8 2003	Approved _____ Disapproved _____ Signature _____ Date _____	

SEE my additional course description changes on subsequent pages.

TO: Larry Strizich
Will Rawn

FROM: Roger Barber

RE: Clarification of the Laboratory Science Requirements

DATE: April 7, 2003

I have approved all of the laboratory science course revisions forms that were recently approved by the full faculty. Those forms clarified which courses satisfied. . .or did not satisfy. . .the area C, laboratory science requirement in MSU-Northern's general education program.

I think some of the resulting course descriptions are extremely confusing, however, particularly from the perspective of a student. For example:

The course description for BIOL 279 says that it includes lecture and laboratory hours. But the new course description immediately says that the course does not meet the laboratory science requirement. That is contradictory, to say the least. And baffling from a student's perspective.

As a consequence, I DID MAKE some changes in the course descriptions to clarify the purpose of the course and to incorporate the recently-approved changes. I did that primarily in an effort to eliminate any confusion, wherever possible, for students, without changing the intent or consequences of the new language approved by the faculty. The results are a bit redundant, but that redundancy emphasizes the purpose of the new course description language.

For example, in the above-described cooperative education course description, I simply deleted the old language that says "includes lecture and laboratory hours." If the laboratory hours don't count for anything, why confuse students by including them in the description? Obviously, the new language will be added to the description. A couple of additional examples will illustrate what I have done:

TSCI 110, Introduction to Water and Wastewater. Introduction to drinking water and sewerage/wastewater treatment systems. Topics include plant layouts, process control. . . and laboratory procedures. The laboratory procedures are not the kinds of experiences that satisfy the laboratory science requirement. This course does not meet the laboratory science requirement.

TSCI 206, Applied Water Hydraulics. Applied hydraulics including study of water and wastewater collection and distribution, maintenance, and safety. Includes lecture and laboratory hours, but the laboratory hours are not the kind of experience that satisfies the laboratory science requirement. This course does not meet the laboratory science requirement.

TSCI 110 Introduction to Water and Wastewater 4 semester credits Introduction to drinking water and sewerage/wastewater treatment systems. Topics include plant layout, process control, distribution and collection systems, federal and state regulations, facultative lagoons, and industrial treatment processes and laboratory procedures. *the laboratory procedures are not the kind of experiences that satisfy the laboratory science requirement.*

TSCI 205 Distribution Systems 3 semester credits Introduction to the topics included on the Montana State Examination. Laboratory experience in basic mechanical and plumbing skills, identification, selection, operation, maintenance and repair of hardware and piping systems, and safety procedures commonly used by water or wastewater treatment plants. *the laboratory experiences are not the kind of experiences that satisfy the laboratory science requirement.*

TSCI 206 Applied Water Hydraulics 3 semester credits Applied hydraulics including study of water and wastewater collection and distribution, maintenance, and safety. Includes lecture and laboratory hours. *the laboratory hours are not the kind of experience that satisfies the laboratory science requirement.*

TSCI 230 Introduction to Groundwater Concepts 3 semester credits An introduction to the basic concepts governing groundwater including geology, chemistry, contamination, contaminant transport, and remediation techniques. Attention will be focused on the use of groundwater as a source for municipal supply. Includes some laboratory applications. *not the kind of applications that satisfy the laboratory science requirement.*

TSCI 231 Wastewater Processes 3 semester credits An introduction to industrial and municipal wastewater treatment and preliminary, primary, and tertiary treatment processes and methods. Specific topics covered include characteristics of wastewater, sampling and testing procedures for wastewater analysis, sludge treatment and disposal, activated sludge process control, legal aspects of sewage disposal, chlorination records and report keeping, maintenance and operation, and safety. Concurrent enrollment in TSCI 232 is required. Prerequisites: TSCI 110, CHEM 111, and MATH 112. *science requirement.*

TSCI 232 Wastewater Processes Laboratory 2 semester credits Laboratory and on-site activities associated with wastewater treatment and analysis. Concurrent enrollment in TSCI 231 is required. **Course Fee: \$20.00**

TSCI 233 Water Treatment Processes 3 semester credits Water treatment processes including collection and distribution, sedimentation, filtration, chlorination, softening, aeration, fluoridation, corrosion and odor control, maintenance water bacteriology and chemistry, and basic hydraulics and electricity. Concurrent enrollment in TSCI 234 is required. Prerequisite: TSCI 231.

TSCI 234 Water Treatment Processes Laboratory 2 semester credits Laboratory and on-site activities associated with water treatment processes and water analysis. Concurrent enrollment in TSCI 233 is required. **Course Fee: \$20.00**

TSCI 279 Cooperative Education 1, 3, 6 or 12 semester credits A planned and supervised work-learning experience in industry, business, government, or community service agencies related to water quality studies. Prerequisites: TSCI 111, two semesters of attendance at MSU-Northern, approval of advisor, Chair/Dean of the College of Arts and Sciences, and cooperative education coordinator. *(includes lecture and laboratory hours.) delete this sentence*

TSCI 304 Fuels and Lubricants 3 semester credits Petroleum products and their application to the fuel and lubricating requirements of automotive and diesel vehicles. Laboratory tests related to octane, distillation, volatility, viscosity, carbon residue, API degree, and dropping point of greases. Chemical analysis will be made by gas chromatography and infrared. Includes lecture and laboratory hours. **Course Fee: \$15.00**

TSCI 320 Environmental Analytical Techniques 2 semester credits Focuses upon the chemical, physical, and biological analytical techniques that are commonly used in performing environmental health and water quality assessments, and involves extensive field and laboratory work. Offered alternate years. Prerequisite: basic chemistry course. **Course Fee: \$15.00**

TSCI 415 Pollution Prevention 3 semester credits An in-depth examination of the process of systematically developing and implementing a pollution prevention program, focusing on developing an awareness of technology applications which have potentially harmful environmental impacts. Case studies and field experience are included such as Decision Support Systems and Water Quality Models

TSCI 420 Applied Water Quality Technology 3 semester credits Computer techniques utilized for the acquisition of data, the handling of data generated, methods of data evaluation including statistical evaluation and data presentation used in the water quality profession. Includes introduction to methods of determining water rates, fees, and amortization of capital costs necessary to operate a water utility.

TSCI 479 Cooperative Education 1, 3, 6 or 12 semester credits A planned and supervised work-learning experience extending the student's learning experience in industry, business, government, or community service agencies related to water quality studies. Prerequisites: Cooperative Education 279 or Junior standing and approval of advisor, Chair/Dean of the College of Arts and Sciences, and cooperative education coordinator.

COURSE REVISION FORM

NEW _____ DROPPED _____ MAJOR REVISION _____ FOR INFORMATION ONLY X

College Arts & Science Program Area Technical Science Date 12/11/02

Submitter [Signature] Chair/Dean [Signature] Date 12/17/02
Signature (indicates "college" level approval)

Please provide a brief explanation & rationale for the proposed revision(s):

Revise the course descriptions for the Technical Science program stating whether or not they meet the science laboratory requirement. All course descriptions to remain the same except for adding a sentence at the end of the description as shown below.

Please provide the following information:

College: **Arts and Sciences**
Program Area: **Technical Science**
Date: **December 11, 2002**

Course Prefix, No. & Course Title:

Sentence to be added to the end of the course description:

TSCI 110 Introduction to Water and Wastewater

This course does not meet the laboratory science requirement.

TSCI 205 Distribution Systems

This course does not meet the laboratory science requirement.

TSCI 206 Applied Water Hydraulics

This course does not meet the laboratory science requirement.

TSCI 230 Introduction to Groundwater Concepts

This course does not meet the laboratory science requirement.

TSCI 232 Wastewater Processes Laboratory

This course taken in conjunction with the lecture portion of the course (TSCI 231) meets the laboratory science requirement.

TSCI 234 Water Treatment Processes Laboratory

This course taken in conjunction with the lecture portion of the course (TSCI 233) meets the laboratory science requirement.

TSCI 279 Cooperative Education

This course does meet the laboratory science requirement.

TSCI 304 Fuels and Lubricants

This course does meet the laboratory science requirement.

TSCI 320 Environmental Analytical Techniques

This course does meet the laboratory science requirement.

TSCI 415 Pollution Prevention

This course does not meet the laboratory science requirement.

TSCI 420 Applied Water Quality Technology

This course does not meet the laboratory science requirement.

SCI 479 Cooperative Education

This course does not meet the laboratory science requirement.

Required by:

Technical Science

Current Catalog Description (include all prerequisites):

Same-see attached

Proposed or New Catalog Description (include all prerequisites):

See above

Course Outcome Objectives:

N/A

Additional instructional resources needed (including library materials, special equipment, and facilities). Please note: approval does not indicate support for new faculty or additional resources.

ACAD course revision form 10-10-2001 rev. 12-12-01

COURSE REVISION FORM

NEW _____ DROPPED _____ MAJOR REVISION _____ FOR INFORMATION ONLY X _____

College Arts & Science Program Area Earth Science Date 12/11/02

Submitter *W. D. ...* Chair/Dean *W. D. ...* Date 12/11/02
Signature Signature (indicates "college" level approval)

Please provide a brief explanation & rationale for the proposed revision(s):

Revise the course descriptions for the Earth Science program stating whether or not they meet the science laboratory requirement. All course descriptions to remain the same except for adding a sentence at the end of the description as shown below.

Please provide the following information:

College: Arts and Sciences
Program Area: Earth Science
Date: December 11, 2002

Course Prefix, No. & Course Title:	Sentence to be added to the end of the course description:
ESCI 115 Foundations of Earth Science	This course does meet the laboratory science requirement.
ESCI 204 Physical Geology	This course does meet the laboratory science requirement.
ESCI 206 Historical Geology	This course does meet the laboratory science requirement.
ESCI 208 Environmental Geology	This course does meet the laboratory science requirement.
ESCI 307 Astronomy	This course does meet the laboratory science requirement.
ESCI 310 Introduction to Paleontology	This course does meet the laboratory science requirement.
ESCI 315 General Hydrology	This course does not meet the laboratory science requirement.
ESCI 405 Earth Science Investigations for Teachers	This course does meet the laboratory science requirement.
ESCI 505 Earth Science Investigations for Teachers	This course does meet the laboratory science requirement.

Required by: Earth Science

Current Catalog Description (include all prerequisites):

Same-see attached

Proposed or New Catalog Description (include all prerequisites):

See above.

Course Outcome Objectives:

N/A

Additional instructional resources needed (including library materials, special equipment, and facilities). Please note: approval does not indicate support for new faculty or additional resources.

ACAD course revision form 10-10-2001 rev. 12-12-01

ESCI 115 Foundations of Earth Science

4 semester credits

Basic concepts of geology, astronomy, meteorology, and physical geography. Selection of topics will be at the discretion of the instructor. Course includes lecture and laboratory hours. Prerequisite: MATH 120 or placement into MATH 112 or MATH 130.

Course Fee: \$5.00

ESCI 204 Physical Geology

4 semester credits

Introductory geology emphasizing the physical constitution of the Earth's interior and surface. Prerequisites: MATH 120 or placement into MATH 112 or MATH 130. **Course Fee: \$5.00**

ESCI 206 Historical Geology

4 semester credits

Introductory geology emphasizing the evolution of the Earth and life through geological time. ESCI 204 is recommended. Prerequisites: MATH 120 or placement into MATH 112 or MATH 130. **Course Fee: \$5.00**

ESCI 208 Environmental Geology

4 semester credits

An introduction to such geological phenomena as earthquakes, volcanism, and flooding which influence humans and human civilization. Lecture and laboratory hours are included. Prerequisites: MATH 120 or placement into MATH 112 or MATH 130.

ESCI 307 Astronomy

4 semester credits

Introduction to astronomical observation and measurement and features of the Solar System and phenomena found outside the Solar System. Includes lecture and laboratory hours. Offered alternate years. Prerequisite: PHYS 231.

ESCI 310 Introduction to Paleontology

3 semester credits

This course will provide an introduction to paleontology and the various procedures in the field with special emphasis on Montana and Alberta Fossils. Prerequisite: ESCI 115 or ESCI 204 or consent of instructor. **Course Fee: \$10.00**

ESCI 315 General Hydrology

3 semester credits

An overview of the water cycle with special emphasis on flowing and standing water systems. Offered alternate years.

ESCI 405 Earth Science Investigations for Teachers

3 semester credits

Astronomy, geology, and meteorology for science teachers. Graduate credit requirements are described in the course syllabus.

Course Fee: \$10.00

ESCI 505 Earth Science Investigations for Teachers

3 semester credits

Astronomy, geology, and meteorology for science teachers. Graduate credit requirements are described in the course syllabus.

Course Fee: \$10.00