

# MICHIGAN STATE UNIVERSITY

January 28, 2011

## MEMORANDUM

TO: Dr. Douglas Estry, Associate Provost for Undergraduate Education  
and Dean of Undergraduate Studies

FROM: Dr. Linda O. Stanford, Associate Provost for Academic Services

RE: Request to Phase Out and Discontinue the Bachelor of Science Degree  
in Physics and Geophysics

For Transmittal to the University Committee on Academic Policy UCAP)

The request referenced above is being sent to the University Committee on Academic Policy (UCAP) in accordance with the *Bylaws for Academic Governance*, 4.4.

### UCAP Response Requested:

Please ask the UCAP to consider the request referenced above and provide consultative commentary. Please mail the related materials referenced under the heading Attachments at the end of this memorandum to UCAP members.

After receiving UCAP's consultative response, the Provost will make a determination to discontinue or not to discontinue this program. If the Provost determines that the program will be discontinued, the request will be forwarded to the University Committee on Curriculum for deletion of curriculum and degree requirements.

If you have any questions, please call Joy Speas, University Curriculum Administrator at 5-8420.

Thank you.

### Attachments:

1. Request for a Change in an Academic Program form dated December 29, 2010: Bachelor of Science Degree in Physics and Geophysics and attachments.
2. Student Enrollments by Program; Student Awards by Programs (for the request referenced above).

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## University Curriculum and Catalog

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## COLLEGE OF NATURALSCIENCE

1. Request to delete the curriculum and degree requirements in the **Bachelor of Science** degree in **Physics and Geophysics** in the Department of Physics and Astronomy. The University Committee on Academic Policy (UCAP) will provide consultative commentary to the Provost after considering this request. The Provost will make a determination after considering the consultative commentary from the University Committee on Academic Policy.

No new students are to be admitted to the program effective Spring 2010. No students are to be readmitted to the program effective Spring 2010. Effective Summer 2011, coding for the program will be discontinued and the program will no longer be available in the Department of Physics and Astronomy. Students who have not met the requirements for the Bachelor of Science degree in Physics and Geophysics through the Department of Physics and Geophysics prior to Summer 2011 will have to change their major.

<b>View a Program</b>		<b>Main Menu</b>
Joy Speas, RO	Wednesday, 12/29/2010	
<b>Program Name: Physics and Geophysics</b> <b>Degree: BS Sequence Number: 3</b>	Program Request ID: 1948	
<b>Effective Dates: Summer 2011 Status: Interim Initial Action: Deleted</b>		
<b>Requested Date: 12/28/2010 10:55:54 AM</b>		
<p><b>1. Department/School/College:</b> 32666 .... Department of Physics and Astronomy</p> <p><b>2. Name of Program:</b> Physics and Geophysics</p> <p><b>3. Name of Degree:</b> BS</p> <p><b>4. Type of Program:</b></p> <p><b>5. Effective Start Semester:</b> Summer 2011</p> <p><b>Effective End date:</b> Summer 2011</p> <p><b>Will the proposed change(s) have a negative impact on students? If so, which ones?:</b> There is a single student pursuing this major as a second major. He was notified of the moratorium at the time it was requested and assured that he would be permitted to complete the degree. He is expected to graduate spring 2011.</p> <p><b>Describe impact and explain what accommodations will be made:</b> Students entering MSU with an interest in Physics and Geophysics can still select the major in Geology with a concentration in Geophysics and pursue additional physics as a second major, second degree, or with selected electives.</p> <p><b>Reason(s) for change(s):</b> The small number of students electing the Physics and Geophysics major in recent years has not justified maintaining the program. In most prior years, only 1-2 students per year have elected this major.</p>		
<b>DEPARTMENT LEVEL APPROVAL STATUS</b>		
Approved: Department of Physics and Astronomy 12/28/2010 4:24:37 PM by Wolfgang Bauer for Wolfgang Bauer, Chairperson		
<b>COLLEGE LEVEL APPROVAL STATUS</b>		
Approved: College of Natural Science 12/29/2010 11:27:42 AM by Kathryn Doig for Kathryn M. Doig, Associate Dean		

**PHYSICS and GEOPHYSICS**

The Bachelor of Science degree with a major in physics and geophysics is designed to provide a thorough foundation in the field of physics, considerable background in the geological sciences and mathematics, and a balanced program in the liberal arts. The degree program is designed for those with an interest in graduate study in the geological sciences or employment in the environmental or energy sector.

A Bachelor of Science degree in Geophysics is also available and is administered by the Department of Geological Sciences. For additional information, refer to the *Department of Geological Sciences* section of this catalog.

**Requirements for the Bachelor of Science Degree in Physics and Geophysics**

1. The University requirements for bachelor's degrees as described in the *Undergraduate Education* section of this catalog; 120 credits, including general elective credits, are required for the Bachelor of Science in Physics and Geophysics.

The University's Tier II writing requirement for the Physics and Geophysics major is met by completing Physics 431, 440, and 451. Those courses are referenced in item 3. b. (1) below.

Students who are enrolled in the College of Natural Science may complete the alternative track to Integrative Studies in Biological and Physical Sciences that is described in item 1. under the heading *Graduation Requirements* in the College statement. Certain courses referenced in requirement 3. below may be used to satisfy the alternative track.

2. The requirements of the College of Natural Science for the Bachelor of Science degree.

The credits earned in certain courses referenced in requirement 3. below may be counted toward College requirements as appropriate.

3. The following requirements for the major: CREDITS

a. The following courses outside the Department of Physics and Astronomy: 44 or 45

- (1) One of the following courses (3 or 4 credits):
- BS 110 Organisms and Populations . . . . . 4
  - BS 111 Cells and Molecules . . . . . 3
  - ENT 205 Pests, Society and Environment . . . . . 3
  - MMG 205 Allied Health Microbiology . . . . . 3
  - PLB 105 Plant Biology . . . . . 3
  - PSL 250 Introductory Physiology . . . . . 4
  - ZOL 141 Introductory Human Genetics . . . . . 3

- (2) One of the following pairs of courses (7 credits):
- (a) CEM 141 General Chemistry . . . . . 4
  - CEM 142 General and Inorganic Chemistry . . . . . 3
  - (b) CEM 151 General and Descriptive Chemistry . . . . . 4
  - CEM 152 Principles of Chemistry . . . . . 3

- (3) All of the following courses (15 credits):
- CEM 161 Chemistry Laboratory I . . . . . 1
  - MTH 132 Calculus I . . . . . 3
  - MTH 133 Calculus II . . . . . 4
  - MTH 234 Multivariable Calculus . . . . . 4
  - MTH 235 Differential Equations . . . . . 3

- (4) All of the following courses in the Department of Geological Sciences (19 credits):
- GLG 201 The Dynamic Earth . . . . . 4
  - GLG 304 Physical and Biological History of the Earth . . . . . 4
  - GLG 411 Hydrogeology . . . . . 4
  - GLG 470 Principles of Modern Geophysics . . . . . 3
  - GLG 471 Applied Geophysics . . . . . 4

b. The following courses in the Department of Physics and Astronomy: 33 to 35

- (1) All of the following courses (27 credits):
- PHY 191 Physics Laboratory for Scientists, I . . . . . 1
  - PHY 192 Physics Laboratory for Scientists, II . . . . . 1
  - PHY 215 Thermodynamics and Modern Physics . . . . . 3
  - PHY 321 Classical Mechanics . . . . . 3
  - PHY 410 Thermal and Statistical Physics . . . . . 3
  - PHY 431 Optics I . . . . . 3
  - PHY 440 Electronics . . . . . 4
  - PHY 451 Advanced Laboratory . . . . . 3
  - PHY 471 Quantum Physics I . . . . . 3
  - PHY 481 Electricity and Magnetism I . . . . . 3

- (2) One of the following courses (3 or 4 credits):
- PHY 183 Physics for Scientists and Engineers I . . . . . 4
  - PHY 193H Honors Physics I-Mechanics . . . . . 3

- (3) One of the following courses (3 or 4 credits):
- PHY 184 Physics for Scientists and Engineers II . . . . . 4
  - PHY 294H Honors Physics II-Electromagnetism . . . . . 3
- The completion of Geological Sciences 470 and 471, or Physics 390 and 490, fulfills the department's capstone course requirement.

## Student Enrollments By Program

LVI Program - Description	Span	FY01	FY02	FY03	FY04	FY05	FY06	FY07	FY08	FY09	FY10	Total
<b>Natural Science - Continued</b>												
<i>Physics-Astronomy - Continued</i>												
UN 3824-Astrophysics - Second Degree	FQ68-	6	6	1	3	4	4	5	3	8	9	49
UN 3842-Physics	FQ68-	108	112	139	178	213	219	202	200	226	236	1,833
UN 3843-Physics - Second Degree	FQ68-	9	14	9	12	14	14	14	14	21	20	141
UN 7001-Physics and Geophysics	SS01-FS09	0	0	1	1	1	1	0	1	1	0	6
UN 7003-Physics and Geophysics - Second Degree	SS01-FS09	0	0	0	0	0	0	1	1	1	1	4
<b>DUAL - Dual Major</b>												
GR 9824-Physics	FQ68-	0	1	0	0	0	0	0	0	0	1	2
<b>MJEL - Teaching Mjr Elem Endorsement</b>												
TE 3848-Physics	FQ68-											
<b>MJSE - Teaching Major Sec Endorsement</b>												
TE 3847-Physics	FQ68-	4	4	7	8	9	13	16	13	12	9	95
<b>MNEL - Teaching Mnr Elem Endorsement</b>												
TE 3852-Astronomy	FQ68-											
TE 3849-Physics	FQ68-	4	2	3	1	0	0	0	0	0	0	10
<b>MNSE - Teaching Minor Sec Endorsement</b>												
TE 3851-Astronomy	FQ68-											
TE 3850-Physics	FQ68-	21	24	21	14	24	18	23	20	15	24	204
<b>MS - Master of Science</b>												
GR 3923-Astrophysics and Astronomy	FS92-	6	4	5	4	8	2	5	9	3	2	48
GR 3836-Physics	FQ68-	29	37	31	36	20	29	37	35	34	26	314
<b>NOPD - No Degree - Post Doctoral</b>												
PD 3844-Physics	FQ68-											
<b>PHD - Doctor of Philosophy</b>												
GR 3924-Astrophysics and Astronomy	FS92-	11	12	17	15	16	17	16	18	18	16	156
GR 3838-Physics	FQ68-	125	137	125	127	130	131	132	131	131	142	1,311
<b>Total - Physics-Astronomy</b>		<b>397</b>	<b>433</b>	<b>435</b>	<b>466</b>	<b>522</b>	<b>536</b>	<b>535</b>	<b>532</b>	<b>575</b>	<b>586</b>	<b>5,017</b>
<b>Physiology</b>												
<b>ADDU - Additional Major Undergraduate</b>												
UN 3863-Physiology	FQ68-	4	5	4	3	8	6	3	5	9	10	57

Fiscal Year (FY) counts are distinct student counts within the Summer, Fall, and Spring terms.  
 e.g. FY07=distinct student count within Summer 06, Fall 06, and Spring 07.  
 If a student changed majors within the FY, he/she is counted under both majors.

## Student Awards By Program

Lvl Program - Description	Span	FY01	FY02	FY03	FY04	FY05	FY06	FY07	FY08	FY09	FY10	Total
<b>Natural Science - Continued</b>												
<i>Physics-Astronomy - Continued</i>												
UN 3824-Astrophysics - Second Degree	FQ68-	1	3	0	1	1	0	1	2	0	2	11
UN 3842-Physics	FQ68-	10	6	8	12	19	26	18	13	16	31	159
UN 3843-Physics - Second Degree	FQ68-	1	2	4	1	2	4	3	3	2	8	30
UN 7001-Physics and Geophysics	SS01-FS09											
UN 7003-Physics and Geophysics - Second Degree	SS01-FS09											
<b>DUAL - Dual Major</b>												
GR 9824-Physics	FQ68-	0	1	1	0	0	0	0	0	0	0	2
<b>MJEL - Teaching Mjr Elem Endorsement</b>												
TE 3848-Physics	FQ68-											
<b>MJSE - Teaching Major Sec Endorsement</b>												
TE 3847-Physics	FQ68-											
<b>MNEL - Teaching Mnr Elem Endorsement</b>												
TE 3852-Astronomy	FQ68-											
TE 3849-Physics	FQ68-											
<b>MNSE - Teaching Minor Sec Endorsement</b>												
TE 3851-Astronomy	FQ68-											
TE 3850-Physics	FQ68-											
<b>MS - Master of Science</b>												
GR 3923-Astrophysics and Astronomy	FS92-	1	1	2	2	6	1	4	3	5	1	26
GR 3836-Physics	FQ68-	13	19	16	23	7	15	22	18	18	14	165
<b>NOPD - No Degree - Post Doctoral</b>												
PD 3844-Physics	FQ68-											
<b>PHD - Doctor of Philosophy</b>												
GR 3924-Astrophysics and Astronomy	FS92-	2	0	2	1	2	0	0	2	4	1	14
GR 3838-Physics	FQ68-	9	20	9	13	11	17	20	18	11	20	148
<b>Total - Physics-Astronomy</b>		<b>48</b>	<b>60</b>	<b>57</b>	<b>62</b>	<b>58</b>	<b>74</b>	<b>85</b>	<b>70</b>	<b>73</b>	<b>93</b>	<b>680</b>
<b>Physiology</b>												
<b>ADDU - Additional Major Undergraduate</b>												
UN 3863-Physiology	FQ68-	1	2	0	0	0	1	2	0	0	1	7