

Name _____
MSU ID# _____

Advisor _____

SNOW SCIENCE OPTION
CURRICULUM CHECKING SHEET
(2010-2012 Catalog)

| Rubric | # | Core Course Title | PREREQUISITES | SEM. | | |
|--|-----|---------------------------------|---|------------|-------|-------|
| | | | | CREDITS | TAKEN | GRADE |
| FRESHMAN YEAR | | | | | | |
| GPHY | 111 | CS Intro to Physical Geography | | 4 | | |
| GPHY | 141 | D Geogr of World Regions | | 3 | | |
| M | 171 | Q Calculus I | M 151 or MATH PLACEMENT IN PAST 12 MONTHS | 4 | | |
| M | 172 | Q Calculus II | M 171 | 4 | | |
| University core or elective | | | | 15 | | |
| Snow Geography concentration consider Biology 101N | | | | | | |
| <i>TOTAL</i> | | | | 30 | | |
| SOPHOMORE YEAR | | | | | | |
| CHMY | 141 | College Chemistry I | Level 3 College Algebra | 4 | | |
| CHMY | 143 | College Chemistry II | CHMY 141 or CHMY 151 | 4 | | |
| PHSX | 220 | College Physics I | HIGH SCHOOL TRIGONOMETRY or M 160 | 4 | | |
| PHSX | 212 | College Physics II | PHSX 205 or PHSX 220 | 4 | | |
| ERTH | 303 | Weather and Climate | GPHY 111 | 3 | Fall | |
| Courses from Core and Snow Geography Emphasis or Snow Mechanics Emphasis | | | | 11 | | |
| <i>TOTAL</i> | | | | 30 | | |
| JUNIOR YEAR | | | | | | |
| ERTH | 307 | Principles of Geomorphology | GEO 101; GPHY 111 | 4 | Fall | |
| Courses from Core and Snow Geography Emphasis or Snow Mechanics Emphasis | | | | 26 | | |
| <i>TOTAL</i> | | | | 30 | | |
| SENIOR YEAR | | | | | | |
| ERTH | 450 | R Snow Dynamic and Accumulation | JR or SR STANDING ALBILITY TO SKI AT INTERMEDIATE LEVEL IN ALPINE TERRAIN; PHSX 205 or PHSX 220; GPHY 111 | 3 | Spr | |
| GPHY | 441 | Mountain Geography | SR STANDING; GPHY 111 or BIOB 170 IN | 4 | Fall | |
| GEO | 445 | Glacial Geology | ERTH 307 | 3 | Spr | |
| Courses from Core and Snow Geography Emphasis or Snow Mechanics Emphasis | | | | 20 | | |
| <i>TOTAL</i> | | | | 30 | | |
| GRAND TOTAL | | | | 120 | | |

Select one of the following three emphases:

| Rubric | # | Core Course Title | PREREQUISITES | SEM. | | |
|--|------|---------------------------------------|--|---------|-------|-------|
| | | | | CREDITS | TAKEN | GRADE |
| Snow Geography | | | | | | |
| BIOB | 170 | IN Principles Biological Diversity | | 3 | | |
| GPHY | 121 | D Human Geography | Recommend GPHY 141 | 3 | | |
| GPHY | 284 | Intro to GIS Science and Cartography | | 3 | | |
| STAT | 332♦ | Statistics for Scientists & Engineers | M 182 | 3 | | |
| ♦ Students with a grade of less than a B in Calculus might consider the following two classes rather than Stat 332 | | | | | | |
| STAT | 216 | Intro to Statistics | C- or better in any 100 level or above M course, or M Placement test w/in past 12 months | | | |
| STAT | 217 | Intermediate Statistical Concepts | STAT 216 | | | |
| GPHY | 365 | Geographical Planning | GPHY 141; GPHY 121 | 3 | | |
| GPHY | 384 | Advanced GIS & Spatial Analysis | GPHY 284 | 3 | | |
| GPHY | 411 | Biogeography | GPHY 121 or BIOB 170 IN | 3 | | |
| GPHY | 484 | Applied GIS & Spatial Analysis | GPHY 284; GPHY 384 | 3 | | |
| GPHY | 461 | Tourism Planning | GPHY 284; GPHY 365 | 3 | | |
| ERTH | 432 | R Surface Water Resources | GPHY 111; STAT 216 or 332; PHSX 201 or 205 | 3 | | |
| OR | | | | | | |
| ENSC | 444 | Watershed Hydrology | GPHY 111; ENSC 110; ENSC 245 IN | 3 | | |
| STAT | 446 | Sampling | STAT 332 or STAT 417 | 3 | | |

Additional 2 credits of upper division credits needed to graduate
TOTAL

33

[See reverse side for other two emphases]

| Rubric | # | Core Course Title | PREREQUISITES | SEM. | | |
|-----------------------|-----|-----------------------------------|-------------------------------|---------|-------|-------|
| | | | | CREDITS | TAKEN | GRADE |
| SNOW MECHANICS | | | | | | |
| I&ME | 350 | Applied Engineering Data Analysis | CHBE 213; ME 251 | 2 | | |
| M | 273 | Q Multivariable Calculus | M 172 | 4 | | |
| M | 274 | Intro to Differential Equation | M 172 | 4 | | |
| EM | 251 | Statics and Particle Dynamics | PHYS 211; COREQUISITE - M 273 | 3 | | |
| EM | 252 | Rigid Body Mechanics | EM 251 | 3 | | |
| EM | 253 | Mechanics of Materials | EM 251 | 3 | | |
| EM | 335 | Mechanics of Fluids | EM 252; EM 253 | 3 | | |
| EM | 435 | Fluid Dynamics | EM 335 | 3 | | |
| CE | 312 | Structures I | EM 253 | 3 | | |
| CE | 320 | Geotechnical Engineering | EM 253 | 3 | | |
| CE | 331 | Engineering Hydrology | I&ME 350 | 3 | | |
| CE | 332 | Engineering Hydraulics | EM 335 | 2 | | |

Additional 5 credits of upper division credits needed to graduate

TOTAL

35

NOTE: The snow mechanics program is within two courses (CE 350 - Transportation Engineering and CE 308 - Construction Practice) of qualifying for admission to the MSU Civil Engineering graduate program. Other university's requirements may differ. The prerequisites for the two additional courses are reespectively: CE 201 - Surveying for Transportation Engineering and BUS 201 - Managerial Communication and ME 116 - Engineering Design Graphics for CE 350 - Construction Practice.

SNOW STATISTICS

| | | | | | | |
|--------------|-----|---------------------------------------|----------------------------------|----|--|--|
| M | 221 | Matrix Theory | M 172 | 3 | | |
| GPHY | 284 | Intro to GIS and Cartography | | 3 | | |
| GPHY | 384 | Advanced GIS and Spatial Analysis | GPHY 284 | 3 | | |
| GPHY | 365 | Geographical Planning | GPHY 141; GPHY 121 | 3 | | |
| | OR | | | | | |
| GPHY | 484 | Applied GIS and Spatial Analysis | GPHY 384 | 3 | | |
| ENSC | 444 | Watershed Hydrology | GPHY 111; ENSC 110; ENSC 245 IN | 3 | | |
| ENSC | 445 | Watershed Analysis | ENSC 444 | 3 | | |
| STAT | 446 | Sampling | STAT 217 or STAT 332 or STAT 401 | 3 | | |
| STAT | 410 | Methods of Data Analysis I | STAT 332 or STAT 217 | 3 | | |
| STAT | 431 | Nonparametric Statistics | STAT 332 or STAT 217 | 3 | | |
| | OR | | | | | |
| STAT | 412 | Methods of Data Analysis II | STAT 410 | 3 | | |
| STAT | 436 | Introduction to Time Series | STAT 410 | 3 | | |
| STAT | 437 | Introduction to Multivariate Analysis | STAT 410 | 3 | | |
| GPHY | 490 | Undergraduate Research | | 3 | | |
| | OR | | | | | |
| GEO | 499 | Senior Thesis | | 3 | | |
| <i>TOTAL</i> | | | | 33 | | |

NOTE: Statistics is **integral** to snow science and students with and interest in **numerical analysis** are encouraged to take this option.

Note: This option meets the requirements for a Statistics Minor.

NOTE: A minimum of 120 credits is required for graduation; 42 of these credits must be in courses numbered 300 or above.

NOTE: Normal text shows courses offered every year, **BOLD courses are planned to be offered in the first year of the cycle (e.g., 2008-9)** and *ITALICIZED courses are planned to be offered in the second year (e.g., 2009-10)*. All offerings are dependent upon available staffing.