

# **Department of Biological Sciences**

## **Natural Sciences**

### **Elementary Concentration or Middle School Endorsement**

- Elementary Education Majors with an area of concentration in the sciences should select a minimum of 12 semester hours of course work beyond the general education requirements in science from among the courses listed below in the life sciences, physical sciences, and earth/space sciences.
- Students wishing to be recommended by Emporia State University for a teaching field in Middle School Science must have earned a minimum of 36 semester credit hours including a minimum of nine (9) semester hours in **each** of the following: Life Science, Physical Science, and Earth/Space Science.

#### **COURSES**

##### **LIFE SCIENCE**

*GB 140 .....	Principles of Biology .....	3 hrs.
*GB 303 .....	Field & Lab Biology .....	3 hrs.

##### **And any of the following:**

BO 212-213 .....	Biology of Plants & Lab. ....	4 hrs.
ZO 214-215 .....	Biology of Animals & Lab. ....	4 hrs.
ZO 362-363 .....	Human Anatomy & Physiology & Lab ..	5 hrs.
MC 316-317 .....	Microbiology & Lab .....	4 hrs.

##### **PHYSICAL SCIENCES**

*PS 115 .....	Our Physical World .....	5 hrs.
**CH 123-24. ....	Chemistry I & Lab .....	5 hrs.

##### **And any of the following:**

**PH 140-141 .....	College Physics I & Lab .....	5 hrs.
PS 341 .....	Physics for the Elementary Teacher. . .	3 hrs.

##### **EARTH/SPACE SCIENCE**

ES 330 .....	Earth Science for Elementary Teachers	3 hrs.
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##### **OR**

ES 110/111 .....	Intro to Earth Science & Lab .....	5 hrs.
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##### **And any of the following:**

PS 218 .....	Descriptive Astronomy .....	3 hrs.
GO 235 .....	Earth History. ....	3 hrs.
ES 619. ....	Meteorology .....	3 hrs.
PH 110-111 .....	Intro to Space Science & Lab. ....	5 hrs.

(OVER)

- Candidates seeking elementary certification will complete the methods course, EE 316, "Teaching Science in Elementary School."
- Candidates seeking a teaching field in Middle School Science should complete GB584, "Teaching Biology in Secondary and Middle Schools" or PS 516, "Physical Science Techniques I" and arrange to do part of their student teaching at the middle school level.

\*General Education Requirement for Elementary Education Majors

\*\*Requires a mathematics prerequisite of MA 109 or MA 110 or equivalent

*Biology Web Site: <http://biology.emporia.edu>*

(Updated October 20, 2006)