



SUMMER 2009

## PHYSICAL SCIENCES COURSES/WORKSHOPS FOR K-12 TEACHERS

Departments of Physical Sciences

(see p.2 for ESU & Physical Sciences URLs)

Contact: 620-341-5330

Email: [dbackhus@emporia.edu](mailto:dbackhus@emporia.edu) or [gtabares@emporia.edu](mailto:gtabares@emporia.edu)

### NOTES:

- (1) All classes or workshops meet Monday through Friday unless stated otherwise. Rooms are in the Science Hall complex.
- (2) **Second-Field Endorsements:** The Departments of Physical Sciences participate in the Kansas State Department of Education second-field endorsement program. Numerous courses shown with † among those listed for summer offering meet initial licensure or second-field program requirements. The second-field program enables a Kansas secondary-licensed teacher interested in gaining additional physical sciences teaching licenses (Chemistry, Earth/Space Science, Physics or General/Middle School/Science 5-8) to do so in generally four years (or less). Because of new licensure regulations including content test requirements, and/or to formally document the pursuit of additional teaching fields, contact Ms. Shannon Hall, Office of Professional Education Services, 208 Visser Hall, Box 4036, Emporia State University, Emporia, KS 66801-5087, or call 620-341-5412, or email [shall6@emporia.edu](mailto:shall6@emporia.edu) for more details. See also “2009 Summer School Schedule Highlights” online at <http://www.emporia.edu/physci>, or contact the Physical Sciences, via the means shown above, for additional information.
- (3) **Financial Assistance:** No Child Left Behind (NCLB) funding is being sought for 3-week/3-year modeling workshops for chemistry and physics inservice teachers; to determine if funding is available and participant slots exist, check with Dr. Malonne Davies, [mdavies@emporia.edu](mailto:mdavies@emporia.edu). NASA Space Grant funds for participant support for a 1-week physics modeling (PH 500/PH 700PA) workshop exist for tuition, housing (for non-commuters), travel and lunches for a limited number of participants, and additional funding is being sought. See additional details below and at [www.emporia.edu/physci](http://www.emporia.edu/physci). Also, some school districts may have funding available for those seeking a “highly qualified” teacher status.
- (4) **State Budget Situation:** At the time publicity was being prepared, the State’s budget circumstances were problematic. Course offerings are contingent upon enrollments. Thus, enroll as soon as possible to ensure the offering, although enrollment and fee payment can be done on the first class day.

### Chemistry

Course	Title	Room	Cr. Hr.	Dates	Time
CH 123A†	Chemistry I	217	3	6/01-7/03	8:00-9:50am
CH 124A†	Chemistry I Lab	211	2	6/01-7/03	10:00-12:50pm
CH 126A†	Chemistry II	217	3	7/06-8/07	8:00-9:50am
CH 127A†	Chemistry II Lab	211	2	7/06-8/07	10:00-12:50pm
CH 370A†	General Organic Chemistry	215	3	6/01-7/03	8:00-9:50am
CH 371A†	General Organic Chemistry Lab	205	2	6/01-7/03	10:00-12:50pm
CH 772PA	Foundations in Organic Chemistry	215/205	3	6/01-7/03	8:00-12:50pm

Notes: “†” means these courses meet licensure requirements.

### Earth Science (See also Geology, p.2)

Course	Title	Room	Cr. Hr.	Dates	Time
ES 110A	Introduction to Earth Science	123	4	6/01-7/03	8:00-11:50am
ES 111A	Introduction to Earth Science Lab	131	1	6/01-7/03	8:00-11:50am
ES 567A†	Physical Geology f/Teachers	123/131	3	6/01-6/19	8:00-11:50am
ES 567B†	Meteorology f/Teachers	123/131	1	6/22-6/26	8:00-11:50am
ES 567C†	Astronomy f/Teachers	123/131	1	6/29-7/03	8:00-11:50am
ES 747PA**	Field Studies in Earth Science	110	4	5/26-6/19	8:00-5:00pm
ES 747PB**	Field Studies in Earth Science	110	2	5/26-6/5	8:00-5:00pm
ES 747PC**	Field Studies in Earth Science	110	2	6/08-6/19	8:00-5:00pm

Notes: ES 567 A/B/C will offer an introduction to the solid Earth (minerals, rocks, and dynamic processes of the Rock Cycle); Earth’s spatial relationships and consequences such as seasons; and its atmosphere and atmospheric processes. “†” means these courses meet licensure requirements; ES 567A/B/C should not be taken if credit exists for ES 110/111 or ES 130/131. \*\*ES747 will involve field-based studies in Kansas and Colorado; contact Dr. J.S. Aber, [jaber@emporia.edu](mailto:jaber@emporia.edu), for details; see also GO547 note below.

## Geology

Course	Title	Room	Cr. Hr.	Dates	Time
GO 231A*	Physical Geology	123/131	3	6/01-6/19	8:00-11:50am
GO 547 PA**†	Field Geology	110	5	5/26-6/26	8:00-5:00pm

**Note:** \*GO 231 should not be taken if a person has credit in ES 110/111, ES 130/131 or a Physical Geology course equivalent unless a “refresher” is desired. \*\*GO 547 Field Geology [or ES 747 Field Studies in Earth Science variations, of shorter duration/fewer credit hours] provides geologic field studies in Kansas and Colorado. Note that it begins May 26, prior to most summer school classes. Includes basic techniques in geologic mapping and field observations; the study and interpretation of sedimentary, metamorphic, and igneous bedrock; and alluvial and glacial sediments and landforms. Meets licensure requirements for teaching Earth/Space science. Prerequisite: GO 325 Earth History (or Historical Geology equivalent) or consent of instructor, Dr. J.S. Aber. Course fee: \$650 for transportation, lodging, and food. Contact J.S. Aber to reserve one of the limited enrollment slots at 620-341-5981, email at [aberjame@emporia.edu](mailto:aberjame@emporia.edu), or visit the website at <http://academic.emporia.edu/aberjame/field/geology.htm>. “†” means these courses meet licensure requirements in Earth/Space science.

## Physics

Course	Title	Room	Cr. Hr.	Dates	Time
PH 500A*†	Modeling Physics Instruction	30/35	2	6/29-7/03	8:30-4:00pm
PH 500PA*†	Modeling Physics Instruction	30/38	2	6/29-7/03	8:30-4:00pm
PH 540A†	Modern Physics	30	3	6/8-6/26	1:00-3:30pm
PH 700PA*†	Modeling Physics Instruction II	30/38	2	6/29-7/03	8:30-4:00pm

**Note:** \*Regarding PH 500PA/700PA, see Note (3) on page 1, “2009 Summer School Schedule Highlights,” or [www.emporia.edu/physics/](http://www.emporia.edu/physics/) for application and stipend details, or email Dr. Jorge Ballester, [jballest@emporia.edu](mailto:jballest@emporia.edu) or Dr. Ken Thompson, see below. “†” means these courses meet or can meet licensure requirements.

## Graduate Program for Physical Science Teachers

The ESU Departments of Physical Sciences offer a principally summer-based master’s degree program in the physical sciences; however, some courses may be taken during the academic year or online. This program can normally be completed in three or four years (depending on individual circumstances), and is designed for teachers of chemistry, earth/space science, physics and the physical sciences. For more information contact: Departments of Physical Sciences, Box 4030, Emporia State University, Emporia, KS 66801-5087, call 620-341-5330, or email [dbackhus@emporia.edu](mailto:dbackhus@emporia.edu) or [kthomps@emporia.edu](mailto:kthomps@emporia.edu).

### Additional information? Contact:

#### Departments of Physical Sciences

<http://www.emporia.edu/physci>

(for details regarding the courses/workshops)

Email: DeWayne Backhus, [dbackhus@emporia.edu](mailto:dbackhus@emporia.edu)

Ginger Tabares, [gtabares@emporia.edu](mailto:gtabares@emporia.edu)

#### Emporia State University

<http://www.emporia.edu>

(for registration, tuition/fee, and other general information)