Texas A&M University
Departmental Request for a New Course
Undergraduate • Graduate • Professional
Submit original form and 25 copies. Attach a course syllabus to each.*

1. This request is submitted by the Department of Geography

2. Course prefix, number and complete title GEOG 643 - Geopolitics and Geostrategies of Energy

3. Course description (not more than 50 words) This graduate seminar course will examine the geopolitics and geostrategies of energy with a primary focus on the development of "hydrocarbon frontiers". It will also deal more briefly with alternative energy sources.

4. Prerequisite(s) N/A Cross-listed with N/A

5. Is this a variable credit course? Yes ☐ No ☐ If yes, from _______ to _______

6. Is this a repeatable course? Yes ☐ No ☐ If yes, this course may be taken ______ times. Will the course be repeated within the same semester/term? Yes ☐ No

7. Has this course been taught as a 489/689? Yes ☐ No ☐ If yes, how many times? ______ Indicate the number of students enrolled for each academic period it was taught.

8. This course will be:
   a. required for students enrolled in the following degree program(s) (e.g., B.A. in history)

   b. an elective for students enrolled in the following degree program(s) (e.g., M.S., Ph.D. in geography)

   MS, PhD in Geography, MP/IA Bush School

9. If other departments are teaching or are responsible for related subject matter, the course must be coordinated with these departments. Attach approval letters.

10. Prefix Course # Title (exclude punctuation) GEOG 643 Geopolitics of Energy

<table>
<thead>
<tr>
<th>Lect.</th>
<th>Lab</th>
<th>SCH</th>
<th>Subject Matter Content Code</th>
<th>Admin. Unit</th>
<th>Acad. Year</th>
<th>FICE Code</th>
</tr>
</thead>
<tbody>
<tr>
<td>030</td>
<td>003</td>
<td>50</td>
<td>0011 186050 07-08</td>
<td>030010</td>
<td>0366</td>
<td></td>
</tr>
</tbody>
</table>

Do not complete shaded area.

Approval recommended by:

Head of Department Date 7/26/07

Chair, College Review Committee Date 10/17/07

Head of Department (if cross-listed course) Date

Dean of College Date 10/17/07

Submitted to Coordinating Board by:

Dean of College Date

Director of Academic Support Services Date Effective Date

*Attach a syllabus according to the guidelines on the Internet site www.tamu.edu/admissions/oaras. To have this form reviewed, please send to Linda F. Lacey, Mail Stop 1265 or fax to 847-8737.

OAR/AS-1099

1 of 8B12
Doug Sherman

From: "Hermann, Charles" <chermann@bushschool.tamu.edu>
To: <sherman@geog.tamu.edu>
Sent: Friday, February 02, 2007 6:28 PM
Subject: Prof Hugill's Geog 643

Dear Professor Sherman:

I want to share with you the strong interest of the Bush School--particularly our Master's Program in International Affairs--in the new course Peter Hugill has designed on Geopolitics and Geostrategies of Energy. I believe this seminar will be attractive to Bush School students and we will encourage them to enroll.

The draft syllabus that Peter has shared with me intersects with two different areas of interests among students in the Bush School. The first of these is our concentration in Middle East Regional Studies and the second is in a new collection of courses in the area of energy and national security. We recently reorganized our graduate curriculum to create clusters of courses that focus on a common subject or set of issues (identified in our program of study as concentrations). For each such concentration we have several key courses for our students in the Bush School, but we actively encourage our folks to enroll in related courses in other departments. With the consent of the instructors involved, we will list such courses elsewhere that are offered on a regular basis as part of our concentrations.

Although the initial number of students in the Bush School is relatively small, our numbers are growing steadily. It would be a valuable asset in the education of our students to be able to include Geog 643.

Best wishes,

Chuck

Charles F. Hermann
Scowcroft Chair in International Policy Studies
and International Affairs Program Director
George Bush School of Government & Public Service
Texas A&M University
College Station, TX 77843-4220
Email: Hermann@tamu.edu
Phone: (979) 862-3469
FAX (979) 845-4155
Revised November 7, 2007

Texas A&M University
Geog 643, 3 credit hours

Geopolitics and Geostrategies of Energy

Instructor, Dr Peter J. Hugill

Background Readings in Geopolitics and Geostrategies:


Mo • Mohr, Anton, 1926. The Oil War. Harcourt, Brace & Co.

Required Readings:


HB • Hugill, Peter J., & Veit Bachman, 2005. “The Route to the Techno-Industrial World-Economy and the Transfer of German Organic Chemistry to America before, during, and immediately after World War One.” In Comparative Technology Transfer & Society 3, pp. 159-86.


Course Description:
This graduate seminar course will examine the geopolitics and geostrategies of energy with a primary focus on the development of “hydrocarbon frontiers” that have, over time, become less about carbon and more about hydrogen: wood & biomass; coal; oil and natural gas; and now hydrogen. It will also deal more briefly with alternative energy sources. Thus far, human societies have had three energy systems. These systems have heavily affected global geopolitics and geostrategies. The first energy system, the Eotechnic, was highly geographically distributed, with small increments of energy available almost everywhere in the form of biomass fuels, wind, or falling water. The geopolitics of the period, never clearly stated until Mahan’s analysis of seapower, were really the geostrategies of trading states. The second energy system, the Paleotechnic, began in late 1700s Britain. Because this was based on fossil hydrocarbons in the form of coal it was geographically concentrated, which privileged those regions with geological endowments from the Carboniferous/Pennsylvanian period of Earth’s geological history. Coal was expensive to ship any distance so that economic development was localized close to coalfields. The central concern of the period, typified by Mackinder’s writings, was control of territory, thus the emergence of the classical geopolitics of territorial states. The third energy system, the Neotechnic, began in the USA in the 1860s. Though the third system is also based on geological endowment, oil and gas are easily shipped by tanker and pipeline. The geopolitics of this is crucial, since by far the largest reserves of oil on the planet are in Southwest Asia and of
natural gas in Russia. Controlling flows of energy, first identified as vital by Mohr in 1926, has thus become the central concern, not controlling territory. As the global balance has shifted back in favor of trading states, ensuring the continued flow of oil from Southwest Asia now dominates geostrategies. Oil and natural gas are also needed as sources of electrical energy and as a vital natural raw material for organic chemistry, thus for a whole range of substances from ammonium nitrate to polymers. A fourth energy system, based on hydrogen, seems possible. If hydrogen can be cracked from water using solar or nuclear power the world would return to a more distributed energy system, akin to that of the Eotechnic.

**Aims of the Course:**
Students will develop an understanding of the technical and political history of energy systems and of their likely development in the next two decades or so. Weeks one through four will be reading and lecture oriented. From week five on the seminar will be student research based and led. Students will become familiar with the basic literature on geopolitics and geostrategies as it relates to energy and with the literature on modern energy systems and their development. Students will learn to consult major research journals and original data sets. Each student will lead research-based seminar discussions based on readings identified by that student and assigned to the seminar group, and produce a research-based seminar paper on an assigned topic from a list of topics on the geostrategies of modern energy flows, and of the nuclear, hydrogen, and green alternatives to the existing fossil hydrocarbon system.

**Requirements:**
Students are expected to both read a great deal and think seriously about all the material required of you. This is a research seminar, and you grade will be heavily dependent on your producing a quality paper reflecting independent research and thinking. Your grade will be based on two things: your level of preparation to lead assigned seminar discussions (40%) and a research paper of 20-25 pages (60%) of a quality acceptable as part of a thesis or dissertation, and potentially publishable. The paper must be submitted in both hard copy and electronic forms. Most academic journals are now available to registered students on-line. By all means communicate with me by e-mail—I will usually get back to you pretty quickly.

**Grading:**
A 90-100%
B 80-89%
C 70-79%
D 60-69%
F under 60%

**Course Policies:**
The Americans with Disabilities Act (ADA) is a federal anti-discrimination statute that provides comprehensive civil rights protection for persons with disabilities. Among other things, this legislation requires that all students with disabilities be guaranteed a learning environment that provides for reasonable accommodation of their disabilities. If you believe you have a disability requiring an accommodation, please contact the Department of Student Life, Services for Students with Disabilities in Room B 118 of Cain Hall, or call 845-1637.

**Absence Policy:**
This class will follow the University’s policy for excused absences. For more information, please see Section 7 of the student rules:  http://student-rules.tamu.edu

**Aggie Honor Code:**
The Aggie honor code states that “An Aggie does not lie, cheat or steal, or tolerate those who do.” Plagiarism is lying (by pretending the work of others is work you have done, even if you pay some cheater to do it for you) and stealing (when it is the work of others that you fail to acknowledge).

**Copyright and Plagiarism Policy:**
All materials used in this class are copyrighted. These materials include but are not limited to syllabi, quizzes, exams, lab problems, in-class materials, review sheets, and additional problem sets. Because these materials are copyrighted, you do not have the right to copy the handouts, unless permission is expressly granted.

As commonly defined, plagiarism consists of passing off as one’s own the ideas, words, writings, etc., which belong to another. In accordance with this definition, you are committing plagiarism if you copy the work of another person and turn it in as your own, even if you should have the permission of that person. Plagiarism is one of the worst academic sins, for the plagiarist destroys the trust among colleagues without which research cannot be safely communicated.

If you have any questions regarding plagiarism, please consult the latest issue of the Texas A&M University Student Rules, http://student-rules.tamu.edu/, under the section “Scholastic Dishonesty.”

**Topics by Week**

<table>
<thead>
<tr>
<th>Wk</th>
<th>date</th>
<th>Topics</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td></td>
<td>The distributed, organic, agro-industrial world-system. Biomass, wind, and falling water in the Eotechnic.</td>
</tr>
<tr>
<td>2</td>
<td></td>
<td>The Coal Economy of the Paleotechnic: origins in the UK and the UK’s rise to global hegemony. Beginnings of a techno-industrial world-system. Challenges to the UK.</td>
</tr>
<tr>
<td>3</td>
<td></td>
<td>Origins of the Oil Economy in the USA. Britain’s search for oil security and its ramifications (failure in Mexico, success in Persia). Southwest Asia as the dominant source of hydrocarbons.</td>
</tr>
<tr>
<td>4</td>
<td></td>
<td>The rise of organic chemistry in Wilhelmine Germany and the triumph of the techno-industrial world-system. The diffusion of organic chemistry to America and elsewhere.</td>
</tr>
<tr>
<td>5</td>
<td></td>
<td>Research designs.</td>
</tr>
<tr>
<td>6</td>
<td></td>
<td>Oil and natural gas in the post-World War Two boom. The roles of Southwest Asia and Russia.</td>
</tr>
<tr>
<td>7</td>
<td></td>
<td>How much oil is there and why is Southwest Asia so central?</td>
</tr>
<tr>
<td>8</td>
<td></td>
<td>Political problems of Southwest Asia: the rise of Israel; Wahabbism; and the influence of Sayyid Qubb.</td>
</tr>
<tr>
<td>9</td>
<td></td>
<td>Controlling flows: the advantages of Southwest over Central Asia.</td>
</tr>
<tr>
<td>10</td>
<td></td>
<td>The nuclear alternative.</td>
</tr>
</tbody>
</table>
The hydrogen alternative.
The hydrogen alternative.
Green alternatives.
Final Research findings.
GEOG 643: Bibliography

Books:

Encyclopedias:

Journals and Serial Publications:
TAMU Libraries have a vast number of journals with, for example, oil in the title (157) or energy (303). Given the history of this state and university, I think we may have ALL the oil trade journals of interest published in English, although we don’t always have complete runs to the first date of publication. Most are trade titles with very close focuses on technology, business, tax systems etc. I have tried to give you some entry points, but will have missed many. My own work on cotton tells me that the longer a trade journal has been around the more likely it is to develop historical interests—trade journals just love anniversaries (usually of their own founding—such as 10, 25, and 50 year retrospectives) so don’t totally ignore them! They also like 100 year anniversaries (I would thus look for such things as “100 years after Spindletop” etc.) Trade journals are also wildly optimistic—they are “selling” a point-of-view.
Geography and History Journals:
Comparative Technology Transfer and Society
Geopolitics
Journal of Historical Geography
Journal of Political Geography
Technology and Culture

Energy Related Journals, Serial Publications, and Proceedings:
Alternative Energy Sources. Proceedings of an annual conference. TJ 163.15 M49
Beyond the Energy Crisis. Proceedings of an annual conference. TJ 163.15 I56
Ninth World Energy Conference Transactions. TJ 163.2 W67
Pergamon. TK 9006 E87. Not so technical as some.
Nuclear Power. British trade journal, not technical. TK 9001 N 7.7
Oil and Gas Journal. Weekly trade journal going back to 1910. TN 860 O4
Oil and Gas. Financial Times International Yearbook. Almost entirely summaries of
corporations, but each yearbook has a useful essay on the state of the business that year.
HG 4821 O4
The Oil Weekly. Trade journal going back to 1916. TN 860 O5
The Petroleum Times. Early British trade weekly. TN 860 P4.2
Science and Technology Press. Five volumes.