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Course Home Page
Space Policy
PUP 4510
Fall 2011

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Overview

Space policy remains a field that stands astride both the future and history in its scope, both idealistic and very practical. That means the quest to reach and explore outer space began many years ago as futuristic dreams and visions and is presently being pursued as an everyday reality in the commercial sector. This course focuses upon the development of human activity across all its manifestations: civil, scientific, commercial, and military. Primary focus is upon the civil, scientific and commercial aspects. Another course, INR 4774 – Military Space Policy, deals explicitly with military space policy – a field of burgeoning interest to a multitude of states. Space policy as a field arose out of the dreams of visionaries but came to its first fruition as part of the now defunct Cold War competition between the United States and the former Soviet Union, now the Russian Federation.

That international political and military competition created a policy dichotomy between military and nonmilitary that still impacts the field when people ask whether a

specific space application is dual use or not? That is: can the same technology with minimal modifications be employed for either military or civilian purposes? For example, the same rocket can serve as a launch vehicle taking a satellite to orbit or a ballistic missile carrying a warhead to a distant target. Most space applications clearly have this dual use nature. This however does not mean the technologies involve weapons. For example, the Global Positioning System (GPS) is a technology of tremendous use in the commercial sector even though its original purposes were clearly military in nature. Related to this concern with the possible military implications is the related question of cost/benefit: are space activities worth their high cost when there are so many social/economic problems to be solved on Earth?

At one time, the thought was that space activities were mostly a cost rather than a benefit once you moved away from the obvious military applications. For that reason, the initial assumption was that only economically developed states would participate although all states regardless of level of economic development might benefit. In pursuit of the latter point, early efforts were made to provide satellite based communications including less developed states through the International Telecommunications Satellite Consortium (INTELSAT). The Soviets and their allies created another organization similar in purpose but with less coverage called Intersputnik. INTELSAT also became the device by which the United States kept control over access to earth orbit by other allied states for commercial purposes. Military applications were considered one of a kind and not relevant for societal purposes. Since the end of the Cold War in 1991, the answer has become generally yes based on past performance and current results even for poorer states especially because future space applications hold the potential to make that activity an even more useful one for broader societal purposes. Poorer societies can benefit due to the ability of earth orbiting satellites to provide disaster warnings such as identifying growing droughts or the spread of disease or weather patterns likely damaging.

What is so particularly challenging for the United States currently is that the vision that sustained the 1960s Apollo Program and the International Space Station (ISS)

has politically run its course. This issue is best symbolized by the 2011 end of the Space Shuttle program with no immediate successor flight program on the horizon. Where the U.S. space program goes from here is being debated but any definitive decision will not come quickly because any government program will demand long term funding and commitment by Congress and the U.S. people. In an era of deficits and battles over national debt, a large scale civil space program is unlikely unless the aliens show up on our door step. Presidents can only propose but only Congress and ultimately the public decide how far things will go. The public is supportive but only in a general sense. International competitors exist at least rhetorically to the U.S. and Russia but the test will be their willingness to continue expending large amounts of precious capital for increasing less political advantage.

Conceptually, the field began as an extension of the Cold War political-military competition. Thus, its content and structure reflects those military origins while its history also illustrates the difficult process of disengaging the nonmilitary sector from those roots. That separation process remains a slow and difficult one but necessary if the full potential of space activities is to be realized for humanity's sake. The continuing U.S. political controversy over technology exports to China and other states is rooted in that earlier political-military perspective. Generally speaking, almost all space technologies are clearly dual use in nature; meaning the same rocket can carry either a satellite to orbit or a warhead to a target across the globe. Caution therefore characterizes the American response to fostering that technology's wider dissemination. However, regardless of U.S. concerns, other states both U.S. friends and more hostile states are demonstrating the independent capability to develop space technologies equivalent to U.S. technologies or even better in some cases.

Remember space activities by their very nature are the essence of international activities. From Earth orbit or the Moon's surface during the Apollo flights, there are no national boundaries visible on Earth even though the individuals who enter outer space have all come as representatives of both humanity and their particular nation. By the end of the 21st century, many hope that individual humans will go forth only as

representatives of humanity. Saying that outer space is international however does not make it so. Individual states remain very concerned about the possible military and commercial implications of using outer space. The United States especially considers outer space both as a growing economic asset and a potential future field for military conflict. How American concerns play out in the larger international political system remains an issue because the United States has been the most willing to expend the economic resources to make its concerns important enough for other states to address.

Text Materials:

Text materials will appear in several forms: textbooks for purchase and materials found on the web. Reading assignments will appear in the modules along with other readings you are responsible for completing. Students are responsible for keeping current with reading assignments.

Burrows – *This New Ocean* (Random House)

Harvey, Henk and Picard – *Emerging Space Powers* (Praxis)

Michael A. G. Michaud – *Reaching for the High Frontier: The American Pro-space movement, 1972-1984* (Westport, CT: Praeger Books, 1986). This book is out of print and can be found at the following web location:
http://www.nss.org/resources/library/spacemovement/index.htm

Course Objectives:

Students will acquire a general understanding of the historical foundations, present context and future development of outer space as an arena for human activities. As part of that process, students will

1. Develop an understanding of the field's historical development.
2. Understand the influence of technology and politics upon the development of space activities. Space activities are immersed in politics often to the engineers' dismay but a reality that must be addressed.
3. Develop an understanding of the international implications of space activities.

4. Become aware of the organizational forums and processes (public, private and international sectors) through which outer space is accessed and exploited for human benefit.
5. Develop an appreciation for the human and economic developmental potential inherent in space activities.
6. Analyze the changing parameters of space policy as we move through the 21st century especially the rapidly changing nature of military space activity.
7. Demonstrate the ability to access information regarding ongoing space activities and proposed future activities.
8. Learn how to write sophisticated analyses of issues within the ambit of space policy both internationally and domestically.

Communicating within the Course

In this class our official mode of communication is through email located inside Webcourses and through the Course Announcements Discussion site. All communications between student and instructor and between student and student should be respectful and professional. It is the student's responsibility to check the "course mail" tool or “course announcements” discussion site frequently. You must also create a Knight's Email account at www.knightsemail.ucf.edu for separate official communications from the university. Inquires about your grade or other aspects of the course can only be answered through the Knight’s email system, not Yahoo, Gmail or other commercial vendors. This is a university policy the instructor is not authorized to ignore. If you are able, you can meet with the instructor during normal office hours or make an appointment for other times as necessary.

Grade Structure:

Grades are determined through a variety of student activities including two examinations taken on line through the course quiz function, three assignments completed on the web, and a web link search for extra credit. The overall weight assigned to each activity is shown below with a brief description provided for each facet. Due dates items are due is provided in the assignments section of the course website. A

total of 1000 points will be assigned across the semester with each graded segment assigned a point value. Final grades will be recorded as A, B, C., etc rather than incorporating pluses and minuses. Grades are posted through the course website and accessible as soon as the materials are graded.

Plagiarism and Cheating of any kind on an examination, quiz, or assignment will result at least in an "F" for that assignment (and may, depending on the severity of the case, lead to an "F" for the entire course) and also may be subject to appropriate referral to the Office of Student Conduct for further action. See the UCF Golden Rule for further information, http://goldenrule.sdes.ucf.edu/. I will assume for this course that you will adhere to the academic creed of this University and will maintain the highest standards of academic integrity. In other words, don't cheat by giving answers to others or taking them from anyone else. I will also adhere to the highest standards of academic integrity, so please do not ask me to change (or expect me to change) your grade illegitimately or to bend or break rules for one person that will not apply to everyone.

Examination – 20 %

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Assignments – 60% total (total of three assignments across the term)

Introductory Assignment – 5% - extra credit –only opportunity for extra credit provided during the term, once the introductory assignment close, no more extra credit opportunities.

NOTE: All assignments and other submissions are to be done in MS Word format; otherwise, I am unable to open the document. This may lead to a delay in grading the materials while you resubmit the assignment. A second occurrence will result in a "zero" for the assignment. This restriction means no WordPerfect, MS Works or other word processing programs are accepted.

Examinations can incorporate both essay and short answer formats. Students will be queried as to their understanding of the processes engaged in developing space policy. The Assignments will test student understanding of different information and

concepts discussed in the modules and in the readings. The Introductory Assignment involves students completing a course-related biography and demonstrating certain techniques related to successfully completing the course. This is the only extra credit assignment available during this course so do not ask for additional attempts at extra credit.

The Web Link Annotation as part of the Extra Credit involves students locating Internet links not already identified in the course. Their assignment becomes annotating (describing and evaluating) in general terms the particular site's content, usability and then make some assessment as to its validity, usefulness and reliability as a possible source of information including its sponsor. Simply put, is the link worth accessing or not? Much of the material on the Web is of dubious reliability, becoming a critical content evaluator and consumer of information is an important part of the course.

Course Assignments:

In this segment of the course, all students are to participate by completing the assignment as specified in the modules. You will have adequate time to complete the assignment based on reading modules, assigned readings and research through the web or library. **Assignments are to be a minimum of 1,500 words, 10 references (not including the textbooks), only half can be solely web although library journal articles accessed through the Library website are not considered web only. Wikipedia is not an acceptable reference; points will be deducted for its use. Remember assignments must be in Word format. For assignment formatting, use American Psychological Association (APA) format – see UCF Library website for information as to format, go to http://infolit.ucf.edu/students/modules/#article158. Late assignments are graded down a letter grade a day until an F grade is reached.**

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Assignments – Fall 2011

Module #	Module name	Date Open	Date Close	Assignment
Module 0	Getting Started	22 August	12 September at 2300 hours	Complete extra credit in Module 0 including posting web annotation to the drop box
Module 1	Introduction - Historical, the Space Age's Beginnings	22 August	September 12 at 2300 hours	Read Materials and respond to Discussion Group: "Was the Apollo Program a Freak of the Cold War?
Module 2	Historical – After Apollo, the Future	September 12	September 19 at 2300 hours	Work on Assignment 1
Assignment 1	Assignment 1	August 22	September 19 by 2300 hours	Turn in Assignment 1
Module 3	Organizing Space: U.S. Government	19 September	3 October at 2300 hours	Begin Work on Assignment 2
Module 4	Organizing Space: Other Governments	3 October	October 10 at 2300 hours	Work on Assignment 2
Test 1	Test	9 October	12 October at 2300 hours	Complete examination on line
Module 5	Organizing Space: Private/Public Interface	10 October	21 October at 2300 hours	Read materials and respond to Discussion Group: "Can the Private Sector Actually Conduct Exploration?" work on Assignment 2
Assignment 2	Assignment 2	20 September	26 October by	Turn in

			2300 hours	Assignment 2
Module 6	Space Lift	21 October	26 October at 2300 hours	Complete readings
Module 7	Space Station & the Future	27 October	7 November at 2300 hours	Complete readings & Respond to Discussion Group:"Should there be another Space Station, who pays?"
Module 8	Space Science	7 November	14 November at 2300 hours	Complete readings
Assignment 3	Assignment 3	October 21	14 November at 2300 hours	Complete Assignment 3
Module 9	Human Spaceflight	14 November	30 November at 2300 hours	Complete readings
Module 10	The Future, Commercial and Other	1 December	3 December at 2300 hours	Complete readings & Respond to "Can Humans ever reach another star?"
Test 2	Test	3 December	6 December at 2300 hours	Complete exam on line