AN UNDERGRADUATE COURSE IN TECHNOLOGY AND THE POLITICAL PROCESS

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**Abstract** - We are developing a course on Technology and the Political Process to be offered jointly by the Political Science and Computer Science programs at Western Carolina University. The course objective is to understand how the political process has changed as a result of the Internet, the ubiquity of personal computers, and the advent of high performance computing. Students will gain an understanding of how computing technology is applied in a variety of political and government arenas. Course content will include class discussions, collaborative learning approaches, service-learning opportunities, and a research project. We believe that every college graduate should have a practical understanding of both technology and politics and that combining these two areas into a single course effectively introduces undergraduates to both disciplines.

Index Terms – interdisciplinary, computers and society, political science

**INTRODUCTION**

From personal computers to cell phones, wireless networks to global positioning systems, technology continues to transform society. Technology has revolutionized business transactions, personal communications, and the interactions between citizens and governments. Just as technology shapes politics, governmental policies have a direct effect on technology funding, innovation, and implementation. As college educators interested in developing well-rounded graduates, we see great potential for an undergraduate course that explores the interdependencies between computing technology and the political process.

At Western Carolina University (WCU), we are working to create a course offered jointly by the Political Science and Computer Science programs. We will offer this course, “Technology and the Political Process” (TPP) as part of our university’s Liberal Studies program. Our Liberal Studies program is required of every degree-seeking student and provides a broad base of knowledge across disciplines.

The TPP course examines how the political process has changed as a result of advances in computing technologies such as the Internet, high performance computing, and ubiquity of personal computers. Students will gain an understanding of how computing technology is applied in a variety of political and government arenas. Another objective is to study the impact of the political process on technology. We also plan to offer a service-learning component in the course.

In the following sections, we describe the genesis of our course, present a brief overview of WCU’s Liberal Studies program, and highlight possible course content. We end by summarizing the current status of course development and highlight the challenges of creating an interdisciplinary course.

**BACKGROUND**

The idea for the TPP course originated from our individual experiences as classroom instructors.

Our computer science majors’ only direct exposure to societal implications of computing occurs in their Senior Capstone course. In this course, class discussions center around broad topics suggested by the course text including privacy, censorship, and the impact of computers on the workplace [1]. While this breadth of topics is important, interaction with students in discussions of technology and politics suggest that a more narrow focus on this issue would be a welcome addition to our curriculum.

Our political science students receive a well-rounded liberal arts education with an emphasis on written communication, oral communication, and critical thinking. However, there is a growing concern that political science students lack data analysis and computer application skills that make them competitive in the current information-based economy [2]. The course on technology and the political process represents ongoing efforts to collaborate across disciplines and improve the educational experiences and career opportunities of students.

There was also a desire to supplement the university’s existing Liberal Studies program. The undergraduate curriculum in liberal studies was “designed to provide each student with the knowledge, skills, and attitudes of an educated person” [3]. The program includes 41 hours of course instruction divided into Core Curriculum (writing, mathematics, oral communication, and wellness) and Perspectives (social sciences, physical and biological sciences, history, humanities, fine and performing arts, and world cultures). Despite the breadth of the Liberal Studies curriculum, we wanted to improve cross-disciplinary connections with a course on technology and the political process.

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Although technology and politics intersect in many ways, we outline five topics that embody these interrelationships. However, we recognize that advances in technology and changes in the political environment require a course structure that is open to the addition of new issues and the latest technological innovations.

Political Activism and Advocacy
Computer technologies have changed the way advocacy groups organize, communicate, and disseminate information. E-mail lists now supplement direct mailing efforts, and the web has become an important venue for information and correspondence. For example, the National Rifle Association (NRA) website presents the latest news headlines, sports scores, stock quotes, weather reports, and updates on recent legislation affecting gun ownership [4]. By becoming a hub for information, the organization increases communication with its core constituency and builds relationships with new and existing members. In our course, students will analyze the ways an interest group, such as the NRA, utilizes technology. In addition, we will apply this knowledge by assisting local advocacy groups in the use of computer technologies.

Communication between Government and Citizens
Computing technology has also enhanced the connections between government and citizens. At first, the Internet provided an opportunity for citizens to read elected officials’ biographical information and obtain phone numbers for government agencies [5]. However, governments soon discovered that citizens wanted more from emerging technologies and developed strategies to enhance the government to citizen (G2C) connection. For example, at the award winning Tennessee homepage citizens can renew driver’s licenses, pay taxes, renew health licenses, and reserve state parks lodging [6]. In our course, we will study government websites (both good and bad), and draw conclusions about the content and technological aspects of the agencies’ Internet presence [7]. Finally, we plan to assist local municipalities as they work to improve connections between government and citizens.

The Politics of Computer Modeling
Advances in computers have resulted in more complex computer models of real-world phenomena. Government personnel make decisions on a wide range of issues with the help of computer modeling and simulations. For example, [8] describes how the Department of Defense is beginning to employ computer simulations in the complex task of systems acquisition. In addition, governmental entities and non-governmental groups use computer models and simulations to advocate political positions and support specific policies [1, p. 172]. Students will investigate these models and study their underlying assumptions to ascertain their reliability and credibility.

International Politics
While political advocacy over the Internet has become commonplace in democratic nations like the United States, this is not the case in countries with more restrictive laws on freedom of speech and censorship [9]. In our course, students will investigate how different nations have responded to the growth of the Internet. We will focus particularly on emerging democracies and the ability of technology to make elections less corrupt, disseminate information to the public, and improve communication between citizens and political representatives. Students will also learn how technology is blurring borders and creating interdependencies between nations.

Technology and Elections
Technology impacts electoral politics as well. Scholars have concluded that the use of outdated voting technology in Florida led voters to incorrectly cast ballots for Reform candidate Pat Buchanan and likely cost Al Gore the presidential election [10]. Since the 2000 election, studies have demonstrated that error correction technology can greatly reduce the number of mistakes made by voters [11]. Technology has also made registering to vote easier with the implementation of online voter registration. In our course, we will study the possibilities for online voting, ways the private sector uses online voting (especially proxy voting for corporate shareholders), and implement strategic plans for local municipalities to improve their elections procedures through advanced computing technology, including possible implementation of online voting.

SUMMARY
We believe that every college graduate should have a practical understanding of both technology and politics. As a result, we are working to create a course on Technology and the Political Process that will enhance the curriculum in our respective departments and have a more general appeal to college students. If this course is successful, we will consider creating a more advanced course specifically for majors.

In either case, our most pressing challenge is determining the right balance of technical and non-technical content for a general audience. We want students to develop a practical understanding of how technology is impacting the political process, but we do not envision any technical prerequisites for this course. However, we recognize that students’ knowledge of politics and computing will vary and we will work to create opportunities for students with different interests to undertake independent projects.

The intersection of technology and politics will continue to expand, and we hope to challenge students to consider ways to develop strategies for integrating both areas. By
exposing students to these issues, we have the best chance of creating leaders who can improve democratic governance and develop solutions to the most important policy problems facing society.

REFERENCES