

Syllabus  
INST755 eGovernment for Smart Cities  
University of Maryland  
Spring 2024

**Class Delivery:** Virtual asynchronous. Live discussion sessions via Zoom <https://umd.zoom.us/j/3547500845> may be arranged.

**Professor:** C. Scott Dempwolf, PhD (he/him)  
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**Office Hours:** by appointment.

### **Course Description**

*Catalog Description:* Federal, state, and local government entities are increasingly communicating, interacting, and providing services digitally in an online and networked environment. Concurrently, urban planners and administrators seek to leverage the potential of rapidly evolving technologies to transform service provisioning for the efficient management of assets and resources, with the goal of creating sustainable, livable, innovative, and economically vibrant cities and communities. This course will examine the intersection of these two developments and provide a framework for understanding the technical, policy, and information management issues that are emerging.

*Expanded Description:* eGovernment and Smart Cities are different but closely related concepts that share a common thread. They both represent the emergence of the next technological evolution for cities, specifically the application of Information and Communications Technology (ICT) to city systems, services, and governance. While eGovernment re-imagines how government functions in more effective, transparent, and inclusive ways, smart cities apply ICT to redesign the city's infrastructure and other physical systems. While both are often held out as desirable goals or 'states' to be achieved, the reality is that 'smart' is more about process than a destination. This course will examine eGovernment, eGovernance (yes, they are different), and smart cities from this process perspective. How do existing cities engage in the seemingly relentless process of transforming how government and city systems work through the application of ICT? In particular, we will engage in research this semester into how municipal governments are adapting to and using new artificial intelligence (AI) tools like ChatGPT to improve eGovernment and municipal systems.

### **Expected Learning Outcomes**

After successfully completing this course, you will be able to:

- Analyze the impact of e-government initiatives on urban areas.
- Describe the key features of e-government systems used in smart cities.
- Evaluate the effectiveness of e-government applications in urban areas.
- Develop strategies for using e-government solutions to improve the efficiency of urban services.

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- Understand the legal, ethical and security issues associated with e-government in smart cities.
- Analyze the current trends and future developments in the use of e-government for smart cities.

**Books and Course Materials**

*Required texts:*

Holzer, M., Manoharan, A., & Melitski, J. (2019). E-Government and Information Technology Management: Concepts and Best Practices. Melvin & Leigh, Publishers.

Townsend, A. M. (2013). Smart cities: Big data, civic hackers, and the quest for a new utopia. WW Norton & Company.

You will need a computer and internet access.

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**Assignments and Grading**

Your final grade for the course is computed as the sum of your scores on the individual elements below (100 possible points total), converted to a letter grade:

A+ 97-100*	B+ 87-89.99	C+ 77-79.99	D+ 67-69.99	
A 93-96.99	B 83-86.99	C 73-76.99	D 63-66.99	
A- 90-92.99	B- 80-82.99	C- 70-72.99	D- 60-62.99	F 0-59.99

Please note: iSchool policy states that if this is a core course for your degree program, you must earn a B or higher to remain in good academic standing. Any students who earn a B- or lower must retake the course to remain in the program. If you have any questions about this policy, please contact your academic advisor. See p. 5 of the Program Handbook.  
<https://ischool.umd.edu/sites/default/files/users/user37/HCIMHandbook2020-2021.pdf> (Links to an external site.)

**Course Grading Criteria**

Grade Item	Points each	Points total	Percent of Final Grade
Lecture exit tickets x 14	10	140	15
Discussion posts x 14	20	280	30
Papers	80	240	26
Semester project city selections	50	50	5
Semester project proposal	75	75	8
Semester project progress report	75	75	8
Final Project Presentation	80	80	9
		940	100

**Lecture Exit Tickets:** Weekly submissions of 1 short paragraph discussing some aspect of the weekly lectures. Grading is either 10 pts or 0 pts.

**Discussion Posts:** Weekly posts in course discussions in response to prompts and instructions in the modules. Grading is 20 pts, 10pts, or 0 pts.

**Papers:** Five to seven page papers with appropriate citations will be assigned periodically in the modules. Grading will be regular 0 to 80 points each.

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**Semester Project City Selections:** A short paper (1 – 2 pages) discussing your selection of 3 cities or counties that will be the focus of your semester research project on the use of generative AI tools in municipal government. Grading 0 to 50 points.

**Semester Project Proposal:** A short (1 – 2 pp) proposal discussing your approach and specific research questions / objectives for your semester project. The proposal will also discuss the format of your final project (paper, poster, presentation, video, etc.). Grading 0 – 75 points.

**Semester Project Progress Report:** A brief (1 – 2 pp) report on your progress. Grading 0 – 75 points.

**Final Project Presentation:** Grading 0 – 80 points.

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## Course Schedule

### Module 01 Course overview and high-level introduction

*Week Starting:* 01/24/2024

*Topics:* Course overview, eGovernment, Smart Systems, Smart Cities, Smart as a process

*Readings:* (available on ELMS)

Twizeyimana, J. D., & Andersson, A. (2019). The public value of E-Government—A literature review. *Government information quarterly*, 36(2), 167-178.

Mikalef, P., Lemmer, K., Schaefer, C., Ylinen, M., Fjørtoft, S. O., Torvatn, H. Y., ... & Niehaves, B. (2022). Enabling AI capabilities in government agencies: A study of determinants for European municipalities. *Government Information Quarterly*, 39(4), 101596.

Vito Albino, Umberto Berardi & Rosa Maria Dangelico (2015) Smart Cities: Definitions, Dimensions, Performance, and Initiatives, *Journal of Urban Technology*, 22:1, 3-21, DOI: 10.1080/10630732.2014.942092.

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## eGovernment Unit

### Module 02 Introduction to eGovernment

*Week Starting:* 01/28/2024

*Topics:* Contours of eGov, eGovernment vs. eGovernance, eGov services, different perspectives on eGov: government staff, citizens, elected officials

*Readings:* Holzer, Manoharan, & Melitski (2019), Chapters 1 and 5

Review <https://www.rockvillemd.gov/>

### Module 03 eGovernment Systems and Processes

*Week Starting:* 02/04/2024

*Topics:* eGov systems, digitization, workflows, privacy, security, and access, user interfaces / user experiences (UI/UX), mobile (mGov), personnel considerations

Introduction to GovPilot

*Readings:* Holzer, Manoharan, & Melitski (2019), Chapters 2, 3, and 8;

Review <https://www.govpilot.com>

### Module 04 eGovernance and Citizen Engagement

*Week Starting:* 02/11/2024

*Topics:* Content for an informed citizenry; from informed to engaged: citizen participation; managing social media in government

*Readings:* Holzer, Manoharan, & Melitski (2019), Chapters 4, 6, and 7;

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**Module 05 The future of eGovernance**

*Week Starting:* 02/18/2024

*Topics:* eGov and big data; AI applications in government; closing the digital divide

*Readings:* Holzer, Manoharan, & Melitski (2019), Chapters 9, 10, and 11;  
ChatGPT: Optimizing Language Models for Dialogue

(<https://openai.com/blog/chatgpt/>)

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**Smart Systems Unit**

**Module 06 What are Smart Systems?**

*Week Starting:* 02/25/2024

*Topics:* Components (remote sensors, ICT, decision making, actuators),  
Applications (monitoring systems, control systems, robots, drones)

*Readings:* TBD

**Module 07 Remote Sensing and Automation**

*Week Starting:* 03/03/2024

*Topics:* remote sensors, ICT, decision making, actuators, application examples

*Readings:* TBD

**Module 08 Autonomous Systems**

*Week Starting:* 03/10/2024

*Topics:* Control systems, drones, robots

*Readings:* TBD

**Module 09**

*Week Starting:* 03/17/2024

*Topics:* SPRING BREAK

**Module 10 Smart Systems Use Cases**

*Week Starting:* 03/24/2024

*Topics:* Presentation and discussion of use cases

*Readings:* TBD

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**Smart Cities Unit**

**Module 11 What are Smart Cities?**

*Week Starting:* 03/31/2024

*Topics:* Defining characteristics and debates; why we need to think differently about smart cities

*Readings:* TBD

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**Module 12 Smart as a Process**

*Week Starting:* 04/07/2024

*Topics:* Technological evolution as a continuous process

*Readings:* TBD

**Module 13 City Systems I**

*Week Starting:* 04/14/2024

*Topics:* Utilities - water, sewer, electric, gas, telecom, broadband

*Readings:* TBD

**Module 14 City Systems II**

*Week Starting:* 04/21/2024

*Topics:* Transportation

*Readings:* TBD

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**Closing Perspectives**

**Module 15 Closing Perspectives**

*Week Starting:* 04/28/2024

*Topics:* Smart cities as emergent complex adaptive systems

*Readings:* TBD

**Module 16 Final Presentations**

*Week Starting:* 05/05/2024

*Topics:* Final projects due

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**Course Policies**

***Syllabus Change Policy***

This syllabus is a guide for the course and is subject to change with advance notice. Changes will be posted in ELMS. The ELMS course site is the definitive location for all course work, and communication, including class schedules, assignments and deadlines.

***Academic Integrity***

Academic dishonesty is a corrosive force in the academic life of a university. It jeopardizes the quality of education and depreciates the genuine achievements of others. Apathy or acquiescence in the presence of academic dishonesty is not a neutral act. All members of the University Community - students, faculty, and staff - share the responsibility to challenge and make known acts of apparent academic dishonesty. As a student, you have a responsibility to avoid violations of the Code of Academic Integrity. This includes:

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- Cheating: "Intentionally using or attempting to use unauthorized materials, information, or study aids in any academic exercise."
- Fabrication: "Intentional and unauthorized falsification or invention of any information or citation in an academic exercise."
- Facilitating Academic Dishonesty: "Intentionally or knowingly helping or attempting to help another to commit an act of academic dishonesty."
- Plagiarism: "Intentionally or knowingly representing the words or ideas of another as one's own in an academic exercise."

For additional information on the Code of Academic Integrity see:

<http://shc.umd.edu/SHC/StudentAcademicDishonesty.aspx> (Links to an external site).

### **Campus Policies**

The purpose of the university's policies (<https://president.umd.edu/administration/policies>) is to enable all of us to fully participate in an equitable, accessible and safe academic environment so that we each can be challenged to learn and contribute most effectively. Policies are, by necessity, often written in impersonal, legalistic language. Nevertheless, we are all responsible for following them. The following sections summarize selected policies as implemented for this course, and provide links to additional information. We are all responsible for knowing and following all university policies.

### ***Accessibility and Learning Support***

Students with disabilities should inform me of their needs at the beginning of the semester. Please also contact the Accessibility and Disability Support Office (<http://www.counseling.umd.edu/ADS/>). ADS will make arrangements with the student and me to determine and implement appropriate academic accommodations. Inclusion is one of the iSchool's core values, and we have attempted to make all materials and assignments accessible to people with varying abilities. However, if there is something else I can do to make the class more accessible please schedule a time to come talk to me. This will benefit not only yourself but also future students.

### ***Names/Pronouns and Self-Identification***

The University of Maryland recognizes the importance of a diverse student body, and we are committed to fostering equitable classroom environments. I invite you, if you wish, to tell us how you want to be referred to both in terms of your name and your pronouns (he/him, she/her, they/them, etc.). The pronouns someone indicates are not necessarily indicative of their gender identity. Visit [trans.umd.edu](https://trans.umd.edu) to learn more.

Additionally, how you identify in terms of your gender, race, class, sexuality, religion, and dis/ability, among all aspects of your identity, is your choice whether to disclose (e.g., should it come up in classroom conversation about our experiences and perspectives) and should be



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self-identified, not presumed or imposed. I will do my best to address and refer to all students accordingly, and I ask you to do the same for all your fellow Terps.