# Social Inequality, Digital Divides, & Algorithmic Literacy:

How differences in technology access and skill impact individuals and society

Meeting Time:	Twice per week for 75 minutes each
Instructor:	Erin Flynn Klawitter, Ph.D.
	Associate Director, Notre Dame - IBM Technology Ethics Lab
	Assistant Term Teaching Professor
Office Hours:	Students are required to meet with me individually at least twice this
	semester.You may schedule an appointment using Google Appointment Slots. I
	will expect to see you in person, unless you email me to request a Zoom link. I
	also welcome drop-ins during office hours. Additional meeting times are
	available upon request. Simply email or speak with me to determine a mutually
	convenient time.

#### **Course Description:**

In the years following its inception, utopian narratives of the Internet promised unfettered access to information, markets, and relationships that would allow users to create wealth and contest power structures by building platform-based enterprises and values-based virtual communities. While some of these benefits have accrued to individuals and society, a significant body of research demonstrates that the reality of the Internet's impact on the world is much more complex. Grounded in key sociological texts, this course focuses on empirical research concerning how "Digital Divides" - differences in individuals' access to, participation in, and benefits from using the Internet – exist on geographic, demographic, and socioeconomic dimensions. It also examines the important role skill and literacy play in mitigating these differences, and takes up the nascent understanding of algorithmic literacy, the increasingly critical knowledge set people need as they navigate the many facets of everyday life now powered by artificial intelligence. As part of the course, students will learn how to critically evaluate empirical social scientific publications and also compose their own literature review concerning a topic related to the course theme.

#### **Course Objectives:**

1. Describe core theories and define key concepts regarding social stratification, digital divides, and algorithmic literacy.

2. Summarize and critically evaluate empirical social science literature.

3. Develop expertise in an area related to course content by proposing, drafting, revising, and producing a term paper.

4. Build skills in written expression and argument through responses to reflection prompts and the production of a term paper.

5. Practice skills in oral communication through class participation and the delivery of a short presentation.

### **General Expectations & Resources**

#### Accessibility

Any student who has a documented disability and is registered with Sara Bea Accessibility Services should speak with the professor as soon as possible regarding accommodations. Students who are not registered should contact the Sara Bea Accessibility Services as soon as possible since accommodation typically needs to be arranged well in advance.

### Attendance

Attendance and participation are important parts of learning in this class. In order to ensure that you have the best possible learning experience in this class **you are allowed a maximum of two (2) unexcused absences.** With a 3<sup>rd</sup> unexcused absence, your final grade will drop 5% and a notification of excessive absence will be sent to you and your Dean. For each unexcused absence beyond the 3rd your final grade will drop 10%. Only absences permitted by University policy and verified as per section 3.1 (pages 4-5) of the <u>Undergraduate Academic Code</u> will be excused.

The instructor will work with students who receive excused absences to develop a plan for successfully completing missing assignments.

Please do not make up excuses for getting behind on work; it is better to submit assignments that are less than perfect than to engage in untruthful behavior. In the case of such behavior, students will receive 0s for all attendance/participation grades and missed assignments. (It's not worth it!)

#### **Class Preparation**

A successful interactive course depends on each participant's energetic preparation for each class meeting. In addition, writing strong research papers requires learning how to critically read and summarize literature. Required reading notes are oriented toward this learning objective. We will conduct discussions during class meetings that require familiarity with the material assigned for that period and as such, students will be asked to prepare reading notes in advance of class. Please read the discussion material assignments carefully to allow yourself enough time to examine the material, take notes, and reflect on it.

#### **Class Participation**

You are required to participate regularly in class discussions and peer workshops. Your contributions should be thoughtful, on topic, and respectful of others. You are encouraged to take notes; however, you may not create any audio or video recordings of any part of class sessions.

#### **Campus Emergencies**

In the event of an emergency situation or disruption to normal campus operations (weather, health emergency, etc.), our class will likely shift to remote instruction using Zoom, as well as other synchronous and asynchronous course materials. Any changes will be communicated through email and/or Canvas.

#### **Email Communication**

I welcome questions, concerns, and ideas from students. Students may communicate with me via the email address provided on the syllabus or via the messaging system provided by Canvas. The instructor will respond to messages received Monday 8 a.m. – Friday 5 p.m. by the end of the next business day. Messages sent on the weekend will be answered by Tuesday at noon. This means that messages sent on the weekend may not receive a response by the beginning of the next class period. Please plan your work accordingly.

#### Honor Code

Entering Notre Dame you were required to study the online edition of the Academic Code of Honor, to pass a quiz on it, and to sign a pledge to abide by it. The full Code and a Student Guide to the Academic code of Honor are available at: <u>http://honorcode.nd.edu</u>. Perhaps the most fundamental sentence is the beginning of section IV-B:

"The pledge to uphold the Academic Code of Honor includes an understanding that a student's submitted work, graded or ungraded – examinations, draft copies, papers, homework assignments, extra credit work, etc. – must be his or her own."

Please note (added January 20, 2023): The use of ChatGPT or any large language model to generate written material for this course is not permitted.

#### Inclusiveness

The University of Notre Dame is committed to social justice. I share that commitment and strive to maintain a positive learning environment based on open communication, mutual respect, and non-discrimination. In this class we will not discriminate on the basis of race, sex, age, economic class, disability, veteran status, religion, sexual orientation, gender identity, color, or national origin. Any suggestions as to how to further such a positive and open environment will be appreciated and given serious consideration.

#### **Mental Health**

Diminished mental health can interfere with optimal academic performance. The source of symptoms might be related to your course work; if so, please speak with me. However, problems with other parts of your life can also contribute to decreased academic performance. The University Counseling Center (UCC) provides cost-free and confidential mental health services to help you manage personal challenges that threaten your emotional or academic well-being. Remember, getting help is a smart and courageous thing to do — for yourself and for those who care about you. For more resources please see <u>ucc.nd.edu</u> or <u>supportandcare.nd.edu</u>. The UCC is located on the third floor of Saint Liam Hall Phone: 574-631-7336. Hours: Monday-Friday 8:30am – 5:00pm. It provides an Urgent Crisis Line 24/7 by calling the phone number listed at all times, except when the University is closed during the week between Christmas and New Year.

#### **Privacy**

This course is a community built on trust; in order to create the most effective learning experience, our interactions, discussions, and course activities must remain private and free from external intrusion. As members of this course community, we have obligations to each other to preserve privacy and cultivate fearless inquiry. We are also obliged to respect the individual dignity of all and to refrain from actions that diminish others' ability to learn.

#### **Revisions to Course Schedule**

Please note that the course schedule is subject to some changes depending on student progress. The instructor will communicate any such changes to students either in class, email, or an announcement posted to Canvas.

#### Smart Use of Technology

This course relies on access to computers, specific software, and the Internet. At some point during the semester you WILL have a problem with technology: your laptop will crash, a file will become corrupted, a server will go down, or something else will occur. These are facts of life, not emergencies. Technology problems will not normally be accepted as excuses for unfinished work. Count on "stuff" happening and protect yourself by doing the following:

- Plan ahead start early, particularly if scarce resources are required
- Save work often at least every ten minutes
- Make regular backups of files in a different location from the originals
- Save drafts of work at multiple stages
- When editing an image, set aside the original and work with a copy
- Practice safe computing when surfing the web and checking email
- On your personal computer, install and use software to control viruses and malware

#### Title IX

The University of Notre Dame provides services for those who have been affected by sexual assault, sexual misconduct, dating or domestic violence, stalking and any conduct that creates a hostile environment. For help and further information including contact information for on and off-campus resources, please consult <u>https://titleix.nd.edu/support-resources</u>.

With limited exceptions, all University employees, including faculty and staff, are considered mandatory reporters. Employees who receive information about any suspected or potential Sexual Harassment, Discriminatory Harassment, and Other Sex-Based Misconduct, whether from the student, faculty, or staff involved or from a third party, must report the information to the Assistant Vice President of the Office of Institutional Equity and Title IX Coordinator (or designee). Should a student disclose information regarding potential Sexual Harassment, Discriminatory Harassment, or other Sex-Based Misconduct, the instructor cannot promise confidentiality or withhold information from the Office of Institutional Equity. The University is responsible for addressing harassment incidents about which it knows, reasonably should have known, or has actual knowledge.

# **Class Schedule and Assignments**

### Assignments

Each week, check the syllabus posted to Canvas for details about assignments and their due dates. In general, weekly assignments include notes on the assigned readings and may also include a written assignment building toward the final paper, and providing notes on others' written drafts. Updates to the syllabus will be posted on Canvas.

### Submitting Assignments:

In order to facilitate the distribution of files for writing, peer review, and final submission, the instructor will create a Google Drive folder for each student in the class. The folder will contain subfolders for each set of assignments. Various assignments must be uploaded to the designated folder by the date and time specified on the syllabus. All work will only be shared with the instructor, who will then share any drafts for peer review with the designated small groups or partners.

### Readings and Reading Notes

Each week, students must prepare a critical summary of the assigned readings.

### **Course Reflections**

The instructor will require students to submit informal course assessments (separate from CIFs) in the week prior to Spring Break and at the end of the semester. These assessments will provide students the opportunity to reflect on their learning experience and to provide constructive feedback to the instructor regarding any aspect of the class. Further details regarding these assignments will be provided in class and posted on the course's Canvas page. They will be graded only for completion.

### **Research Paper and In-class Presentation**

Learning to propose, write, and present a research project is an important skill to develop. Two classes will be scheduled in Hesburgh library to learn about how to access materials. Students will meet with the subject librarian to learn how to use databases, assess source materials, and plan a research project.

Students will be required to propose a research paper further exploring a topic related to the course early in the semester. This assignment will be broken into several parts: proposing a topic as well as

research questions and justification. These components will be reviewed in peer workshops, revised, and then reviewed and graded by the instructor. Following spring break, students will submit a detailed outline and rough draft of their final paper. The outline and rough draft will also be reviewed by peers, revised, and then submitted for grading and comment by the instructor. Each component of the research paper, as well as the final paper submission (consisting of a 10-page term paper plus references) is expected to respond to the constructive criticism from the instructor and peers and to conform to the norms of social scientific writing. Finally, students will present their papers via a 5 minute in-class presentation at the end of the semester.

The instructor will provide grading rubrics and instructions for each assignment related to the production of the final paper. Each student is required to participate in peer workshops as well as to meet one-on-one with the instructor at least twice during the semester to discuss their progress.

### **Peer Workshops**

Providing and receiving constructive criticism is an important part of academic and professional writing. Peer writing workshops provide students the opportunity to experience giving and accepting input from others in a helpful manner, aimed at improving the final version of the document. Students will provide and receive feedback on all components of the research paper assignment, as well as on class presentations. The instructor will provide additional details on the expectations of peer reviewers, the format of workshops, and incorporating criticism from peers into final submissions. All written feedback from peer reviewers will be graded by the instructor. The instructor will also observe in-person workshop meetings (held during class) to ensure conversations are proceeding according to the course's norms.

### Assignment Formatting and Styles

Workshop assignments, the midterm literature review, and final paper should be formatted according to the <u>APA 7<sup>th</sup> edition style guide</u>. Typefaces must be Times New Roman or Arial in 12-point font. Page margins should not exceed one inch. Assignments must be double-spaced. Assignments must be uploaded to the designated assignment folder in Google Docs and follow the proper filename convention:

LastName-Assignment-Date e.g., Klawitter-FinalPaper-8May2022

## Summary

Your continued enrollment in this class signifies that you have read, understand and will abide by the rules set forth in this syllabus.

# Grading

Assignment/Assessment	Points
Reading Notes	130 points (10 pts/week, 2 absences)
Class Participation	145 points (10 pts/week, 2 1-1 meetings, 2 absences)
Midterm Course Reflection	30 points
Final Course Reflection	45 points
Topic Proposal	50 points for self 25 points for peer comments
Research Question(s) and Justification	50 points for self 25 points for peer comments
Outline (3-4 pages)	75 points for self 30 points for peer comments
Rough Draft of Final Paper (8 pages)	100 points for self 50 points for peer comments
In-Class Paper Presentation	75 points 20 points for peer comments
Final Paper (10 pages, excluding references)	150 points
Total	1000 points

# Final Course Grade

Grade	Points
А	940-1000
A-	900-930
B+	870-890
В	830-860
В-	800-830
C+	770-790
С	730-760
C-	700-720
D+	670-690
D	600-660
F	0-590

# **Course Schedule**

Week I:	Introduction to the Course and Learning Community
Class I	Introduce Participants
	Complete in-class assessments
	Review Syllabus - Up to Expectations
Class 2	<b>Review Syllabus - Course Schedule and Assignments</b>
	<b>Review Canvas and Google Drive File Structure</b>
Week 2:	Theoretical Orientation: Introduction to Social Stratification
Class 3	In Class Activity: The Social Justice Game
	Meet at 247 Hesburgh Library
	Read and Submit Reading Notes
	• 2021 Income Inequality increases for first time since 2011 (U.S. Census
	Bureau)
	The big picture on wealth, income, ecological, and gender inequality
	looks bad (International Monetary Fund).
	(Library Reserves)
	Marx, K. Classes in Capitalism and Pre-Capitalism
	Weber, M. Status Groups and Classes
	Weber, M. Open and Closed Relationships
	All appear in: Grusky. (2001). Social stratification : class, race, and
	gender in sociological perspective (2nd ed.). Westview Press.
Class 4	In-Class Discussion of Game and Readings
	Topic Proposals Assigned

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Week 3:	Historical Orientation: Introduction to the Participatory Web
Class 5	Submit Draft Topic Proposals
	Read and Submit Reading Notes (Library Reserves)
	Campbell-Kelly, & Aspray, William. (2004). "The Computer Becomes a Business
	Machine." In Computer : A history of the information machine (pp. 93-116).
	Westview Press.
	Leiner, B. M., Cerf, V. G., Clark, D. D., Kahn, R. E., Kleinrock, L., Lynch, D. C.,
	& Wolff, S. (2009). A brief history of the Internet. ACM SIGCOMM
	Computer Communication Review, 39(5), 22-31.
	Blank, G., & Reisdorf, B. C. (2012). The participatory web: A user perspective
	on Web 2.0. Information, Communication & Society, 15, 537-554
Class 6	Submit Comments on Topic Proposals
	Class Discussion, continued
	Peer Workshop on Topic Proposals (Small Groups)
Week 4:	First Level Digital Divide: Infrastructure & Access
Class 7	Submit Final Topic Proposals
	Read and Submit Reading Notes
	OECD, 2001. Understanding the Digital Divide
	OECD, 2021. COVID-19 crisis accentuating the need to bridge digital divides
	Library Reserves
	Francis, D.V., & Weller, C. E. (2022). Economic inequality, the digital divide, and
	remote learning during COVID-19. The Review of Black Political Economy,
	49(1), 41-60.
Class 8	How To: Search for Literature (Visit to Library)

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Week 5:	Second-Level Digital Divide: Use and Participation
Class 9	Read and Submit Reading Notes
	Shirky, C. (2003). Power laws, web logs, and inequality.
	http://acamedia.info/sciences/J_G/sichtF/Shirky_Chapter%20Three.pdf
	Library Reserves
	DiMaggio, P., Hargittai, E., Celeste, C., & Shafer, S. (2004). Digital inequality:
	From unequal access to differentiated use. Social inequality, 355-400.
	Correa, T., Hinsley, A.W., & De Zuniga, H. G. (2010). Who interacts on the
	Web?: The intersection of users' personality and social media use. Computers
	in human behavior, 26, 247-253.
	Blank, G. (2013). Who creates content? Stratification and content creation on
	the Internet. Information, Communication & Society, 16, 590-612.
Class 10	Class Discussion, continued
	How To: Select, Refine, Propose, and Justify a Research Question
	Research Questions and Justification Assigned
Week 6:	Second-Level Digital Divide: Skill and Self-Efficacy
Class I I	Submit Draft Research Questions and Justification
	Read and Submit Reading Notes (Library Reserves)
	Eastin, M. S., & LaRose, R. (2000). Internet self-efficacy and the psychology of
	the
	digital divide. Journal of computer-mediated communication, 6,611.
	Hargittai, E. (2005). Survey measures of web-oriented digital literacy. S ocial
	science computer review, 23, 371-379.
	Van Deursen, A., & Van Dijk, J. (2011). Internet skills and the digital divide. <i>new</i>
	media & society, 13, 893-911.

Class 12	Submit Comments on Peer Research Questions and Justifications Class Discussion, continued Peer Workshop on Research Questions and Justifications (Small Groups)
Week 7:	Differences Related to Wealth and Education
Class 13	Submit Final Research Questions and Justifications
	Read and Submit Reading Notes (Library Reserves)
	Hargittai, E. (2010). Digital na(t)ives? Variation in internet skills and uses among members of the "net generation". <i>Sociological Inquiry, 80</i> , 92-113.
	Scheerder, A., Van Deursen, A., & Van Dijk, J. (2017). Determinants of Internet
	skills, uses and outcomes. A systematic review of the second-and third-level digital divide. <i>Telematics and informatics, 34</i> , 1607-1624.
	Ritzhaupt, A. D., Liu, F., Dawson, K., & Barron, A. E. (2013). Differences in
	student information and communication technology literacy based on
	socio-economic status, ethnicity, and gender: Evidence of a digital divide in Florida schools. <i>Journal of Research on Technology in Education, 45</i> , 291-307.
Class 14	How To: Organize Literature (Visit to Library) Outline Assigned
Week 8:	Differences Related to Gender
Class 15	Read and Submit Reading Notes (Library Reserves)
	Hargittai, E., & Shafer, S. (2006). Differences in actual and perceived online skills:
	The role of gender. Social Science Quarterly, 87, 432-448.
	Ritzhaupt, A. D., Liu, F., Dawson, K., & Barron, A. E. (2013). Differences in
	student information and communication technology literacy based on
	socio-economic status, ethnicity, and gender: Evidence of a digital divide in

	Florida schools. <i>Journal of Research on Technology in Education, 45</i> (4), 291-307.
	Antonio, A., & Tuffley, D. (2014). The gender digital divide in developing countries. <i>Future Internet, 6</i> , 673-687.
	Campos-Castillo, C. (2015). Revisiting the first-level digital divide in the United States: Gender and race/ethnicity patterns, 2007–2012. <i>Social Science Computer Review, 33</i> , 423-439.
Class 16	Midterm Course Reflection (In Class) How To: Synthesize and Integrate Literature
Week 9:	SPRING BREAK
<u>Week 10:</u>	Differences Related to Race, Ethnicity, & Nationality
Class 17	<b>Read and Submit Reading Notes (Library Reserves)</b> Wellman, B., Quan-Haase, A., Boase, J., Chen, W., Hampton, K., Díaz, I., & Miyata, K. (2003). The social affordances of the Internet for networked individualism. <i>Journal of Computer-Mediated Communication, 8</i> , 834.
	Lorence, D. P., Park, H., & Fox, S. (2006). Racial disparities in health information access: resilience of the digital divide. <i>Journal of Medical Systems, 30</i> , 241-249.
	Hargittai, E., & Litt, E. (2011). The tweet smell of celebrity success: Explaining variation in Twitter adoption among a diverse group of young adults. <i>new media</i> & society, 13(5), 824-842.
	Campos-Castillo, C. (2015). Revisiting the first-level digital divide in the United States: Gender and race/ethnicity patterns, 2007–2012. <i>Social Science Computer Review, 33</i> , 423-439.

Class 18	Class Discussion, continued How to Synthesize and Integrate Literature, continued
Week II:	Differences Related to Age/Ability
Class 19	Submit Draft Outline Read and Submit Reading Notes (Library Reserves)
	Read and Submit Reading Notes (Library Reserves)
	Hargittai, E., & Hinnant, A. (2008). Digital inequality: Differences in young adults' use of the Internet. <i>Communication Research, 35</i> , 602-621.
	Correa, T. (2016). Digital skills and social media use: how Internet skills are related to different types of Facebook use among 'digital natives'. <i>Information,</i>
	Communication & Society, 19, 1095-1107.
	Dobransky, K., & Hargittai, E. (2006). The disability divide in internet access and use. <i>Information, Communication &amp; Society, 9</i> , 313-334.
	Kent, M. (2015). Disability and eLearning: Opportunities and barriers. <i>Disability Studies Quarterly, 35</i> .
	Rough Draft Assigned
Class 20	Submit Comments on Peer Outlines
	Class Discussion, continued
	Peer Workshop on Outlines (Small Groups)
Week 12:	Introduction to Algorithmic Literacy
Class 21	Submit Final Outlines
	Read and Submit Reading Notes
	Gillespie, T. (2014). The relevance of algorithms. Media technologies: Essays on
	communication, materiality, and society, 167, 167.

Lutz, C. (2019). Digital inequalities in the age of artificial intelligence and big data. *Human Behavior and Emerging Technologies, 1*, 141-148.

Hargittai, E., Gruber, J., Djukaric, T., Fuchs, J., & Brombach, L. (2020). Black box measures? How to study people's algorithm skills. *Information, Communication & Society, 23*, 764-775.

Reisdorf, Bianca C., and Grant Blank (2021). "Algorithmic literacy and platform trust." In the *Handbook of Digital Inequality.* Edward Elgar Publishing, 2021.

Oeldorf-Hirsch, A., & Neubaum, G. (2021, November 18). What Do We Know about Algorithmic Literacy? The Status Quo and a Research Agenda for a Growing Field. https://doi.org/10.31235/osf.io/2fd4j

Class 22 How To: Cite Literature

#### Week 13: Algorithmic Literacy: The Privacy/Visibility Paradox

Class 23 Submit Rough Drafts Read and Submit Reading Notes (Library Reserves) Cotter, K. (2019). Playing the visibility game: How digital influencers and algorithms negotiate influence on Instagram. *new media & society, 21,* 895-913.

Stoilova, M., Nandagiri, R., & Livingstone, S. (2021). Children's understanding of personal data and privacy online–a systematic evidence mapping. Information, *Communication & Society, 24*, 557-575.

Klawitter, E., & Hargittai, E. (2018). "It's like learning a whole other language": The role of algorithmic skills in the curation of creative goods. *International Journal of Communication, 12,* 3490-3510.

Class 24	Submit Comments on Peer Rough Drafts Class Discussion, continued Peer Workshop: Rough Drafts (Small Groups)
Week 14:	Algorithmic Literacy: Implications for the Individual and Society
Class 25	<b>Read and Submit Reading Notes (Library Reserves)</b> Pariser, E. (2011). Introduction. <i>The Filter Bubble (pp. XX-XX)</i> . Penguin.
	Cho, J., Ahmed, S., Hilbert, M., Liu, B., & Luu, J. (2020). Do search algorithms endanger democracy? An experimental investigation of algorithm effects on political polarization. <i>Journal of Broadcasting &amp; Electronic Media, 64</i> , 150-172.
	Swart, J. (2021). Experiencing algorithms: How young people understand, feel about, and engage with algorithmic news selection on social media. <i>Social media</i> + <i>Society, 7</i> , 20563051211008828.
Class 26	Submit Revised Rough Draft Assign Final Paper
Week 15:	Algorithmic Literacy: Implications for the Individual and Society
Class 27	<b>Read and Submit Reading Notes (Library Reserves)</b> Morahan-Martin, J. M. (2004). How internet users find, evaluate, and use online health information: a cross-cultural review. <i>CyberPsychology &amp; Behavior, 7</i> , 497-510.
	Klawitter, E., & Hargittai, E. (2018). "I went home to Google": How users assess the credibility of online health information. In <i>eHealth: Current evidence, promises, perils and future directions</i> (Vol. 15, pp. 11-41). Emerald Publishing Limited.
Class 28	Submit Presentations of Papers Present in Class

### Submit Peer Comments on Presentations by 8 am April 28

Week 16:	Class Wrap-Up & Final Reflections
Class 29	Presentations, continued Submit Final Course Reflection (In Class)
Week 17:	Exam Week
NO CLASS	Final Papers Due