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| ICT4D  CSC5026z: Information and Communication Technology for Development |  | Instructors:  Melissa Densmore [melissa.densmore@uct.ac.za](mailto:melissa.densmore@uct.ac.za)  Nailah Conrad [nailah.conrad@uct.ac.za](mailto:nailah.conrad@uct.ac.za)  Office Hours: [by appointment](https://calendly.com/melissa-densmore/) |
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# Overview

This course provides an instruction to research in the Information and Communication Technology for Development space. We will look at both theoretical underpinnings of development with technology as well as concrete case studies of deployments

# Milestones and Deliverables

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| --- | --- | --- | --- |
| *Deliverable* | Weighting | Type | Due Date |
| *Theory Participation* | 10% | Individual | Weekly by Tues morning |
|  |  |  |  |
| *A1: Ethics* | 15% | Individual | Friday, 22 April |
| *A2: Success in ICT4D* | 15% | Individual | Friday, 29 April |
| *A3: 4IR Position Paper* | 15% | Individual | Friday, 13 May |
| *A4: Reflection Essay* | ~~10%~~ 15% | Individual | Friday, 10 June |
|  |  |  |  |
| *D1: Synthesis and POV* | 5% | Group | Wednesday, 4 May |
| *D2: Prototype and Feedback* | 5% | Group | Wednesday, 18 May |
| *~~D3: Presentations~~* | ~~5%~~ | ~~Group~~ | ~~Wednesday, 25 May~~ |
| *D4: Final Report* | 20% | Group | ~~Friday, 27 May~~Friday, 3 June |

# Lectures and Design Thinking Studios

##### All class meetings will take place in-person in the Gary Marsden Boardroom, located in the Computer Science Building, Floor 3A. We will meet for one hour on Tuesdays (9-10) to reflect on the readings and for two hours on Wednesdays (9-11) for design thinking activities. The first week’s lecture will take place as a three-hour block on Wednesday 1-4p. Students are expected to have prior exposure to Design ThinkingLectures will consist of both teaching and student-run discussions and debates. Students will be expected to read assigned material before lectures and participate in the provided online channels.

# Class Participation

##### Each week you will have several assigned readings. Class participation takes place in three forms: 1) a substantive reflection posted to the Padlet on one or more of the assigned readings, to help facilitate discussion in class, 2) comments on at least two posts from other students and 3) participation in class discussion.

##### The substantive reflections must be either (a) a question about the reading, (b) a summary of *one* of the core arguments in the paper, or (c) a response to one of the core arguments stating why you do or do not agree. Students will receive full marks if and only if their contribution is original in the space of the discussion. This incentivizes you to participate early. In addition, you need to post comments on at least two posts about papers you didn’t post about.

##### For each week you will receive up to 5 participation marks:

* 2 pts for substantive comment on reading
* 2 pts for comments on other student posts (two posts)
* 1 pt for participation in in-class discussion (except for the 4IR debate)

##### ~~There are 7 weeks in the term, so opportunities for 34 participation marks.~~ There are 6 weeks in the term, so opportunities for 29 participation marks. You can get another 5 participation marks for completing the course evaluation. The total participation will be marked out of 30 ~~35~~ points, for a maximum participation mark of 30 ~~35~~.

# Assignments

##### All assignments will be posted to and submitted on Vula. Please consult Vula for the exact due time for each assignment, which will generally be on Fridays 11:55p Vula Time. Late assignments will incur a 10% penalty for each calendar day late and will not be accepted after five days.

##### Cheating and plagiarism will not be tolerated. Please read the Academic Honesty policy available on Vula under resources.

# Reading List

The pre-lecture reading is required by all students. Participation is required before lecture to avoid penalties.

* Week 1: **Welcome, Introduction to ICT4D and Development**
  + Adjusted lecture time: Wednesday 13 April 2022, 1-4p
  + Practical Assignment A1: Ethics in ICT4D (due Fri 19 March)
  + Class Project C1: Group Report and Individual Reflections (due 14 May)
  + Lecture Slides and Recordings (1B and 1C)
  + Assigned Reading:
    - [Aid Evolved Podcast: From ICTD Research to Practice with Eric Brewer of UC Berkeley](https://aidevolved.com/podcast/eric-brewer/)
    - Technology as an amplifier in international development. Kentaro Toyama. OR Geek Heresy. Chapters 2-4. Kentaro Toyama.
    - ICT4WHAT-Using the choice framework to operationalize the capability approach to development. Dorothea Kleine. 2010.
    - Development as Freedom. Amartya Sen. 1999 (Summaries provided and UCT library)
    - Implementing ICT4D. In: Information and Communication Technology for Development. Chapter 3 Richard Heeks. 2018 (ICT4D-Richard Heeks-Chapters 1-3-9.pdf)
  + Optional Reading
    - Human-Computer Interaction for Development: The Past, Present, and Future. Melissa Ho et al. 2009 (hci4d-past-present-future.pdf).
* **Week 2: ICT4D Ethics**
  + Assigned Reading:
    - ICT4D 2.0. The next phase of Applying ICT for International Development. Richard Heeks. 2008.
    - Minimum Ethical Standards in ICTD. <https://ictdethics.wordpress.com/>
    - San Code of Research Ethics. 2017
    - Decolonising HCI and interaction design discourse: some considerations in planning AfriCHI. Nicola Bidwell. XRDS: Crossroads, The ACM Magazine for Students 22.4 (2016): 22-27. (xrds2016-bidwell.pdf)
    - The Challenge of Technology Research in Sensitive Settings: Case Studies in ‘Sensitive HCI’. Waycott, Wadley, Schutt, Stabolidis and Reeva. 2015
  + Optional Reading:
    - Deriving Engagement Protocols Within Community-Based Co-design Projects in Namibia. Kapuire G.K., Winschiers-Theophilus H., Brereton M. (2017). In: Choudrie J., Islam M., Wahid F., Bass J., Priyatma J. (eds) Information and Communication Technologies for Development. ICT4D 2017. IFIP Advances in Information and Communication Technology, vol 504. Springer, Cham. (Proceedings IFIP WG 94 2017 Conference - Springer (1).pdf)
    - Postcolonial Computing: A Lens on Design and Development. Lilly Irani et al. 2010 (irani-postcolonial.pdf)
    - Constructing informed consent in ICT4D research. Revi Sterling
    - Heike Winschiers-Theophilus, Shilumbe Chivuno-Kuria, Gereon Koch Kapuire, Nicola J. Bidwell, and Edwin Blake. 2010. Being participated: a community approach. In Proceedings of the 11th Biennial Participatory Design Conference (PDC '10). Association for Computing Machinery, New York, NY, USA, 1–10. DOI:https://doi.org/10.1145/1900441.1900443
    - Paul Dourish, Christopher Lawrence, Tuck Wah Leong, and Greg Wadley. 2020. On Being Iterated: The Affective Demands of Design Participation. Proceedings of the 2020 CHI Conference on Human Factors in Computing Systems. Association for Computing Machinery, New York, NY, USA, 1–11. DOI:https://doi.org/10.1145/3313831.3376545
    - Ethics and ICTD Research. In: Linking research to practice. Strengthening ICT for development research capacity in Asia. John Traxler. 2012.
    - Donner, J. (2009). Blurring livelihoods and lives: The social uses of mobile phones and socioeconomic development. Innovations, 4(1), 91-101.
    - Corbett, S (2008). Can the cellphone help end global poverty? New York Times, April 13, 2008.
    - Gerster, R. & Zimmerman, S. (2003). Information and Communication Technologies (ICTs) for Poverty Reduction? Swiss Agency for Development and Cooperation.
* **Week 3: ICT4D and Infrastructure**
  + Assigned Reading:
    - Dye, Michaelanne, et al. "[El Paquete Semanal: The Week's Internet in Havana](https://vula.uct.ac.za/access/content/group/b0e4c306-d2a9-4ca7-ba29-bf369fe6d95d/readings-required/chi2018-dye-el-paquete-semenal.pdf)." *Proceedings of the 2018 CHI Conference on Human Factors in Computing Systems*. 2018.
    - [Tuck Wah Leong, Christopher Lawrence, and Greg Wadley. 2019. Designing for diversity in Aboriginal Australia: Insights from a national technology project.](https://vula.uct.ac.za/access/content/group/b0e4c306-d2a9-4ca7-ba29-bf369fe6d95d/readings-required/ozchi2019-leong-thismymob.pdf) In Proceedings of the 31st Australian Conference on Human-Computer-Interaction (OZCHI'19). Association for Computing Machinery, New York, NY, USA, 418–422. DOI:https://doi.org/10.1145/3369457.3369505.
    - [Community Networks: the Internet By the People, For the People.](https://vula.uct.ac.za/access/content/group/b0e4c306-d2a9-4ca7-ba29-bf369fe6d95d/readings-required/Community%20networks%20-%20the%20Internet%20by%20the%20people%2C%20for%20the%20people.pdf) Intro by Luca Belli (p23-32), and Ch 12 Declaration on Community Connectivity (p 237-240).
    - Ssozi-Mugarura, Fiona, Edwin Blake, and Ulrike Rivett. "Codesigning with communities to support rural water management in Uganda." CoDesign 13.2 (2017): 110-126.
  + Optional Reading:
    - Connecting the Roof of the World with Yahel Ben-David of AirJaldi. Aid, Evolved Podcast. <https://aidevolved.com/podcast/yahel-ben-david/>
    - [Wireless Networking in the Developing World, 3rd Ed. 2013. http://wndw.net/](http://wndw.net)
    - “You’re capped!” Understanding the effects of Bandwidth Caps on Broadband Use in the Home. Chetty, Banks, Brush, Donner and Grinter. 2012. (“You’re Capped!” Understanding the Effects.pdf)
    - [Developing capacity through co-design: the case of two municipalities in rural South Africa](https://www.tandfonline.com/doi/full/10.1080/02681102.2018.1470488). Jacobs, Rivett and Chemisto
    - [Beyond Pilots: Keeping Rural Wireless Networks Alive. Sonesh Surana et al. 2008 (surana-beyond-pilots.pdf)](https://vula.uct.ac.za/access/content/group/b0e4c306-d2a9-4ca7-ba29-bf369fe6d95d/readings-required/surana-beyond-pilots.pdf)
    - [Sen, Rijurekha, et al. "Inside the walled garden: Deconstructing Facebook's free basics program." *ACM SIGCOMM Computer Communication Review* 47.5 (2017): 12-24.](https://vula.uct.ac.za/access/content/group/b0e4c306-d2a9-4ca7-ba29-bf369fe6d95d/readings-required/imc2016-sen-freebasics.pdf)
    - Lorini, Maria Rosa, Amalia Sabiescu, and Nemanja Memarovic. "Collective Digital Storytelling in Community-based co-design projects. An Emergent Approach." The Journal of Community Informatics 13.1 (2017).
    - Learning to Be Sustainable in ICT for Development: A Citizen Engagement Initiative in South Africa. (2017). Pade-Khene and Lannon. (Proceedings IFIP WG 94 2017 Conference - Springer (1).pdf)
    - If god gives me the chance I will design my own phone: exploring mobile phone repair and postcolonial approaches to design in rural Kenya. Wyche, Susan, et al. Proceedings of the 2015 ACM International Joint Conference on Pervasive and Ubiquitous Computing. ACM, 2015. (wyche-if-god.pdf)
* **Week 4: ICT4D and Health**
  + Assigned Reading:
    - The Cell-Life Project: Converging technologies in the context of HIV/AIDS. Ulrike Rivett and Jonathan Tapson
    - [The Many Sides of Digital Health with Liz Peloso](https://aidevolved.com/podcast/liz-peloso/), Aid Evolved Podcast, by Rowena Luk, 2 Feb 2021
    - [The Transnational Framework for Digital Health in International Cooperation](https://vula.uct.ac.za/access/content/group/b0e4c306-d2a9-4ca7-ba29-bf369fe6d95d/readings-required/Transnational_Framework_Digital_Health_final_1.pdf). Medicus Mobile 2020.
    - Elizabeth Murray, et al. [Evaluating Digital Health Interventions: Key Questions and Approaches, American Journal of Preventive Medicine](https://vula.uct.ac.za/access/content/group/b0e4c306-d2a9-4ca7-ba29-bf369fe6d95d/readings-required/murray2016-evaluating-digital-health.pdf), Volume 51, Issue 5, 2016, Pages 843-851, ISSN 0749-3797, https://doi.org/10.1016/j.amepre.2016.06.008.  
      (https://www.sciencedirect.com/science/article/pii/S074937971630229X)
    - [A Pilot Study of an mHealth Application for Healthcare Workers: Poor Uptake Despite High Reported Acceptability at a Rural South African Community-Based MDR-TB Treatment Program.](https://vula.uct.ac.za/access/content/group/b0e4c306-d2a9-4ca7-ba29-bf369fe6d95d/readings-required/chaiyachati-2013-mobilize.pdf) Chaiyachati, Krisda H; Loveday, Marian; Lorenz, Stephen; Lesh, Neal; Larkan, Lee-Megan; Cinti, Sandro; Friedland, Gerald H; Haberer, Jessica E; Pai, Madhukar. ISSN: 1932-6203; DOI: 10.1371/journal.pone.0064662
  + Optional Reading:
    - Designing with Community Health Workers: Enabling Productive Participation Through Exploration. Molapo, Maletsabisa, Melissa Densmore, and Limpho Morie. Proceedings of the First African Conference on Human Computer Interaction. ACM, 2016. (africhi2016-Molapo-participation.pdf)
    - Patriarchy, maternal health and spiritual healing: Designing maternal health interventions in Pakistan. Mustafa ET AL. 2020
    - Chib, A., Wilkin, H., & Hoefman, B. (2013). [Vulnerabilities in mHealth implementation: Ugandan HIV/AIDS SMS campaign](http://ped.sagepub.com/content/20/1_suppl/26.short). *Global Health Promotion, 20*(Supp.1), 26-32. doi:10.1177/1757975912462419.
    - Challenges and Opportunities in Connecting Care Recipients to the Community Health Feedback Loop. Okeke et al. 2019
    - Co-designing for mental health: creative methods to engage young people experiencing psychosis. Nakarada-Kordic, Hayes, Reay, Corbet and Chan. 2017
* **Week 5: Partnerships and Intermediaries in** **ICT4D**
  + Assigned Reading:
    - [Punching above your weight with Karl Brown and the Rockefeller Foundation](https://aidevolved.com/podcast/karl-brown/). Aid Evolved Podcast. 19 January 2021
    - Conceptualising ICT4D project champions. Heeks and Renken
    - Reducing "white elephant" ICT4D projects: a community-researcher engagement. Winschiers-Theophilus, Zaman and Yeo.
    - Intermediated technology use in developing communities. Sambasivan, Cutrell, Toyama and Nardi
  + Optional Reading:
    - Bourne, L., and Walker, D. H. (2005). Visualising and Mapping Stakeholder Influence. Management Decision, 43(5): 649-660. (Bourne & Walker 2005 Visualising and mapping stakeholder influence.pdf)
    - Conceptualising development in ICT4D. Zheng, Hatakka, Sahay and Andersson. 2018
    - Stakeholder Relations and Ownership of a Community Wireless Network: The Case of iNethi
    - Bentley, C. M.,& Chib, A. (2016). The impact of open development initiatives in lower- and middle income countries: A review of the literature. Electronic Journal of Information Systems in Developing Countries.
* **Week 6:** **Critical Reflections on ICT4D: 4IR Debate**
  + 4IR starter readings:
    - Research ICT Africa. Digital Futures: South Africa’s Digital Readiness for the ‘Fourth Industrial Revolution’. August 2020. Executive Summary. <https://researchictafrica.net/wp/wp-content/uploads/2021/01/021220_Digital-Futures_SAs-Digital-Readiness-for-4IR_01.pdf>
    - Njuguna Ndung’u and Landry Signé. [The Fourth Industrial Revolutionand digitization will transform Africa into a global powerhouse.](https://www.brookings.edu/research/the-fourth-industrial-revolution-and-digitization-will-transform-africa-into-a-global-powerhouse/) Foresight Africa 2020, Chapter 5, Brookings.
  + Assigned Reading (for padlet):
    - ICT4D 3.0? Part 1—The components of an emerging “digital for-development” paradigm. Heeks. 2019
    - Tigist Shewarega Hussen, Nicola J. Bidwell, Carlos Rey-Moreno, and William D. Tucker. 2016. Gender and Participation: Critical Reflection on Zenzeleni Networks in Mankosi, South Africa. In Proceedings of the First African Conference on Human Computer Interaction (AfriCHI'16). Association for Computing Machinery, New York, NY, USA, 12–23. DOI:https://doi.org/10.1145/2998581.2998584
    - On the Importance of Price Information to Fishers and to Economists: Revisiting Mobile Phone Use Among Fishers in Kerala. Srinivasan and Burrell. 2015
  + Optional Reading:
    - The Ins and Outs of HCI for Development. Nicola Dell and Neha Kumar. 2016 (dell-kumar-ins-and-outs)
    - The most unlikely innovators are changing ICT for development - it's time we took notice. <https://www.weforum.org/agenda/2018/11/the-most-unlikely-innovators-are-changing-ict-for-development-its-time-we-took-notice/>
* **Week 7: Research and ICT4D**
  + *This week’s readings are strongly recommended, especially if you hope to continue doing research in ICT4D. However, padlet posts are not required.*
  + Assigned Reading:
    - “Yours is Better!” Participant Response Bias in HCI Nicola Dell et al. 2012 (dell-yours-is-better.pdf).
    - What Constitutes Good ICTD Research? Jenna Burrell, Kentaro Toyama. 2009 (burrell-toyama-good-ictd.pdf).
    - An Elaboration of Critical Success Factors for Rural ICT Project Sustainability in Developing Countries Exploring the DWESA Case. Pade, Sewry and Mallinson. 2008.
    - The future of ICT4D. In: Information and Communication Technology for Development. Chapter 9 Richard Heeks. 2018 (ICT4D-Richard Heeks-Chapters 1-3-9.pdf)
  + Optional Reading:
    - Digital Green case: <https://www.digitalgreen.org/>
    - Can a Process Approach Improve ICT4D Project Success? Walton and Heeks. (2011). (Can a Process Approach improve ICT4D project success-Walton and Heeks.pdf)
    - Stories from the Field: Reflections on HCI4D Experiences. Yaw Anokwa et al. 2009 (anokwa-stories.pdf)
    - Beyond Pilots: Keeping Rural Wireless Networks Alive. Sonesh Surana et al. 2008 (surana-beyond-pilots.pdf).
    - ICT4D research: reflections on history and future agenda. Geoff Walsham. (2017). (ICT4D research reflections on history and future agenda.pdf)
    - A Critique of the Claims about Mobile Phones and Kerala Fisherman-The Importance of the Context of Complex Social Systems. Steyn. 2016