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| **Course Information** |
| **Sandbox Course Site(s):** |
| **Timeline:** Fall 2021 |
| **Instructor Name and Contact: Santosh S. Vempala,** [**vempala@gatech.edu**](mailto:vempala@gatech.edu) |
| **Developer Name and Contact:** |
| **Syllabus Draft: Will be available at** [**http://c4g.gatech.edu**](http://c4g.gatech.edu) |
| **Course Schedule Draft: Will be available at** [**http://c4g.gatech.edu**](http://c4g.gatech.edu) |

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| **Course Description** |
| What knowledge or skills will students gain completion of this course? (Course Description)  How can computing help make the world a better place? Can we avoid wars, alleviate homelessness and improve global health using computers? What are the technical challenges that arise and what humanistic issues have to be taken into account and understood in the process? In this C4G course, we explore problems faced by developing countries and underserved populations from a computing perspective. The course will be project-centered with teams of students choosing project topics early in the semester and working towards a deployed solution by the end of the semester. |

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| **Course Learning Objectives – *Learning Objectives should be measurable and distinct for students here is a resource to ensure you create meaningful objectives:*** [**https://teachonline.asu.edu/objectives-builder/**](https://teachonline.asu.edu/objectives-builder/) |
| What are the big ideas and key concepts students should take away from this course? (Course Objectives)  The learning objectives of the course are:  • Learn to think about computing for social good and all its complexities  • Undertake a significant, semester-long project working on a team: Identify a problem/project/organization that you are passionate about; design, evaluate and deploy a solution  • Develop a rudimentary understanding of a domain of social importance.  • Develop an understanding of the key issues in humanitarian computing, including sustainability, resource availability (or lack thereof), novice user design, and diversity in user and stakeholder populations. |

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| **Course Prerequisites** |
| What are the prerequisites to taking this course? A graduate course in any ONE of the following topics: (A) Databases (B) Networking (C) Logistics (D) Web development (E) Global Health (F) Technology and Society (G) User Interface Design. |

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| **Course Materials + Technology** |
| Required and Recommending Reading all PDF (included in syllabus) |

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| **Course Outline**  ***A full-term course has a total of 15 modules with the final being designated for review and the final exam. It is best to present the course in a total of 14-15 lessons that can be designated to each module and scaled down for a summer run. Below you will outline each lesson its topic, learning objectives, required or recommended readings and any assessments and activities (discussions/projects). As a rule of thumb each module should have an ungraded knowledge check to ensure students comprehend material before moving on to graded assignments and activities. This is comprised of 4-5 questions that correspond to the learning objective. We also like to include some discussion element to ensure we are meeting the course interaction requirements for online learning, usually this is one or two design posts in Piazza or the canvas LMS like an introduce yourself or project Q&A threaded post.*** | | | |
| **Lesson Topic**  *(what is the module title/topic)* | **Lesson Learning Objectives**  *(by the end of each week, what do you want your students to be able to demonstrate?)* | **Instructional Support Materials**  *(readings, and other materials do students need to engage with in order to successfully complete the assessments and activities?)* | **Assessments and Activities**  *(what kinds of activities and assessments will students do to demonstrate learning each week?)* |
| **Getting Started** | - Take on-boarding quiz  - Take assessments via proctoring software  - Set-up communications in Canvas  -Access video materials | * On-boarding Quiz w/ ID verification * Getting started completion block | |
| **Lesson 1:** | Introductions  Course goals  Skills/Interests exercise  Team formation | **Required Readings:**  **Optional Suggested Readings:** | **Knowledge Check**  **Assignment 1:** Skills/Interests exercise |
| **Lesson 2:** | Learning from Successes  Examples of successes/failures  Partner presentations  Brainstorm project goals  Announce Midterm Paper | **Required Readings:**  [**The C4G BLIS experience**](https://dl.acm.org/doi/pdf/10.1145/2909609.2909657)  **Optional Suggested Readings:**  Guest segment:  **CDC Global Health**  **Heather Alexander** | **Knowledge Check**  **Project Due: Project goals (individual)** |
| **Lesson 3:** | Learning from Failures  Examples of failures/successes  Partner presentations  Finding partners in your community | **Required Readings:**  [Information Systems and Developing Countries: Failure, Success and Local Improvisations](https://www.tandfonline.com/doi/abs/10.1080/01972240290075039?casa_token=3WkY2zrlPRAAAAAA%3AbPx9qWKjw0wLa6ropZQBwSkqN25Jg0oh50ofHXskezo42y-4kwtc7Q-caV6BWVTQeGdxUtgAS6Im&)  **Optional Suggested Readings:**  Guest segment:  **Protip Biswas**  **United Way of Atlanta** | **Knowledge Check**  **Project Due: teams by end of the week.** |
| **Lesson 4:** | Partner presentations  The Role of Technology  Brainstorm deliverables | **Required Readings:**  [Geek Heresy: Rescuing Social Change from the Cult of Technology](https://www.amazon.com/Geek-Heresy-Rescuing-Social-Technology/dp/161039528X)  Guest segment:  **Kentaro Toyama** | **Knowledge Check**  **Assignment 2: Study of technology in an area of societal need (individual survey)** |
| **Lesson 5:** | The Role of Technology in Society  How to Evaluate | **Required Readings: TBD**  [Mobile Phones for Maternal Health in Rural India](https://homes.cs.washington.edu/~anderson/papers/2015/kumar_chi2015.pdf)  Guest segment:  **Neha Kumar** | **Knowledge Check**  **Project due: Goals, deliverables; project webpage (team)** |
| **Lesson 6:** | Project mini-presentations |  | **Knowledge Check** |
| **Lesson 7:** | ICT4D, Sustainability | **Required Readings: TBD**  [ICT4D 2.0: The Next Phase of Applying ICT for International Development](https://ieeexplore.ieee.org/abstract/document/4548169?casa_token=HG9r-PBXY5UAAAAA:hUFTRND5OGVrbz7zADS1Zxy7dgHYMr41u6_YdB428M-HnXCEzXv00ToBwara9qzXS_zcZ5oC)  Guest segment:  **Mike Best** | **Knowledge Check**  **Project due: Initial evaluations (team)** |
| **Lesson 8:** | Sustainable Interfaces  Healthcare delivery | **Required Readings:**  [SMS for health](https://www.cc.gatech.edu/fac/arriaga/YunArriagaCHI13.pdf)  Guest segments:  **Rosa Arriaga** | **Knowledge Check**  **Midterm Paper due (individual)** |
| **Lesson 9:** | Social inequity | **Required Readings:**  **Optional Suggested Readings:** | **Knowledge Check** |
| **Lesson 10:** | Project evaluations |  | **Knowledge Check**  **Project due: Peer evaluations (individual)** |
| **Lesson 11:** | Infrastructure: System and Human | **Required Readings:**  **Optional Suggested Readings:**  Guest segments:  **Pinar Keskinocak**  **Julie Swann** | **Knowledge Check** |
| **Lesson 12:** | Connectivity | **Required Readings:**  [**The SARI project**](https://smartech.gatech.edu/bitstream/handle/1853/48574/Sustainability%20Failures%20of%20Rural%20Telecenters%20Challenges%20from%20the%20Sustainable%20Access%20in%20Rural%20India%20%28SARI%29%20Project.pdf?sequence=1&isAllowed=y)  **Optional Suggested Readings:** | **Knowledge Check**  **Project due: demo** |
| **Lesson 13:** | Project feedback session |  | **Knowledge Check** |
| **Lesson 14:** | Project demos and evaluations | **Required Readings:**  **Optional Suggested Readings:** | **Knowledge Check**  **Project due: Field evaluation** |
| **Lesson 15:** | Project presentations |  | **Knowledge Check**  **Project due: Final Report** |

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| **Graded Assignments and Distribution** | | |
| **Assignment** | **Weight** | **Brief Description** |
| On-Boarding Quiz *(required to verify identity using proctoring software)* | 0% *(required to verify identity using proctoring software)* | *(required to verify identity using proctoring software)* |
| Assignment 1 (Skills/Interests) | 1% |  |
| Assignment 2 (Tech survey) | 4% |  |
| Midterm Paper | 15% |  |
| Project  Initial Goals (individual)  Team formation  Team goals+deliverables  Present to TA  Team webpage  Initial evaluations (with partner organization)  Demo (present to TA)  Field evaluation  Final Report  Final presentation (record) | 70%  2%  3%  5%  5%  5%  10%  10%  10%  10%  10% |  |
| Peer project evaluations | 10% |  |