Teach CS+Social Good: Sample Curriculum Timelines

**Sample 22 day (~4 week, 40 min classes) curriculum timeline**

* **Introduction and Design Thinking**
  + **Day 1**: Intro to CS+Social Good. Have students start to learn how tech can be used for good, and come up with some ideas. Expose them to prior examples.
  + **Day 2-3**: Design thinking crash course. This will create an overview for the *method* of the final project. At the end of the two days, introduce the interviewing assignment, which they will have two weeks for.
* **First Coding Project**
  + **Day 4**: Introduce machine learning, the problem of breast cancer classification, supervised and unsupervised machine learning, and the kNN algorithm. Ensure students have a solid conceptual understanding of the algorithm, leave enough time for questions.
  + **Day 5-8**: Four days for coding of five functions in the starter code for breast cancer classification. Students can work in pairs
  + **Day 9**: Introduce some extensions (can be done when any group finishes the project), and have students wrap up and submit code.
* **Virtual Reality and Social Impact (Day 10-11) -** Introduce the concept, have people play around with Google Cardboards, and have a critical discussion about VR and empathy.
* **Design Thinking: Empathy Redux, Define, and Ideate**
  + **Day 12**: Define workshop. This will help students identify a specific problem from their interviews so their solutions can be targeted and effective.
  + **Day 13**: Ideation workshop. Students will come up with as many ideas as possible in 15 minutes (ideally ~50 ideas) and use the dot voting method to pick the best.
* **Second Coding Project**
  + **Day 14-17**: Mental Health Resources project. Begin with ~10 minutes of slides, and hand out the assignment explanation. Students will design classes, build a mini “database,” and work on responding effectively to human queries. Grading by completion of the project.
* **Final Project Conclusion**
  + **Day 18**: Paper prototyping workshop. This will allow students to sketch out what their solution will look like, either on paper, or through electronic designs.
  + **Day 19**: Workday to complete presentations
  + **Day 20-21**: Five minute presentations for each group.
  + **Day 22**:Final Feedback

**Sample 12 day, 10 day (2 week, 40 min classes) curriculum timelines**

1. **Design thinking and one Coding Project**

* **Introduction and Design Thinking**
  + **Day 1**: Intro to CS+Social Good. Have students start to learn how tech can be used for good, and come up with some ideas. Expose them to prior examples.
  + **Day 1-2**: Design thinking crash course. This will create an overview for the *method* of the final project. At the end of the two days, introduce the interviewing assignment, which they will have two weeks for.
* **Coding Project**
  + **Day 3-6:** One of the shorter coding projects, potentially the mental health project.
* **Design Thinking: Empathy Redux, Define, and Ideate**
  + **Day 7**: Define workshop. This will help students identify a specific problem from their interviews so their solutions can be targeted and effective.
  + **Day 8**: Ideation workshop. Students will come up with as many ideas as possible in 15 minutes (ideally ~50 ideas) and use the dot voting method to pick the best.
* **Final Project Conclusion**
  + **Day 9 (optional)**: Paper prototyping workshop. This will allow students to sketch out what their solution will look like, either on paper, or through electronic designs.
  + **Day 10 (optional)**: Workday to complete presentations
  + **Day 11-12**: Five minute presentations for each group.

**2) Two Coding Projects**

* **Introduction and Design Thinking**
  + **Day 1**: Intro to CS+Social Good. Have students start to learn how tech can be used for good, and come up with some ideas. Expose them to prior examples.
* **First Coding Project**
  + **Day 2**: Introduce machine learning, the problem of breast cancer classification, supervised and unsupervised machine learning, and the kNN algorithm. Ensure students have a solid conceptual understanding of the algorithm, leave enough time for questions.
  + **Day 3-5**: Three days for coding of five functions in the starter code for breast cancer classification. Students can work in pairs
  + **Day 6**: have students wrap up and test + submit code.
* **Second Coding Project**
  + **Day 7-10**: Mental Health Resources project. Begin with ~10 minutes of slides, and hand out the assignment explanation. Students will design classes, build a mini “database,” and work on responding effectively to human queries. Grading by completion of the project.

**Other possibilities for shorter durations**

Mix and match from different components

1. 2 days -- intro + design thinking crash course
2. 4-5 days -- 1 coding project

Given 4-5 days, an intro plus one coding project would be plenty, or an intro followed by a slightly longer design thinking crash course, since that tends to be fun and lighter at the end of the year.