



**Birla Institute of Technology & Science, Pilani**  
Hyderabad Campus

## **FIRST SEMESTER 2021-2022**

### Course Handout Part II

Date: 20-08-2021

In addition to part-I (General Handout for all courses appended to the time table) this portion gives further specific details regarding the course.

*Course No.* : **CS F315**  
*Course Title* : **Information and Communication Technologies and Development**  
*Instructor* : Dipanjan Chakraborty

### **Scope and Objective of the Course:**

This course will introduce students to understanding the societal challenges of the world and if and how Information and Communication Technologies can tackle them. After the successfully completing the course, the students will:

1. learn about the different application areas (SDGs, MDGs, etc.) where Information and Communication Technologies can play a catalytic role
2. learn to appreciate that technology is not a silver bullet, there are several other factors that need to be in place to create an environment in which technology can succeed
3. learn that an impactful technology does not need to be complex, the simplest of technologies can have big impact
4. learn to appreciate diversity among technology users, learn to put users at the centre of any technology, learn to conduct effective user-studies
5. learn about the pitfalls of tech-determinism

### **Textbooks:**

1. **Kentaro Toyama. Geek Heresy.** 2015. Public Affairs
2. Reading materials and research papers to be circulated

### **Reference books:**

1. **Aaditeshwar Seth. Overcoming Paradigms that Produce Disempowering Technologies - A Call to Technologists** (Preprint, will be circulated among the students)
2. **Payal Arora. The Next Billion Users.** First Edition, 2019. Harvard University Press.



3. **Amartya Sen and Jean Dreze. An Uncertain Glory: India and Its Contradictions.** 2020. Penguin Books
4. **Amartya Sen. Development as Freedom.** 2000. Anchor Books.
5. **Jean Dreze. Sense And Solidarity - Jholawala Economics for Everyone.** 2017. Permanent Black
6. **Ian Smillie. Mastering the Machine Revisited.** 2006. First Edition Reprint.
7. **Richard Heeks. Information and Communication Technology for Development (ICT4D).** 2018. Routledge.
8. **Cathy O'Neil. Weapons of Math Destruction.** 2017. Penguin Random House

### Course Plan:

Lecture No .	Learning objectives	Topics to be covered	Chapter in the Text Book
1	To motivate the students for the course	What is development, can ICTs lead to development, and the need for this course	R4: Introduction R3: Ch 2
2		Models of social developments and their pros and cons	Extra reading material
3 – 4	To acquaint students with some case studies in ICTD which did not lead to favourable outcome	Case studies with unfavourable outcome (Tech Determinism)	R2: Ch 6
5 – 6			T1: Ch 1
7 – 8			R5: Ch 8
9 – 10			T1: Ch 3
11 – 12	To acquaints students with the inequalities in society and their ramifications	Inequalities: gender divide, digital divide	R6: Ch XIII
13 – 14			R2: Ch 1
15			Reading material: Smartphone Ownership Is Growing Rapidly Around the World, but Not Always Equally
16 – 17			R1: Ch 6
18 – 22	To acquaint students with the ethical underpinnings of technology	Ethics in applied computing	R8: Ch 4, 5, 6, 8, 9, 10
23			Reading Material: Gig Economy



24			Reading Material: The limits of “design ethics” under capitalism
25 – 27			R1: Ch 4, 5
28 – 29	To acquaint students with the ramifications of big technology companies influencing public policy	Big Tech and its problems	Reading Material: Defund Big Tech, Refund Community · Tech Otherwise
			Reading Material: Facebook and elections, Jio and telecom
30 – 36	To acquaint students with different theories and frameworks in the ICTD domain	ICTD theories and frameworks	T1: Ch 2, 6, 7, 9
37			R7: Ch 1.3
38 – 40	To motivate the students to think of a way forward to work in this domain	The way forward	R1: Ch 7, 8

### Evaluation Scheme:

Component	Duration	Weightage (%)	Date & Time	Nature of Component
Comprehensive examination	2 hours	35%	11/12 AN	Partially Open Book
Mid-term examination	1.5 hours	30%	18/10/2021 11.00 - 12.30PM	Partially Open Book
Course Project	-	20% (proposal: 5 % Mid-term: 5% End-term: 10%)	continuous	Open (In class)
Course Debates	-	10%	continuous	Open (In class)
Class Participation	-	5%	continuous	open

Mid Term grading: Mid-term examination (30%) + Project Proposal (5%) + Project Mid-term (5%) = 40%



**Consultation Hour:** TBA

**Notices:** To be circulated through CMS and/or Piazza

**Make-up Policy:**

- Mid-term and Comprehensive examinations: prior permission from I/C is necessary.
- Other components: no make-up allowed, rescheduling may be allowed at the discretion of the I/C in urgent and genuine cases.

**Academic Honesty and Integrity Policy:**

Academic honesty and integrity are to be maintained by all the students throughout the semester and no type of academic dishonesty is acceptable.

**INSTRUCTOR-IN-CHARGE**

