



THE INVENTION PROCESS: Invention in the Context of Innovation

July 19–23, 2021 | Instructor: Emanuel Sachs | professional.mit.edu/tip

Note: All times are US Eastern Daylight Time. Schedule is subject to change.

DAY 1: MONDAY, JULY 19		
	Topic	Instructor
8:30–9:30 AM	Introduction, discussion of “the Chip”. Key points about patents/intellectual property.	Sachs
9:30–10:30 AM	Model of invention/engineering as iterative looping of synthesis and analysis. Lessons from cognitive psychology: drawing on the right side of the brain (Edwards). Blink (Gladwell), Thinking Fast and Slow (Khaneman) and others.	Sachs
10:30–10:40 AM	BREAK	
10:40–11:30 AM	TRIZ Part A - Expressing an inventive opportunity in the language of contradiction. Relation to interactions, coupling. The language of effects.	Sachs
11:30 AM–12:20 PM	TRIZ Part B – The 40 principles. The language of effects.	Sachs
DAY 2: TUESDAY, JULY 20		
8:30–9:00 AM	Morphological Analysis and brainstorming	Sachs
9:00–11:00 AM	“Yes and…” Group exercises leading to Invention Improv (applying the ideas of Improvisational Comedy to Invention).	David Marino
11:00–11:10 AM	BREAK	
11:10 AM–12:20 PM	Estimation Part A	Sachs
DAY 3: WEDNESDAY, JULY 21		
8:30–9:30 AM	Patents Part A – What’s the purpose of a patent? History. Requirements. Structure.	Sachs
9:30–10:10 AM	Robustness	Sachs
10:10–10:20 AM	BREAK	
10:20–11:10 AM	Prototyping strategy	Sachs
11:10 AM–12:20 PM	Invent (small groups)	Sachs
DAY 4: THURSDAY, JULY 22		
8:30–9:30 AM	Patents Part B – Find the flaw. Legal and enforcement.	Sachs
9:30–10:30 AM	BREAK	
10:30–11:40 AM	Invent (small groups) and write claims	Sachs
11:40 AM–12:20 PM	Estimation Part B – Rate limits	Sachs
DAY 5: FRIDAY, JULY 23		
8:30–9:30 AM	TRIZ Part C – Hierarchies of invention, evolution of technical systems. The place of invention within innovation.	Sachs
9:30–10:30 AM	Planning R&D, predicting technology trends.	Sachs
10:30–10:40 AM	BREAK	
10:40 AM–12:20 PM	Pitching your ideas, Q&A	Sachs
	END OF CLASS	