DIGITAL LITERACY
FOR DECISION-MAKERS

Columbia Business School
B8125, SPRING (B) 2023

Instructor:	Marco Morales
Email:	marco.morales@columbia.edu
Office Hours:	TBD, and by appointment

I. Course Description

Unrelenting technological progress demands entrepreneurs, executives, and managers to continually upgrade their skills in the pursuit of emerging opportunities. More often than not, this implies making competent decisions on domains that quickly drift into technology, computing, software, data, machine learning, or even innovations in the making — like the metaverse.

This course conceives **Digital Literacy as a contextual layer** that is necessary to operate in this increasingly technological world. Non-technical entrepreneurs, executives and managers do not need to be experts in all things "digital", but they need to have a sufficient understanding of technology concepts to be able to ask the pertinent questions from their technical counterparts, manage technical teams, and make appropriately informed decisions.

Gaining that articulated understanding of "digital" is the main objective of this course. To achieve it, we will

- examine the historical and technical context of digital technologies so that you can participate more fully in the discussion around new technologies and assess the implications of tech news
- become familiar with the concepts that underpin the latest uses of computers, data and software, empowering managers to engage with technical counterparts credibly and confidently
- shed light on the processes and tools employed throughout the process that builds digital solutions

- clarify what product managers do, walk through the details of managing the development of digital solutions, and equip executives with best practices to evaluate and improve their product
- prepare managers to identify, recruit, and nurture the technical talent they will need to source from today's highly competitive tech job market
- gain awareness of the next generation of technological breakthroughs and understand how those new technologies will shape future business environments

While targeted at **non-technical founders**, **executives** and **managers** who see the competitive advantage in managing and building digital solutions, this course is recommended for anyone who agrees that Digital Literacy is a prerequisite for remaining competitive in today's marketplace.

II. Course Materials

There are **no required textbooks** for this course. We will rely instead on a combination of **curated materials** for each session made available through **Courseworks**. These materials include — but are not limited to — texts (articles, book chapters, reports, white papers), videos, or podcasts. Technology changes fast, and the course keeps agile with this strategy. In addition, a list of suggested tech publications will be made available so you can keep up with these developments in real time during the term.

III. Course Roadmap

WEEK 1: A "SOFT" INTRODUCTION TO DIGITAL LITERACY

Introductions. Course outline and overview. Why this course? What is digital literacy? A broader definition of "digital". A blueprint for Digital Literacy: what, where, who. A practical example as a preview of how it all comes together.

WEEK 2: BACKEND (COMPUTING & DATA)

A soft introduction to computers, the internet and the cloud. Computing architectures: sequential v parallel v distributed computing. Could v on-premise computing. Data archi-

tectures: data lakes, data warehouses, data pipelines. Databases: relational v non-relational v graph databases. APIs. Evaluating data collection.

WEEK 3: FRONTEND

Tech stack to build user interfases (UIs): HTML, CSS, Java. Coding language wars. Mobile vs web apps. Ready to use UIs. User experience (UX): design process and useful principles.

WEEK 4: PROCESS TO DEVELOP DIGITAL SOLUTIONS

The development lifecycle of digital products. Philosophies and tools to manage the cycle. Version control. Working environments (development, QA, staging, production). Software testing. Deploying digital products.

WEEK 5: THE HUMAN LAYER

Managing technical teams. Data Engineering v Machine Learning Engineering v Software Engineering: what are these roles and what skills are required for each one of them? Data Science vs Analytics: what are these roles and what skills are required for each one of them? How to hire for these roles?

WEEK 6: EMERGING TRENDS

Description, state of the art and future trends in Machine Learning and Deep Learning (AI), the metaverse, web3, blockchain, [blank] as a service. Past and current trends in the tech job market.