



The Job Skills of 2022

The Fastest Growing Job Skills for Institutions

coursera

Introduction: The Job and Skills Landscape of 2022

In this eBook

In this eBook, we deep dive into the fastest growing digital and human skills on Coursera for 2022. We aim to provide an understanding of which skills are growing fastest among enterprise learners on the Coursera platform globally, signaling what has grown the most in the past year and what will likely continue to grow or stay popular in 2022. We consider the contexts driving the growth of these skills—from emerging technical roles to shifting cultural norms at work—and the learnings to be taken from their growth by both prospective job seekers and institutions.

Using data drawn from Coursera's 92 million learners, 2,000 business customers, 3,000 higher education institutions, and 230 government entities, diverse in both geography and industry, we provide the insights that institutions can use to help shape their response to labor market challenges like the pandemic, automation, and the Great Resignation.

Coursera's [Global Skills Report](#) Series and [Women and Skills Report](#) identify skill trends for diverse segments and populations—across countries, regions, industries, and demographics. In this eBook, we take a step back to look at the skills holistically across our enterprise learners and chart the map for institution-led skills development in 2022.

Where are we?

The job landscape is in the midst of a vast transformation.

A double disruption, led by automation and COVID-19, is reshaping work and the skills it requires across industries and markets. By 2025, [85 million jobs are estimated to be displaced by the rapid automation of jobs and 40% of core skills will change for workers](#)¹.

Yet research suggests that new roles will, in fact, outpace those lost to automation, with the global workforce being offered [149 million](#)² new technology-oriented jobs by 2025.

In short, the opportunity presented by technology to the global job landscape can offset risks of automation. But only if we scale skills development.

The challenge of meeting the demands from this fast-changing job market is only compounded by the Great Resignation creating countless vacancies in skilled roles. In 2021, job vacancies soared globally, hitting record highs in both [the UK](#)³ and [the US](#)⁴. One survey suggests that [69% of companies globally](#)⁵ are reporting a shortage of candidates.

With changing attitudes toward work, including reevaluations of work-life balance and simple desire for change, these pandemic-era trends mean that employers need to demonstrate that they can nurture new skills and provide benefits and progression to win talent. Accordingly, [35% of CEOs](#)⁶ say they've expanded benefits in the past year to strengthen their ability to retain talent.

The employee shortfall is driven not just by a lack of candidates, but a lack of skilled candidates. There is growing sentiment among both prospective employees and employers that today's candidates lack core skills. Entry-level job seekers concur—only [34% of US college students](#)⁷ feel they have the right knowledge and skills to join the workforce. In the UK, only [48% of employers](#)⁸ believe that students leave school with sufficient digital skills.

To build a better long-term future for the global workforce, we need to drive skills development at scale.

Managing this transition will require building new strategic frameworks that enable people to learn at every stage of their life—from schooling to careers, and any point in between. Institutions such as governments, businesses, and higher education have a critical role to play in bridging skills and jobs.

Where Are We Now—At a Glance

85 million

jobs to be replaced by automation by 2025¹

40%

of core skills anticipated to change for workers¹

69%

of companies globally reporting shortages of talent⁵

149 million

new technology-oriented jobs expected by 2025²

What Needs to Happen?

Individuals primarily rely on three key institutions—governments, higher education, and businesses—for their career development. These institutions have the capability to deliver the digital skills development that the global workforce requires.

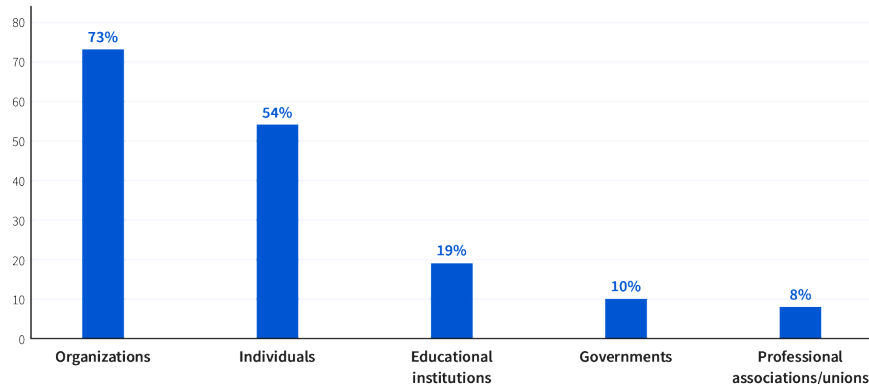
To meet the demands of a transitioning workforce, institutions must prioritize skills-based learning. Research suggests [62% of employers](#)⁹ have made a formal effort to move toward skills-first hiring. Leaders, including [Apple CEO Tim Cook](#)¹⁰, are rejecting outdated notions that aptitude is tied to a college degree. Instead of total years of experience, skills are fast becoming the preferred qualification for businesses seeking new hires.

Skills-based learning provides tailored learning experiences to meet the particular needs of individuals at a specific point in time. It delivers the very specific know-how needed to enter a new job or progress in a career. Relevancy and focus with regard to an individual learning journey are at the heart of skills-based learning. It contrasts with approaches such as open-learning models, in which learners take whichever courses they want, or guided-learning models that feature courses recommended by a specific team or peers.

A skills-first approach is one important way to tackle the shortfall emerging from our transforming job market.

Institutions are Key to Enabling the Digital Transition

Which entities in society do you think are primarily responsible for workforce development?



Source: [Deloitte Human Capital Trends \(2020\)](#)¹¹

Why Institutions Should Prioritize Skills



Governments must identify and train for the in-demand skills needed to future-proof their labor force and accelerate economic growth



Businesses must focus on upskilling solutions to accelerate transformation, retain top talent, and make employees successful



Higher education institutions must prepare students for successful job outcomes by prioritizing in-demand and human skills, job-based learning, and hands-on projects

The Fastest-Growing Skills of 2022

How we define the fastest growing skills

Our fastest growing skills of 2022 have been identified through a comparative evaluation of Coursera enterprise learner enrollments between 2020 and 2021. The fastest growing skills are those which have seen the biggest increase in their overall ranking in this time period, and therefore are expected to continue to grow or stay popular in 2022.

Digital skills

[UNESCO](#)¹² defines digital skills as “a range of abilities to use digital devices, communication applications, and networks to access and manage information.” Digital skills can incorporate everything from social media to cybersecurity, and are increasingly central to a thriving workforce, particularly as businesses have [accelerated](#)¹³ [digital transformation](#)¹⁴ in response to the pandemic. The term ‘digital skills’ is often used interchangeably with ‘technology’ and ‘technical’ skills.

Fastest Growing Digital Skills

Rank for skills of 2022	Skill name	Rank Change <i>(how many “slots” this skill moved up between start & end period)</i>
1	Product Design	+71
2	Plotting Data	+69
3	User Experience Design	+54
4	Statistical Visualization	+50
5	Security Strategy	+45
6	Cloud Infrastructure	+42
7	Supply Chain Systems	+41
8	Social Media	+41
9	Operations Management	+38
10	Business Process Management	+37

* Start period = October 1, 2019 - September 30, 2020
End period = October 1, 2020 - September 30, 2021

Trends in Digital Skills

The Experience Economy is Driving Demand for Product and User Experience Design

Product design tops our ranking of the fastest growing digital skills in 2021, with user experience design in third place. Both skills speak to the growing value that businesses are placing on digital interactions in 2021 and 2022 and the need to differentiate in saturated markets.

Several trends are likely accelerating the growth of product and user experience design skills. Digital experiences are key to driving revenue across industries, with e-commerce sales surpassing [4.2 trillion US dollars](#)¹⁵ worldwide across 2 billion consumers alongside a parallel reduction in physical [brick and mortar](#)¹⁶ [stores](#)¹⁷.

Meanwhile, the software market has become increasingly saturated, leading to a trend toward ‘product-led growth,’ which, according to [HubSpot](#)¹⁸, emphasizes “the product as the main driver to acquire, activate, and retain customers.” Product-led growth is being driven by a competitive and mature market for business software and end-users’ expectations of polished digital experiences at work. It is now beginning to displace marketing (which has dominated business strategies since the early 2000s) as the primary driver of business growth.

In this context, product and user experience design are becoming [crucial differentiators](#)¹⁹ for businesses in what is fast becoming a digital ‘experience economy.’ We expect them to remain vital into 2022 and beyond, as the pandemic, technological innovations, and an increasingly globalized market continue to accelerate digital transformations and the growth of e-commerce.

Digital Upskilling at Scale With Coursera

One mid-sized European IT company needed to rapidly upskill more than 1,000 employees, providing them with new digital expertise in areas such as User Interface, User Experience, Front- and Back-end Development, and Service. Using Coursera’s enterprise offering, Coursera for Business, they were able to deploy role-based training on each topic to groups of 200+ employees on a rolling three-month basis. The speed and scale of Coursera’s deployment meant they could rapidly arm the team with the new know-how needed to tackle the fast-changing challenges of today’s digital market.

Managing and Visualizing Data is Becoming a Business-Wide Skill Requirement

Several of the fastest growing digital skills identified in this study highlight the changing role of data in an organization. As digital transformation leads to increased volumes of workplace data, how that data is shared, presented, and analyzed is of growing importance to businesses. The growth of skills around plotting data (2nd place) and statistical visualization (4th place) speak to this trend, alongside skills which relate to the storage and management of data such as security strategy skills (5th place) and cloud infrastructure (6th place).

Whether it's HR identifying skill gaps or sales teams analyzing their performance, data is no longer the preserve of scientists and tech professionals. Data increasingly underpins work across sectors and job roles. Data today is both a driver of business strategies and, perhaps most importantly, a medium of communication.

In particular, analysts at Gartner have suggested that data storytelling, in which data is used to inform a narrative, whether that's sharing a business's performance indicators with investors or launching a new marketing campaign, will become the most widespread means of consuming business [intelligence by 2025](#)²⁰. The global data visualization market is also expected to continue to grow, reaching [\\$5.17bn USD by 2026](#)²¹.

With total global data production rocketing toward [175 zettabytes by 2025](#)²² (equal to 33 trillion gigabytes), and organizations seeking to untap value from that information, data-centric skills will likely only grow in demand.

How Coursera Can Help Upskill Your Organization's Digital Skills

Coursera provides **92 million learners** worldwide with the skills needed to build successful careers.

Coursera has a comprehensive set of tailor-made courses for any competency level across all digital skills, including those focused on product and user experience design, such as:



Product Design:

The [Google UX design](#) course offers professional training by Google to prepare individuals for a career in the high-growth field of UX design, with no experience or degree required.

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Data:

The [Data & Analytics Academy](#) provides a complete skill development solution for organizations looking to upskill teams of any level in all data-driven skills, from data processing and visualization through to applied machine learning.

Human Skills

Institutions often struggle when it comes to defining human skills, sometimes known as ‘soft’ skills. Yet they are vital for organizational success. Human skills are non-technical but no less valuable, or easier to learn, than ‘hard’ skills.

They include a range of cognitive, social, and emotional skills, such as creativity, critical thinking, information interpretation, decision-making, and communication. Certain emotional skills may align with what are elsewhere understood as behavioral traits, such as resilience, empathy, and emotional intelligence—though by treating these traits as skills, we emphasize that they can be learned.

Human skills aren’t built in silos. Improving our human skills can complement digital skills or other ‘hard’ skills and vice versa. We need human skills to effectively and ethically make use of digital skills, as well as to create the frameworks and technologies through which digital skills emerge and evolve. Likewise, digital skills can enhance our human skills. While “human skills” may seem like an obvious term (of course, we’re human!), when placed in dialogue with technology, it acquires deeper meaning.

Fastest Growing Human Skills

Rank for skills of 2022	Skill name	Rank Change (how many “slots” this skill moved up from 2020 to 2021*)
1	Communication	+46
2	Change Management	+36
3	Professional Development	+21
4	Storytelling	+18
5	Planning	+17
6	Influencing	+17
7	Decision Making	+15
8	Problem Solving	+11
9	People Development	+10
10	Human Resources	+9

* Start period = October 1, 2019 - September 30, 2020
End period = October 1, 2020 - September 30, 2021

Three factors, in particular, appear to be **accelerating the demand** for these specific skills across the job market.

- 01.** The pandemic has increased a drive towards more empathetic workspaces, with as many as [two in five](#)²³ reporting a decline in mental health since the COVID-19 pandemic began. In this context, communication skills are crucial for employees of every level to build a culture of care in the workplace.
- 02.** Remote and hybrid working continues globally, with Gartner estimating [53% of workers will be remote in the US, 52% in the UK, and 28% in China](#)²⁴. This new way of working, which cannot rely on the physical office bringing people together, requires a more intentional approach to communication and collaboration.
- 03.** The automation of repetitive technical jobs means that greater value is being placed on those more creative skills, like complex problem solving and storytelling, which reveal the limitations of machines. Developing skills in these areas, which any form of artificial intelligence cannot soon replace, is important now and provides a degree of future-proofing.

In the Remote Work Age, Communication, Storytelling, and Problem Solving are Vital

More effective sharing of information between people is at the heart of many of the fastest growing human skills, including communication (1st place), storytelling (4th place), and problem solving (8th place). These often relate to digital skill trends, particularly the emphasis on the need for clear and compelling narratives seen in both data visualization (digital) and storytelling (human).

Lastly, storytelling has become a key ingredient in modern marketing. The desire to create engagement between brands and their customers through stories has come to be seen as a powerful advertising technique. According to [The Rise of Storytelling as the New Marketing](#)²⁵, “Content that may elicit empathy and educate those who view or hear it will be more desired than traditional advertising techniques in order to pique people’s interest in purchasing certain goods.”

As each of these trends continue into 2022 and beyond, likely accelerated by a demand for more compassionate workplace cultures, flexible working and technological innovation, the urgent demand for human skills centred around communication, storytelling, and problem solving is only likely to grow.

Morocco Bolsters Human Skills in Higher Education With Coursera

Morocco's Ministry of National Education and Vocational Training recently launched an initiative to enhance student employability and cut drop-out rates by switching public higher education institutions to a four-year bachelor system. The new curriculum kicks off with a first-year focus on language and human skills like teamwork, time management, and problem-solving. To launch this skills-driven curriculum, the Ministry has encouraged 16 higher education institutions across the country to use Coursera, which had already proven a popular choice with students using the Campus Response Initiative during the pandemic. As a result of this skills-centric and digital approach, over 15,000 students have already enrolled in more than 100,000 courses, with 320,000 students expected to learn on Coursera in the next four years.

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Skills Development is a Lifelong Mission

According to Gartner, [58% of the workforce](#)²⁶ need new skill sets to do their jobs successfully. The study also notes that one in three skills relevant in 2017 for an IT, finance, or sales professional are today obsolete. This trend is backed up by research from Deloitte, which suggests that skills have an average shelf-life of [less than five years](#)²⁷. Put simply, skills development is increasingly urgent.

Another major trend in human skills is the growth of skills which enable others to develop or retrain. This is evidenced in the growth of human skills such as change management (2nd place), professional development (3rd place), people development (9th place), and human resources (10th place). As the broader need for reskilling occurs, the parallel requirement to provide skilled guidance to employees and managers assumes equal importance.

No single skill or course can fuel a lifetime career. In the new world of work, institutions need to promote a mindset of lifelong learning. Businesses recognize this need, with the World Economic Forum finding that [95% of companies in the US and 98% in the UK](#)²⁸ plan to retrain existing employees in response to shifting skill needs. And individuals feel this, too: 73% of US adults think of themselves as life-long learners according to a [Pew Research study](#)²⁹.

Investing in reskilling teams with world-class content and hands-on learning can boost retainment and create more attractive workplaces for talent, particularly when just [34% of employees are happy or satisfied](#)³⁰ with their organization's investment in improving their skills. As the fallout from the Great Resignation continues to put pressure on securing new hires and retaining existing employees, an evidence-backed commitment to developing skills will be essential for businesses looking to build thriving teams.

Building In-Demand Human Skills With Coursera's Leadership Academy

From change management to emotional intelligence, business must provide employees with a range of vital human skills in order to adapt, lead, and innovate in today's rapidly changing world. With job-based programs and unrivaled teaching quality across 42 skill sets, the [Leadership Academy from Coursera](#) is designed to provide every organization with the human skills necessary to flourish in the future of work.

Conclusion

How can we prepare for 2022 and beyond?

We're on the cusp of a more equitable world of work, built on a foundation of life-long learning. To make progress towards this vision, institutions should act quickly.

Technology is enabling us to deliver unparalleled educational experiences to anyone, anywhere, across the globe. Simultaneously, the hyper-growth of remote working enables those same people to access high-quality jobs regardless of city, state, or even national boundaries.

The future is not without challenges. Risks to the economy and personal success come from growing automation, rapidly-changing skill requirements, and labor shortfalls. Embracing technology and its ability to democratize access to new roles, and nurture the new digital and human skills that underpin those careers, will be vital in overcoming these risks.

To deliver on the promise of a better future of work, public-private partnerships that create pathways, from skills development to job opportunities, will be essential. From digital expertise in data visualization to human-centric skills like storytelling, institutions should act swiftly to provide people everywhere with the job-ready knowledge they need to succeed in a changing world.

Technical Appendix

Overview

The Job Skills of 2022 Report assesses the skills demand and online learning trends among Coursera for Business learners globally. Building this report involves data from several components:

1. The Coursera Skills Graph
2. Growing Skills
3. Share of Enrollments by Business Line

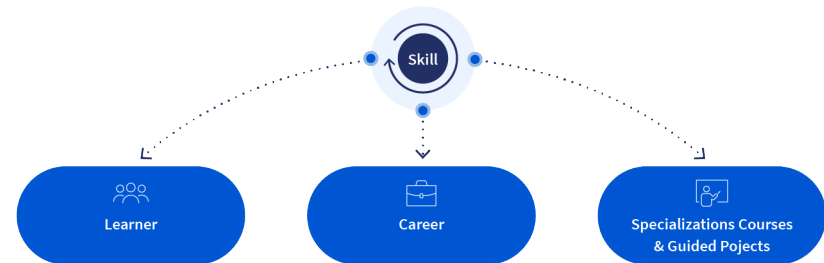
The Coursera Skills Graph

The Coursera Skills Graph maps the connections among skills, content, careers, and learners on the Coursera platform.

For the Job Skills of 2022 Report, we leverage the following parts of the Skills Graph:

- **Skill to skill:** Describes the connections among skills and generates a skills taxonomy where broad, higher-level skills are parents of more granular, lower-level skills.
- **Skill to content:** Maps skills to the Coursera courses that teach them.

Figure 1: The Coursera Skills Graph



Relationships Among Skills

We assemble a vast skills taxonomy of over 38,000 skills in the subject areas of business, technology, and data science through a combination of open-source taxonomies like Wikipedia and crowdsourcing from Coursera educators and learners.

Guided by open-source data combined with knowledge from industry experts, we assemble a structured taxonomy that connects Coursera domains to the set of skills within them, ranging from competencies (granularity 2 skills) down to very specific skills (granularity 3+ skills). For the Job Skills of 2022 Report, we focus on measuring performance at the granularities 2 and 3 level.

To illustrate the mapping among domains, competencies, and skills, Figure 2 shows a subsection of Coursera’s Skills Taxonomy.

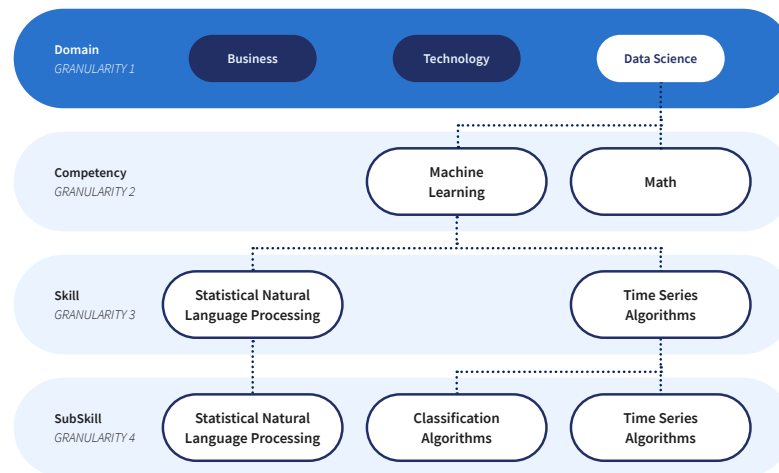
Relationships between Skills and Content

The skills in the Coursera Skills Taxonomy are mapped to the courses that teach them using a machine learning model trained on a data set of university instructor, subject matter expert, and learner-labeled skill-to-course mappings. Features of the model include occurrence counts (e.g. in the lecture transcripts, assignments, and course descriptions), text embeddings, and Coursera search data.

With over 2,500 courses in business, technology, and data science from top-ranked university and industry partners around the world, our catalog spans the wide variety of skills that are relevant to this report.

For each skill-course pair, this machine learning model outputs a score that captures how likely it is that the skill is taught in the course. To define the set of skill-to-course tags that power this report, we tune a cutoff threshold based on expert feedback from our content strategy team.

Figure 2: A portion of the Coursera Skills Taxonomy



Growing Skills

To determine which skills are growing, we study two year-long periods:

- October 1, 2019 through September 30, 2020 (the “start period”)
- October 1, 2020 through September 30, 2021 (the “end period”)

For each of the two periods, we measure each skill’s popularity by calculating the share of Coursera for Business enrollments in content that teaches the skill.

We then calculate growth as follows:

1. For each time period, rank each skill by its enrollment share in descending order (say skill S is ranked 70th in the start period and 50th in the end period)
2. Compute the “rank improvement” of skill S by comparing the start period rank and the end period rank (skill S rank improvement is $70 - 50 = 20$)
3. Highest-growing skills are the skills with the largest rank improvement (if skill S2 has rank improvement of 25 slots, it grew more than skill S1 that saw a rank improvement of 20)

We consider the same set of skills in both the start and end period: all granularity 2 and granularity 3 skills in Coursera’s clean skill taxonomy, which spans the business, technology, and data science domains. The notion of whether a course teaches a skill is derived from the Coursera Skills graph, described earlier in this appendix.

About the Data Science Team at Coursera

The Data Science team at Coursera develops the statistical and machine learning models that power a personalized learning experience, leads the experimentation and inference that informs Coursera's strategy, and builds the products to access data for the company's university partners and enterprise customers.

The team has ideated and launched learner and enterprise-facing products powered by machine learning that have been covered in [TechCrunch](#), [Harvard Business Review](#), [MIT Technology Review](#), and the [World Economic Forum](#). See more of their work on the [Coursera Data Blog](#).

The Data Scientists behind the Global Skills Report

Allie Rogers is a Senior Data Scientist working on Coursera's Skills Graph and related applications. Her recent focus has been on building content recommender systems that help learners reach valuable career and skill goals. Allie holds a Masters in Computer Science from University of Illinois at Urbana-Champaign and a BA in Economics from Princeton University.

Eric Karsten is a Data Scientist at Coursera. He works within the Insights and Research vertical, partnering with external university and NGO researchers to use Coursera's data to answer valuable questions about skills and labor markets for the world. He also works with the skills team at Coursera to guide decisions about Coursera's skills products. His work has been included in publications from the World Economic Forum. Eric holds an MA in Economics and a BA in mathematics, both from the University of Chicago.

Endnotes

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