

RESULTS OF THE COURSERA FOR GOVERNMENTS PILOT IN ESTONIA



To mitigate the effects of the COVID-19 crisis in 2020, the Estonian government in cooperation with the online learning platform **Coursera** offered free access to online courses and certificates on Coursera to its citizens.

Access was firstly provided to the unemployed and groups in risk of unemployment (in July) and later (in August) to all Estonians. People had the

opportunity to access more than 4000 courses on Coursera and study from July or August until the end of 2020.

The pilot programme was managed by the Estonian Ministry of Social Affairs, the Estonian Ministry of Education and Research, the Estonian Ministry of Economic Affairs and Communications and the Estonian Unemployment Insurance Fund.

To reach people, direct e-mails were sent to the unemployed, professional unions and employers, who received the COVID-19 temporary employment subsidy. National media and social media were used to disseminate information about the courses in several communication waves. Social media posts about the courses were very popular and widely shared.

See examples of coverage here:

- <https://www.hm.ee/en/news/people-who-have-been-negatively-affected-covid-19-health-crisis-get-opportunity-develop-their>
- <https://www.facebook.com/Sotsiaalministeerium/photos/a.373038989375772/3585537484792557/>
- <https://www.facebook.com/Sotsiaalministeerium/posts/3419154528097521>
- <https://www.err.ee/1124861/tootutele-pakutud-tasuta-kursused-huvitasid-vaheleid>

INTEREST TOWARDS THE COURSES & LEARNERS' PROFILE



Figure 1. Facebook post about Coursera

All together **15 963** Estonians i.e. 1,2%¹ of the Estonian population registered to access the courses (hereafter *registered learners*). **11 773** people registered to at least 1 course. Out of registered learners, **22,4%** (3557) were unemployed.

To learn more about registered learners' profile, **we compared their socio-demographic profile to the national population** (data from the *Estonian Labour market Survey* from the 2nd half of 2020).

As presented in Table 1:

- Majority of registered learners (64,6%) were **female**, this trend is similar to life-long learning patterns.
- Among age groups, **younger people** aged 25-34 were a large group of learners (42,7%), also the 35-44 age group. Registered learners over the age of 55 made up only 3% of registered learners, this may be due to the language barrier or internet usage skills.
- More than half of registered learners had **higher education** (65,2%), those who finished at least one course even 73%. In the national population, the percentage of highly educated people was lower (30,6%). There were also less people without any professional among registered learners in Coursera (21,3%) than in the national population (33,4%).
- Majority of registered learners were native Estonian speakers (68,6%). Compared to the national population, there were **more learners with another mother tongue** than Estonian or Russian (6% of registered learners), most likely foreigners living in Estonia.
- Over half of registered learners (58,7%) lived in **Tallinn and in Harjumaa** (with Tallinn 72,4%), the national average is 45,8%. Overall, the registered learners mostly came from either Tallinn or Tartu. However, these cities also have large numbers of young professionals.

Table 1. The sociodemographic profile of registered learners on Coursera and the Estonian population.

	Registered Coursera learners	Registered Coursera learners, %	National population (age 15-74) %
GENDER	15 963	100,0%	100% (N=984 200)
Female	10 312	64,6%	51,2%
Male	5 509	34,5%	48,8%

¹ Data from 2021, National Statistics Estonia, <https://www.stat.ee/et/avasta-statistikat/valdkonnad/rahvastik>

Unspecified	142	0,9%	
AGE		100%	100%
15-24	2 496	15,6%	12,8%
25-34	6 814	42,7%	18,6%
35-44	4 410	27,6%	18,9%
45-54	1 726	10,8%	17,8%
55-64	463	2,9%	17,6%
65-74	50	0,3%	14,2%
75+	4	0,0%	
EDUCATION LEVEL		100%	100%
no professional education	3 400	21,3%	33,4%
Short-cycle tertiary education	1 461	9,2%	19,1%
Vocational education	691	4,3%	16,9%
Higher education	10 411	65,2%	30,6%
NATIVE LANGUAGE		100%	100%
Estonian	10 952	68,6%	66,7%
Russian	4 049	25,4%	31,4%
Other	962	6,0%	1,9%
PLACE OF RESIDENCE IN ESTONIA		100%	100%
Harjumaa (except Tallinn)	2 190	13,7%	12,3%
Tallinn	9 375	58,7%	33,5%
Hiiumaa	49	0,3%	0,8%
Ida-Virumaa	674	4,2%	10,3%
Jõgevamaa	74	0,5%	2,1%
Järvamaa	86	0,5%	2,3%
Lääne-Virumaa	243	1,5%	1,5%
Läänemaa	88	0,6%	4,4%
Põlvamaa	66	0,4%	1,9%
Pärnumaa	367	2,3%	6,4%
Raplamaa	180	1,1%	2,5%
Saaremaa	151	1,0%	2,5%

Tartumaa	2 017	12,6%	11,2%
Valgamaa	78	0,5%	2,1%
Viljandimaa	204	1,3%	3,5%
Võrumaa	121	0,8%	2,7%

- **22,4% of registered learners were unemployed compared to the national average of 5.4%.** This is most likely due to targeting, as the courses were firstly offered to the unemployed or people in risk of unemployment. Compared to participation rates in lifelong learning, **there were more than three times as many unemployed as in life-long learning on average.**
- The highest amount of registered learners came from a **field of activities of households as employers etc** (16,8%) and from the **information and communication field** (14,8%), the field of **financial and insurance activities** was also overrepresented compared to the national average. Compared to the national population, several **fields affected by the corona crisis** had a high number of employees participating in courses. For example, **the fields of accommodation and food services and arts entertainment and recreation** made up 5,8% (vs 3,3% of national population) and 5,8% (vs. 2,7% of national population of registered learners respectively). Courses were also popular among **health and social workers, educational workers and the public administration.** More detailed overview is presented in Table 2.
- **Table 2. Learners' most recent field of employment: registered learners on Coursera vs the employed national population**

THE FIELD OF MOST RECENT EMPLOYER (of the learner)	Registered Coursera learners	Registered Coursera learners %	Employed national population (age 15-74) %
Agriculture, forestry and fishing	186	1,2%	3,0%
Mining and quarrying	41	0,3%	0,7%
Manufacturing	944	5,9%	18,3%
Electricity, gas, steam and air conditioning supply	236	1,5%	0,5%
Water supply; sewerage, waste management and remediation activities	41	0,3%	0,6%
Construction	545	3,4%	9,4%
Wholesale and retail trade; repair of motor vehicles and motorcycles	1 089	6,8%	13,1%
Transportation and storage	589	3,7%	6,6%
Accommodation and food service activities	931	5,8%	3,3%
Information and communication	2 368	14,8%	4,8%
Financial and insurance activities	1 260	7,9%	1,5%

Real estate activities	162	1,0%	1,6%
Professional, scientific and technical activities	624	3,9%	4,5%
Administrative and support service activities	222	1,4%	3,6%
Public administration and defence; compulsory social security	1 016	6,4%	7,0%
Education	1 229	7,7%	9,8%
Human health and social work activities	872	5,5%	6,3%
Arts, entertainment and recreation	921	5,8%	2,7%
Activities of households as employers; undifferentiated goods and services producing activities for households for own use	2 680	16,8%	2,2%
Other service activities	7	0,0%	0,0%
Kokku	15 963	100,0	100,0

- When comparing registered learners of Coursera with the **profile of Estonians participating in life-long learning**, some trends appear. Similarly to Coursera learners, participation in life-long learning was higher among **women**. However, **participation in lifelong learning is more balanced in terms of age, education level and place of residence**. Significantly more older middle aged people participated in lifelong learning than in Coursera (in the age group 55-64 four times more), this is also true for people with vocational education level.
- As people often participate in lifelong learning through their employer, **participation rates for the unemployed were lower in lifelong learning than in Coursera** (7% of participants vs 22,3% of registered learners on Coursera). This may also be because the Coursera pilot was directly targeted towards the unemployed.
- Compared to registered unemployed, the **unemployed Coursera learners were more often women, young people, highly educated and from the Harjumaa region**. While 22% of registered unemployed were over the age of 55, only 4% of the unemployed Coursera learners were over 55 years old.
- **17,5%** of registered learners **had used Coursera before**.

COURSES & STATISTICS

To learn more about study preferences, users' registration data was tied to the Coursera user database. In the interest of validity, possible double or otherwise questionable registrations were removed. Courses without a domain were also removed. Overall, the remaining database covers 11 669 people and 3139 courses. Due to such corrections, strong conclusions based on this data should not be drawn.

MOST POPULAR COURSES & DOMAINS

Most popular domains were business and computer science. At least about half of the participants selected a business course and at least one third of all learners picked a course on computer science (see Table 4).

Table 4. Most popular course domains (number of participants & percentage)

KOKKU	11 669	100,00%
Business	6 151	52,71%
Computer Science	3 988	34,18%
Life Sciences (incl Health)	2 865	24,55%
Data Science	2 223	19,05%
Personal Development	2 562	21,96%
Language Learning	2 452	21,01%
Arts and Humanities	1 646	14,11%
Information Technology	1 619	13,87%
Social Sciences	1 251	10,72%
Physical Science and Engineering	815	6,98%
Math and Logic	255	2,19%

Table 5. 25 most popular Coursera courses, number of participants & %

Programming for Everybody (Getting Started with Python)	Computer Science	1 191	17,89%
The Science of Well-Being	Personal Development	1 042	15,66%
Excel Skills for Business: Essentials	Business	970	14,57%
Learning How to Learn: Powerful mental tools to help you master tough subjects	Personal Development	906	13,61%
Work Smarter, Not Harder: Time Management for Personal & Professional Productivity	Business	713	10,71%
Introduction to Psychology	Life Sciences (incl Health)	653	9,81%
Write Professional Emails in English	Language Learning	614	9,22%
Marketing in a Digital World	Business	554	8,32%
Programming Foundations with JavaScript, HTML and CSS	Computer Science	500	7,51%
Social Psychology	Life Sciences (incl Health)	497	7,47%
Crash Course on Python	Information Technology	471	7,08%
Speak English Professionally: In Person, Online & On the Phone	Language Learning	429	6,45%
Technical Support Fundamentals	Information Technology	403	6,05%
Introduction to Search Engine Optimization	Business	403	6,05%
Project Management: The Basics for Success	Business	401	6,02%
Initiating and Planning Projects	Business	397	5,96%
Influencing People	Business	349	5,24%
Python Data Structures	Computer Science	338	5,08%
Excel Skills for Business: Intermediate I	Business	338	5,08%
Introduction to Data Analysis Using Excel	Data Science	337	5,06%
Introduction to HTML5	Computer Science	328	4,93%
SQL for Data Science	Data Science	325	4,88%
Better Business Writing in English	Language Learning	324	4,87%
Positive Psychology	Life Sciences (incl Health)	322	4,84%
Introduction to Social Media Marketing	Business	318	4,78%

Table 6. 5 most popular courses in each domain & % of participants

Arts and Humanities	Основы фотографии	35,09%
	Cameras, Exposure, and Photography	31,17%
	Creative Writing: The Craft of Plot	18,09%
	Basic Elements of Design: Design Principles and Software Overview	16,87%
	Introduction to Philosophy	12,59%

Business	Excel Skills for Business: Essentials	40,52%
	Work Smarter, Not Harder: Time Management for Personal & Professional Productivity	29,78%
	Marketing in a Digital World	23,14%
	Introduction to Search Engine Optimization	16,83%
	Project Management: The Basics for Success	16,75%
Computer Science	Programming for Everybody (Getting Started with Python)	62,78%
	Programming Foundations with JavaScript, HTML and CSS	26,36%
	Python Data Structures	17,82%
	Introduction to HTML5	17,29%
	Introduction to Web Development	14,65%
Data Science	Introduction to Data Analysis Using Excel	29,54%
	SQL for Data Science	28,48%
	The Data Scientist's Toolbox	27,26%
	Neural Networks and Deep Learning	18,14%
	Business Metrics for Data-Driven Companies	18,14%
Information Technology	Crash Course on Python	42,55%
	Technical Support Fundamentals	36,40%
	AWS Fundamentals: Going Cloud-Native	17,71%
	Palo Alto Networks Academy Cybersecurity Foundation	17,25%
	Introduction to Git and GitHub	16,53%
Language Learning	Write Professional Emails in English	40,72%
	Speak English Professionally: In Person, Online & On the Phone	28,45%
	Better Business Writing in English	21,49%
	Business English: Networking	19,56%
	Spanish Vocabulary: Meeting People	16,31%
Life Sciences (incl Health)	Introduction to Psychology	43,80%
	Social Psychology	33,33%
	Positive Psychology	21,60%
	Science of Exercise	18,44%
	Positive Psychiatry and Mental Health	14,96%
Math and Logic	Data Science Math Skills	44,33%
	First Steps in Linear Algebra for Machine Learning	32,47%
	Комбинаторика для начинающих	15,46%
	Теория игр (Game Theory)	10,82%
	Introduction to Calculus	10,82%
Personal Development	The Science of Well-Being	52,31%
	Learning How to Learn: Powerful mental tools to help you master tough subjects	45,48%
	Finding Purpose and Meaning In Life: Living for What Matters Most	14,26%
	Mindshift: Break Through Obstacles to Learning and Discover Your Hidden Potential	10,54%
	Presentation skills: Designing Presentation Slides	8,33%
Physical Science and Engineering	Introduction to Sustainability	24,44%
	Intro to Digital Manufacturing with Autodesk Fusion 360	24,44%
	Quantitative Methods	22,22%
	Greening the Economy: Sustainable Cities	20,00%
	Fundamentals of GIS	20,00%

Social Sciences	Model Thinking	32,34%
	Teach English Now! Foundational Principles	25,37%
	Critical Thinking Skills for University Success	18,16%
	Психология коммуникации	15,92%
	Understanding International Relations Theory	13,18%

PARTICIPANTS MOST RECENT FIELD OF EMPLOYMENT & STUDY CHOICES

Data here is presented only for people aged 25-64 years, as they form the main employed group in the population.

As seen in Figure 1, the most diverse interest towards different course domains is shown by people in the field of activities of households as employers etc. People from fields of information and communication field, financial and insurance activities education, and arts entertainment and recreation also selected from a wider variety of course domains.

Figure 1. Course domain popularity by participants' most recent field of employment. The colors highlight popularity within a domain.

	Business	Computer Science	Life Sciences (incl Health)	Data Science	Personal Development	Language Learning	Arts and Humanities	Information Technology	Social Sciences	Physical Science and Engineering	Math and Logic
Public administration and defence; compulsory social security	392	211	190	173	200	153	84	89	117	55	9
Construction	164	109	59	49	57	66	47	29	21	58	6
Electricity, gas, steam and air conditioning supply	86	69	31	43	32	35	15	35	19	24	5
Financial and insurance activities	541	264	177	232	208	218	96	111	85	39	20
Administrative and support service activities	80	42	36	33	34	42	28	19	21	9	3
Education	316	177	211	114	237	156	133	60	164	51	19
Wholesale and retail trade; repair of motor vehicles and motorcycles	423	189	145	106	136	164	99	50	52	27	10
Information and communication	775	843	266	409	290	239	124	428	116	70	47
Real estate activities	67	30	22	20	20	30	12	10	14	4	2
Arts, entertainment and recreation	307	178	144	84	148	104	153	43	67	38	5
Professional, scientific and technical activities	211	195	92	127	91	73	49	77	40	61	13
Accommodation and food service activities	259	129	122	60	107	94	62	41	36	13	7
Other activity	3	1	2	1		1	1	1	1		
Other service activities	853	422	362	222	344	383	239	179	146	88	39
Mining and quarrying	15	9	4	5	3	9	3	4	1	5	
Agriculture, forestry and fishing	52	36	30	22	23	26	9	17	6	13	2
Human health and social work activities	195	100	271	60	134	99	65	30	45	25	4
Manufacturing	340	219	123	107	110	138	59	72	50	61	11
Water supply; sewerage, waste management and remediation activities	13	10	5	3	6	6	4	2	5	9	1
Transportation and storage	208	116	69	64	64	97	48	54	33	24	14

FINISHING COURSES

At least 3988 people finished at least 1 course (33% of learners), the profile of such learners was not very different from all learners. However, compared to all registered learners, there was a bit more of people with higher education (73% vs 68,1%) and the unemployed (25,8% vs 23,6%).

Courses with the highest amounts of graduates are presented in Table 7. The top 25 were pretty equally divided between business domain courses, IT, computer and data courses and then personal development, life sciences and language courses.

Table 7. 25 most often finished courses on Coursera

Programming for Everybody (Getting Started with Python)	Computer Science	308	25.3%
Work Smarter, Not Harder: Time Management for Personal & Professional Productivity	Business	268	36.6%
Excel Skills for Business: Essentials	Business	240	24.2%
Learning How to Learn: Powerful mental tools to help you master tough subjects	Personal Development	239	25.7%
The Science of Well-Being	Personal Development	152	14.3%
Python Data Structures	Computer Science	139	38.3%
Introduction to Psychology	Life Sciences (incl Health)	135	18.5%
Technical Support Fundamentals	Information Technology	126	29.8%
Excel Skills for Business: Intermediate I	Business	121	34.6%
Initiating and Planning Projects	Business	96	23.0%
Project Management: The Basics for Success	Business	92	21.6%
Introduction to Search Engine Optimization	Business	89	21.2%
Marketing in a Digital World	Business	87	15.2%
Using Python to Access Web Data	Computer Science	85	30.2%
Positive Psychology	Life Sciences (incl Health)	79	23.9%
Write Professional Emails in English	Language Learning	78	12.3%
AI For Everyone	Business	78	27.0%
Introduction to HTML5	Computer Science	75	21.4%
Programming Foundations with JavaScript, HTML and CSS	Computer Science	73	14.0%
Crash Course on Python	Information Technology	70	14.4%
AWS Fundamentals: Going Cloud-Native	Information Technology	69	33.2%

Introduction to Data Analysis Using Excel	Data Science	67	19.4%
Finding Purpose and Meaning In Life: Living for What Matters Most	Personal Development	65	22.0%
Excel Skills for Business: Intermediate II	Business	62	24.9%
The Bits and Bytes of Computer Networking	Information Technology	62	37.8%

This analysis was put together by the analysis department of the Estonian Ministry of Social Affairs. For further enquiries please contact the ministry at info@sm.ee.