CERTIFICATION

Project Number:	23/115
Education Provider:	Google
Courses:	Google Advanced Data Analytics Professional Certificate Google Business Intelligence Professional Certificate Google Cybersecurity Professional Certificate

To whom it may concern
All information in this report was provided by Coursera and assessed by the FIBAA expert panel. However, some of the information had to be redacted for one of the following reasons

- Material/information prohibited from disclosing as a public company under U.S. securities laws
- Proprietary information about internal processes not publicly known
- Level of detail that Coursera generally does not share with the public (e.g. expressly naming internal tools to support compliance processes). Please see https://www.coursera.org/about/privacy for relevant public information
- Confidential personal information

For information about redactions, please contact: PR@coursera.org

Panel Recommendation for the FIBAA Accreditation and Certification Committee

14th Meeting on 14 June 2024

CERTIFICATION

Project Number:	23/115
Platform Provider:	Coursera Inc.
Education Provider:	Google
Courses:	Google Advanced Data Analytics Professional Certificate Google Business Intelligence Professional Certificate Google Cybersecurity Professional Certificate

The FIBAA Accreditation and Certification Committee takes the following decision:

Certification with conditions:
According to § 7 (2) in conjunction with § 10 (1) of the "Special Conditions for awarding the FIBAA Quality Seal for Continuing Education Courses", the continuing education course(s) are certified with two respectively three conditions.

Period of Certification: June 14, 2024 – June 13, 2029

The FIBAA Quality Seal is awarded.

Condition 1

Coursera and Google provide a deduction of the intended EQF levels of each of the respective courses.

The condition is fulfilled.
The decision was made by the FIBAA Accreditation and Certification Committee on June 05, 2025

Condition 2

Coursera and Google publish more detailed information about recommended previous knowledge on the course pages (available to interested learners) of the *Google Advanced Data Analytics Professional Certificate* and the *Google Business Intelligence Professional Certificate*.

The condition is fulfilled.
The decision was made by the FIBAA Accreditation and Certification Committee on June 05, 2025

Condition 3

Coursera and Google

a) provide Certificate supplements for each Google Professional Certificate that document the courses' associated qualifications in a transparent and coherent manner, and
b) implement a learner workload evaluation system which includes a systematic control loop from the learner/completer survey to the analysis of the results and the taking of appropriate measures.

The condition is fulfilled.
The decision was made by the FIBAA Accreditation and Certification Committee on June 05, 2025

Proof of meeting these conditions is to be supplied by March 13, 2025.

All conditions are fulfilled.
The decision was made by the FIBAA Accreditation and Certification Committee on June 05, 2025

Assessment Report

Host of educational content:

Coursera Inc.

Content partner: Google

Continuing Education Courses:

- Google Advanced Data Analytics Professional Certificate
- Google Business Intelligence Professional Certificate
- Google Cybersecurity Professional Certificate

Brief description of the continuing education courses:

Coursera Inc.[1] hosts a portfolio of "Professional Certificates" from Google, IBM, Intuit, Meta, Salesforce, and other industry leaders as MOOCs (Massive open online courses). The Professional Certificates are issued after completing the respective online course which is designed to help develop the skills needed to land entry-level jobs in business, IT, data science, and design.

Google Professional Certificate Courses[2] belong to this portfolio of Professional Certificates and are offered to individuals worldwide who seek to reskill to move into emerging digital careers. The three Google Professional Certificate Courses of this certification process comprise a workload of 80 hours (Business Intelligence), 171 hours (Cybersecurity), and 205 hours (Advanced Data Analytics), thus also representing "microcredentials" as small learning entities. With FIBAA certification, Coursera proposes ECTS crediting recommendation following the "Recognition of prior learning" as outlined in the ECTS Users' Guide.[3]

All Google Professional Certificate Courses are based on a methodological approach provided by Coursera and a content conceived, produced, and instructed by Google.

Date of opening of the procedure:

January 12, 2024

Date of filing the self-assessment report:

January 23, 2024

Date of online assessment conference:

March 19-21, 2024

Type of certification:

Initial Certification

Mode of study:

Online, Part-time

Initial start of the Courses:

Google Advanced Data Analytics Professional Certificate: April 2023
Google Business Intelligence Professional Certificate: April 2023
Google Cybersecurity Professional Certificate: May 2023

Start of course cycle: continuous

Capacity load: not limited

[1] Referred to as "Coursera" in this report (except for summary chapter)

[2] Referred to as "programs" by Coursera, for terminology see glossary at the end of this report

[3] ECTS Users' guide 2015, page 46

Learner intake[4] by March 2024:

- Google Advanced Data Analytics Professional Certificate: [redacted] learners
- Google Business Intelligence Professional Certificate: [redacted] learners
- Google Cybersecurity Professional Certificate: [redacted] learners

No. of ECTS credits assigned to the Course:

- Google Advanced Data Analytics Professional Certificate: 8 ECTS credits
- Google Business Intelligence Professional Certificate: 3 ECTS credits
- Google Cybersecurity Professional Certificate: 7 ECTS credits

Hours (workload) per credit:

25

Project Manager:

Christiane Butler

Panel Members:[5]

Prof. Dr. Peter Heusch
Stuttgart University of Technology
Professor of Fundamentals of Computer Science

Ilja Kogan
Wayfair GmbH, Berlin, Germany
Senior Product Manager

Peter Michael Schroeder
Berlin University of Economics and Law
Student Business Informatics (B.Sc.)

Prof. Dr. Vladimir Stantchev
SRH Berlin University of Applied Sciences
Professor of Business Informatics, Managing Director of the Institute for Business Informatics

[4] Enrollment numbers are material nonpublic information that are prohibited from disclosing as a public company under U.S. securities laws

[5] The panel is presented in alphabetical order

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Summary

The panels' assessment takes into account the self-assessment and the results of the online assessment conference as well as the statement of Coursera Inc. to the assessment report dated May 6, 2024.

Google Advanced Data Analytics Professional Certificate, Google Business Intelligence Professional Certificate, and Google Cybersecurity Professional Certificate of Coursera Inc. fulfil (with few exceptions) the FIBAA quality requirements for certified continuing education courses and can be certified by the Foundation for International Business Administration Accreditation (FIBAA) under two respectively three conditions. They may be recognized as modules within further educational programs and provide an ECTS credit recommendation.

The panel members identify need for action regarding the following aspects: Logic and transparency of course objectives (deduction of EQF levels) (see chapter 1.1); Focus on the target group (transparency of recommended prior knowledge) (see chapter 2.1), and Application of the "European Credit Transfer and Accumulation System" (ECTS) and modularization (Certificate Supplements and learner workload evaluation) (see chapter 3.1). Therefore, they recommend the certification on condition of meeting the following requirements:

Condition 1 (see chapter 1.1)

Coursera and Google provide a deduction of the intended EQF levels of each of the respective courses.

Condition 2 (see chapter 2)

Coursera and Google publish more detailed information about recommended previous knowledge on the course pages (available to interested learners) of the *Google Advanced Data Analytics Professional Certificate* and the *Google Business Intelligence Professional Certificate*.

Condition 3 (see chapter 3.1)

Coursera and Google

c) provide Certificate supplements for each Google Professional Certificate that document the courses' associated qualifications in a transparent and coherent manner, and

d) implement a learner workload evaluation system which includes a systematic control loop from the learner/completer survey to the analysis of the results and the taking of appropriate measures.

Proof of meeting these conditions is to be documented by March 13, 2025.

Furthermore, the quality requirements that have not been fulfilled – Methodological competence (see chapter 3.2), Evaluation by learners (see chapter 6), and External evaluation by course completers, employers, and others (see chapter 6) – are not asterisk criteria and therefore do not lead to a condition. The measures the course provider takes to solve the identified problems are to be considered during the re-certification.

The panel members also identified several areas where the courses could be further developed:

- Taking more advantage of Coursera's tremendous market reach and platform tools to differentiate between and analyze various regions to create contents that consider intercultural aspects (see chapter 3.2).
- Re-thinking the learning objectives of the courses with regards to including methodological competencies on the defined level of the European Qualification Framework (EQF) and setting down methodological competencies as a learning objective in the respective module descriptions (see chapter 3.2).
- Having instructor supervision in some of the discussion forums and further options for learners to contact their instructors (see chapter 4.1).
- Presenting on the course page the contents and learning outcomes of the courses in more detail to aspiring learners and to employers and/or schools and other stakeholders (see chapter 5).
- Communicating current Learner Outcome Reports on the website (see chapter 6).
- Collecting course-specific completer data for compiling them into Learner Outcome Reports at course-level (see chapter 6).
- Using the platform tools and following up with learners of the respective learning unit about instructor's performance if there have been any issues identified (see chapter 6).

The measures the course provider takes in order to implement the recommendations of the panel members are to be considered in the context of the re-certification.

On the other hand, there are many criteria that exceed the quality requirements:

- International orientation of the courses (see chapter 1.2).
- Logic and transparency of teaching and learning methodology (see chapter 3.4).
- Course and Learning materials (see chapter 3.4).
- Skills for employment/Employability (see chapter 3.5).
- Teaching staff's qualifications (see chapter 4.1).
- Teaching staff's pedagogical/teaching qualifications (see chapter 4.1).
- Process organization and administrative support for learners and teaching staff (see chapter 4.2).
- Technical organizational unit (see chapter 4.5).
- Technical support for learners (see chapter 4.5).
- Quality assurance and development of course content, processes and outcomes (see chapter 6).

Furthermore, there are a few criteria which the panel team rates as "exceptional":

- Positioning of the course in the education and job market, and the professional field ("employability") (see chapter 1.3).
- Practical experience of the teaching staff (see chapter 4.1).
- Teaching and learning platform (see chapter 4.5).

Further positive aspects the panel would like to highlight although they do not lead to a formal “exceed” rating within the respective chapter:

- Highly detailed and systematic descriptions of learning outcomes in the course data sheets provided (see chapter 1.1).
- Very logical and well-structured course units (see chapter 3.1).
- Well thought out contents of the courses (see chapter 3.2).
- Focus on diversity, inclusion, and equity (see chapter 3.2).
- Highly committed and motivated teaching staff (see chapter 4.1).
- Optimal internal cooperation between platform/technical unit and teaching staff/content providers responsible for the didactical part of the courses (see chapter 4.1).

For the overall assessment please refer to the quality profile at the end of this report.

Details on the institution

Launched in 2012 by two Stanford professors, Andrew Ng, and Daphne Koller, Coursera's mission is to provide universal access to world-class learning. Coursera is now one of the largest online learning platforms, with 118 million registered learners, partnering with over 300 university and industry partners to offer a broad catalog of content and credentials, including courses, Specializations, Professional Certificates, Guided Projects, and bachelor's and master's degrees. Institutions worldwide use Coursera to upskill and reskill their employees, citizens, and students in data science, technology, and business. Coursera became a B Corp[6] in February 2021.

Coursera operates in five essential business units within two models:

1) Coursera for Individual learners
    a. Degrees
    b. Open Content (Professional Certificates, Specializations & Courses by University and Industry Partners)
2) Business to Business (Coursera for Enterprise)
    a. Coursera for Business
    b. Coursera for Campus
    c. Coursera for Government

Learners coming to Coursera are presented with a broad range of learning offerings, from a two-hour Guided Project on how to build a website to full study programs. As technology automates more repetitive, predictable, lower-skilled job tasks, individuals worldwide seek to reskill with Professional Certificates and college degrees to move into emerging digital careers. Coursera offers a portfolio of entry-level Professional Certificates from Google, IBM, Intuit, Meta, Salesforce, and other industry leaders that help develop the skills needed to land entry-level digital jobs in business, IT, cybersecurity, data science, marketing, sales, design, and finance without requiring a college degree or any experience in the field. Coursera also has online degrees in data science, computer science, engineering, business, social science, and public health. The full Coursera catalog includes:[7]

- 3,500+ Guided Projects: Gain a job-relevant skill in less than two hours
- 6,900+ Courses: Learn something new in four to six weeks
- 875+ Specializations: Gain a job-relevant skill in three to six months
- 125+ Certificates
- 45+ Entry-Level Professional Certificates[8]: Earn a certification of job readiness for an in-demand career in three to nine months

[6] https://www.bcorporation.net/en-us/ (certification for sustainability)
[7] As of December 31, 2023. The periods noted are intended completion timeframes; actual time to completion varies by learner.
[8] In this report referred to as "courses", for terminology see glossary at the end of this report.

- 30 Non-Entry-Level Professional Certificates[9]: Earn a certification to advance your career in one to ten months
- 30 University certificates: Earn a university-issued certificate to develop expertise in a chosen field in four to 24 months
- 15+ MasterTrack Certificates: In three to twelve months, earn a university-issued certificate from a module of a university degree and credit that can be applied to that degree in the future.

The Coursera platform is designed to enable learners to discover the right content and credentials by domain (e.g., Business, Technology, Health), by skills (e.g., Python, Statistics, Data Visualization), and by job role (e.g., Data Analyst, Marketer, Engineer). Once learners enroll in a course, the unified technology platform is designed to enable them to learn effectively to advance their careers and earn credentials to signal their learning to prospective employers.

Learners either pay per single guided project, course, certificate, or degree. Coursera Plus is a subscription pricing model that gives learners access to over 7,000 courses, Guided Projects, Specializations, and Professional Certificates on Coursera for a monthly or an annual fee.

As part of Coursera's strategy and focus on supporting individuals with job readiness certificates in their career planning, certificate offerings have increasing importance in Coursera's product catalog. After the first positive experiences with this training offer, Coursera has been able to expand the number of available Entry-Level certificates to over 45, and other Professional Certificates such as Advanced Certificates to over 30. Coursera systematically derives the needs from a thorough analysis of data as well as the latest conference and research results. Coursera partners with companies to integrate subject matter expertise from professional practice and to train the skills that are needed on the job for the respective tasks. A separate corporate division has dedicated itself to this topic of industry partnerships.

Coursera's research and internal data analysis shows that career certificates are a significant opportunity for learners to progress in their jobs and form a path to digital jobs. Many off-platform demand signals are considered when defining Professional Certificates, such as job postings and job growth in the last twelve months in key countries, percentage of entry-level positions, percentage of roles not requiring a Bachelor's degree, projected growth, median salary, and difficulty in hiring. The demand signals are further validated once the programs are live by analyzing on-platform demand signals such as search volume, enrollment numbers, revenue, and the number of learners with a Professional Certificate that later have proceeded to enroll in a degree program.

An increasing number of universities worldwide recognize Professional Certificates towards their degrees, thus making these learning units stackable into full-degree programs. To ease recognition in Europe and in accordance with the ECTS Users' Guide' s intention of Recognition of Prior Learning,[10] Coursera also aims at ECTS credit recommendation with FIBAA certification.

For Coursera's Professional Certificates in the areas of business, data analytics, and cybersecurity, Coursera has been able to win Google as a content partner. Google Career Certificates are part of Grow with Google, an initiative that draws on Google's 20-year history of building products,

[9] In this report referred to as "courses", for terminology see glossary at the end of this report.
[10] *ECTS Users' guide 2015, page 46,* last access on March 27, 2024

platforms, and services that help people and businesses grow. Through programs like these, Google aims to help those who make up the workforce of today and the learners who will drive the workforce of tomorrow – access the best of Google's training and tools to grow their skills, careers, and businesses (see self-report p. 8 f.).

Although this is the first time the courses in this bundle will be certified according to the ECTS standards, many learners have already completed the courses. Most of the certification courses have already been assessed at least once by the American Council on Education and have received a positive credit recommendation. Comments and recommendations from beta testing and first learners have been successfully implemented. In addition to these external quality assurance measures, Coursera continuously and systematically collects, processes, and makes available data points, including the number of learners, number of completions, star rating, the average time to completion, average passing score, pass ratios, and learner satisfaction rates in dashboards that are analyzed at least once a year in a detailed feedback and evaluation meeting between all parties. In this meeting, areas for improvement are identified, measures derived, and implementation timetables recorded. It is also reviewed whether changes or updates to the learning content are necessary (See also chapter 6).

Appraisal:

The panel acknowledges Coursera as a well-established platform of online courses. Google is a leader in building products, platforms, and services, and has profound experience in developing trainings. Moreover, Google provides exceptional practical content knowledge. Thus, the co-operation to develop and conduct Professional Certificates combines considerable knowledge and resources for conceiving and designing the courses and provides a considerable number of highly effective processes as well as outstanding employability (see also chapters 3.2, 3.4, 3.5, 4.1, 4.2).

Description and appraisal in Detail

1 STRATEGY AND OBJECTIVES

1.1 Logic and transparency of course objectives

Coursera's general objectives for "Professional Certificates" (entry-level, advanced, experts) offer an accessible learning experience from top companies and universities. Learners can get started immediately, study at their own pace, anytime and anywhere. They can create work samples through the course to demonstrate their skills and earn a career credential.

"Entry-Level Professional Certificates" like the Google Cybersecurity Professional Certificate on Coursera are designed to provide a comprehensive and high-quality approach to preparing learners for an in-demand career. They are offered to learners with little prerequisites and no or little previous knowledge. Learners gain practical skills and knowledge through hands-on projects and, upon completion, can demonstrate job readiness to potential employers with a Professional Certificate credential.

"Advanced-Level Professional Certificates" are designed to prepare learners to advance in their career by moving from one job role to another, or advancing in their job role. Advanced Certificates build on skill sets acquired by learners in entry-level roles or other entry-level professional certificates, preparing learners for an intermediate level role.

The Google Professional Certificates are aimed to provide learners with subject-specific, methodological, and social competencies through a holistic qualification concept. Across the various Google Professional Certificates, the application orientation is represented in the practical implementation of projects and application of Data Analytics, Business Intelligence, and Cybersecurity procedures in the respective method courses and labs. Theoretical foundations and explanations always accompany the expertise of practitioners and subject matter experts.

The nature of online learning also promotes the individual development of several organizational skills, specifically concerning time management. These essential skills are integral to online learning experiences; due to structure and learning methods, learners are guided in this process and have optimal opportunities to reach a high level of competence. Analyzing problems and making decisions are competencies that learners require and develop in different course units of the certificates.

[redacted]

[redacted][11]

According to Coursera and Google, the specifications from the European Qualifications Framework (EQF) have been taken into account in the design of the learning objectives of the modules and courses,[12] e.g., "the ability and willingness of the individual to use knowledge and skills as well as personal, social and methodological abilities and to behave in a thoughtful and individually and socially responsible manner. Competence is understood in this sense as comprehensive action competence" (see self-report p. 11 f.).

Appraisal:

[11] Level of detail not shared with the public
[12] See chapter 3.1 Structure

The qualification objectives of the courses are explained and convincingly presented in relation to the prioritized learner group. They embrace appropriate training of knowledge, skills and competencies, comprehensive employability, as well as the development of the individual learner's personality (in relation to the scope of the courses). The panel highlights the very detailed description and the systematic approach used when compiling the learning outcomes (related to the Job Task Analysis, see chapter 3.5).

The course objectives are based on subject-specific and generic learning outcomes. Furthermore, Coursera and Google provided "Executive summaries of the assessment" for EQF level determination for each of the three courses and an EQF level determination guide with exemplary EQF level assessments[13]. The panel appreciates this process to determine the appropriate EQF levels. However, in the view of the panel, the executive summaries are not detailed enough, and the EQF level determination guide only includes exemplary assessments from other courses (not from this cluster). Therefore, the panel still misses a plausible deduction of the level according to the European Qualification Framework (EQF) for the three courses to be certified, supported by a taxonomy of the job skills provided in the job task analyses. The panel needs to see the full assessments of the three courses in this cluster with respect to the determination of the respective EQF levels.

Therefore, the panel recommends the following condition:

> Coursera and Google provide a deduction of the intended EQF levels of each of the respective courses.

The panel suggests taking into account a taxonomy of the intended job skills (e.g., based on Bloom, EQF and the e-Competence Framework of the EU).[14] The categorization into Entry-level (Google Cybersecurity Professional Certificate) and Advanced-level courses (Google Business Intelligence Professional Certificate and Google Advanced Data Analytics Professional Certificate) should be described and explained appropriately.

When defining the learning objectives, the course provider and content partner (Google) also take into account the findings of course completers tracking studies that show the career development of course completers. However, the panel could not verify that there are course-specific completer data (see chapter 6).

		Exceptional	Exceeds quality requirements	Meets quality requirements	Does not meet quality requirements	n.r.
1.	**Strategy and Objectives**					
1.1*[15]	Logic and transparency of course objectives				Condition	

[13] see additional appendices *EQF level determination* and *EQF level determination guide*

[14] e-CF levels, (see p. 42 to align e-CF and EQF levels)

[15] *: Asterisk Criterion

1.2 International orientation of the courses

Coursera prepares its learners with Professional Certificates for jobs in an international environment. The certificates are intended to facilitate learners' development of an international perspective on issues and explicitly prepare them for global professional activity. The language of instruction also supports the certificates' internationality. All courses are delivered in English, while some are translated into or have subtitles provided for other world languages like Turkish (Google Advanced Data Analytics Professional Certificate), Japanese, Portuguese (Brasil), French, and Spanish (Google Cybersecurity Professional Certificate). Additional languages can be added on request and due to identified demand for certain areas or markets.

If relevant to the learning objectives, international aspects of the respective course content are integrated into all modules, thus enabling learners to gain an international perspective on the problem areas. In addition, when selecting instructors and subject matter experts,[16] greater importance is attached to ensuring they have foreign language skills and international experience, e.g., through stays abroad, employment in internationally active companies, and/or internationally oriented project work (see self-report p. 12).

Any country-specific differences in software, research, and applicability of what has been learned are addressed. Especially in software training, various formatting, or convention differences are explicitly highlighted, and workarounds are made available within the framework of toolboxes or adapted versions.

The learning objectives are designed to provide learners worldwide with the relevant subject knowledge and develop skills that will help them work successfully in an international environment. [redacted].[17] Emphasis is always placed on international standards, and common procedural techniques applied worldwide.

Appraisal:

The panel underlines the internationality of learner demographic, and the available translations on the platform that make content accessible to an even larger non-English-speaking audience. Moreover, the course topics are highly relevant for businesses all over the world and the tools and relevant knowledge in these fields are ensured to be applicable internationally. Learners are clearly able to apply the skills and competencies from their Certificates in their diverse home regions and abroad.

		Exceptional	Exceeds quality requirements	Meets quality requirements	Does not meet quality requirements	n.r.
1.	**Strategy and Objectives**					
1.2	International orientation of the courses		X			

[16] For Coursera terminology of teaching staff, see chapter 4.1 and glossary.

[17] Proprietary information not publicly known about internal processes

1.3 Positioning of the courses

During the Covid19 pandemic, online learning provided educators, businesses, and governments with the means to respond to a global crisis that fundamentally changed how people learn and work. The combined forces of online learning and remote work assist to the vision of a world, where anyone, anywhere, has access to education. By working directly with universities and enterprises and powering institutional collaboration across the platform, Coursera provides access to global and affordable education while paving the way for talent to rise from anywhere with remote, digital jobs.

With the rise of online learning and the increasing demand for skills and qualifications, online Professional Certificates have become increasingly popular. They offer a way for individuals to gain new skills, qualifications, and credentials without attending traditional classrooms.

Coursera's Professional Certificates are industry-recognized and can provide a competitive edge on the job market. In addition, Professional Certificates are becoming a much sought-after asset for both candidates (job seekers and employees) and employers, as they demonstrate that an individual has the skills and knowledge necessary to excel in a certain field. They provide individuals with a convenient and accessible way to gain the necessary skills and qualifications to pursue a career. As employers and educational institutions become more rigorous in their requirements, Professional Certificates become an asset in helping individuals meet their career goals and objectives.

The development of the Professional Certificates was strongly oriented toward the specifications and recommendations of business and industry representatives to prepare job-seekers appropriately for labor market requirements. Concerning the range of qualifications, care was taken to include the facets and characteristics of the intended occupational fields and to anchor them in the syllabus ([redacted]).

[redacted][18]

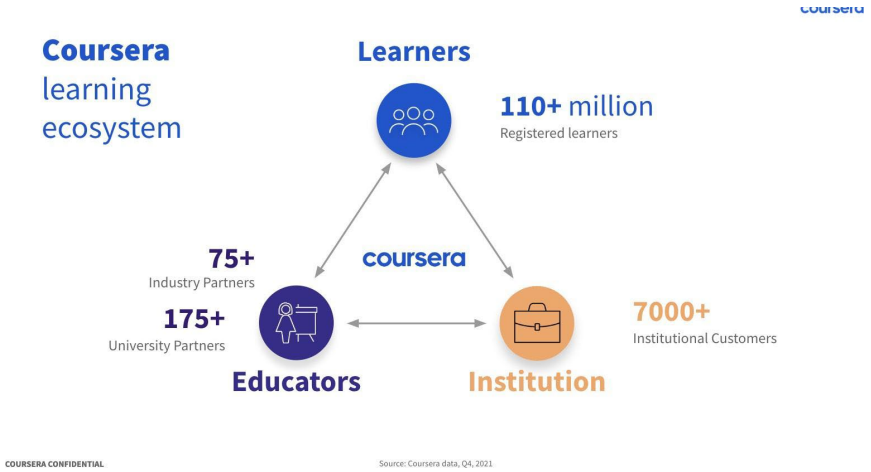
[18] Proprietary information not publicly known about internal processes

Coursera considers lifelong and lifecycle learning in positioning courses on the Coursera platform. It aims to reach learners early in their careers and offer them affordable, job-relevant content, skills learning, and credentials to help them start or advance their careers. Coursera's lifelong learning ecosystem (see figure 1) shows the three pillars of the company's strategy: the connections made between learners and educators, industry, or university partners, the one between learners and institutions, and the one between educators and institutions.

In this context, Coursera's partnership with Google connects learners and educators to solve a particular learner problem: learning new skills to either land their first professional job or switch to different roles.

According to Coursera, extensive research has been conducted to define the best way to position content to learners to ensure a best-fit with what individual learners are seeking, and what the content may provide, while considering in-demand skills from the job market. Through consideration of relevant metrics, Google was identified as a thought leader and expert in areas that may provide learners with an opportunity for job placement, as subject matter areas generally correlate with high job growth (see self-report p. 15).

Figure SEQ Figure * ARABIC 1: Coursera's lifelong learning ecosystem



Appraisal:

The position in the education and job market is reviewed, and the courses' competitiveness analyzed and documented. Professional Certificate completers-tracking studies are undertaken, analyzed and confirm the desired position of the courses' completers. The panel appreciates the very structured and holistic approach of the analysis of the job market, conducted via the "Job Task Analysis (JTA)"[19] (see also chapter 3.5). The very detailed analysis allows an exceptional alignment of the desired Learning outcomes with the needs of job market, taking into consideration specific exemplary job positions for completers as well as other offers on the market for comparable

[19] Proprietary information not publicly known about internal processes

courses. Through this approach, combined with highly experienced course teachers and a focus on practical application of the contents, the courses provide an excellent employability for completers.

The way in which the courses are integrated into Coursera's overall strategy and relate to the other offers of Coursera is plausibly described. The courses pursue qualification objectives which correspond to the course provider's concept and strategic planning.

		Exceptional	Exceeds quality requirements	Meets quality requirements	Does not meet quality requirements	n.r.
1.	**Strategy and Objectives**					
1.3	Positioning of the courses					
1.3.1	Positioning of the course in the education and job market, and the professional field ("Employability")	X				
1.3.2	Position of the course within the institution's overall strategy			X		

2 ADMISSION

Google Advanced Data Analytics Professional Certificate (Advanced-level)

This Professional Certificate is designed for learners who want to develop job-ready skills, tools, and a portfolio for a senior data analyst, data analyst II, associate data scientist, junior data scientist, data analytics scientist, data science analyst, or data analytics consultant positions.

This advanced certificate builds on learners' data analytics skills and experience. It is designed for people working in the field of data analytics or for those with foundational skills from the *Google Data Analytics Professional Certificate* (entry-level)[20] or a similar program.

Concretely, this program recommends prior knowledge of foundational analytical principles, skills, and tools, such as:

- data types, data strategy, data integrity, data cleaning, data aggregation, data analysis, and best practices when information-sharing.
- It also requires an understanding of spreadsheets, databases and structured query language, programming concepts, data visualization, and dashboards.

There are no formal admission requirements or prerequisites to enrolling in this professional certificate program.

Google Business Intelligence Professional Certificate (Advanced-level)

This Professional Certificate is designed for learners who want to develop job-ready skills, tools, and a portfolio for a business intelligence analyst, business intelligence engineer, business data analyst, business intelligence developer, business analyst, or analytics engineer position.

This advanced certificate builds on learners' data analytics skills and experience. It is designed for people working in the field of data analytics or for those with foundational skills from completing the *Google Data Analytics Professional Certificate* (Entry-Level)[21] or a similar program.

Concretely, this program recommends prior knowledge of foundational analytical principles, skills, and tools, such as:

- data types, data strategy, data integrity, data cleaning, data aggregation, data analysis, and best practices when information-sharing.
- It also requires an understanding of spreadsheets, databases and structured query language, programming concepts, data visualization, and dashboards.

There are no formal admission requirements or prerequisites to enrolling in this professional certificate program.

Google Cybersecurity Professional Certificate (Entry-Level)

This Professional Certificate is designed for learners who want to develop job-ready skills, tools, and a portfolio for an entry-level cybersecurity analyst, security analyst, security operations center (SOC) analyst, information security analyst, IT security analyst, or cyber defense analyst position.

[20] Cf. FIBAA certification project 23/039

[21] Cf. FIBAA certification project 23/039

There are no formal admission requirements or prerequisites to enrolling in this professional certificate program. No background knowledge or experience in the field of cybersecurity is necessary to enroll in this professional certificate program.

For all programs

To enroll in each of the Google Professional Certificates, learners must subscribe to the Coursera platform and enroll in their preferred course from the course description page on the Coursera website. To enroll, learners must 1) open the page for the course they want to enroll in, 2) click enroll and 3) choose the preferred payment option.[22] After enrolling, learners must agree that they will be required to provide a government-issued ID to earn a certificate for completing learning content, after which learners can navigate to the beginning of the course through the platform and begin learning asynchronously. To enroll in the course, learners must have access to a computer or mobile device and internet connection. Learners who enroll in the courses must be proficient in English.[23]

Legal Relationship between Coursera and Google

[redacted][24]

Legal relationship between Coursera and Learners

[redacted]

[22] See information on payment in chapter "Details on the institution"

[23] English is the default language for all Professional Certificates, although for some courses there are variants available in other world languages or with subtitles. Learners are informed about the available language versions on the course page and can choose the one that suits them best.

[24] Proprietary information not publicly known about internal processes

[redacted][26]

Google and Teaching staff (Instructors)

[redacted][27]

Appraisal:

Coursera's key segments are Career Starters, Career Switchers, Career Advancers, and Enthusiasts around the globe without any prior knowledge or degrees. All Coursera offers are open to everyone (they are Massive Open Online Courses, or MOOC's). The specific needs of interested learners are taken into account in terms of accessibility of the courses and availability of support staff (see chapter 4). However, for the two advanced-level courses prior knowledge is recommended but not transparent on the course pages. For the *Google Advanced Data Analytics Professional Certificate* and the *Google Business Intelligence Professional Certificate* the landing page only recommends "Prior knowledge of foundational analytical principles, skills, and tools". Prospected learners should be able to get more details as to which tools they should be familiar with. Therefore, the panel recommends the following condition for the two Advanced-level Professional Certificates:

> Coursera and Google publish more detailed information about recommended previous knowledge on the course pages (available to interested learners) of the *Google Advanced*

[25] https://www.coursera.org/about/terms (last call February 1, 2024)
[26] Proprietary information not publicly known about internal processes
[27] Proprietary information not publicly known about internal processes

Data Analytics Professional Certificate and the *Google Business Intelligence Professional Certificate*.

Coursera and Google also recommend taking the *Google Data Analytics Professional Certificate* (Entry-Level) course before starting the two Advanced-level Certificates.

Coursera could also put a course link to the recommended *Google Data Analytics Professional Certificate* (Entry-Level) course, so that interested learners and other parties can check the skills and competencies taught in this previous course and for interested learners to subscribe to the previous course if they have not acquired such skills yet. By adding the link, Coursera should make sure that the *Google Data Analytics Professional Certificate* (Entry-Level) course description and learning objectives/skills are coherent with the recommended prerequisites for the two Advanced-level courses.

Besides the missing documentation of the course pages (see condition above), enrollment guidelines have been defined and are coherent (e.g. prior knowledge of certain basic skills for advanced courses). They support the achievement of the course objectives. Enrollment guidelines also include information on the requirements in terms of technical equipment.

The contractual relationship between Coursera and the content partner (Google) on the one hand and the learners on the other hand, as well as between content partner and teaching staff is set down and documented. Rights and obligations of contractual parties have been established and are known to all relevant parties. Transparency and legal certainty exist.

		Exceptional	Exceeds quality requirements	Meets quality requirements	Does not meet quality requirements	n.r.
2.	**Admission**					
2.1*	Focus on the target group			Cyber-security	Condition: Adv. DA & BI	
2.2*	Admission conditions			X		
2.3*	Legal relationship			X		

3 IMPLEMENTATION

3.1 Structure

Structure of the courses

Each Google Professional Certificate program contains "courses", which contain weekly "modules"[28] (four to six lessons) that progressively build on concepts taught previously. Each module contains weekly learning objectives. By completing the weekly content for each module in order, learners can achieve the learning outcomes required to progress to the subsequent module.

The **Google Cybersecurity Professional Certificate** is an "Entry-Level" certificate. Entry-Level Professional Certificates require no degree or experience in the area to take the program or obtain a specified entry-level job role. For example, a learner with a high school diploma and no degree or work experience can take an Entry-Level Professional Certificate and be considered for related roles upon completion. Like all content on Coursera, Professional Certificates include Coursera's Pedagogy Principles (see chapter 3.4).

Google Entry-Level Professional Certificates on Coursera:

- Include a minimum of four courses designed to be completed in less than twelve months.
- Include career-relevant, hands-on projects to showcase to potential employers on the learner's resume and in interviews.
- Include a partner-branded Professional Certificate, which Coursera issues and the partner delivers, from the partner dashboard to learners who successfully complete the program.
- Provide career-readiness resources, so the learner knows how to prepare for the job role.

Learners should be expected to complete an Entry-Level Professional Certificate in 80 to 200 hours of total engagement time. Each course in the Entry-Level Professional Certificate must include approximately ten hours of total learner engagement time per week (e.g., watching videos, reading materials, completing assessments).

To help learners prepare for an entry-level job, Coursera and Google emphasize that they should get ample practice and hands-on learning time to learn the skills they need for the role. Each course should also include a job-relevant project at the end of each course to help learners demonstrate their skills and build their resumes for potential employers. Coursera summarizes Entry-Level Professional Certificate Content Specifications as follows:

[28] "Course" in Coursera terminology is a learning unit within the certificate program covering a certain content topic. A course (topic) is split into "modules" (in Coursera terminology) which is a weekly learning unit, thus "module" being Coursera's terminology for the smallest learning unit within the "course" and the "program" (as a whole), see glossary.

Table 1: Entry-Level Professional Certificate Content Specifications[29]

[redacted]	
[redacted]	[redacted]
[redacted]	[redacted]
[redacted]	[redacted]
[redacted]	[redacted]

[29] Proprietary information not publicly known about internal processes

[redacted]	[redacted]

The **Google Advanced Data Analytics** and **Business Intelligence** Certificates are "Advanced-Level" Professional Certificates, designed to prepare learners to advance in their career by moving from one job role to another, or advancing in their job role.

Google Advanced-Level Professional Certificates on Coursera:

- Include a minimum of three courses designed to be completed in less than twelve months.
- Include career relevant hands-on projects to showcase to potential employers.
- Build on a skillset from an Entry-Level Professional Certificates.
- Prepare learners for an intermediate level role.

Table 2: Advanced-Level Professional Certificates[30]

[redacted]	[redacted]	[redacted]
[redacted]	[redacted]	[redacted]
[redacted]	[redacted]	[redacted]

[30] Proprietary information not publicly known about internal processes

Google Professional Certificates generally can be completed in six months.

The modules (seven modules in the Google Advanced Data Analytics Professional Certificates, three modules in the Google Business Intelligence Professional Certificate, and eight modules in the Google Cybersecurity Professional Certificate) are progressively built on concepts taught in the previous modules. After completing the modules in order, learners will have acquired skills and knowledge to enable them to become job ready for a career in data analytics, or respectively, in business intelligence or business analytics.

Application of the "European Credit Transfer and Accumulation System" (ECTS) and modularization

Google Professional Certificates have been developed from the ground up to ensure employability for a specific target occupation and to build skills, abilities, and competencies to be job-ready.

1. Learning Outcomes

[redacted][31] a basic idea of the learning objectives has been developed by Google's instructional designers and a team of subject matter experts. Each Professional Certificate has therefore defined learning objectives to be achieved at the top level, whereby both the EQF recommendations on competence acquisition have been applied, and the descriptions of the respective learning objectives have been formulated based on the recommendations of Bloom's taxonomy.

In addition, the overarching learning objectives for the respective certificate are broken down further toward individual learning outcomes for each "course" and for each weekly "module". The quizzes and assessments are aligned with the learning objectives at the weekly "module", "course", and certificate levels.

2. Workload

   To determine the workload, each sub-element is analyzed within the pre-structured weekly learning plans, and the length (e.g., videos or reading) is determined. The learning and processing times determined in this way are finally summarized at the level of the Professional Certificate. In this way, learners know the total workload in the respective certificate and the weekly learning times for each element. It is possible to set individual learning time targets and days on which Coursera reminds the user of their learning goals in the app or the browser, thus continuously motivating learners to participate. The workload at all levels is documented and systematically displayed before and during learning.

3. Recommendations for ECTS credit allocation

   Referencing the methodology and principles from the ECTS User's Guide 2015 and utilizing the application of the workload calculation, Coursera and Google aim to show a defined ECTS credit recommendation that corresponds appropriately to the workload and learning objectives for the individual certificates. One ECTS credit should correspond to 25 hours of workload. The individual workload per module may vary depending on the task and exceed the initially determined reference time. The workload analyses provide a regular check, but in case of doubt, a slightly higher effort for a task should be assumed rather than less learning time. Coursera and Google consider this by using the lower end of the range[32] and showing a corresponding ECTS credit recommendation value.

4. Non-Allocation for single educational components (on module/course level)

   Although the Professional Certificate comprises smaller units, the respective "courses" and "modules", Coursera and Google refrain from distributing ECTS credits at this level. This approach follows the application in higher education institutions. For example, a module in the field of tertiary education, similar to an entire certificate, extends over four to six months. The ECTS credit allocation assigned to one module at higher education institutions should, according to many national recommendations,[33] not be less than five ECTS credits as a rule. A different allocation than full ECTS credits should be avoided unless the general program design can compensate for the sensible full ECTS credits per semester. In addition, the corresponding

[31] Proprietary information not publicly known about internal processes

[32] i.e. the possible range of hours allocated per ECTS credit: 25-30

[33] As an example, they refer to the recommendations for action of the University Rectors' Conference in Germany (HRK), such as the recommendation on "Designing modularization" from February 2016.

course unit should conclude with an examination performance, which justifies the acquisition of the ECTS credits. In the case of the Professional Certificate, this is the Final Project or "Capstone Project".

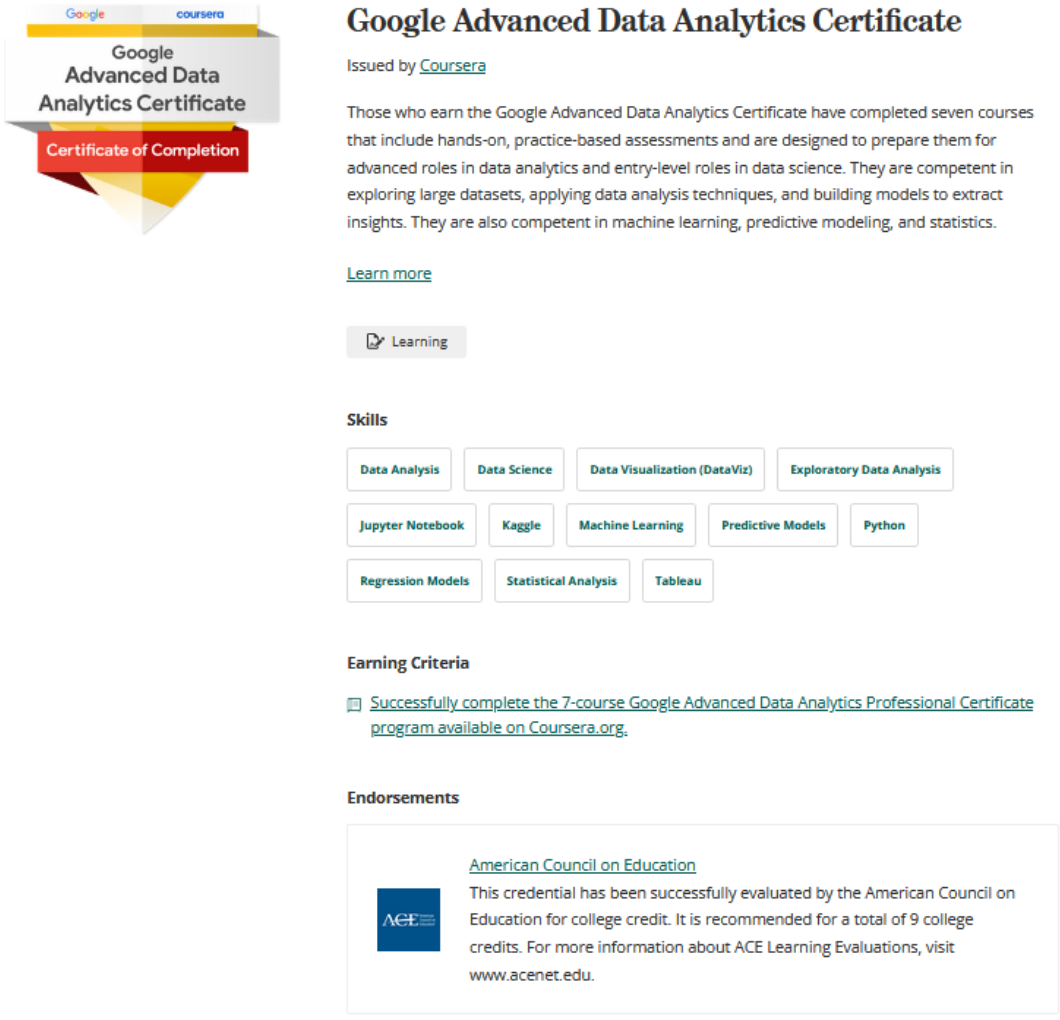
5. 60 ECTS credits allocation per year

   The Professional Certificates are part-time continuing education programs intended to enable the acquisition of competencies and skills part-time. The weekly learning performance is geared towards this circumstance, with a maximum workload of approximately ten hours per week for six months.

6. ECTS credit documentation

   The use of ECTS credits is facilitated and quality enhanced by supporting documents like the course catalog and the certificate supplement via Credly. Via Credly learners can permanently store their achieved digital credits in a secure place. In addition, Credly provides prospective employers with the ability to verify that the individual earned the Professional Certificate, thus enabling a certificate authenticity check. In addition to badges, Credly provides learners with a transcript that Registration Offices a HEIs can utilize.

Figure 2: Certificate Supplement on the Credly page (example for Google Advanced Data Analytics Professional Certificate)



7. Certificate supplements

   A Certificate supplement documents the courses and the associated qualifications. The acquired skills, the earning criteria for the certificate, the learner, the content, the issuer, the course description, and the certificate details (when and where obtained) are documented transparently and through Credly in a safe space that still allows for authenticity checks for external parties.

Conditions of participation and assessment regulations

For each certificate program, Google provided a plan including learning objectives of the program, the "courses", and the "modules", the learning projects, and an overview and biographies of the teaching staff.[34]

After enrolment, learners must agree that they will be required to provide a government-issued ID to earn a certificate for completing learning content, after which learners can navigate to the beginning of the course through the platform and begin learning asynchronously.

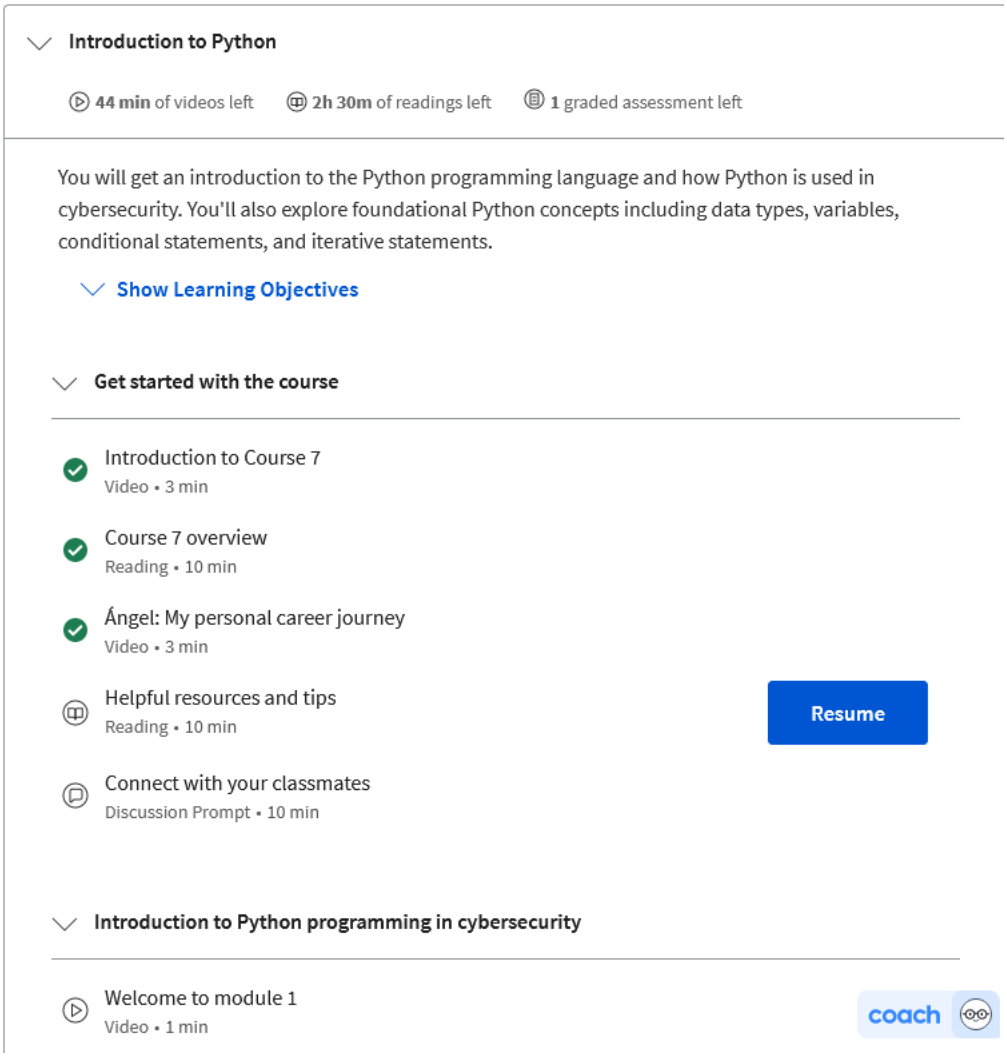
Learners attend the course by viewing lectures, completing readings and quizzes, responding to discussion prompts, and completing hands-on labs and programming assignments. Each Google Professional certificate has a minimum passing score of 80 % that learners must meet in order to pass graded quizzes and complete the qualification for the Professional Certificate. All learners must adhere to the Coursera Code of Conduct, Honor Code, and Terms of Use. Detailed conditions of participation and assessment regulations, such as quiz attempt rates, passing grades, and identity verification, are described to learners within each Google Professional Certificate program at the start of each assignment as they navigate throughout the course content. In addition, learners are informed where they can go in case of doubt about discrepancies and how the grading appeal procedure would look like in these cases.

Feasibility of study workload

Google aims to ensure the feasibility of the programs' workload by a suitable curriculum design and a plausible calculation of workload of under ten hours of study a week to complete the course within the suggested six months. Learner enrolment is voluntary and self-guided. Learners will complete the content asynchronously at a pace that meets the demands of their personal schedules. Assessment deadlines are generated based on a personalized schedule that begins when a learner enrolls in a course. If learners miss two assessment deadlines in a row or an assessment deadline by two weeks, they will see a "reset deadlines" option in their grades page. Learners can then switch to a new schedule for the course with updated deadlines and can utilize this option as many times as needed. This does not remove progress made in the course. If a learner cancels their Coursera subscription and then reactivates it, their deadlines will automatically reset.

[34] See also chapter 4.1 and glossary

Figure 3: Sample weekly plan (Google Cybersecurity Entry-Level Professional Certificate)



Discussion forums are accessible for enrolled learners, where they benefit from:

- Support from fellow learners which are moderated,
- Interaction with classmates, shared resources, and help answer questions about course materials or assessments,
- Asking questions, debating ideas, and identifying classmates who share the same goals.

Appraisal:

The panel highlights the structural set-up of the courses. The structure clearly serves to promoting the achievement of objectives and the learner's acquisition of knowledge and competencies in a step-by-step process with given objectives at each step.

By giving an analysis of the approach towards ECTS credit allocation, Coursera and Google have proven comprehensive examination of the ECTS guidelines. The following ECTS elements: principle of modularization, credit points and workload specifications, have mostly been implemented. The

panel is missing a Certificate Supplement that documents the courses and the associated qualifications in a transparent and coherent manner. Analogously to the Diploma Supplement for degree programs, a more detailed description of learning outcomes of the respective course needs to be included.

The panel recommends the following condition:

> Coursera and Google provide Certificate supplements for each Google Professional Certificate that document the courses' associated qualifications in a transparent and coherent manner.

As for the workload calculated by Coursera and Google and intended ECTS credits to be awarded, the conversion is as follows:

Table 3: Workload calculation and ECTS credit assignment

Course	Learning hours[35]	ECTS credits (Estimated learning hours/25 hours)	Coursera recommendation of ECTS credit assignment
Google Advanced Data Analytics Professional Certificate (Advanced-Level)	205	8,2	8
Google Business Intelligence Professional Certificate (Advanced-Level)	80	3,2	3
Google Cybersecurity Professional Certificate (Entry-Level)	171	6,84	7

According to the ECTS Users' Guide,[36] workload is an estimation of the time the individual typically needs to complete all learning activities such as lectures, seminars, projects, practical work, work placements and individual study required to achieve the defined learning outcomes in a formal learning environment. Based on the generally valid rounding rules (4,5 equals up to 5 equals up to 5,4) the workload calculation and ECTS credit allocation is plausible for the three programs.

Coursera and Google did not provide proof of a process of reviewing the workload including taking into account learner feedback and the courses' success rate. The panel notes that the average learner can finish the material ahead of estimated time. In their sample check of the learning material, the panel discovered examples where they consider the estimated time calculation for a reading piece to be a lot more than the actual time needed (especially for the Google Cybersecurity Professional Certificate, e.g., Module 1: "Common cybersecurity terminology" estimated a 30 minutes read, and in Module 2 a Glossary with almost the same content, but it is estimated only a ten minutes read). Representatives during the conference explained that generally, the time allocated is set to the maximum time required.

During the assessment conference learners confirmed that the calculated workload was rather generous, and they finished the material ahead of time. A review whether actual workload

[35] See chapter 3.2 Google Professional Certificates: Course contents and learning hours

[36] ECTS Users' guide 2015, p. 10 (last access on March 27, 2024)

corresponds with estimated workload (including teaching time, self-study time and examination) is missing.

Therefore, the panel recommends the following condition:

> For each of the three courses, Coursera and Google implement a learner workload evaluation system which includes a systematic control loop from the learner/completer survey to the analysis of the results and the taking of appropriate measures.

There are transparent conditions of participation and assessment regulations. The courses' characteristic structural features have been implemented.

Apart from the missing implementation of learners' feedback into the evaluation of the workload (see condition), the feasibility of the courses' workload is ensured by a suitable curriculum design, by a plausible calculation of workload, by an adequate number and frequency of assessments, by appropriate support services as well as academic and general learner counselling.

		Exceptional	Exceeds quality requirements	Meets quality requirements	Does not meet quality requirements	n.r.
3.	**Implementation**					
3.1	Structure					
3.1.1	Structure of the course			X		
3.1.2*	Application of the "European Credit Transfer and Accumulation System (ECTS)" and modularization			Condition		
3.1.3*	Conditions of participation and assessment regulations			X		
3.1.4*	Feasibility of study workload			X		

3.2 Content

The course contents are as follows:

Google Advanced Data Analytics Professional Certificate (Advanced-Level) (7 "courses")[37]

Module Number	Module Title	Learning Hours
1	Foundations of Data Science	26
2	Get Started with Python	30
3	Go Beyond the Numbers: Translate Data into Insights	32
4	The Power of Statistics	37
5	Regression Analysis: Simplify Complex Data Relationships	34
6	The Nuts and Bolts of Machine Learning	37
7	Google Advanced Data Analytics Capstone	9
Total Learning Hours		205

Google Business Intelligence Professional Certificate (Advanced-Level) (3 "courses")

Module Number	Module Title	Learning Hours
1	Foundations of Business Intelligence	30
2	The Path to Insights: Data Models and Pipelines	23
3	Decisions, Decisions: Dashboards and Reports	27
Total Learning Hours		80

Google Cybersecurity Professional Certificate (Entry-Level) (8 "courses")

Module Number	Module Title	Learning Hours
1	Foundations of Cybersecurity	21
2	Play It Safe: Manage Security Risks	11
3	Connect and Protect: Networks and Network Security	14
4	Tools of the Trade: Linux and SQL	27

[37] In the following tables, Coursera uses the term "modules" for what is elsewhere called "courses", see glossary

5	Assets, Threats, and Vulnerabilities	26
6	Sound the Alarm: Detection and Response	24
7	Automate Cybersecurity Tasks with Python	30
8	Put it to Work: Prepare for Cybersecurity Jobs	18
Total Learning Hours		171

Integration of theory and practice

Google's Professional Certificates adhere to Coursera's best practice guidelines for Quality in Online Learning and other manuals on online teaching pedagogy and course structures. Each week is comprised of individual content units that incorporate both theoretical and practical components. The theoretical components include readings and videos, while the practical elements are always aligned with the previously covered knowledge. This approach enables learners to assess their progress not only through small quizzes throughout the learning process but also through practical exercises that allow them to apply what they have learned. For example, learners will learn how to collect, interpret, and report on data to help organizations make informed business decisions. For example, in Google Business Intelligence Professional Certificate, learners will design business intelligence visualizations, practice using BI reporting and dashboard tools, and create presentations to share key BI insights with stakeholders. Furthermore, learners can discuss their approaches in the forum and upload their work at the end of each unit. As a result, there is a continuous and effective interplay between theoretical learning and practical application.

Methodological competence

The Professional Certificates courses aim to provide participants with the essential knowledge and skills required to perform well in their intended job role, including proficiency in relevant software, programming languages, tools, and systems. The Professional Certificates also offer an overview of current industry trends. Through practical, hands-on exercises, learners will develop their methodological competence and practical experience using various business tools and industry best practices.

The courses adopt a methodological approach to learning, enabling learners to acquire practical skills through exercises and projects. Learners will have the opportunity to apply their newly acquired skills in practical settings, preparing them for entry-level positions in the workforce.

The in-depth methods build on the basic knowledge acquired earlier in the course and enable the planning and use of complex methods for evaluation and assessment. Learners will deepen their knowledge through projects and practical exercises, including the final capstone projects. The programs also cover methods such as analyzing processes, collecting, presenting, analyzing, and interpreting data using appropriate methods, and measuring success.

Examinations

Assessments are aligned to learning objectives and designed in accordance with best practices for assessment design. The following types of assessments and examinations are included in Google Professional Certificates to assess learning outcomes:

- Graded quizzes (summative): Graded quizzes are used to monitor educational outcomes. They answer the question: Has this learner demonstrated that he or she can complete this task? Weeks always end with a graded quiz.
- Peer-review (formative): The peer review activities allow learners to put the course concepts they are learning into practice by doing an activity or solving a problem. In a peer review, learners complete an artifact, review, and grade each other's work, and receive qualitative and quantitative feedback from other learners. Peer review is a two-sided process: In a peer review all learners receive feedback from three other learners and are obliged to give feedback to at least three peers. The quality of the feedback received from others is also evaluated by the learners.
- Self-Review (formative): The self-review activities allow learners to put the course concepts they are learning into practice by doing an activity or solving a problem. Learners can check their own work using an Exemplar (an expert-created version of the activity introduced in the self-review); this helps learners develop insights and check their own understanding.
- Discussion prompts (formative): Discussion prompts allow for active reflection and engagement among learners in a public forum in Coursera. Discussion prompts offer a low-stakes opportunity for learners to reflect on what they have learned, connect new knowledge to prior understanding, and benefit from discussions and feedback.
- Practice Quizzes (formative): Ungraded quizzes, or practice quizzes, are used to help learners monitor their own learning. They answer the question: Is this learner successfully learning what he or she is expected to learn? When a new concept is introduced, it is typically tested in an ungraded quiz.
- In-video Quizzes (IVQ, formative): In-video quizzes are ungraded quiz questions that appear while learners watch a video. IVQs reinforce key concepts, serve as a check-in with the learner, and review video content with a question that is not difficult or surprising. IVQs typically appear close to the content they reference and are not grouped at the end of a video.
- Plugins (formative): Plugins are interactive, hands-on activities that encourage learners to practice specific tasks and help them apply knowledge they have gained in the course. There are five main types of plugin activities: drag & drop, multiple choice, infographic, matching, and flip card.

Learners are given transparent information about established plagiarism standards and regulations regarding the conduct of digital assessments on the Coursera platform (Coursera Honor Code).

Appraisal:

The curricula adequately reflect the qualification objectives of the courses. The contents of the courses are well-balanced, logically connected, and oriented towards the intended learning

outcomes. The lectures and seminars on offer cover the contents necessary for achieving the qualification objectives and are outcome oriented.

In the courses, theory and practice are linked. Knowledge delivery and practical contributions complement each other to develop the learners' competencies. Career-integrated methods like the Capstone project are part of the courses. The courses' completers mentioned that more interaction with and support by Google SMEs during the courses is desirable (see also recommendation in chapter 4.1). The panel underlines that further support especially for the Capstone projects would lead to greater practical linkage.

Within the limited scope of the courses in terms of workload, international contents are appropriately integrated according to the courses' qualification objectives and strategy. Coursera rated international and intercultural contents as "not applicable" (see self-report, p. 27). However, the panel found several indices for the fulfillment of this aspect. All the tools or software skills taught in the courses are ensured to be applicable worldwide, or they are specified for regional needs if necessary (see chapter 1.2). The learner body is very international and with the available translations (Arabic, French, Portuguese, Italian, Vietnamese, Spanish, and German, see chapter 1.2) the courses' reach goes beyond solely English-speaking environments. In this respect, the panel highlights the strong focus on diversity, inclusion, and equity.

Regarding topics of data analysis and cybersecurity, the issue of compliance is dealt with very differently across the globe, e.g., GDPR rules in Europe are very German-specific based on Germany's historic background. Therefore, the panel **recommends** taking more advantage of the tremendous market reach and the platform tools (see chapter 4.5) to differentiate between and analyze various regions to create contents that consider intercultural aspects also. Integrating these intercultural topics into the courses can further contribute to the learners' capacity to act in an intercultural environment.

In contrast to what the panel expected to find in the courses with regards to methods (e.g., in the Google Cybersecurity Professional Certificate: multi-factor authentication, three-tier architecture), the acquisition of methodological competencies is not set down as a learning objective in the module descriptions. During discussions with representatives of the Google Cybersecurity Professional Certificate, the panel got to know the nature of the course and the learner demographics, which is very broad/open. The course is aimed at providing learners with very basic hands-on skills and knowledge as a foundation that can be further developed in advanced courses or a respective study program or on the job. The content partners are very careful in considering the diverse knowledge base of learners upon entering the courses and they want everyone to be able to successfully finish the course. The panel finds this explanation plausible. After all, completer studies show that Entry-Level Professional Certificate completers do advance in their careers after taking the course(s). Nevertheless, the panel recommends setting down methodological competencies as a learning objective in the respective module descriptions.

Additionally, regarding the competencies as set out by the EQF on the levels targeted by Coursera and Google, the panel acknowledges that within the limitations of a MOOC not all Dublin Descriptors may be equally satisfied. To fully meet the quality requirements of the criterion, the panel additionally recommends re-thinking the learning objectives of the courses with regards to including methodological competencies on the defined level of the European Qualification Framework (EQF). This should include a continuous (re-)evaluation of the methodological aspects

of the course contents to e.g., consider implementing aspects such as multi-factor-authentification or three-tier architecture for the Google Cybersecurity Professional Certificate.

Due to the limited duration and the focus of the programs the integration of academic work and science-based teaching was rated by Coursera as not applicable. However, the panel considers the aspect of science-based teaching relevant for the Google Advanced Data Analytics Professional Certificate. On demand of the panel, Coursera and Google provided proof of science-based teaching within this course (detailed course descriptions sheet, e.g., learning units like “Go Beyond the Numbers: Translate Data into Insights”, “Regression Analysis: Simplify Complex Data Relationships”, “The Nuts and Bolts of Machine Learning”).

All assessments, as they are defined for the courses, are suited in format and content to ascertain the intended learning outcomes as well as the identity of the examinees. However, the panel noticed in some modules that the limited number of questions in the graded quizzes make grading rather difficult, e.g., in Cybersecurity, module 1, there are only four questions, thus the learner can only achieve 75 % or 100 % (minimum passing score is 70 %). This means if you succeed you are either excellent or satisfactory. The panel suggests including at least six to eight questions in every graded quiz to allow grading to match with the actual assessment of learning outcomes.

The requirements are in accordance with the desired qualification level. The course provider has established plagiarism rules and regulations regarding the conduct of digital assessments. Learners are given transparent information about these regulations. During the assessment conference completers expressed criticism of the current implementation of the peer reviewed assessments. They felt that (by what they interpreted as lack of reading the another’s assignment) the peer-review is often generic and hence, useless. The panel therefore suggests considering implementing additional moderation or quality checks for the peer-reviews.

		Exceptional	Exceeds quality requirements	Meets quality requirements	Does not meet quality requirements	n.r.
3.	**Implementation**					
3.2	Content					
3.2.1*	Logic and conceptual coherence			X		
3.2.2	Integration of theory and practice			X		
3.2.3	International and intercultural contents			X		
3.2.4	Methodological competence				X	
3.2.5	Academic work and science-based teaching			Adv. DA		BI, Cybersecurity
3.2.6*	Examinations			X		

3.3 Transdisciplinary qualifications and soft skills

The Professional Certificates cover guidelines for collecting, presenting, analyzing, and interpreting data using appropriate methods. The programs cover various methods such as

analyzing processes, assessing data, and measuring success. The programs also cover content on how to visualize and present data findings in dashboards, presentations and commonly used visualization platforms (Data Analysis and Business Intelligence), or to identify common data/network risks, threats, and vulnerabilities, as well as techniques to mitigate them (Cybersecurity). All three courses help companies to make important business decisions based on data or based on risks associated with data. This requires skills like strategic communication, problem-solving, and stakeholder management. In addition, learners get to experience real-world scenarios.

In the Google Advanced Data Analytics Professional Certificate, for example, learners are taught how to communicate insights from data analysis to stakeholders. In the Google Business Intelligence Professional Certificate learners are taught how to create dashboards that effectively communicate data insights to stakeholders, and learners in the Google Cybersecurity Professional Certificate are taught to understand the importance of cybersecurity practices and their impact for organizations, which they also would have to communicate effectively within the organization.

Appraisal:

Although Coursera and Google considered this criterion as “not applicable”, the panel would like to emphasize that even within the limited scope of the courses they see evidence that learners acquire appropriate transdisciplinary qualifications in accordance with the qualification objectives in all courses. For example, after reviewing course material provided, the panel highlights that the courses raise awareness about social issues (like rising levels of Cybercrime, DEI in tech, UN sustainable development goals). The courses also stimulate communication and feedback skills when interacting with peers in forums or during the peer-review process (see chapter 3.2), and the ability to communicate insights into crucial business-related data to relevant stakeholders in the organization which is formulated as a learning outcome in all courses (see chapter 1.1).

		Exceptional	Exceeds quality requirements	Meets quality requirements	Does not meet quality requirements	n.r.
3.	**Implementation**					
3.3	Transdisciplinary qualifications and soft skills			X		

3.4 Didactics and Methodology

Coursera’s platform is built for Mastery Learning, a pedagogical model that allows and requires learners to demonstrate mastery of learning objectives before moving forward to learn subsequent information. The platform organizes content into modules, setting scheduled milestones for their completion, which requires learners to demonstrate mastery of the learning objectives over time. According to Coursera, Data analysis from thousands of courses shows that well-designed, high-quality content includes both formative and summative assessments with elaborative feedback to support learners as they work toward mastery of the defined learning objectives (see self-report, p.30).

Coursera's platform structures content to facilitate Mastery Learning by requiring instructors to set key learning objectives at the program level, course level, and modular levels. Formative and summative assessments with feedback-corrective features are used to measure progression towards those objectives. Instructors can embed practice and feedback directly in the learning path using various proprietary tools, including in-video questions, quizzes, technical labs, and other exercises. Providing frequent opportunities for feedback and active learning helps the learner track their progress towards mastery. Feedback is also used for summative graded assessments, which are available to learners at the end of each course module. Whereas practice assessments are low-stakes formative opportunities that provide feedback explaining why a response is correct or incorrect, learners demonstrate mastery of the learning objectives by passing each week's summative assessment. Mastery learning embraces "failure as feedback" to the learning process; therefore, the platform allows multiple attempts on graded assessments. A learner cannot earn a completion certificate until they demonstrate mastery of the learning objectives by passing all graded assessments in a course or program.

The practical application of Coursera's "learners first" strategy begins with effective content and program development. Coursera strives to partner with leading content providers to help learners succeed by completing individual courses or certificate programs. Its real time monitoring of learner progress is an essential element to support all content providers and learners enrolled in hosted content of all its courses and programs. As defined by Coursera Professional Certificate Content Specifications (see chapter 3.1), the three Google Professional Certificates include Applied Learning Projects that help learners hone and apply the concepts learned throughout each course in the asynchronous video lectures, readings, discussion posts, and quizzes.

For example, in the Google Advanced Data Analytics Professional Certificate, learners are instructed through various teaching methods, including discussion prompts, lectures, practice and graded quizzes, readings, and hands-on projects. Learners are encouraged to actively participate in the learning process and engage with other learners through discussion prompts and applied learning projects. In the final capstone course of the Google Advanced Data Analytics Certificate, learners practice applying knowledge and skills acquired so far through completing an advanced data analytics capstone. Through the Capstone course, learners will:

- Examine data to identify patterns and trends,
- Build models using machine learning techniques,
- Create data visualizations, and
- Explore career resources.

By the end of the Google Advanced Data Analytics program, learners will have created and/or updated their resume and professional portfolio, developed a data frame, composed data visualizations, used statistics to analyze and interpret data, built, interpreted, and evaluated regression models, and utilized machine learning techniques in Python. To further prepare learners to interview for jobs, learners will review data-focused career resources designed to help them effectively navigate the job market and prepare for interviews.

Course and Learning materials

All course materials for Google Professional Certificates are included within the course content on the Coursera Platform. Datasets for hands-on labs are provided in the "Resources" section in CSV format for learners to export to their desktops and use for analysis in practical exercises. Welcome, and learning/lecture videos for each week are hosted under the "Course Material" section with transcriptions. Under "Course Materials", learners will also find readings, practice quizzes, and graded assignments in the order they should be reviewed. There is a section for learner notes and discussion forums.

Each week of course material begins with a module description and a clear outline of learning objectives that should be met throughout the week of study. The lectures, readings, hands-on projects, and quizzes in each week help learners meet the weekly learning objectives.

Appraisal:

The didactic concept of the courses is systematically oriented towards the course objectives. It is orientated towards the learning outcomes of each course, module, and towards the learners. A mix of different teaching and learning methods (Videos, quizzes, labs), depending on the contents and curricular requirements, is applied in the courses/single modules. The panel appreciates the innovative and creative approaches Google uses in line with Coursera's methodological standards to enable the learners to progress faster and more intensely in their learning (e.g., video pacing options, transcripts of videos, jumping ahead to the assignment if a learner is already familiar with the content), as well as support them during the self-study phases (24/7 support by administration and technical staff). By nature of the online self-paced study design of the courses, learners are encouraged to take an active role in the learning process which is further supported by peer-to-peer learning and feedback (e.g., discussion forums, peer-review).

The accompanying course and learning materials are oriented towards the intended learning outcomes and correspond to the required qualification level. They are up to date and easily accessible for the learners. The courses and learning materials are very user-friendly and encourage learners to engage in further independent studies (e.g., the panel noticed the "AI-driven In-course coach" that also shows options for further resources and links, see also chapter 4.5). General standards for materials guide the teaching staff and support the quality of the lecture.

		Exceptional	Exceeds quality requirements	Meets quality requirements	Does not meet quality requirements	n.r.
3.	**Implementation**					
3.4	Didactics and methodology					
3.4.1*	Logic and transparency of teaching and learning methodology		X			
3.4.2*	Course and learning materials		X			

3.5 Skills for employment / Employability (Asterisk Criterion)

According to Coursera and Google, 75 % of Google certificate completers report a positive career outcome (e.g., new job, promotion, or raise) within six months of completion (see self-report p.32).

To ensure course instruction aligns with job market demands and promotes course completers' employability in the professional field, Coursera and Google align on job role requirements to create learning outcomes in a subject area that leverages Google's areas of expertise as an organization. [redacted]

[redacted]

[redacted]

- [redacted]
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- [redacted]
- [redacted]
- [redacted]

[redacted]

[redacted]

[redacted][38]

[38] Proprietary information not publicly known about internal processes

Appraisal:

The contents focus on achieving the qualification objectives and have a clear profile. Employability in accordance with the qualification objectives and the defined learning outcomes is promoted, adding a benefit for course completers in the respective occupational field.

In addition, the courses are systematically aligned with the expected requirements of a dynamic labor market. For this purpose, the course provider uses evaluation results (course completers, employers). The panel highlights that market studies are clearly analyzed, and all relevant stakeholders are involved to derive relevant tasks and skills that are high in demand.

		Exceptional	Exceeds quality requirements	Meets quality requirements	Does not meet quality requirements	n.r.
3.	**Implementation**					
3.5*	Skills for employment / Employability			X		

4 RESOURCES AND SERVICES

4.1 Teaching Staff of the courses

Course management

Quality education that supports Mastery Learning (see chapter 3.4), requires the tight alignment of learning objectives, instructional materials, and assessments. Instructors and curriculum developers use backward design by creating learning objectives and assessments before content and instructional materials. All content on Coursera must include these Pedagogy Principles:

Figure: Coursera Pedagogy Principles

[redacted][39]

Structure and number of teaching staff in relation to curricular requirements

The Google team of SMEs, teaching experts, content creation and instructional designers work collaboratively within the framework of the general project management to operationalize the predefined learning objectives, divide them into units and logically sequenced learning elements, and collect and prepare the corresponding materials through internal cooperation. They prepare materials in the form of videos, reading units, discussion boards, quizzes, and activities as outlined by the Coursera Pedagogy Principles. On the Coursera platform within the course description page learners find information on instructor's backgrounds and qualifications.

[redacted][40]

[redacted][41]

[39] Proprietary information not publicly known about internal processes
[40] Proprietary information not publicly known about internal processes
[41] Level of detail that is not generally shared with the public

Subject matter experts' qualifications

According to Coursera and Google (see self-report p. 34), the teaching staff members' and subject matter expertise, practical experience, and pedagogical and didactic qualifications have undergone thorough assessment and documentation, thus supporting the certificate's quality profile and practical orientation. Emphasis is placed on the practical experience of the teaching staff, the instructors have accumulated years of professional experience,

[42]

[42] Proprietary information not publicly known about internal processes

Learner support and coaching

Coursera collaborates closely with partners to execute on a number of items related to learner services. These services include but are not limited to:

- monitoring all course forums and Slack channels on a regular basis to answer learner technical questions,
- reviewing learner progress in certificate progression,
- identifying at-risk learners, or learners that may demonstrate behaviors that indicate they may not be on a path to being successful in pursuit of their program, and
- generating automated and personalized communications to support successful engagement and completion (such as motivation help, pain-point help, and dropout intervention). These include
    - in-course pop-ups,
    - learning reminder and nudge emails, and
    - app notifications.

[redacted][43]

In addition to automated in-product retention support, Coursera provides staff support via:

- Program Support Dashboards, which are created using learner behavior data (e.g., assignments attempted/passed, activity in course, and platform behavior) and by highlighting learners at risk of not progressing successfully through a course, term, or program, and
- Learner Support Dashboards, which enable course staff to track learner progress within a specific course.

Learners are also supported and coached by instructors and teaching staff through a variety of proprietary tools in the learning path, including in-video questions, quizzes, technical labs, and other exercises. Providing frequent opportunities for feedback and active learning helps the learner track their progress towards mastery. Feedback is also used for summative graded assessments, which are available to learners at the end of each module of a course. Whereas practice assessments are low-stakes formative opportunities that provide feedback explaining why a response is correct or incorrect, learners demonstrate mastery of the learning objectives by passing each week's summative assessment. Outside of feedback related to formative and summative assessments, instructors can create engagement opportunities with learners through custom forums where learners can engage with instructors by asking questions and answering discussion prompts. Learners and instructors can also engage via email messaging in the "Messages" section of the platform.

Appraisal:

A Google team of instructional designers, technical content writers, program managers, and subject matter experts (SMEs), collaborate closely to design and develop the courses. The qualifications

[43] Proprietary information not publicly known about internal processes

and experience of the program management and instructional designers correspond with the requirements of the courses. Google's program managers and instructional designers are responsible for the quality of the courses as a whole (content and methodology), following Coursera's Content Specifications and Pedagogy Principles and in close co-operation with Coursera (represented by Senior Learning Design Consultants, Program Managers, and the Manager Teaching and Learning).

The structure and number of teaching staff (SMEs and instructors) correspond with the requirements of the courses. During the interviews, the panel noticed the high motivation and commitment of Google's staff. Coursera's mission of making quality education accessible, and achievable on a broad scale is vigorously supported by Google staff members.

The subject-specific, pedagogical, and didactic qualifications of the teaching staff correspond with the requirements of the courses. Special characteristics of the learner demographics are considered. Additionally, the SMEs' outstanding qualification is documented by references in their respective professional network. They have above-average business experience (evidenced in their CVs) and, according to completers' feedback in the assessment conference, use it in a clearly visible and valuable way in their teaching activities. Having checked the biographies of the teaching staff and talked to representatives during the assessment conference, the panel highlights the relevant practical experience of SMEs within Google of five to 20 years, as a unique selling proposition. Additionally, with respect to the entry-level job positions learners of the Google Cybersecurity Professional Certificate are targeting, there are instructors in junior job roles able to talk to the learners on eye-level and give them relevant insights into their aspired entry-level professional roles (insights gained during the online conference).

[redacted][44]

The panel highlights the internal cooperation between the technical unit (see chapter 4.5) and teaching staff/content providers responsible for the didactical part of the courses. It is systematically ensured that the teaching staff cooperate internally for the purpose of tuning the course components towards the overall qualification objectives (see also chapter 6). There are regular meetings of all those teaching in the course.

Support of the learners is an integral part of the services provided by the teaching staff. Support is offered on a regular basis and serves to help participants learn successfully. Due to the nature of the MOOC approach, the role of an instructor focusses on the development of course content and providing some interactive tools within the course (in-video questions, quizzes, assessments, technical labs, discussion forums). The support of the learners during the course is mainly limited to technical and legal aspects regarding the course organization of the course environment (although instructors can create engagement opportunities with learners through custom forums or via email). The panel has gained the impression from course completers that they would appreciate some more interaction with and support by instructors. They **recommend** having instructor

[44] Level of detail that is not generally shared with the public

supervision and support in some of the discussion forums and further options for learners to contact their instructors for exchange and support.

		Exceptional	Exceeds quality requirements	Meets quality requirements	Does not meet quality requirements	n.r.
4.	**Resources and Services**					
4.1	Teaching Staff of the courses					
4.1.1*	Course management			X		
4.1.2*	Structure and number of teaching staff in relation to curricular requirements			X		
4.1.3*	Teaching staff's qualifications		X			
4.1.4*	Teaching staff's pedagogical /didactic qualifications		X			
4.1.5	Practical experience of the teaching staff	X				
4.1.6	Internal cooperation			X		
4.1.7*	Learner support and coaching			X		

4.2 Process organization and administrative support for learners and teaching staff (Asterisk Criterion)

Coursera offers learner support and educator support designed to empower learners, educators, and administrators to do what they need to do on the Coursera platform. The Learner Help Center aims to help learners with questions they have on the Coursera platform from finding courses to take, to participating in their chosen course, to troubleshooting technical issues as needed. The Learner Help Center is exclusively for Coursera learners before, during, and after their course participation and completion. Learners can reach the Learner Help Center 24/7 (includes 24-hours live chat support and clientsupport@coursera.org responding within one hour) and get assistance in the following areas:

- **Account settings, login issues, and notification preferences.** Here, learners can get help with setting up their Coursera account, changing account settings and password troubleshooting, changing email notifications, and using the Coursera mobile app.
- **Payments and subscriptions.** Here, learners can receive help with payments for their courses, apply for financial aid or scholarships, learn about their subscription details, and receive information about promotions and free trials.
- **Enrollment options.** Learners can receive help enrolling or un-enrolling in a course and finding courses to take.
- **Grades, peer reviews, assignments, and labs.** Learners can receive help with troubleshooting the submission of peer-reviewed assignments, taking quizzes and assignments, checking grade details, understanding how to complete programming assignments, in-browser coding, and common issues with Coursera Labs.

- **Sharing and verifying Course Certificates.** Learners can access guides on how to download and share course certificates, verify their identity, and solve problems with course certificates.
- **Coursera Policies and Program Terms.** Learners can access accessibility statements,[45] accommodations for learners with disabilities, third-party policies, code of conduct, honor code, age restrictions, General Data Protection Regulations, and more.
- **Course content, including videos, discussion forums, and common course issues.** Learners can receive help troubleshooting problems with the Coursera platform, learn about recommended browsers and devices, receive assistance with video settings and subtitles, report problems within a course, and receive help with course content in discussion forums. Learners can also report abuse in forums here.

[redacted][46]

The Coursera Educator Resource Center, exclusive to Coursera instructors, is a place for both self-service and on-demand support to ensure the success of the digital classroom. Instructors can reach the Educator Resource Center 24/7 and get support in the following areas:

- **Platform onboarding & best practices.** View articles, instructional videos, and frequently asked questions on Coursera terminology, production milestones, partner communication channels, recommended browsers, and Coursera Pedagogy Principles.
- **Creating course content.** View resources on creating and organizing instructional material in lessons and modules through course authoring tools, digital course content management, templates for importing and exporting course outlines, video recording, and formatting guidelines, importing, and exporting content assistance, reading item management, and more.
- **Developing effective assessments and managing learner submissions.** Learn how assessments on Coursera work, how to set and adjust grading formulas, how to add new assessment items, auto-graded questions, and question variations, peer review assignments, how to manage quizzes, staff graded assignments, and discussion prompt management. This section also includes information on programming assignments, team assignments, high-touch grading features, question banks, proctored assignments, and academic integrity.
- **Building custom learning content and programming assignments.** Instructors can learn about how to create custom programming assignments, lab activities, and coding labs. Learn about developing, managing, and adding plugins, in-browser coding, and managing and configuring code blocks.
- **Viewing tips for launching, branding, and marketing content.** Through this resource, instructors can learn how to launch a new course, set a target launch date, marketing recommendations, improve search engine optimization, how to beta test, and how to reach

[45] https://www.coursera.support/s/article/360050668591-Accessibility-Statement?language=en_US (last call April 5, 2024)
[46] Level of detail that is not generally shared with the public

new learners in the Coursera community.

- **Managing their course staff, landing pages, and other settings.** Instructors can learn how to manage staff roles and permissions, how to copy a course, how to invite group members, manage landing pages and brand assets, update and manage course certificates, and how to create and manage private sessions.
- **Interacting with learners through discussion forums and announcements.** Here, instructors can learn how to leverage Coursera discussion forums, send course announcements and messages, recruit mentors to help support learners, and schedule live events.
- **Tracking content performance with data dashboards and exports.** Instructors can learn how to leverage course dashboards, download grade books, manage organization dashboards, and export data.
- **Finding content and accessibility policies.** Here, instructors can review content policies, platform changes, sharing and research policies, data privacy information, and copyright guidelines.

All Coursera employees have access to all learning opportunities on the platform, and partners, like employees, have additional access to Coursera Classroom Resources and Coursera Administrator Training.

Appraisal:

The panel was impressed by the feedback management in terms of process organization and administrative support. The main processes and responsibilities are described. The administrative staff operates as service provider for both learners and teaching staff, contributes to the further development of the course in cooperation with the relevant groups and prepares for the learner's needs in advance. The administrative contact is regularly available to help with enquiries and acute problems and questions. The course provider offers continuous professional development for the administrative staff. Opportunities of electronic service-support are intensively and effectively applied.

		Exceptional	Exceeds quality requirements	Meets quality requirements	Does not meet quality requirements	n.r.
4.	**Resources and Services**					
4.2*	Process organization and administrative support for learners and teaching staff		X			

4.3 Networking

Learners are supported in creating and maintaining networks through discussion forums. In discussion forums, learners receive support from one another on course-related topics and create and maintain networking opportunities. Discussion forums benefit learners by providing a space

for interaction with classmates, sharing resources, and help to answer questions about course materials or assessments. They are used for asking questions, debating ideas, and identifying other classmates who share the same goals so they can pursue networking opportunities and conversations.

In addition, all Professional Certificate completers receive access to the Professional Certificate Community, which not only provides further peer support, but also offers a range of career services, resume support and interview practice.

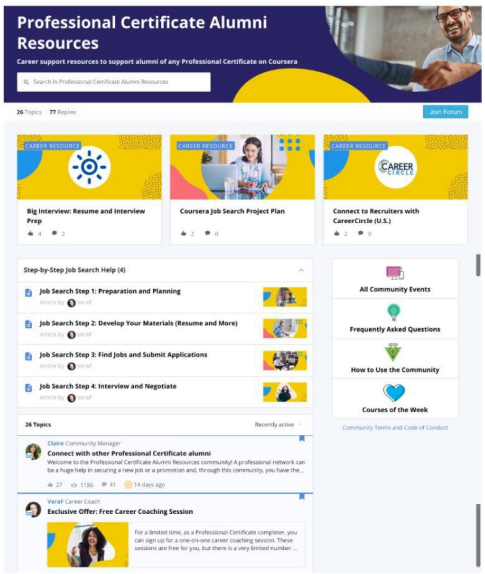
Certificate courses by Google ("Google Career Certificates")[47] also include content that teaches learners how to set up a professional network and maintain connections that will be helpful to their career, such as professional social media profiles, elevator pitches, and personal portfolios and websites.

Figure: Coursera Professional Certificate Career Resources

Professional Certificate Career Resources

All Professional Certificate completers will have access to a number of career support resources to help them reach their career objectives.

- **Job Search Guide:** The job search process is complex, especially when switching to a new career field. Our 5 step guide helps learners navigate the job search process.
- **Resume support:** Learners get free access to an AI-powered checker to score their resume and LinkedIn profile with actionable feedback for improvements, a resume builder, and a library of resume templates and guides to help them build a standout resume.
- **Hands-on interview practice:** Learners can practice mock interviews tailored to their specific industry, job, and experience level with free access to Big Interview.
- **Professional Certificate community**: Learners get access to the Professional Certificate community where they can get peer support and network with alumni who have successfully made a career change.



Appraisal:

Promoting networks is part of the didactical approach of Mastery Learning. The learners are supported in creating and maintaining networks by measures Coursera and Google provide to them like peer review assessments, forums, and relevant communities.

	Exceptional	Exceeds quality requirements	Meets quality requirements	Does not meet quality requirements	n.r.
4. Resources and Services					

[47] See chapter "Details on the institution"

	Exceptional	Exceeds quality requirements	Meets quality requirements	Does not meet quality requirements	n.r.
4.3 Networking			X		

4.4 Cooperation with academic institutions or enterprises (Asterisk Criterion for cooperation courses)

Cooperation of Coursera with all content partners for Professional Certificates (i.e. Google in this case) follows a general pattern Coursera has developed:

[redacted][48]

Quality Assurance in Implementation:

During implementation, either the key account manager (program responsibility) or a dedicated implementation success manager ensures that all work streams according to Coursera's blueprint for high-quality courses, are being well informed, kicked off, have their relevant action items and

[48] Proprietary information not publicly known about internal processes

keep their deadlines in order to complete the production process of the course to a level where the beta testing can start (see also chapter 6).

Initial launch and further cooperation:

Feedback from the beta testing is discussed with Google and changes are recommended. After the last QA test has successfully been achieved, content can go live on the platform. The cooperation is followed up by Coursera's Industry or University Partner success teams and enables Coursera to stay abreast of current trends and technologies and to develop courses and teaching materials accordingly. In addition, Coursera participates in research projects and events to gain valuable insights and further enhance teaching and learning quality. All cooperation is documented in detail and regularly evaluated. The course provider regularly reviews and updates the agreements to ensure that all activities contribute to developing the learners' qualifications and skills. [redacted][49]

Feedback loop:

After the content is launched, Coursera starts receiving feedback from learners and from the content partner (Google) itself. Therefore, both the quantitative performance data as well as the qualitative information received is taken into consideration for future content mapping by Coursera's content strategy team making sure that they can collaboratively learn from their mistakes and celebrate their successes (see also chapter 6).

Appraisal:

The panel acknowledges an effective and professional co-operation between Coursera and Google. Cooperation with the content partner (i.e. Google) is aligned with the strategy of the course and actively promoted, for example, by means of regular project work involving those who contribute to the courses in responsible positions to discuss the further development of the programs. The cooperation is actively pursued and has a clear impact on the conception and implementation of the courses. Such cooperation has a formative impact on the curricular contents and on the profile of the completers.

The agreements forming the basis of the cooperation with Google are documented. All such activities contribute to the development of the learners' qualifications and skills. Coursera ensures that the quality standards are met. Processes to enable this are coordinated closely with Google.

		Exceptional	Exceeds quality requirements	Meets quality requirements	Does not meet quality requirements	n.r.
4.	**Resources and Services**					
4.4(*)	Cooperation with academic institutions or enterprises (asterisk criterion for cooperation courses)			X		

[49] Level of detail that is not generally shared with the public

4.5 Technology and Facilities

Technical organizational unit

For the work of the technical organizational unit to enable and support the implementation of digital teaching see description of the Coursera Educator Resource Center in chapter 4.2. Coursera regularly maintains and updates the Educator Resource Center and the Coursera platform with guides on various innovative technologies and tools for teaching, digital classroom management, assessment management, and learner management so that instructors can create a seamless digital learning experience for learners.

Teaching and Learning platform

The Coursera platform is designed to enable learners to discover the right content and credentials by domain (e.g., business, technology, health), by skill (e.g., Python, statistics, data visualization), and by job role (e.g., data analyst, marketer, engineer). Once learners enroll in a course, the unified technology platform is designed to enable them to learn more effectively to advance in their careers and earn credentials to signal their learning to prospective employers.

The learning experience includes:

- Courses with video-based lectures, in-video quizzes, notes and highlights, readings, assessments, peer reviews, and group projects,

[redacted][50]

- Coursera Labs with hands-on projects that teach practical skills using real-world tools such as Python, Jupyter Notebooks, VS Code, R-Studio, and many other desktop and cloud-based applications fully in-browser with no software or data downloads,
- A mobile app that is designed to enable course downloads for offline learning, regarded to be especially important for learners with limited or intermittent internet connectivity or power, and
- Localized learning experiences including localized homepage, payment options, local partnership, and content discovery.

Learners enroll in their preferred course by clicking “Enroll” and subscribing to Coursera through the course description page. After enrolling, learners can view all course[51] content by module and week, continue to the course and begin navigating the Coursera platform. Within the platform, there is a navigation bar that contains sections including Course Material, Grades, Notes, Discussion Forums, Messages, and Course Information. All tools and multimedia files are integrated into the Coursera platform, and the entirety of teaching and learning activities in Coursera courses occurs within the Coursera platform.

- **Course Material**: In this section, learners can navigate throughout the weekly learning material. Each week begins with a summary overview, introductory videos, an overview of

[50] Proprietary information not publicly known about internal processes

[51] For Coursera terminology program/course/module, see chapter 3.1 and glossary

the learning objectives, video lecture, readings, and assignments, and ends with a summary of the week.

- **Grades**: In this section, learners can view the quiz or assessment item, their completion status, the due date, the weight of the quiz or assessment item, and their grades.
- **Notes**: Learners can utilize the Notes section as a digital notebook, where notes are collected throughout the duration of their study.
- **Discussion Forums**: Instructors can create custom forums to provide a space for learners to interact with one another. Learners can share resources and help answer questions about course materials or assessments. This section holds all discussion forums for the course by week, where learners can discuss the week's modules or respond to assigned prompts. Discussion forums can also be used to ask questions, debate ideas, and find classmates who share their goals. Forum guidelines are available for reference in the Discussion Forums section.
- **Messages**: In the Messages section, learners can read messages from the instructor, organization, or Coursera support. Instructors can send messages to learners to communicate important updates and information. They can send course announcements to all learners who meet certain criteria, like those who are currently enrolled or have completed the course. Instructors can also send announcements only to learners in a specific private course instance.
- **Course Information**: In the Course Information section, learners can view a course description and course details, view instructor information, and review the syllabus.

In addition to the above features, learners can access the Learner Help Center, and Instructors are able to access the Educator Resource Center, directly through their respective instance.

In order to enable learning outside the homepage, i.e., without constant access to the internet, learners have the possibility to download all videos, the corresponding transcripts and toolboxes to their own computers and to read and edit the materials offline.

In addition, Coursera offers a learning app for download via all common app stores. Learners can keep track of their current learning status, view and download the relevant elements of the current week or the entire course, and watch videos directly in the app. The app also offers sending learning reminders as a notification and to be reminded of learning at self-determined times. Only the software-supported labs require learning on a computer.

Another feature was made available with the last update. With the new "audio only" mode, participants can now listen to only the audio track of selected videos.

Accessibility

Coursera's mission is to provide universal access to the world's best education. They are committed to achieve the goal of maintaining access to the website and mobile applications to all learners, including those with disabilities via the following:

- Coursera strives to comply with the Web Content Accessibility Guidelines ("WCAG") 2.1 AA published by World Wide Web Consortium.
- All course lecture videos offer closed captioning. Learners may flag issues while watching

lecture videos and are encouraged to submit support tickets for content that is not captioned appropriately. Coursera is committed to address the matter promptly.

- Coursera's videos are available to learners at any time which allows learners to get a head start on the course.
- An independent accessibility consultant periodically reviews the platform. Potential accessibility issues are identified so that Coursera can address such issues and take any remedial actions deemed necessary.
- Coursera developers engage in training and projects relating to accessibility that both educate and improve the accessibility of their products as they are being developed.
- Coursera has published accessibility guidelines for content providers and contractually requires that content providers comply with their independent obligations under applicable accessibility laws.
- Coursera manages an email alias where incoming accessibility support tickets from learners are addressed.

The Learner Help Center has resources for learners with disabilities.[52]

Data Protection

[redacted][53]

[52] https://www.coursera.support/s/article/208280056-Accommodations-for-learners-with-disabilities?language=en_US (last call March 18, 2024)

[53] Level of detail that is not generally shared with the public (e.g., expressly naming internal tools to support compliance processes). Please see https://www.coursera.org/about/privacy for relevant public information (last call April 18, 2024)

Data Analysis System

[redacted]

[redacted][54]

Technical support for learners

[redacted]

[redacted][55]

Access to required literature

[redacted][56]

Appraisal:

The technical organizational unit enables and supports the implementation of digital teaching. In addition, the technical organizational unit follows trends and enables teachers to implement innovative technologies and tools in teaching beyond the standard. During the online conference, the Google teaching staff confirmed that regular offers of varied training courses to instructors are provided. The Coursera Teaching and Learning team uses recent learning science research to work continuously on the further development of digital learning tools (see also chapter 4.1). There is a

[54] Proprietary information not publicly known about internal processes
[55] Proprietary information not publicly known about internal processes
[56] Proprietary information not publicly known about internal processes

plan at course provider level (evidenced by the establishment of the Educator Resource Center) for the provision of training in the technical aspects of digital teaching.

The panel highlights the teaching and learning platform as Coursera's unique selling point. The platform is clearly structured and designed to be user-friendly. It is stable and scalable and there are no disruptive impulses when using it. It offers sufficient possibilities for embedding text, audio, images, graphics, animation, multimedia files and social media. Learners can navigate smoothly through the teaching units. The teaching platform offers sufficient opportunity for collaborative learning and promotes interaction both among learners and between learners and teachers (which should be even more intensified, see recommendation in chapter 4.1).

Coursera has access to a data analysis system and sufficient technology to process large amounts of data. The data available could be more intensively used to identify specific learner analytics (like pace and time for finishing learning units, course-specific completer surveys).

Learners can reach the technical support of Coursera easily. Questions regarding digital teaching and the teaching platform are answered quickly. Coursera ensures that learners are able to handle the technologies and tools. Coursera proactively supports communication between learners and technical departments and has established rules on response times.

Coursera provides access to all necessary literature, articles, and information within the course. The information is aligned with the course content and is up to date. A concept for the course's continuing update of resources and material is available.

		Exceptional	Exceeds quality requirements	Meets quality requirements	Does not meet quality requirements	n.r.
4.	**Resources and Services**					
4.5	Technology and Facilities					
4.5.1	Technical organizational unit		X			
4.5.2*	Teaching and Learning platform	X				
4.5.3	Data analysis system			X		
4.5.4*	Technical support for learners		X			
4.5.5	Access to required literature			X		

5 DOCUMENTATION

The Google Professional Certificates are documented and publicized through the Coursera platform. Learners can access the entirety of the course description and learning objectives before enrolling in the course through the course description pages. Learners can access all course data and content by enrolling in Professional Certificates at the following points of registration (landing pages):

- Google Advanced Data Analytics Professional Certificate (Advanced-Level): https://www.coursera.org/professional-certificates/google-advanced-data-analytics
- Google Business Intelligence Professional Certificate (Advanced-Level): https://www.coursera.org/professional-certificates/google-business-intelligence
- Google Cybersecurity Professional Certificate (Entry-Level): https://www.coursera.org/professional-certificates/google-cybersecurity[57]

All course content, including lectures, projects, readings, assessments, and assignments are accessible for interested parties within the Coursera platform. The courses' content, curricula, and assessment schemes are documented on the course and module description pages accessible by the stated web address.

In addition to course documentation through the Coursera platform, Coursera's academic policies and procedures related to accommodations for learners with disabilities, age restrictions, accessibility, honor code, general data protection regulations, international restrictions, and third-party tools are constantly updated and made publicly available.[58]

It is planned that after successful initial certification, additional information will also be made available on the course homepages about ECTS credit recommendation and documentation.

Appraisal:

The courses' contents, curricula, and assessment schemes have been documented and published. Especially the provided course data sheets provide a detailed overview of course contents and learning outcomes but need to be more transparently communicated to prospective learners on the course pages. The panel **recommends** presenting on the course page the contents and learning outcomes of the courses in more detail to aspiring learners and to employers and/or schools and other stakeholders (see also condition in chapter 2 concerning the documentation of recommended prerequisites on the course pages).

For the planned documentation on the Coursera website and documentation the panel team emphasizes the following issues to observe:

1. Documentation of ECTS crediting recommendation has to be included on the respective program descriptions and include: number of credits recommended, requirements for awarding credits and workload assigned to the program (see chapter 3.2).

[57] Last call March 18, 2024

[58] https://www.coursera.support/s/learner-help-center-coursera-policies?language=en_US, last call March 18, 2024

2. Documentation of ECTS crediting has also to be included on the respective certificate issued by Coursera. Documentation has to include number of credits recommended and workload assigned to the program (see chapter 3.2).
3. When course completers apply for recognition of ECTS credit points at a HEI, the HEI is obliged to examine recognition and to justify if ECTS credit points are not or only partially accepted. However, the HEI is not obliged to the recognition of ECTS credit points. Documentation on the website and further documentation and information therefore must not evoke the impression that HEIs are obliged to give (full) recognition.

When course completers apply for recognition of ECTS credits at a HEI, the HEI is not obliged to recognize prior learning (RPL) and awarding ECTS credits for RPL. Documentation on the Coursera Homepage therefore must not evoke the impression that HEIs are obliged to give (full) recognition. The panel also points out that as there are no formal enrollment requirements for the Professional Certificates, course completers may also be required to catch up on formal enrollment requirements of the HEI (e.g., school-leaving certificate level).

		Exceptional	Exceeds quality requirements	Meets quality requirements	Does not meet quality requirements	n.r.
5.*	Documentation			X		

6 QUALITY ASSURANCE

[redacted]

[redacted]

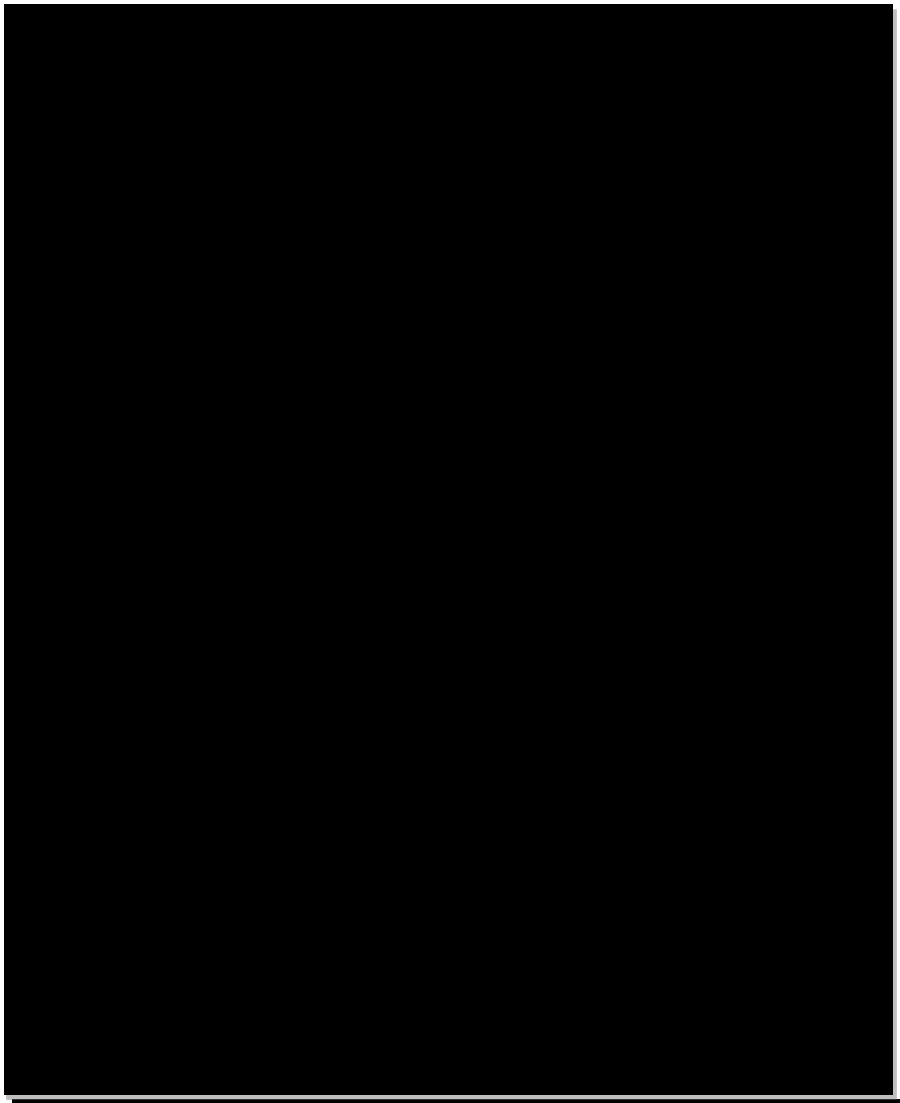
[redacted]

[redacted]

In addition, the Google team gains further insights about how the content is being interpreted and identifies ways to improve the content by monitoring discussion forums on the Coursera platform, listening to organic social conversation from learners, and gathering feedback from ecosystem partners like nonprofits, universities, and employers.

[redacted]

[redacted]



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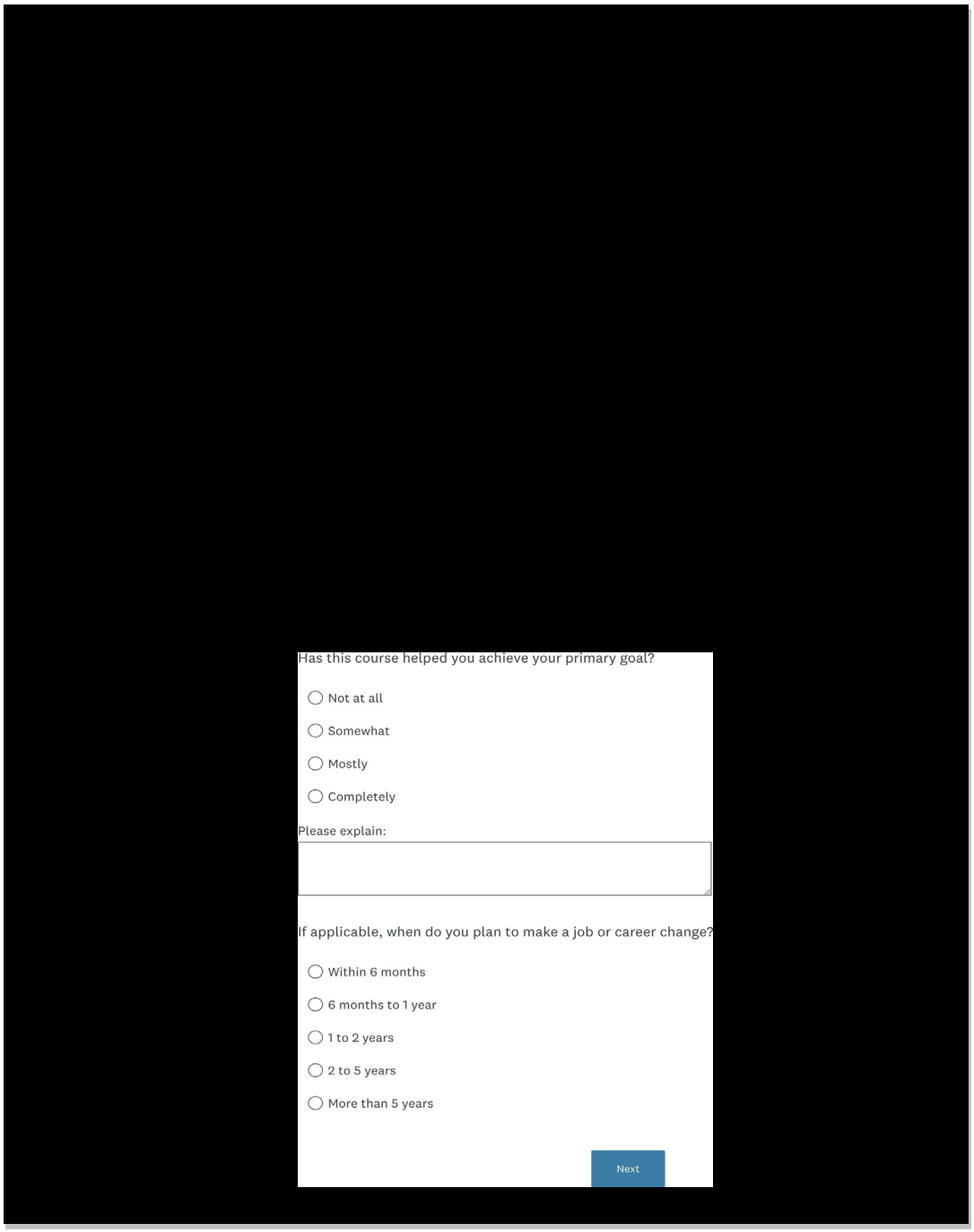

[redacted]

[redacted][59]

Appraisal:

There is a quality assurance and development procedure, which systematically and continuously monitors and develops the quality of the courses with respect to its contents, processes, technology, and outcomes. Sufficient staff resources are available, and responsibilities are clearly defined. Teaching staff and learners' contribution to quality assurance and development procedures is ensured (for the learner workload evaluation see condition chapter 3.1). In addition, Google employees from the respective occupational field of the courses participate in planning and assessing quality assurance and development procedures. Opportunities for improvement are systematically detected and implemented. The quality management system includes a procedure to regularly check the effectiveness of the implemented measures.

Evaluation by learners/completers is carried out on a regular basis and in accordance with a prescribed procedure; the outcomes provide input for the quality development process. Coursera collects a lot of feedback information and processes this into the "Learner Outcome Report". However, it has not become clear to the panel whether and how information of the Learner Outcome Report is provided to the learners and completers. The panel therefore **recommends** communicating current Learner Outcome Reports on the website. In addition, completer data should be collected and analyzed for each Certificate course separately. The panel **recommends** collecting course-specific completer data for compiling them into Learner Outcome Reports at course-level.

Besides external evaluation of course completers, the panel appreciates that various employers/industry partners and university partners are regularly invited to give feedback on the Professional Certificates.

Quality control by the teaching staff is carried out on a regular basis and in accordance with a prescribed procedure and provides input for the quality development process. The communication of outcomes to learners is missing. Considering limitations regarding the tremendous number of learners, the panel **recommends** using the Coursera platform (course info page or a separate page for feedback) and following up with learners of the respective learning unit about instructor's performance results if there have been any issues identified.

[59] Proprietary information not publicly known about internal processes

		Exceptional	Exceeds quality requirements	Meets quality requirements	Does not meet quality requirements	n.r.
6.	**Quality Assurance**					
6.1*	Quality assurance and development of course content, processes, and outcomes		X			
6.2	Instruments of quality assurance					
6.2.1	Evaluation by learners				X	
6.2.2	Quality assurance by teaching staff			X		
6.2.3	External evaluation by course completers, employers and others				X	

Quality Profile

Platform Provider: Coursera Inc.
Education Provider: Google

Continuing Education Courses:

- Google Advanced Data Analytics Professional Certificate
- Google Business Intelligence Professional Certificate
- Google Cybersecurity Professional Certificate

Quality Ratings		Exceptional	Exceeds quality requirements	Meets quality requirements	Does not meet quality requirements	n.r.
1.	**Strategy and Objectives**					
1.1*[60]	Logic and transparency of course objectives				**Condition**	
1.2	International orientation of the courses		X			
1.3	Positioning of the courses					
1.3.1	Positioning of the courses in the education and job market, and the professional field ("Employability")	X				
1.3.2	Position of courses within the course provider's overall strategy			X		
2.	**Admission**					
2.1*	Focus on the target group			Cyber-security	**Condition: Adv. DA & BI**	
2.2*	Admission conditions			X		
2.3*	Legal relationship			X		
3.	**Implementation**					
3.1	Structure					
3.1.1	Structure of the courses			X		
3.1.2*	Application of the "European Credit Transfer and Accumulation System (ECTS)" and modularization				**Condition**	
3.1.3*	Conditions of participation and assessment regulations			X		
3.1.4*	Feasibility of study workload			X		
3.2	Content					
3.2.1*	Logic and conceptual coherence			X		
3.2.2	Integration of theory and practice			X		
3.2.3	International and intercultural contents			X		
3.2.4	Methodological competence				X	
3.2.5	Academic work and science-based teaching			Adv. DA		BI, Cybersecurity

[60] *: Asterisk Criterion

Quality Ratings		Exceptional	Exceeds quality requirements	Meets quality requirements	Does not meet quality requirements	n.r.
3.2.6*	Examinations			X		
3.3	Transdisciplinary qualifications and soft skills			X		
3.4	Didactics and methodology					
3.4.1*	Logic and transparency of teaching and learning methodology		X			
3.4.2	Course and learning materials		X			
3.5*	Skills for employment/Employability		X			
4.	**Resources and Services**					
4.1	Teaching staff of the courses					
4.1.1*	Course management			X		
4.1.2*	Structure and number of teaching staff in relation to curricular requirements			X		
4.1.3*	Teaching staff's qualifications		X			
4.1.4*	Teaching staff's pedagogical/teaching qualifications		X			
4.1.5	Practical experience of the teaching staff	X				
4.1.6	Internal cooperation			X		
4.1.7*	Learner support and coaching			X		
4.2*	Process organization and administrative support for learners and teaching staff		X			
4.3	Networking			X		
4.4(*)	Cooperation with academic institutions or enterprises (asterisk criterion for cooperation courses)			X		
4.5	Technology and Facilities					
4.5.1	Technical organizational unit		X			
4.5.2*	Teaching and learning platform	X				
4.5.3	Data analysis system			X		
4.5.4*	Technical support for learners		X			
4.5.5	Access to required literature			X		
5.*	**Documentation**			X		
6.	**Quality Assurance**					
6.1*	Quality assurance and development of course content, processes, and outcomes		X			
6.2	Instruments of quality assurance					
6.2.1	Evaluation by learners				X	
6.2.2	Quality assurance by teaching staff			X		
6.2.3	External evaluation by course completers, employers and others				X	

Glossary

Coursera and report terminology	description
Professional Certificate (program); Program	Course (entity that is subject to certification)
Course	Content entity covering one topic within the program
Module	Weekly learning entity, smallest learning entity
Subject Matter Expert	Employee of Google (Coursera content partner) or third party assigned by Google (Coursera content partner), who is qualified for content development
Instructor	Teaching staff that is part of the team that conceives, designs, and produces the course