

CERTIFICATION

Project Number: 23/117
Education Institution: Coursera Inc.
Courses: IBM DevOps and Software Engineering Professional Certificate
IBM IT Support Professional Certificate
IBM and ISC2 Cybersecurity Specialist Professional Certificate
IBM Business Intelligence (BI) Analyst Professional Certificate
IBM IT Project Manager Professional Certificate
IBM Product Manager Professional Certificate
IBM Project Manager 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

Decision of the FIBAA Accreditation and Certification Committee



16th Meeting on 27 November 2024

CERTIFICATION

Project Number:	23/117
Platform Provider:	Coursera Inc.
Education Provider:	IBM Corp.
Courses:	IBM DevOps and Software Engineering Professional Certificate IBM IT Support Professional Certificate IBM and ISC2 Cybersecurity Specialist Professional Certificate IBM Business Intelligence (BI) Analyst Professional Certificate IBM IT Project Manager Professional Certificate IBM Product Manager Professional Certificate IBM Project Manager Professional Certificate

The FIBAA Accreditation and Certification Committee has taken the following decision:

Certification with condition:

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 one condition.

Period of Certification: November 27, 2024 – November 26, 2029

The FIBAA Quality Seal is awarded.

Condition

Coursera and IBM

- a) provide Certificate supplements for each course that document the courses’ associated qualifications in a transparent and coherent manner.
- b) provide correct documentation in the Certificate Supplement regarding the HEI’s obligations and scope for decision-making when recognizing prior learning (RPL) and awarding ECTS credits for RPL.

Proof of meeting the condition is to be supplied by August 26, 2025.

The FIBAA Quality Seal is awarded.

Assessment Report

Host of educational content:

Coursera Inc.

Content partner: IBM

Continuing Education Courses:

1. IBM DevOps and Software Engineering
 2. IBM IT Support
 3. IBM and ISC2 Cybersecurity Specialist
 4. IBM Business Intelligence (BI) Analyst
 5. IBM IT Project Manager
 6. IBM Product Manager
 7. IBM Project Manager
-

Brief description of the continuing education courses:

Coursera Inc.¹ hosts a portfolio of “Professional Certificates” from Microsoft, 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, project management, and design.

IBM Entry-Level Professional Certificate courses² belong to this portfolio of Professional Certificates and are offered to individuals worldwide who seek to reskill to move into emerging digital careers.

The IBM Professional Certificate courses of this certification process comprise a workload of approximately 90 hours (IBM Product Manager) to 200 hours (IBM DevOps and Software Engineering), thus also representing “micro-credentials” 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 2015.³

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

Date of opening of the procedure:

January 25, 2024

Date of filing the self-assessment report:

August 12, 2024

Date of online assessment conference:

September 17-19, 2024

Type of certification:

Initial Certification

Mode of study:

Online, Part-time

Initial start of the Courses:

1. IBM DevOps and Software Engineering: [REDACTED]
2. IBM IT Support: [REDACTED]
3. IBM and ISC2 Cybersecurity Specialist: [REDACTED]
4. IBM Business Intelligence (BI) Analyst: [REDACTED]
5. IBM IT Project Manager: [REDACTED]
6. IBM Product Manager: [REDACTED]
7. IBM Project Manager: [REDACTED]

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

Start of course cycle:

continuous

Capacity load:

not limited

Learner intake⁴ by March 2024:

1. IBM DevOps and Software Engineering: [REDACTED]
2. IBM IT Support [REDACTED]
3. IBM and ISC2 Cybersecurity Specialist [REDACTED]
4. IBM Business Intelligence (BI) Analyst [REDACTED]
5. IBM IT Project Manager [REDACTED]
6. IBM Product Manager [REDACTED]
7. IBM Project Manager [REDACTED]

No. of ECTS credits assigned to the Course:

1. IBM DevOps and Software Engineering: 8 ECTS credits
2. IBM IT Support: 4 ECTS credits
3. IBM and ISC2 Cybersecurity Specialist: 5 ECTS credits
4. IBM Business Intelligence (BI) Analyst: 6 ECTS credits
5. IBM IT Project Manager: 6 ECTS credits
6. IBM Product Manager: 4 ECTS credits
7. IBM Project Manager: 4 ECTS credits

Hours (workload) per credit:

25

Project Manager:

Christiane Butler

Panel Members:⁵**Prof. Dr. Stephan Convent**

Diploma University of Applied Sciences

Dean of Studies for Digital Management, Professor of Security Management

Prof. Dr. Harald Dobernig

University of Applied Sciences Upper Austria

Professor for Digital Process Management

⁴ Enrolment 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.

Thomas Keuthen

ZHAW

Student: MSc. Business Administration

Completed: BSc. Business informatics (DHBW)

Ilja Kogan

Wayfair GmbH

Senior Product Manager

Prof. em. Dr. Wolfgang Renninger

East Bavarian Technical University Amberg-Weiden

Professor of Organization and Information Systems

List of Tables

Table 1: Entry-Level Professional Certificate Content Specifications	29
Table 2: Workload calculation and ECTS credit assignment.....	34
Table 3: IBM Professional Certificates instructors' qualifications	49

List of Figures

Figure 1: Coursera's EQF level determination approach	15
Figure 2: Coursera's lifelong learning ecosystem	24
Figure 3: Certificate Supplement on the Credly page (example for the IBM Project Manager Professional Certificate)	31
Figure 4: Sample weekly plan for "Introduction to DevOps" (IBM DevOps and Software Engineering)	33
Figure 5: Coursera Professional Certificate Career Resources	54
Figure 6: Coursera Coursera Quality Assurance System	66
Figure 7: Screenshot – Course level feedback.....	70
Figure 8: Screenshot – Feedback to the teaching staff.....	71
Figure 9: Topic/"Course" ⁶ level completion feedback.....	71

⁶ See glossary at the end of this report

Summary

The panel's 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 30 October 2024.

The Professional Certificates: **IBM DevOps and Software Engineering, IBM IT Support, IBM and ISC2 Cybersecurity Specialist, IBM Business Intelligence (BI) Analyst, IBM IT Project Manager, IBM Product Manager, and IBM Project Manager** of Coursera Inc. fulfil (with one exception) the FIBAA quality requirements for certified continuing education courses and can be certified by the Foundation for International Business Administration Accreditation (FIBAA) under one condition. 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 aspect: Application of the "European Credit Transfer and Accumulation System" (ECTS) and modularization (Certificate Supplements) (see chapter 3.1). Therefore, they recommend the certification on condition of meeting the following requirement:

Condition (see chapter 3.1): Coursera and IBM

- a) provide Certificate supplements for each course that document the courses' associated qualifications in a transparent and coherent manner.
- b) provide correct documentation in the Certificate Supplement regarding the HEI's obligations and scope for decision-making when recognizing prior learning (RPL) and awarding ECTS credits for RPL.

Proof of meeting this condition is to be documented by August 26, 2025.

Furthermore, the quality requirement that has not been fulfilled for the courses **IBM IT Project Manager, IBM Project Manager, and IBM Product Manager** – International and intercultural contents (see chapter 3.2) – is not an asterisk criterion and therefore does not lead to a further condition. The measures the course provider takes to solve the identified problem are to be considered during the re-certification.

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

- specifying the organizational embedding and responsibility for the process of EQF determination by improving documentation of the process including who is involved and in charge and at which step of the designing stage (or redesign or further development) of a course the EQF level is deduced (or in case of a redesign: checked, evaluated, and adjusted). The respective benchmarks – university courses used as comparison for EQF level determination – should also be further explained as to why they were chosen as a comparison (see chapter 1.1),
- improving support for potential learners in deciding which Professional Certificate to take (see chapter 1.1),
- adding information on recommended prior knowledge and skills provided in the self-report to the respective course landing page (see chapter 2),
- introducing workload questions in the evaluation questionnaires after specific activities or

“modules” to get more qualitative evaluation results (see chapter 3.1),

- for the courses **IBM IT Project Manager**, **IBM Project Manager**, and **IBM Product Manager**: appropriately integrating international contents and intercultural aspects and setting them down in the courses’ qualification objectives and strategy (see chapter 3.2),
- linking to Coursera existing offerings regarding academic writing and research skills (offered in cooperation with university partners) (see chapter 3.2),
- linking to further material throughout the courses to encourage learners’ motivation for further learning and self-study (see chapter 3.4),
- re-thinking marketing/wording implying completers are “specialists” upon completion (see chapter 3.5),
- formulating effective measures to further improve employability, e.g., linking to other certificates that round up and/or deepen skills acquired (ensuring a logic behind the “stackability” of the courses), connecting completers to professional networks/companies to find internships (see chapter 3.5),
- identifying and implementing effective measures to make sure completers know of career-services (see chapter 3.5),
- offering learners a direct means of communication to instructors, e.g., a regular online consultation hour (see chapter 4.1),
- giving the course management more access to relevant data at a sufficient level of granularity to be able to work with it for the further development of the courses (see chapter 4.5),
- for the learner evaluation (see chapter 6):
 - collecting more qualified feedback (comment section and specific questions after specific learning activity to refine star-ratings and thumb expressions),
 - relating feedback questions more specifically to formulated learning outcomes,
 - collecting feedback at least once during the course (e.g., in the middle), not only at the end of the Certificate,
 - collecting feedback from dropouts (inactive learners),
 - communicating detailed results of learner and course completer evaluations to all relevant stakeholders and decision makers and provide a summary (e.g., Learner Outcome Report) on the website, and
 - collecting and analyzing completer data for each Certificate course separately (especially what kind of positions they work in pre- and post-certificate completion).

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:

- Logic and transparency of course objectives (see chapter 1.1)
- International orientation of the courses (see chapter 1.2)
- Positioning of the course within the course provider’s overall strategy (see chapter 1.3)
- Integration of theory and practice (see chapter 3.2)
- Logic and transparency of teaching and learning methodology (see chapter 3.4)
- Teaching staff’s pedagogical/teaching qualifications (see chapter 4.1)
- Practical experience of the teaching staff (see chapter 4.1)
- For the **IBM and ISC2 Cybersecurity Specialist**: Cooperation with academic institutions or enterprises (see chapter 4.4)
- Technical organizational unit (see chapter 4.5)
- Teaching and learning platform (see chapter 4.5)
- Data analysis system (see chapter 4.5)
- Technical support for learners (see chapter 4.5)
- Documentation (see chapter 5)

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

- Coursera’s mission to provide universal access to world-class learning (see chapter “Details on the institution”),
- efforts of Coursera’s corporate division dedicated to developing industry partnerships (see chapter “Details on the institution”),
- Coursera’s goal to support recognition of prior learning aiming at ECTS credit recommendation (see chapter “Details on the institution”),
- very logical and well-structured course units and very transparent workload/ECTS credit calculation (see chapter 3.1),
- the effective use of modern project management tools like Slack or Jira and the agile approach which is used to organize internal communication (see chapter 4.1),
- course management (see chapter 4.1),
- internal cooperation (see chapter 4.1),
- effective cooperations with enterprises (e.g., IBM, SkillUp, ISC2) (see chapter 4.4),
- quality assurance and development of course content, processes, and outcomes (see chapter 6).

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 Corp⁷ 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 Microsoft, 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:⁸

- 2,200+ Guided Projects: Gain a job-relevant skill in less than two hours
- 5,300+ Courses: Learn something new in four to six weeks
- 625+ Specializations: Gain a job-relevant skill in three to six months
- 75+ Certificates
 - 45+ Entry-level Professional Certificates:⁹ Earn a certification of job readiness for an in-demand career in three to nine months

⁷ <https://www.bcorporation.net/en-us/> (certification for sustainability)

⁸ As of December 31, 2023. The periods noted are intended completion timeframes; actual time to completion varies by learner.

⁹ In this report referred to as “courses”, for terminology see glossary at the end of this report.

- 20+ 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
- 30+ Degrees: Earn a bachelor's or master's degree or a postgraduate diploma

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.

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. 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.



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 Software Engineering, IT Support, Cybersecurity, Business Intelligence, Project Management, IT Project Management, and Product Management, Coursera has been able to win IBM as a content partner (see chapter 4.4).

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. In addition to these external quality assurance measures, Coursera continuously and systematically collects, processes, and makes available data

in dashboards that are analyzed at least once a year in a detailed feedback and evaluation

¹⁰ [ECTS Users' guide 2015](#), page 46, last access on September 20, 2024

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).

Description and appraisal in detail

1 STRATEGY AND OBJECTIVES

1.1 Logic and transparency of course objectives

Coursera’s general objectives for “Professional Certificates” *are to* 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” 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.

The IBM Professional Certificates are designed to provide learners with a holistic qualification concept that aims to impart subject-specific, methodological, and social competencies. Across the various IBM Professional Certificates, the application orientation is represented in the practical implementation of projects and application of *relevant* 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.

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Appraisal:

Coursera and IBM systematically base the qualification objectives of the courses on the specific requirements of the target group. The qualification objectives are documented in detail. They are constantly reviewed for their adequacy and up-to-dateness and are adapted accordingly.

Learning objectives embrace appropriate training of knowledge, skills and competence, comprehensive employability, as well as the development of the individual learner’s personality (so far possible within the limited scope of the courses).

The course objectives are based on subject-specific and generic learning outcomes which are in line with the level of the qualification to be awarded on completion.

The courses take into account the requirements of the European Qualification Framework (EQF). The deduction of the EQF level is comprehensible. However, a few details within the EQF level deduction process remained unclear to the panel, e.g. who exactly is responsible for the process of EQF level deduction and when exactly the EQF level deduction takes place during the development process and how the benchmarks (university modules) were chosen. Therefore, the panel **recommends** specifying the organizational embedding and responsibility for the process of EQF determination by improving documentation of the process including who is involved and in charge and at which step of the designing stage (or redesign or further development) of a course the EQF level is deduced (or in case of a redesign: checked, evaluated, and adjusted). The respective benchmarks – university courses used as comparison for EQF level determination – should also be further explained as to why they were chosen as a comparison.

Additionally, the panel hints at the potential benefits of making the EQF level determination and analysis available to the course management for the further development of the courses and to incorporate this process into the quality assurance and development process of the programs.

The panel also points out that Coursera offers several courses from different content partners with similar titles (e.g., IBM Cybersecurity Certificate, Google Cybersecurity Certificate, Microsoft Cybersecurity). It does not become clear to the prospective learners how the courses differ in terms of level and content and which Certificate course or which provider/company to choose as best fit. As explained by Coursera during the assessment conference, the algorithm in which courses appear on the website when searching for a particular topic (e.g., Cybersecurity), is currently based on star rating and how many learners are enrolled in the course. In the opinion of the panel, this may give interested learners information on the quality of a course but will not necessarily help to choose the one that best suits the learner’s interests in terms of contents and level.

The panel therefore **recommends** improving support for potential learners in deciding which Professional Certificate to take. For instance, this could be achieved by revealing information on distinctive features of similar courses on the website. The panel points out that the results of the EQF level deduction process may also be of assistance here.

When defining the learning objectives, the course provider also takes into account the findings of the Learner Outcome survey, conducted with Professional Certificate completers. A Certificate-specific analysis is missing (see recommendations in chapter 6). However, due to the limited scope of the courses and the fact that the target group rarely completes only one course or Certificate, a course-level evaluation of outcomes with regards to completers’ employability may not lead to qualified results.

		Exceptional	Exceeds quality requirements	Meets quality requirements	Does not meet quality requirements	n.r.
1.	Strategy and Objectives					
1.1* ¹¹	Logic and transparency of course objectives		X			

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 international applicability of the certificates. All courses are delivered in English, while some are translated into or have subtitles provided for other world languages. For the IBM Professional Certificates there are about 22 automatic translations available, for example in French, Portuguese, Italian, Korean, Chinese, Spanish, or German. Additional languages can be added on request and due to identified demand for certain areas or markets.

¹¹ *: Asterisk Criterion

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. The necessary skills are derived from carefully crafted and analyzed job role alignment with leading enterprises and subject matter experts (see chapter 3.5). Emphasis is always placed on international standards, and common procedural techniques applied worldwide.

Appraisal:

On the basis of the international orientation of the courses (for implementation see chapter 3.2) the intention is to sustainably promote the employability of course graduates.

The way in which the courses are designed (availability, admission (see chapter 2), and automatic translation in more than 20 world languages) Coursera puts an emphasis on internationality. Learners clearly acquire knowledge and develop skills that enable them to competently handle international tasks in their respective fields (within the scope of the courses).

	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			

1.3 Positioning of the courses

Over the past four years, 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 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 (see self-report p. 14). They offer a way for individuals to gain new skills, qualifications, and credentials without attending traditional classrooms.

Professional Certificates hosted on Coursera’s platform are industry-recognized (see self-report p. 14) 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 completers 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 (see description of the job-role alignment in chapter 3.5).

Coursera is aware of other platforms that support the delivery of similar online educational content. One of the nuanced aspects about evaluating Coursera is that it is a multi-sided market - formed by learners, content partners, and enterprise. Besides universities who come on the platform as educators, there are leading companies joining the platform to train and skill people around the world. The Coursera platform enables content production, delivery, learning experience, and analytics to serve a global audience, across a range of needs and contexts. Coursera has a transparent co-branding approach with content providing partners, whereby the Coursera brand and role is readily known by learners.

[REDACTED]

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 IBM 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.

[REDACTED]

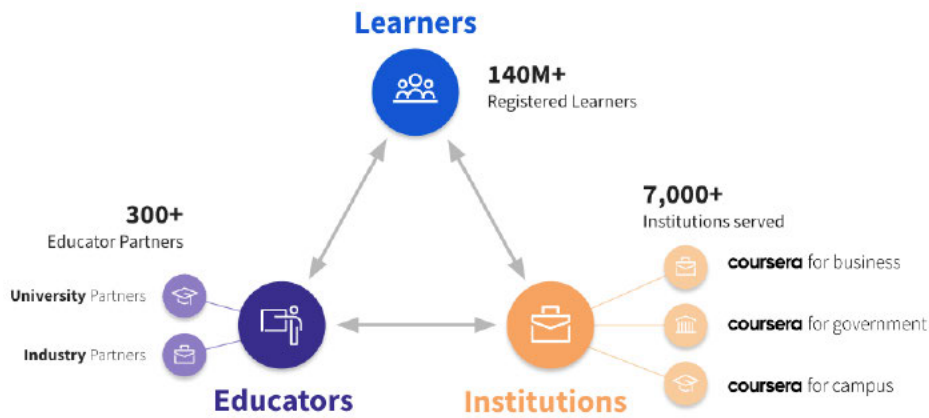


Figure 2: Coursera's lifelong learning ecosystem

Appraisal:

The described profile and the qualification objectives are such that the courses can compete on the education and job market.

In addition, course graduates-tracking studies are undertaken (Learner Outcome report) and confirm the desired position of the courses' completers. Although course-specific completer data is not tracked (see chapter 6) the Learner Outcome report from Professional Certificate completers highlights the positive outcomes and achievements of the course completers.

The way in which the courses are integrated into Coursera's overall strategy and relate to the other offers of Coursera (e.g. cooperation with academic institutions, strong focus on practice in cooperation with enterprises, further education competency) is plausibly described. The courses pursue qualification objectives which correspond to the course provider's concept and strategic planning. The qualification objectives constitute the core of the course provider's strategy and are sustainably implemented.

		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

The target market for these Professional Certificates are beginner-level learners who want to develop job-ready skills, tools, and a portfolio for entry-level positions. These certificate courses do not require any prior experience. There are no formal admission requirements or prerequisites to enrolling.

However, there are some recommendations for skills that will be helpful to learners for each of the seven courses:

- For the **IBM DevOps and Software Engineering Professional Certificate**: It will be helpful to learners to have basic knowledge of IT infrastructure and familiarity working with Windows, Linux, or MacOS. Still, it is not necessary to complete the course. No prior computer programming experience is necessary.
- For the **IBM IT Support**, the **IBM Business Intelligence (BI) Analyst**, the **IBM IT Project Manager**, the **IBM Product Manager**, and the **IBM Project Manager Professional Certificate**: learners should be comfortable working with computers, be willing to develop new technical and analytical skills and enjoy collaborative problem-solving and communicating solutions.
- For the **IBM and ISC2 Cybersecurity Specialist Professional Certificate**: learners should be comfortable working with computers, be willing to develop new technical skills and enjoy collaborative problem-solving and communicating solutions.

To enroll in each of the IBM 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.¹² 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.

Although translations and video subtitles are available (see chapter 1.2), Coursera points out at the starting page of each course that the course is taught in English, and the interpretations, provided by a machine-aided translation service, may contain mistakes. Therefore, English proficiency is recommendable to consult the original course clips for clarification whenever translations are unclear.

Legal Relationship between Coursera and IBM



¹² See information on payment in chapter “Details on the institution”

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Legal relationship between Coursera and Learners

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Legal relationship between IBM and Teaching staff (Instructors)

[Redacted text block]

¹³ <https://www.coursera.org/about/terms> (last call February 1, 2024)

¹⁴ See chapter 4.4

Appraisal:

There is no previous knowledge, experience, or educational level required to enroll in Coursera’s courses. This choice is based on the strategic objectives of all Coursera courses – to make quality education available to all. Coursera’s [redacted]

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 4.1 and 4.2).

Moreover, to ensure achievement of learning outcomes, some courses list some recommendations for the learners that will facilitate their successful learning. These recommendations are fitting the overall objectives of the respective courses and their respective contents. Recommendations also include information on the requirements in terms of technical equipment.

However, no recommendations are listed on the course website of the **IBM and ISC2 Cybersecurity Specialist**, the **IBM Product Manager**, **IBM IT Project Manager**, and the **IBM Project Manager** Professional Certificates). The panel **recommends** adding information on recommended prior knowledge and skills provided in the self-report to the respective course landing page.

The contractual relationship between Coursera and IBM on the one hand and the learners on the other hand, as well as between Coursera partners (IBM, see also chapter 4.4) 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.¹⁵

		Exceptional	Exceeds quality requirements	Meets quality requirements	Does not meet quality requirements	n.r.
2.	Admission					
2.1*	Focus on the target group			X		
2.2*	Admission conditions			X		
2.3*	Legal relationship			X		

¹⁵ It should be noted that no comprehensive legal review can be carried out as part of the certification process.

3 IMPLEMENTATION

3.1 Structure

Structure of the courses

Each IBM Professional Certificate is structured into different topics (“courses”), which contain weekly “modules”¹⁶ (smallest learning entities) that progressively build on concepts taught previously (“Mastery Learning”, see chapter 3.4). 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 IBM Professional Certificates are “Entry-Level” certificates. Entry-Level Professional Certificates require no degree or experience in the area (see chapter 2). Like all content on Coursera, Professional Certificates include Coursera’s Pedagogy Principles (see chapter 3.4).

Entry-Level Professional Certificates on Coursera:

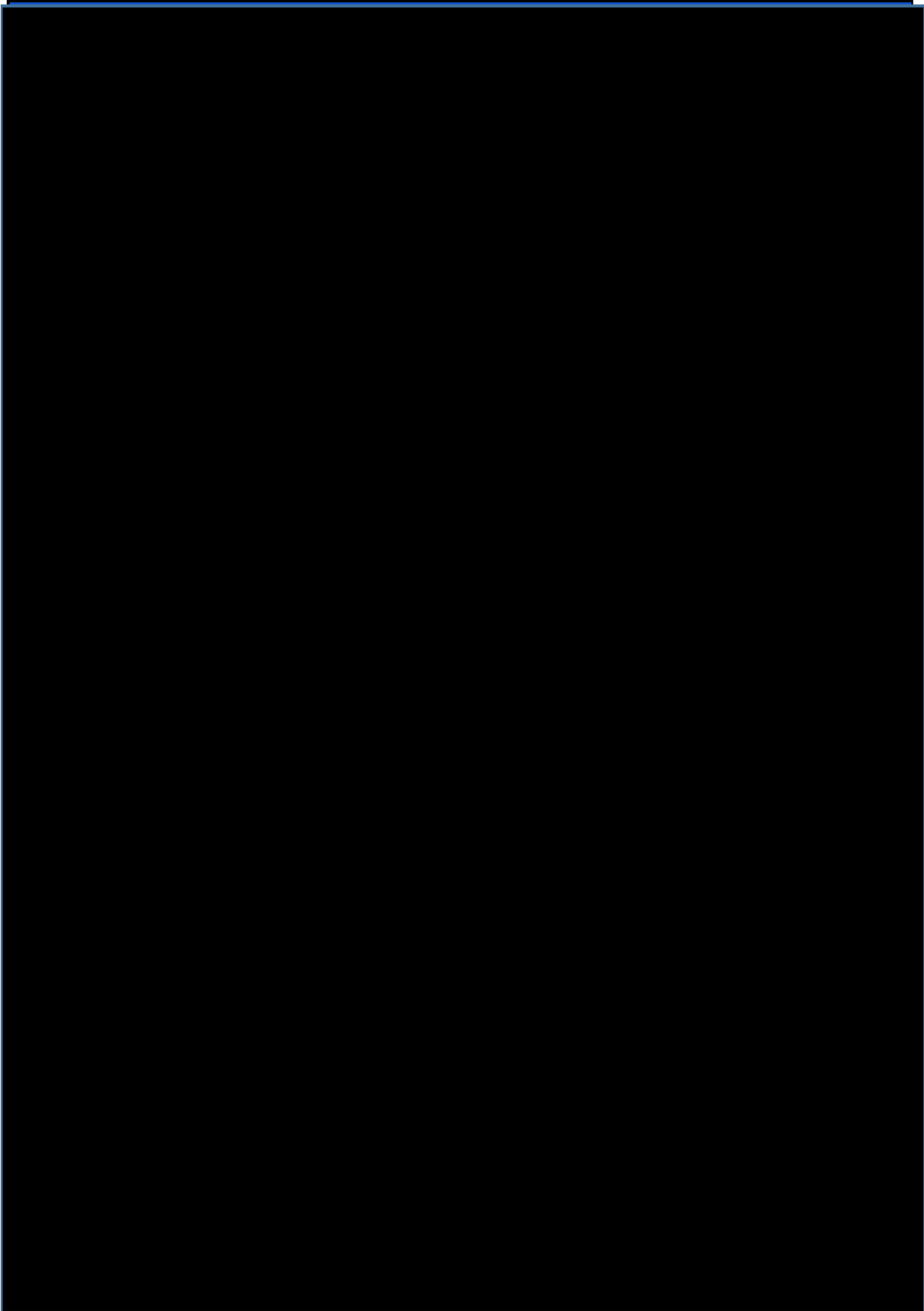
- Include a minimum of four courses designed to be completed in less than twelve months.
- Include career-relevant, hands-on projects to showcase to potential employers on the learner’s resume and in interviews.
- Include a partner-branded Professional Certificate, which Coursera issues and the partner delivers, from the partner dashboard to learners who successfully complete the course.
- 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 65 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 IBM 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:

¹⁶ “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





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

Coursera and IBM provided the following examples to show alignment with the principles of the ECTS system and modularization:

1. Learning Outcomes

Derived from the job role alignment exercise (see chapter 3.5), a basic idea of the learning objectives has been developed by Coursera 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 IBM aim to show a defined ECTS credit recommendation that corresponds appropriately to the workload and learning objectives for the individual certificates. According to the ECTS User’s Guide, one ECTS credit should correspond to 25-30 hours of workload. Coursera and IBM assign 25 hours per ECTS credit point and a corresponding ECTS credit recommendation value for each course. 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.

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 IBM 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,¹⁷ not be less than five ECTS credits as a rule. A different allocation than full ECTS credits should be avoided unless the general course design can compensate for the sensible full ECTS credits per semester. In addition, the corresponding 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. Recommendation for 60 ECTS credits allocation per year (full-time study)

The Professional Certificates are part-time continuing education courses intended to enable the acquisition of competencies and skills part-time. The weekly learning performance is geared towards this circumstance, with a 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 can be utilized by HEIs Registration Offices.



Figure 3: Certificate Supplement on the Credly page (example for the IBM Project Manager 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

¹⁷ 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 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, IBM provided a plan including learning objectives of the certificate, the “courses”, and the “modules”, the learning projects, and an overview and biographies of the teaching staff.¹⁸

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 IBM Professional Certificate has a minimum passing score of either 70 % or 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 IBM Professional Certificate 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

Coursera and IBM aim to ensure the feasibility of the courses’ workload by a suitable curriculum design and a plausible calculation of workload of approximately 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 automatically 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.

¹⁸ See also chapter 4.1 and glossary

Overview of DevOps Module details ^

Module 1 1 hour to complete

In this module, you will learn how business models are disrupted by innovation and that technology enables innovation and not drives innovation. You will learn that DevOps is more than just collaboration between the Dev team and the Ops team. It is a cultural change. They are introduced to the essential features of DevOps. Using a brief story by DevOps, you will see how DevOps emerged as a grassroots movement and that influential people have helped others realize that DevOps is a better way of working.

That's all included

▶ 8 videos
📖 1 reading
📊 3 quiz
💬 1 Discussion topic
🔗 1 plug-in

[> Show information about module content](#)

DevOps thinking ▼

Module 2 1 hour to complete

DevOps working ▼

Module 3 1 hour to complete

Organize for DevOps ▼

Module 4 Complete 59 minutes

DevOps Measuring ▼

Module 5 50 minutes to complete

Case Studies and Final Examination ▼

Module 6 1 hour to complete

Figure 4: Sample weekly plan for “Introduction to DevOps” (IBM DevOps and Software Engineering)

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

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

Appraisal:

The panel highlights the very well-structured and clear set-up of the courses. The structure clearly serves to promote 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.

According to the ECTS Users' Guide,¹⁹ 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. The workload calculation provided by Coursera and IBM is plausible for the seven certificates. The workload is also checked during the testing stage of the Certificate. During the assessment conference learners confirmed that the calculated workload was feasible. After completing a Certificate, learners are asked if the workload was higher or lower than they expected. However, there is not much feedback from learners in general and the question on workload at the end of a course was only recently introduced by Coursera. The panel **recommends** introducing workload questions in the evaluation questionnaires after specific activities or "modules" to get more qualitative evaluation results.

Furthermore, Coursera and IBM provide a very transparent and straightforward calculation of ECTS credits, by accumulating the workload for all learning activities per course and then dividing the workload by factor 25. To avoid uneven numbers, ECTS credits are rounded based on generally valid rounding rules (4,5 equals up to 5 equals up to 5,4).

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

Course	Learning hours ²⁰	ECTS credits (Estimated learning hours/25 hours)	Coursera recommendation of ECTS credit assignment
IBM DevOps and Software Engineering	200	8	8
IBM IT Support	104	4,2	4
IBM and ISC2 Cybersecurity Specialist	120	4,8	5
IBM Business Intelligence (BI) Analyst	141	5,6	6
IBM IT Project Manager	152	6,1	6
IBM Product Manager	94	3,8	4
IBM Project Manager	111	4,4	4

Table 2: Workload calculation and ECTS credit assignment

By giving an analysis of the approach towards ECTS credit allocation, Coursera and IBM 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

¹⁹ [ECTS Users' guide 2015](#), p. 10 (last access on July 1, 2024)

²⁰ See chapter 3.2: Course contents and learning hours

to be included. Moreover, the Certificate Supplement states: “[HEIs] are obliged to recognize prior learning and non-formal learning experience [...] up to a certain amount [...] provided there are no major differences in learning outcomes”. Both statements do not correctly convey the idea of the ECTS Users’ Guide. For the credit recognition for learning outcomes acquired outside the formal learning context, the ECTS User’s Guide p. 47 states:

“Higher education institutions should be competent to award credits for learning outcomes acquired outside the formal learning context through work experience, voluntary work, student participation, independent study, provided that these learning outcomes satisfy the requirements of their qualifications or components. The recognition of the learning outcomes gained through non-formal and informal learning should be automatically followed by the award of the same number of ECTS credits attached to the corresponding part of the formal program.”

The panel would like to especially underline that Higher Education Institutions are not obliged to recognize prior learning. Furthermore, the recognition of prior learning by the HEI is based on equivalence of content and learning outcomes – not sameness.

The panel recommends the following **condition**:

Coursera and IBM

- a) provide Certificate supplements for each course that document the courses’ associated qualifications in a transparent and coherent manner.
- b) Additionally provide correct documentation in the Certificate Supplement regarding the HEI’s obligations and scope for decision-making when recognizing prior learning (RPL) and awarding ECTS credits for RPL.

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

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:

IBM DevOps and Software Engineering (14 topics/"courses")²¹

Unit	Topic/"course"	Learning Hours
1	Introduction to DevOps	9
2	Introduction to Cloud Computing	12
3	Introduction to Agile Development and Scrum	11
4	Hands-on Introduction to Linux Commands and Shell Scripting	14
5	Getting Started with Git and GitHub	10
6	Python for Data Science, AI & Development	25
7	Developing AI Applications with Python and Flask	11
8	Introduction to Containers w/ Docker, Kubernetes & OpenShift	13
9	Application Development using Microservices and Serverless	14
10	Introduction to Test and Behavior Driven Development	19
11	Continuous Integration and Continuous Delivery (CI/CD)	14
12	Application Security for Developers and DevOps Professionals	17
13	Monitoring and Observability for Development and DevOps	16
14	DevOps Capstone Project	15
Total Learning Hours		200

IBM IT Support Professional Certificate (9 topics/"courses")

Unit	Topic/"course"	Learning Hours
1	Introduction to Technical Support	12
2	Introduction to Hardware and Operating Systems	17

²¹ "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.

3	Introduction to Software, Programming, and Databases	18
4	Introduction to Networking and Storage	12
5	Introduction to Cybersecurity Essentials	12
6	Introduction to Cloud Computing	12
7	Practice Exam for CompTIA ITF+ Certification	2
8	Technical Support (IT) Case Studies and Capstone	10
9	Tech Support Career Guide and Interview Preparation	9
Total Learning Hours		104

IBM and ISC2 Cybersecurity Specialist Professional Certificate (12 topics/"courses")

Unit	Topic/"course"	Learning Hours
1	Introduction to Cybersecurity Careers	7
2	Introduction to Hardware and Operating Systems	17
3	Introduction to Software, Programming, and Databases	18
4	Introduction to Networking and Storage	12
5	Introduction to Cloud Computing	12
6	Introduction to Cybersecurity Essentials	12
7	Security Principles	5
8	Incident Response, BC, and DR Concepts	2
9	Access Control Concepts	4
10	Network Security	8
11	Security Operations	8
12	Cybersecurity Capstone: Breach Response Case Studies	15
Total Learning Hours		120

IBM Business Intelligence (BI) Analyst (10 topics/"courses")

Unit	Topic/"course"	Learning Hours
1	Business Intelligence (BI) Essentials	14
2	Excel Basics for Data Analysis	12
3	Data Visualization and Dashboards with Excel and Cognos	15
4	Introduction to Relational Databases (RDBMS)	15
5	SQL: A Practical Introduction for Querying Databases	21
6	Data Warehouse Fundamentals	15
7	Statistical Analysis Fundamentals using Excel	13
8	Getting Started with Tableau	11
9	Advanced Data Visualization with Tableau	11
10	The Business Intelligence (BI) Analyst Capstone Project	14
Total Learning Hours		141

IBM IT Project Manager Professional Certificate (11 topics/"courses")

Unit	Topic/"course"	Learning Hours
1	Introduction to Project Management	9
2	Project Management Foundations, Initiation, and Planning	20
3	Project Lifecycle, Information Sharing, and Risk Management	16
4	Project Management Communication, Stakeholders & Leadership	19
5	Information Technology (IT) Fundamentals for Everyone	18
6	Introduction to Software Engineering	14
7	Introduction to Agile Development and Scrum	11
8	Introduction to Scrum Master Profession	9
9	Project Management Capstone	18
10	Practice Exam for CAPM Certification	5
11	Project Management Job Search, Resume, and Interview Prep	13

Total Learning Hours	152
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IBM Product Manager Professional Certificate (7 topics/"courses")

Unit	Topic/"course"	Learning Hours
1	Product Management: An Introduction	13
2	Product Management: Foundations & Stakeholder Collaboration	15
3	Product Management: Initial Product Strategy and Plan	18
4	Product Management: Developing and Delivering a New Product	18
5	Introduction to Agile Development and Scrum	11
6	Product Management: Capstone Project	16
7	Practice Exam for AIPMM Certified Product Manager (CPM)	3
Total Learning Hours		94

IBM Project Manager Professional Certificate (8 topics/"courses")

Unit	Topic/"course"	Learning Hours
1	Introduction to Project Management	9
2	Project Management Foundations, Initiation, and Planning	20
3	Project Lifecycle, Information Sharing, and Risk Management	16
4	Project Management Communication, Stakeholders & Leadership	19
5	Introduction to Agile Development and Scrum	11
6	Project Management Capstone	18
7	Practice Exam for CAPM Certification	5
8	Project Management Job Search, Resume, and Interview Prep	13
Total Learning Hours		111

Integration of theory and practice

IBM's Professional Certificates adhere to Coursera's best practice guidelines for Quality in Online Learning and manuals on online teaching pedagogy and course structures. Each week is comprised of individual learning units that incorporate both theoretical and practical components. The

theoretical components include readings and videos. Previously covered knowledge is then aligned with practical exercises. 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. 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.

The Coursera platform users are 80 % from outside the USA. Although figures for the respective courses are not available, the learner and course completers in the assessment conference proved an international composition. Learners from different countries interact within discussion forums or via the peer review process. Instructors in the courses also represent a variety of countries and cultural backgrounds.

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 engaging, hands-on exercises, learners will develop their methodological competence and practical experience using various business tools and industry best practices. The certificates also cover methods and guidelines for collecting, presenting, analyzing, and interpreting data using appropriate methods, and measuring success.

The instructional design of the certificate courses adopts a structured methodological approach, facilitating the acquisition of practical skills through targeted exercises and project-based learning. This structure ensures that participants can apply their skills in practical scenarios, crucial for those entering the workforce with Professional Certificates.

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.

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 the IBM Professional Certificates to assess learning outcomes:

- **Graded quizzes (summative):** Graded quizzes are used to monitor educational outcomes. They answer the question: Has the learner demonstrated that he or she can complete this task? Weeks always end with a graded quiz.
- **Peer-review (formative and summative):** 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 (randomly chosen, not necessarily the same peers that gave the same learner feedback). 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 the 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. Most lessons include 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 induce the video to pause until the question is answered correctly (unlimited tries allowed).
- **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 systematically linked. Career-integrated methods (e.g. capstone project) are part of the courses. Knowledge delivery and practical contributions complement each other to develop the learners' competences.

Furthermore, it is ensured that practical contents are transferred by appropriate means, such as demanding practical projects, which are monitored by Coursera and IBM respectively. The job

requirements of the learners are systematically considered.

Coursera and IBM rated “International contents and intercultural aspects” as not applicable for the seven courses. Although country-specific differences in software, research, and applicability of what has been learned are addressed (see chapter 1.2), the panel agrees for the IT-focused and more technical Certificates (**IBM and ISC2 Cybersecurity Specialist, IBM Business Intelligence (BI) Analyst, IBM DevOps and Software Engineering, and IT Support**) that international contents and intercultural aspects – especially with regards to the limited duration of the courses – are not relevant.

However, the management-focused Certificates (**IBM IT Project Manager, IBM Project Manager, and IBM Product Manager**) should at least consider international and intercultural aspects, because completers are likely to need intercultural sensitivity when working with diverse people and applying their skills in the globalized environments. The panel clearly misses the intercultural aspects in these courses. Therefore, for the courses **IBM IT Project Manager, IBM Project Manager, and IBM Product Manager**, the panel **recommends** appropriately integrating international contents and intercultural aspects and setting them down in the courses’ qualification objectives and strategy.

The acquisition of methodological competences on the defined level of the European Qualification Framework (EQF) is ensured. It is set down as a learning objective in the module descriptions.

Due to the limited duration and the focus of the courses the integration of academic work and science-based teaching was rated as not applicable by Coursera and IBM. The panel follows this assessment in general, although proof of science-based teaching within the certificates has been provided. Furthermore, in order to support integration of the courses into academic programs at Higher Education Institutions, Coursera could make use of its vast portfolio or respective cooperations with universities to draw the connection to the academic sphere and support the learners’ motivation for further independent studies. Therefore, the panel **recommends** linking to Coursera existing offerings regarding academic writing and research skills (offered in cooperation with university partners). Coursera and IBM could also add a link to the further resources page including a hand-out on academic writing and research.

All assessments, as they are defined for the courses, are suited in format and content to ascertain the intended learning outcomes. The requirements are in accordance with the desired qualification level. Coursera’s code of conduct shows considerations regarding plagiarism. The panel suggests further developing their guidelines with regards to the identification of examinees. Learners are given transparent information on these rules and regulations on the Coursera website.

	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			

	Exceptional	Exceeds quality requirements	Meets quality requirements	Does not meet quality requirements	n.r.
3.2.3 International and intercultural contents				X ²²	X ²³
3.2.4 Methodological competence			X		
3.2.5 Academic work and science-based teaching					X
3.2.6* Examinations			X		

3.3 Transdisciplinary qualifications and soft skills

The IBM Professional Certificates cover guidelines for collecting, presenting, analyzing, and interpreting data using appropriate methods. They also cover content on how to visualize and present data findings in dashboards, presentations and commonly used visualization platforms, or to identify common data/network risks, threats, and vulnerabilities, as well as techniques to mitigate them. Completers of the respective certificates can 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 throughout the courses.

However, the acquisition of soft skills is limited based on the fact that there is no synchronous interaction with fellow learners and instructors.

Appraisal:

Coursera and IBM considered this criterion as “not applicable”. The panel follows this assessment based on the limited scope of the certificates. There are transdisciplinary elements inherent in each certificate based on the courses’ subjects (e.g., analyzing data, presenting data). However, interaction that is necessary to acquire communication and soft skills is limited in the MOOCs offered by Coursera.

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

²² For the IBM IT Project Manager, IBM Project Manager, and IBM Product Manager

²³ For the IBM and ISC2 Cybersecurity Specialist, IBM Business Intelligence (BI) Analyst, IBM DevOps and Software Engineering, and IT Support.

3.4 Didactics and Methodology

Coursera's Pedagogy Principles incorporate findings from peer-reviewed educational research and learning science. Their platform technology and education philosophy are based on Mastery Learning, which focuses on the importance of feedback in learning and promotes the mastery of a topic before moving on to more advanced materials. This requires the tight alignment of learning objectives, instructional materials, and assessments. Instructors and curriculum developers use backward design by creating learning objectives and assessments first to align content with instructional materials.

Coursera's platform organizes content into topics/"courses" and subsequent small weekly "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.35).

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 weekly 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 within the certificate course.

The teaching methods include 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.

Coursera partners with leading content providers (IBM in this certification procedure) to effectively develop content for the course. Coursera thereby applies a "learners first" strategy. Via the platform real time monitoring of learner progress is used as an essential element to support all learners to succeed in completing the courses.

Course and Learning materials

All course materials for IBM 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” and weekly “module”, and it is learner-centric. A mix of different teaching and learning methods (videos, quizzes, labs), depending on the contents and curricular requirements, is applied in the respective certificate “courses”/weekly “modules”.

Coursera and IBM use innovative and creative approaches (ludological approach, playful learning experience, and applying failure as a crucial learning experience) to enable the learners to progress faster and more intensely in their learning, as well as support them during the self-study phases (e.g., chat bot). Students are encouraged to take an active role in the learning process (e.g. self-paced learning, peer-review).

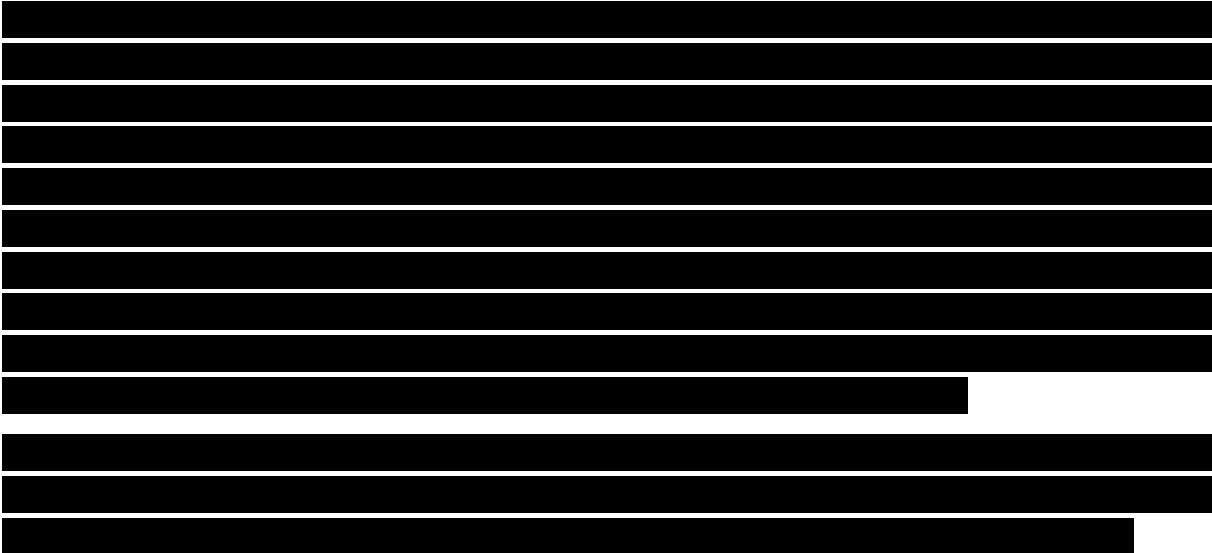
The accompanying course and learning materials are oriented towards the intended learning outcomes and correspond to the required qualification level. They are up to date and easily accessible for the learners. Learners get links to further materials at the end of the certificate and are encouraged to go deeper into the topics. However, in the opinion of the panel, after completion of the course and receiving the Certificate, the motivation of the graduates to still go beyond is not supported or stimulated. Therefore, the panel additionally **recommends** linking to further material throughout the courses to encourage learners’ motivation for further learning and self-study.

	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)

IBM 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.

To ensure course instruction aligns with job market demands and promotes course completers' employability in the respective professional field, Coursera and IBM align on job role requirements to create learning outcomes in a subject area that leverages IBM's areas of expertise as an organization. Coursera provided the methodology for the "job role alignment exercise" for each of the respective courses.



Completers of the Professional Certificates are intended to have up-to-date specialist knowledge and methodological skills in the corresponding qualification areas of the job requirements on which the certificates are based. Through labs, interactive practice activities, and/or final capstone projects, learners' skills are further developed through ongoing practical application of the theories and models learned. The completers' practical experience facilitates their entry into the world of work or support their career switch into a new industry or job type upon completion of the certificate. Detailed work samples or portfolios built up in the certificates.

The nature of self-responsible online learning also promotes the individual development of organizational skills, specifically concerning time management. These essential skills are integral to asynchronous online learning experiences; due to structure and learning methods, learners are guided in this process to reach the intended level of competence. Analyzing problems and making decisions are competencies that learners require and develop in different course units of the Professional Certificates. Completers also have demonstrated their reliability through their self-motivated and committed learning and successful completion of the courses.

Appraisal:

The contents focus on achieving the qualification objectives and have a clear profile. Employability in accordance with the qualification objectives (see chapter 1.1) and the defined learning outcomes is promoted by providing up-to-date skills and competencies, adding a benefit for course completers in the respective occupational field. However, in the opinion of the panel, the

Certificates should not imply completers are “Specialists” in a certain area. This goes beyond the scope of the courses. The panel **recommends** re-thinking marketing/wording implying completers are “specialists” upon completion. Furthermore, the panel **recommends** formulating effective measures to further improve employability, e.g., linking to other certificates that round up and/or deepen skills acquired (ensuring a logic behind the “stackability” of the courses), connecting completers to professional networks/companies to find internships.

There are career-readiness resources (see chapter 4.3) available to course completers. However, during the discussions at the assessment conference, it became clear to the panel that these resources seem to be unknown to some completers. The panel **recommends** identifying and implementing effective measures to make sure completers know of career-services.

		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

[REDACTED]

Structure and number of teaching staff in relation to curricular requirements

Each IBM Professional Certificate is developed by a team of subject matter experts (SMEs), teaching experts, content creation experts and instructional designers (in total six to ten staff members according to statements during the conference). They 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 (see chapter 3.4). On the Coursera platform within the course description page learners find information on instructor’s backgrounds and qualifications.

[REDACTED]

Teaching staff's qualifications

According to Coursera and IBM (see self-report p. 38), 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.

All instructors have access to Coursera's pedagogical resources, including resources on inclusiveness and research on online learning drivers of quality. Instructors and SMEs have access to Coursera's Resource Center (see chapter 4.2). Coursera shares platform updates and best practices with instructors and SMEs, and provides opportunities for networking and knowledge sharing, such as the Coursera Conference.

Emphasis is placed on the practical experience of the teaching staff, the instructors have accumulated years of professional experience, averaging twelve years. As a provider of application-oriented education, Coursera and IBM recognize the value of practical experience in teaching the required practice-oriented knowledge. Therefore, instructors are continuously assessed through several feedback mechanisms (see chapter 6).

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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:

The panel highlights the efforts and organizational skills of the course management and their involvement in the courses' development. A team of technical curriculum developers, instructional designers, technical content writers, program managers, and subject matter experts (SMEs), collaborate closely to design and develop the courses. The qualifications and experience of the program management and instructional designers correspond with the requirements of the courses. The IBM Global Program Director serves as course manager and is responsible for the quality of the courses as a whole (content and methodology), thereby following Coursera's Content Specifications and Pedagogy Principles. The IBM Global Program Director works in close co-operation with Coursera (represented by Senior Learning Design Consultants, Project Managers, and the Manager Teaching and Learning) to develop the courses.

The structure and number of teaching staff (SMEs and instructors involved in developing the courses on the one hand, teaching assistants dedicated to monitoring learner forums on the other hand) correspond with the requirements of the courses.

The qualifications of the teaching staff (instructors, SMEs) correspond to the requirements and objectives of the courses. Special characteristics of the target group are incorporated.

The pedagogical and didactic qualifications of the teaching staff correspond with the requirements of the courses. Special characteristics of the target group are taken into account. Additionally, the course provider verifies the pedagogical qualifications and competence of the teaching staff by means of established procedures, e.g. proper onboarding, regular evaluation. Regular measures for further qualifying the teaching staff pedagogically/didactically are offered by Coursera.

The teaching staff has above-average practical experience and uses it in a clearly visible and valuable way in their teaching activities. Special characteristics of the target group are taken into account.

The panel highlights the effective use of modern project management tools like Slack or Jira and the agile approach which is used to organize internal communication. 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 (represented by teaching assistants). It is offered on a regular basis and serves to help learners

study successfully. However, there is no official option for learners to directly get in touch with SME and instructors. Some instructors mentioned they have been contacted by learners via LinkedIn – for the purpose of networking, but also for asking subject-specific questions. The panel **recommends** offering learners a direct means of communication to instructors, e.g., a regular online consultation hour. There are tools to effectively facilitate Q&A's with large groups (e.g., Mentimeter, Slido, Kahoot).

		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

_____ 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,²⁴ 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.

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,

²⁴ https://www.coursera.support/s/article/360050668591-Accessibility-Statement?language=en_US (last call September 20, 2024)

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 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:

Teaching staff and learners are supported by the administration in the organization of the courses. In terms of both quality and quantity, sufficient staff are available, even if their involvement in other courses is taken into account, so that the processes described can be implemented appropriately and the courses run smoothly. A main contact for the learners is in place. The learners are informed on all relevant matters in advance and in a comprehensive way. The information is distributed in an understandable and user-friendly manner. User-friendly access to facilities and materials is ensured. Availability of service staff is clearly determined; requests are dealt with promptly. Decision-making processes, authority, and responsibilities are clearly defined. Teachers and learners are included in the decision-making processes where their areas of work are involved.

		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.

Coursera Career Certificates 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.

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.

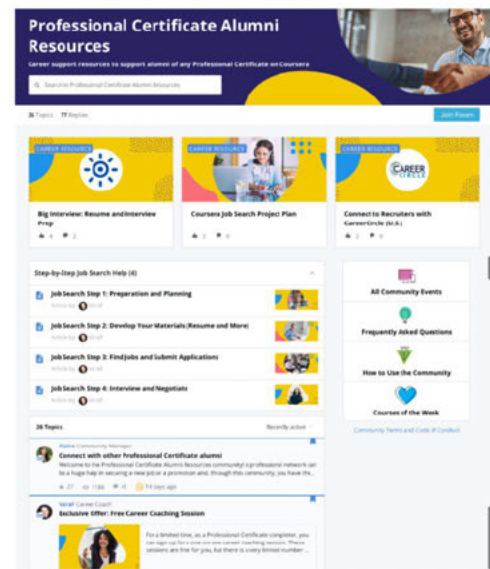


Figure 5: Coursera Professional Certificate Career Resources

Appraisal:

Measures to create and maintain networks have been provided.

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

Exceptional	Exceeds quality requirements	Meets quality requirements	Does not meet quality requirements	n.r.
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4.3	Networking			X	
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4.4 Cooperation with academic institutions or enterprises (Asterisk Criterion for cooperation courses)

Coursera collaborates with enterprises such as IBM to create educational content. [REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

Coursera and the respective content partner (IBM) identify skills that learners need to be successful in the job market. Once skills sets or job roles and an enterprise partner are identified to create a Professional Certificate the project team progresses towards implementation, launch, and content maintenance. The processes related to skill identification and cooperation with content partners and enterprises follow a procedure that has been described and written down.

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

²⁵ See statement of Coursera and IBM dated 1. November 2024

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

Quality Assurance in Implementation

During implementation, either the content partner’s key account manager (IBM lead responsibility, see chapter 4.1) 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 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 partners 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. After the initial start yearly success meetings are conducted between Coursera and its partners and past performance as well as goals for the next year are discussed and action items agreed upon that will then again feed the PDCA quality cycle of the Coursera QA process (see also chapter 6).

Feedback loop

After the content is launched, Coursera starts receiving feedback from learners and from the content partner (IBM) 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 the effective and professional co-operation between all parties involved in the course concept, creation and offer. 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 panel highlights the cooperation with ISC2, which is a well-regarded industry recognized standard for security trainings, in the “IBM and ISC2 Cybersecurity Specialist”. This effective cooperation might serve well to differentiate this IBM Cybersecurity Certificate from other Cybersecurity Certificates offered by Coursera with other content partners (see recommendation in chapter 1.1), due to its partner’s wide recognition in the security trainings area.

The agreements forming the basis of the cooperation with IBM are documented. All such activities contribute to the development of the learners’ qualifications and skills. Coursera ensures that the quality standards are met.

		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 ²⁶	X ²⁷		

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

²⁶ For the IBM and ISC2 Cybersecurity Specialist

²⁷ For the IBM Product Manager, IBM Business Intelligence (BI) Analyst, IBM DevOps and Software Engineering, IBM IT Support, IBM IT Project Manager, IBM Project Manager

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,
- AI-driven learning features to help learners stay motivated and making progress,
- 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^{e28} 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 occur 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 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.

²⁸ For Coursera terminology program/course/module, see chapter 3.1 and glossary.

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- **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 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.

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Technical support for learners

Apart from the administrative support that learners receive from the Coursera Learner Help Center (see chapter 4.2) learners can also reach the same hotline for technical support³². The Learner Help Center includes 24-hour, live chat support for immediate issues. Learners can email clientsupport@coursera.org or submit a form through the Learner Help Center “Contact Customer Support” portal to receive help over email. Coursera technical support usually responds to requests by email within 24 hours and responds to chat support immediately.

³² https://www.coursera.support/s/learner-help-center-contact-us?language=en_US (last call July 1, 2024)

Coursera supports learners in using technologies and tools to enable digital learning and increase digital skills through the various articles, tutorials, videos, and help resources available in the Learner Help Center. 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.

Access to required literature

By enrolling in the course content through the Coursera platform, learners receive access to a number of course items, including lecture videos, readings, and labs. Materials are aligned with the course content and learning objectives and are kept up to date within the Coursera platform. Learners do not need to purchase supplementary literature that IBM has not produced and provided itself, therefore, no external content is integrated in the course structure.

Appraisal:

The technical organizational unit follows trends and enables teachers to implement innovative technologies and tools in teaching beyond the standard. It offers regular and varied training courses to teachers and works continuously on the further development of digital learning tools. There is a plan at course provider level for the provision of training in the technical aspects of digital teaching.

The teaching 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. Students can navigate smoothly through the teaching units. Additionally, the teaching platform offers sufficient opportunity for collaborative learning and promotes interaction both among learners and between learners and teachers. Coursera and IBM could easily use the platform features to facilitate direct contact between learners and instructors/SMEs (see recommendation in chapter 4.1).

Coursera has access to a data analysis system and sufficient technology to process large amounts of data. Additionally, the data analysis system and other tools enable a variety of learning analytics with a high degree of integration, so that they can be used meaningfully for didactics. However, Coursera is not fully using this potential for further development, since the course management does have limited access to relevant data at the relevant granularity due to organizational boundaries between Coursera and IBM. Therefore, the panel **strongly recommends** giving the course management more access to relevant data at a sufficient level of granularity to be able to work with it for the further development of the courses.

Students can reach the technical support of Coursera via a range of channels (e.g., by chat, by email). Questions regarding digital teaching and the teaching platform are answered quickly. The course provider ensures that learners are able to handle the technologies and tools. Additionally, Coursera proactively supports communication between learners and technical departments (e.g., chat bot) and establishes 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.

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

- IBM DevOps and Software Engineering Professional Certificate: <https://www.coursera.org/professional-certificates/devops-and-software-engineering>
- IBM IT Support: <https://www.coursera.org/professional-certificates/ibm-technical-support>
- IBM and ISC2 Cybersecurity Specialist: <https://www.coursera.org/professional-certificates/ibm-isc2-cybersecurity-specialist>
- IBM Business Intelligence (BI) Analyst: <https://www.coursera.org/professional-certificates/bi-analyst>
- IBM IT Project Manager: <https://www.coursera.org/professional-certificates/ibm-it-project-manager>
- IBM Product Manager: <https://www.coursera.org/professional-certificates/ibm-product-manager>
- IBM Project Manager <https://www.coursera.org/professional-certificates/ibm-project-manager>³³

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.³⁴

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.

³³ Last call September 20, 2024

³⁴ https://www.coursera.support/s/learner-help-center-coursera-policies?language=en_US, last call September 20, 2024

Additionally, the courses are described in detail (e.g., learning outcomes and contents). This documentation is constantly updated and easily accessible for interested parties, which ensures a high level of transparency.

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

1. Documentation of ECTS crediting recommendation has to be included on the respective course descriptions and include: number of credits recommended, requirements for awarding credits and workload assigned to the course (see chapter 3.2). (It is also highly recommendable to include the respected EQF levels)
2. Documentation of ECTS crediting recommendation has also to be included on the respective certificate issued by Coursera. Documentation has to include the respected EQF level, number of credits recommended and workload assigned to the course (see chapter 3.2).
3. When course completers apply for recognition of ECTS credit points 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 (see condition in chapter 3.1).

The panel also points out that as there are no formal enrolment requirements for the Professional Certificates, course completers may also be required to catch up on formal enrolment 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

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Figure 6: Coursera Quality Assurance System

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³⁵ See glossary at the end of this report

Appraisal:

The panel highlights that the quality management system and procedures are well-established. There is a clear systematic behind all processes and they are very well documented with one exception being the documentation of the EQF level determination (see chapter 1.1). In this regard, the panel suggests taking the EQF level determination into consideration in the further development of the courses including this process into the quality management system. All in all, 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.

Evaluation by learners/completers is carried out on a regular basis and in accordance with a prescribed procedure. Coursera collects feedback information and processes this into the "Learner Outcome Report". However, it has not become clear to the panel, how the feedback outcomes provide input for the quality development process and whether and how information of the Learner Outcome Report is provided to the learners and completers. Furthermore, the feedback gathered is very superficial (thumbs up/down, star-rating and only at the end of a Certificate, Learner Outcome report gathers data from all Professional Certificates).

The panel therefore **recommends** for the learner evaluation:

- collecting more qualified feedback (comment section and specific questions after specific learning activity to refine star-ratings and thumb expressions),
- relating feedback questions more specifically to formulated learning outcomes,
- collecting feedback at least once during the course (e.g., in the middle), not only at the end of the Certificate,
- collecting feedback from dropouts (inactive learners),
- communicating detailed results of learner and course completer evaluations to all relevant stakeholders and decision makers and provide a summary (e.g., Learner Outcome Report) on the website, and
- collecting and analyzing completer data for each Certificate course separately (especially what kind of positions they work in pre- and post-certificate completion).³⁶

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 panel highlights the regular review cycles (every six to nine months) and the deployment of new SMEs for the review to get fresh input and benefit from other perspectives (statement during digital conference). The communication of content updates (the results of the regular feedback) could also be communicated to learners (e.g., via the course landing page).

³⁶ To be reviewed with regards to the limited scope of the Certificates and the effects of stacking different Certificates

		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

Institution: Coursera Inc.

Content partner: IBM

Continuing Education Courses:

1. IBM DevOps and Software Engineering
2. IBM IT Support
3. IBM and ISC2 Cybersecurity Specialist
4. IBM Business Intelligence (BI) Analyst
5. IBM IT Project Manager
6. IBM Product Manager
7. IBM Project Manager

Quality Ratings	Exceptional	Exceeds quality requirements	Meets quality requirements	Does not meet quality requirements	n.r.
1. Strategy and Objectives					
1.1* ³⁷ Logic and transparency of course objectives		X			
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			X		
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			

³⁷ *: Asterisk Criterion

Quality Ratings		Exceptional	Exceeds quality requirements	Meets quality requirements	Does not meet quality requirements	n.r.
3.2.3	International and intercultural contents				X ³⁸	X ³⁹
3.2.4	Methodological competence			X		
3.2.5	Academic work and science-based teaching					X
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 ⁴⁰	X ⁴¹		
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		

³⁸ For the IBM IT Project Manager, IBM Project Manager, and IBM Product Manager

³⁹ For the IBM and ISC2 Cybersecurity Specialist, IBM Business Intelligence (BI) Analyst, IBM DevOps and Software Engineering, and IT Support.

⁴⁰ For the IBM and ISC2 Cybersecurity Specialist

⁴¹ For the IBM Product Manager, IBM Business Intelligence (BI) Analyst, IBM DevOps and Software Engineering, IBM IT Support, IBM IT Project Manager, IBM Project Manager

Quality Ratings

		Exceptional	Exceeds quality requirements	Meets quality requirements	Does not meet quality requirements	n.r.
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, certificate, program, course (are all used as synonyms)	Course (entity that is subject to certification)
Course	Sometimes indicates a content entity covering one topic within the program/certificate which is then clearly differentiated from the overall course/certificate/program
Module	Weekly learning entity, smallest learning entity
Subject Matter Expert	Employee of Coursera content partner (IBM) or third party assigned by Coursera content partner (IBM), who is qualified for content development
Instructor	Teaching staff that is part of the team that conceives, designs, and produces the course