



جامعة الإمام عبد الرحمن بن فيصل
IMAM ABDULRAHMAN BIN FAISAL UNIVERSITY

Professional Exams Handbook

كتيب الاختبارات المهنية

كلية علوم الحاسب وتقنية المعلومات

Imam Abdulrahman Bin Faisal University's Professional Certifications and Examinations Handbook. This reference en-
lists relevant exams and prioritizes the most essential ones (as described in the Organization section).

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Professional Exams Handbook

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Disclaimer

While every effort has been made by the CCSIT Professional Certification Alignment (PCA) Committee to ensure that the information in this publication is up to date and accurate, The CCSIT PCA Committee does not give any guarantees, undertakings or warranties in relation to the accuracy, completeness and up to date status of the information presented herein.

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Organization

This handbook is organized in a manner that would reflect the following:

1. The handbook reveals a selected number of ‘candidate’ exams (or certification programs if you may will), picked based on survey data results collected within a short period. Each program is **summarized** in a manner that reveals important aspects such as exam/certification title, prerequisites, program category, exam process, application process, and URL, or Unified Resource Locator (i.e. supporting Web-link for each listing).
2. Each program category, or just program as in the handbook (i.e. which CCSIT program does a particular mentioning falls under or serves best based on curriculum topics and course syllabi) reflects the initials of each CCSIT department: **Computer Science (CS)**, **Computer Information Systems (CIS)**, and finally **Cyber Security (CYS)**. A listing may have one, or more departments as it may well serve all three departments, or just two for example.

The CCSIT PCA Committee came to the agreement that the current **top pics**, based on popular (national) demand, and college alignment, are (and not limited to) the following — in no particular order:

Top Listings Based on College, and Poplar Demand

- 1 Microsoft (MTA, MCSA, MCSA, and Azure). All are Microsoft Certified Professional (MCP) exams
- 2 Red Hat Academy (EX200, EX300, EX183, and 283) exams (contracted with CCSIT very recently)
- 3 COMPTIA (LINUX+) exam
- 4 Oracle (Java SE, BPM, and MySQL) exams
- 5 Cisco (CCENT, CCNA, and CCNP) exams (depending on department track/curriculum)
- 6 Python Institute (PCAP and PCPP) exams
- 7 Cybersecurity (e.g. CISSP and CEH) exams listed herein
- 8 Scala (via Coursera) course for acquiring Advanced Programming skills needed for industry

Top Listings Based on College, and Poplar Demand

9 Udacity Nanodegrees (not covered extensively as they differ based on specialization/skillset)

10 Udemy courses (not covered extensively as they differ based on specialization/skillset)

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Document Revision History

This table describes the periodic changes to the Handbook:

Professional Exams Handbook — Revision History		
12 November 2018	v1.01	Initial release of the Handbook
25 November 2018	v1.02	New courses added, content rewritten. New headings to group certifications and exams based on their issuers/granters.
27 November 2018	v1.03	Program subsections added under each listing. Document body refined and corrected. Organization rewritten.
28 November 2018	v1.04	Minor typos fixed. Oracle certification info updated.
9 February 2019	v1.05	Update to the list of certification programs. Main font changed.
9 March 2019	v1.06	Listings updated (post Alignment Survey). Survey data used to update and prioritize exams based on CCSIT faculty feedback.

Microsoft

Microsoft Certified Professional (MCP) certifications validates IT professional and developer technical expertise through rigorous, industry-proven, and industry-recognized exams. MCP exams cover a wide range of Microsoft products, technologies, and solutions. See <<https://www.microsoft.com/en-us/learning/microsoft-certified-professional.aspx>>.

MTA | Microsoft Technology Associate

Categories

CS, CIS, and CYS.

Prerequisites

Nil.

Exams

Pass 1 exam to earn an MTA certification. Be sure to explore the exam prep resources.

Application

MTA certifications are a great place to start if you would like to get into the technology field. MTA certifications address a wide spectrum of fundamental technical concepts, assess and validate core technical knowledge, and enhance technical credibility. Note: MTA exams do not qualify for MCP certification, nor are they a prerequisite for MCSA or MCSA certification.

URL

See: <<https://www.microsoft.com/en-us/learning/mta-summary-certification.aspx>>.

MCSA | Microsoft Certified Solutions Associate Windows Server

Categories

CS, CIS, and CYS.

Prerequisites

Microsoft Technology Associate (MTA) certifications.

Exams

- **Exam 70-480/Course 20480**

Programming in HTML5 with JavaScript and CSS3

Candidates for this exam should have one or more years of experience programming the essential business/application logic for a variety of application types and hardware/software platforms using JavaScript.

Candidates should also have a minimum of one to two years of experience developing with HTML in an object-oriented, event-driven programming model.

- **Exam 70-483/Course 20483**

Programming in C#

Candidates for this exam should have one or more years of experience programming the essential business/application logic for a variety of application types and hardware/software platforms using C#.

- **Exam 70-486/Course 20486**

Developing ASP.NET MVC Web Applications

This exam is intended for developers with a minimum of three to five years of experience developing Microsoft ASP .NET web applications, including two or more years developing MVC-based solutions.

Application

Earning an MCSA: Web Applications certification qualifies you for a position as a web developer or web administrator.

URL

See: <<https://www.microsoft.com/en-us/learning/mcsa-web-applications-certification.aspx>>.

MCSA | Microsoft Certified Solutions Developer for Web Applications

Categories

CS, CIS, and CYS.

Prerequisites

Microsoft Certified Solutions Associate Windows Server 2012 (MCSA).

Exams

- Exam 70-532/Course 20532

Developing Microsoft Azure Solutions

This exam is for candidates who are experienced in designing, programming, implementing, automating, and monitoring Microsoft Azure solutions. Candidates are also proficient with development tools, techniques, and approaches used to build scalable and resilient solutions.

- Exam 70-535/Course 20535

Architecting Microsoft Azure Solutions

Candidates for this exam define the appropriate cloud native, cloud migration, and hybrid cloud solutions to meet the required functional, operational, and deployment requirements through the solution lifecycle.

Candidates should know the features and capabilities of Azure services to be able to identify tradeoffs and make decisions for designing public and hybrid cloud solutions.

The candidate should understand DevOps technologies, provisioning Azure resources using ARM templates, and designing highly resilient workloads running on Azure.

- **Exam 70-487/Course 20487**

Developing Microsoft Azure and Web Services

This exam is intended for developers with a minimum of three to five years of experience developing Web Services, including one or more years developing Web API and Azure solutions.

- **Exam 70-496/MVA Course**

Administering Microsoft Visual Studio Team Foundation Server

Candidates for this exam are senior developers, server administrators, or technical product managers who manage software development using Team Foundation Server in an enterprise development environment.

- **Exam 70-497**

Software Testing with Visual Studio

Candidates for this exam are software testers. They manage the process of running tests, creating and monitoring bugs, and managing and mitigating issues that a software organization has in controlling test coverage for project requirements. The qualified candidate typically has a strong understanding of the software testing role and modern testing practices, and the ability to implement testing practices by using Microsoft technologies.

- **Exam 70-498**

Delivering Continuous Value with Visual Studio Application Lifestyle Management

This exam is designed to provide candidates with an assessment of their knowledge of fundamental server administration concepts. It can also serve as a stepping stone to the Microsoft Certified Technology Specialist exams. It is recommended that candidates become familiar with the concepts and the technologies described here by taking relevant training courses. Candidates are expected to have some hands-on experience with Windows Server, Windows-based networking, Active Directory, account management, and system recovery tools and concepts.

Application

Demonstrate your expertise at implementing modern web apps.

URL

See: <<https://www.microsoft.com/en-us/learning/mcsd-app-builder-certification.aspx>>.

Microsoft Azure (Cloud Computing)

Microsoft Azure is the cloud for modern business. Expands Students Azure development skills to meet future business needs with these certifications.

Categories

CS, CIS, and CYS.

Prerequisites

Basics of Cloud Computing knowledge.

Exams

- Microsoft Certified Azure Solutions Architect

Master the skills needed to design solutions that run on Azure. A Microsoft Azure Solutions Architect must have expertise in compute, network, storage, and security.

- **Microsoft Certified Azure Administrator**

An Azure Administrator is responsible for implementing, monitoring, and maintaining Microsoft Azure solutions, including major services related to compute, storage, network, and security. Get certified today.

- **Microsoft Certified Azure Developer**

Microsoft Azure is the cloud for modern business. Expand your Azure development skills to meet future business needs with these certifications.

Application

Microsoft Azure Cloud.

URL

Students' Main Page:

<<https://www.microsoft.com/en-sa/learning/microsoft-certifications-for-students.aspx>>.

Certification Specific Pages:

<<https://www.microsoft.com/en-sa/learning/azure-solutions-architect.aspx>>.

<<https://www.microsoft.com/en-sa/learning/azure-administrator.aspx>>.

<<https://www.microsoft.com/en-sa/learning/azure-developer.aspx>>.

CompTIA

LINUX+

CompTIA Linux+ covers common tasks in major distributions of Linux, including the Linux command line, basic maintenance, installing and configuring workstations, and networking. Linux+ is comprised of two exams – LX0-103 and LX0-104. Candidates must pass LX0-103 before taking LX0-104.

Categories

CS, CIS, and CYS.

Prerequisites

CertMaster Practice for Linux+

Exam prep that increases retention and builds confidence.

Exams

EXAM CODE LX0-103 AND LX0-104

Application

After passing the two exams required for certification, candidates will have mastered the following concepts:

1. System configuration.
2. The command line interface.
3. Scripting basics.
4. Network settings and services.
5. System security.

URL

See: <<https://certification.comptia.org/certifications/linux?tracking=getCertified/certifications/linux.aspx#examdetails>>.

Oracle

Oracle Java SE 8 Programmer

Provides advanced level programming skills in Java.

Earning this certification helps candidates cultivate in demand Java programming skills that will serve them well in a competitive job market.

Categories

CS and CYS.

Prerequisites

MySQL basic DBMS concepts taught in DBMS Course.

Exams

- **1Z0-808**

Oracle Certified Associate, Java SE 8 Programmer I

You have advanced level programming skills in Java, now take full advantage of new features in Java SE 8, the most significantly updated version of Java yet.

Improve code clarity and increase performance using lambda and parallel streams. Greatly reduce development time and gain greater flexibility in your programming. Java SE 8 significantly changes the way Java programmers write code. Earning a Java SE 8 Certification gives you the tools to make the most of the new features within Java SE 8.

URL

1Z0-808: <https://education.oracle.com/java-se-8-programmer-i/pexam_1Z0-808>.

Oracle MySQL Certifications

With Oracle MySQL Training, students can explore why MySQL is the world's most used open source relational database management system (RDBMS). Students learn how to include advanced features and management tools to achieve the highest levels of MySQL scalability, security and reliability in your database management system.

Categories

CS, CIS, and CYS.

Prerequisites

MySQL basic DBMS concepts taught in DBMS Courses:

- CIS 321 – Database Concepts and Design.
- CIS 416 – Data and Information Management.
- CIS 523 – Object Oriented Database.

Exams

- **MySQL Developer**

Oracle Certified Professional, MySQL 5.6 Developer (OCP)

The Oracle Certified Professional, MySQL 5.6 Developer (OCP) Certification validates students' knowledge of the skills, tools and issues involved in writing applications with the MySQL database server.

- **MySQL Database Administrator**

Oracle Certified Professional, MySQL 5.6 Database Administrator (OCP)

The Oracle Certified Professional, MySQL 5.6 Database Administrator (OCP) Certification proves student's ability to install and optimize MySQL Server, set up replication and security, perform database backups and performance tuning and protect MySQL databases.

Application

Oracle MySQL Workbench or PhpMyAdmin or Similar.

URL

See: <https://education.oracle.com/oracle-certification-path/pFamily_406>.

Oracle BPM Certification | Business Process Management

Oracle Business Process Management (BPM) delivers faster time-to-value, reduces complexity and risk, and enables strategic advantage. With Oracle BPM Training, students learn more about how to use business activity monitoring for dashboards and more.

Categories

CS, CIS, and CYS.

Prerequisites

BPM basic concepts taught in Business related Courses:

- MGMT 320 – Principles of Management.
- MGMT 410 – Fundamentals of Business.
- MGMT 421 – Organizational Behavior.
- MGMT 513 – Organizational Performance Management
- CIS 528 - Business Process Management

Exams

- Oracle Business Process Management Suite 12c Certified Implementation Specialist

The Oracle Business Process Management Suite 12c Implementation Specialist certification is designed for individuals who possess a strong foundation and expertise in implementing Oracle Business Process Management Suite 12c solutions. This certification covers topics such as: BPMN process modeling, adaptive case management, simulation, business rules, human workflow, human task forms, process analytics, BPM Workspace, Security and Administration. This certification differentiates candidates in the marketplace by providing a competitive edge through proven expertise. Up-to-date training and field experience are recommended.

- Oracle IT Architecture BPM 2013 Certified Architecture Specialist

The Oracle IT Architecture BPM 2013 Certified Architecture Specialist certification is designed for individuals who possess a strong foundation and expertise in Oracle IT Architecture BPM. This certification covers topics such as: Business Process Management Foundation, BPM Infrastructure, BPM Roadmap Creation, BPM Governance, Business Process Engineering and Creating a Business Case for BPM. This certification differentiates candidates in the marketplace by providing a competitive edge through proven expertise. Up-to-date training and field experience are recommended.

Application

Oracle BPM Suite (online).

URL

See: <https://education.oracle.com/service-oriented-architectures-soa-and-oracle-business-process-management-bpm/bpm/product_274>.

Also: <https://education.oracle.com/oracle-business-process-management-suite-12c-certified-implementation-specialist/trackp_356>.

Cisco

Cisco offers five levels of network certification: Entry, Associate, Professional, Expert and Architect, the highest level of accreditation within the Cisco Career Certification program.

CCENT | Cisco Certified Entry-level Network Technician

The CCENT certification validates the skills required for entry-level network support positions, the starting point for many successful careers in networking. CCENT certified professionals have the knowledge and skill to install, operate, and troubleshoot a small enterprise branch network, including basic network security.

It opens doors to a career in networking. Having a CCENT means a candidate can have what it takes to manage a small, enterprise branch network. A CCENT is the first step towards CCNA certification and will help the candidate stand out from the crowd in entry-level positions.

Categories

CS, CIS, and CYS.

Prerequisites

Nil.

Exams

- **100-105 ICND1**

Interconnecting Cisco Networking Devices Part 1

See: <<https://www.cisco.com/c/en/us/training-events/training-certifications/exams/current-list/100-105-icnd1.html>>.

Application

Through Cisco's site.

URL

See:

<<https://www.cisco.com/c/en/us/training-events/training-certifications/certifications/entry/ccent.html>>.

CCNP | Cisco Certified Network Professional (Routing and Switching)

Cisco Certified Network Professional (CCNP) Routing and Switching certification validates the ability to plan, implement, verify and troubleshoot local and wide-area enterprise networks and work collaboratively with specialists on advanced security, voice, wireless and video solutions. The CCNP Routing and Switching certification is appropriate for those with at least one year of networking experience who are ready to advance their skills and work independently on complex network solutions. Those who achieve CCNP Routing and Switching have demonstrated the skills required in enterprise roles such as network engineer, support engineer, systems engineer or network technician. The routing and switching protocol knowledge from this certification will provide a lasting foundation as these skills are equally relevant in the physical networks of today and the virtualized network functions of tomorrow.

Categories

CS and CYS.

Prerequisites

Networking basic concepts is a must.

Valid Cisco CCNA Routing and Switching certification or any Cisco CCIE certification can act as a prerequisite.

Exams

The main requirement for obtaining Cisco Career Certifications such as CCENT, CCNA Routing and Switching, CCDP and CCIE and Cisco Specialist Certifications such as Cisco Firewall Security Specialist is to take and pass one or more certification exams and sign the Cisco Certifications and Confidentiality Agreement. Passing exams give network professionals the chance to prove their networking knowledge and expertise.

Application

Through Cisco's site.

URL

See:

<<https://www.cisco.com/c/en/us/training-events/training-certifications/overview.html>>.

<<https://www.cisco.com/c/en/us/training-events/training-certifications/certifications.html>>.

Also: <<https://www.cisco.com/c/en/us/training-events/training-certifications/certifications/professional/ccnp-routing-switching.html#~stickynav=1>>.

Python Institute

PCAP | Certified Associate in Python Programming

Accomplish coding tasks related to the basics of programming in the Python language and the fundamental notions and techniques used in object-oriented programming.

Categories

CS, CIS, and CYS.

Prerequisites

Nil.

Exams

PCAP-31-02, PCAP-31-01.

Application

Certification shows that the individual is familiar with general computer programming concepts like conditional execution, loops, Python programming language syntax, semantics, and the runtime environment, as well as with general coding techniques and object-oriented programming.

Becoming PCAP certified ensures that the individual is fully acquainted with all the primary means provided by Python 3 to enable her/him to start her/his own studies, and to open a path to the developer's career.

URL

See: <<https://pythoninstitute.org/pcap-certification-associate>>.

PCPP | Certified Professional in Python Programming

Certification shows that you are passionate about programming in Python. It proves that you take your career development seriously and it lets you stand out with a globally-recognized credential. Professional certification reflects your wide programming skills and experience.

Categories

CS, CIS, and CYS.

Prerequisites

PCAP | Certified Associate in Python Programming Certification (PCAP-31-01, PCAP-31-02).

Exams

PCAP | Certified Associate in Python programming (PCAP-31-02).

Application

Certification shows that the individual is familiar with the more advanced aspects of classes, regular expressions, and advanced features of object-oriented programming. The scope of certification also includes graphical and network programming, as well as working with databases, testing and debugging, and processing various kinds of data.

Becoming PCPP certified ensures that the individual is fully acquainted with all the advanced means provided by Python 3 and related technologies to enable her/him to advance her/his career as a Python developer.

URL

See: <<https://pythoninstitute.org/pcpp-certification-professional>>.

Red Hat Academy

Red Hat Academy offers a range of curriculum and certification offerings.

RH124 | Red Hat System Administration I

Learn to deploy, administer, manage, and secure Red Hat Enterprise Linux.

Categories

CS, CIS, and CYS.

Area

Core System Administration

URL

See: <<https://www.redhat.com/en/services/training/rh124-red-hat-system-administration-i>>.

RH134 | Red Hat System Administration II

Certification for learning how to deploy, administer, manage, and secure Red Hat Enterprise Linux.

Categories

CS, CIS, and CYS.

Area

Core System Administration

URL

See: <<https://www.redhat.com/en/services/training/rh134-red-hat-system-administration-ii>>.

RH254 | Red Hat System Administration III

Certification for learning how to deploy, administer, manage, and secure Red Hat Enterprise Linux.

Area

Core System Administration

URL

See: <<https://www.redhat.com/en/services/training/rh254-red-hat-system-administration-iii>>.

JB183 | Red Hat Application Development I: Programming in Java EE

Certification for mastering middleware applications.

Categories

CS, CIS, and CYS.

Area

Middleware Development.

URL

See: <<https://www.redhat.com/en/services/training/jb183-red-hat-application-development-i-programming-java-ee>>.

JB283 | Red Hat Application Development: Implementing Microservices

Architectures

Certification for mastering middleware applications.

Categories

CS, CIS, and CYS.

Area

Middleware Development.

URL

See: <<https://www.redhat.com/en/services/training/jb283-red-hat-application-development-ii-implementing-microservice-architectures>>.

CL110 | Red Hat OpenStack Administration

Certification for supporting organizational movement to the cloud.

Categories

CS, CIS, and CYS.

Area

Cloud Computing.

URL

See: <<https://www.redhat.com/en/services/training/cl110-red-hat-openstack-administration-i>>.

DO180 | Introduction to Containers, Kubernetes, and Red Hat OpenShift

Certification for supporting organizational movement to the cloud.

Categories

CS, CIS, and CYS.

Area

Cloud Computing.

URL

See: <<https://www.redhat.com/en/services/training/do180-introduction-containers-kubernetes-red-hat-openshift>>.

EX200 | Red Hat Certified System Administrator (RHCSA)

Certification available through Red Hat Academy.

Categories

CS, CIS, and CYS.

Offerings

Certification available through the Academy, with a 50% discount for students, and a further 75% discount for instructors.

URL

See: <<https://www.redhat.com/en/services/training/ex200-red-hat-certified-system-administrator-rhcsa-exam>>.

EX300 | Red Hat Certified Engineer (RHCE)

Certification available through Red Hat Academy.

Categories

CS, CIS, and CYS.

Offerings

Certification available through the Academy, with a 50% discount for students, and a further 75% discount for instructors.

URL

See: <<https://www.redhat.com/en/services/training/ex300-red-hat-certified-engineer-rhce-exam>>.

EX183 | Red Hat Certified Enterprise Application Developer (RHCEAD)

Certification available through Red Hat Academy.

Categories

CS, CIS, and CYS.

Offerings

Certification available through the Academy, with a 50% discount for students, and a further 75% discount for instructors.

URL

See: <<https://www.redhat.com/en/services/training/ex183-red-hat-certified-enterprise-application-developer-exam>>.

EX283 | Red Hat Certified Enterprise Microservices Developer (RHCEMD)

Certification available through Red Hat Academy.

Categories

CS, CIS, and CYS.

Offerings

Certification available through the Academy, with a 50% discount for students, and a further 75% discount for instructors.

URL

See: <<https://www.redhat.com/en/services/training/ex283-red-hat-certified-enterprise-microservices-developer-exam>>.

Coursera

The following represents an important course, which is part of the **Functional Programming in Scala Specialization**, provided by **Coursera** (i.e. an online e-learning platform like **Udacity**, **Udemy**, **KKUx**, and others).

Functional Programming Principles in Scala

Functional programming is becoming increasingly widespread in industry. This trend is driven by the adoption of Scala as the main programming language for many applications. Scala fuses functional and object-oriented programming in a practical package. It interoperates seamlessly with both Java and Javascript. Scala is the implementation language of many important frameworks, including Apache Spark, Kafka, and Akka. It provides the core infrastructure for sites such as Twitter, Tumblr and also Coursera. In this course students will discover the elements of the functional programming style and learn how to apply them usefully in your daily programming tasks. You will also develop a solid foundation for reasoning about functional programs, by touching upon proofs of invariants and the tracing of execution symbolically.

Categories

CS, CIS, and CYS.

Prerequisites

This is the first of five courses about Scala.

Recommended background: You should have at least one year programming experience. Proficiency with Java or C# is ideal, but experience with other languages such as C/C++, Python, Javascript or Ruby is also sufficient. You should have some familiarity using the command line.

Application

Learners will build small to medium size Scala applications by applying knowledge and skills including: functional programming, parallel programming, manipulation of large data sets, higher-order functions, property-based testing, functional reactive programming.

URL

Specialization: <<https://www.coursera.org/specializations/scala>>.

Course: <<https://www.coursera.org/learn/progfun1>>.

(ISC)²

A leading Cybersecurity and IT Security Professional organization.

CISSP | A Premier Cybersecurity Certification

Candidates can accelerate their cybersecurity careers with the CISSP certification.

The CISSP is ideal for experienced security practitioners, managers and executives interested in proving their knowledge across a wide array of security practices and principles, including those in the following positions:

- Chief Information Security Officer.
- Chief Information Officer.
- Director of Security.
- IT Director/Manager.
- Security Systems Engineer.
- Security Analyst.
- Security Manager.
- Security Auditor.
- Security Architect.
- Security Consultant.
- Network Architect.

Categories

CYS.

Prerequisites

Sound knowledge in Cybersecurity.

Application

Through their site.

URL

See: <<https://www.isc2.org/Certifications/CISSP>>.

EC-Council

A leader in Cybersecurity that offers valid certification programs.

CEH | Certified Ethical Hacker Certification

A Certified Ethical Hacker is a skilled professional who understands and knows how to look for weaknesses and vulnerabilities in target systems and uses the same knowledge and tools as a malicious hacker, but in a lawful and legitimate manner to assess the security posture of a target system(s). The CEH credential certifies individuals in the specific network security discipline of Ethical Hacking from a vendor-neutral perspective.

Categories

CYS.

Prerequisites

Sound knowledge in Cybersecurity.

Application

Through their site.

URL

See: <<https://www.eccouncil.org/programs/certified-ethical-hacker-ceh/>>.