

ROLE WISE SKILLS AND CERTIFICATES

Here's a structured table with the **Skills Required** and **Certifications Needed** for each IT category and role:

1. Software Development & Engineering

Role	Skills Required	Certifications Needed
Software Developer / Engineer	Programming (Python, Java, C++, JavaScript), Data Structures & Algorithms (DSA), Databases (SQL, MongoDB), System Design, Git	Microsoft Certified: Azure Developer Associate, Oracle Certified Java Programmer (OCP), AWS Certified Developer
Frontend Developer	HTML, CSS, JavaScript, React.js, Vue.js, Angular, UI/UX Basics, APIs, Git	Google Mobile Web Specialist, Meta Frontend Developer Certificate
Backend Developer	Node.js, Java, Python, Ruby, Go, Databases, RESTful APIs, Microservices, Docker, Kubernetes	AWS Certified Solutions Architect, Microsoft Certified: Azure Developer Associate
Full Stack Developer	Frontend + Backend Skills, Databases, API Development, DevOps Basics	Meta Full Stack Developer Certificate, IBM Full Stack Cloud Developer
Mobile App Developer	Swift (iOS), Kotlin (Android), React Native, Flutter, Firebase, UI/UX, API Integration	Google Associate Android Developer, Apple Certified iOS Developer
DevOps Engineer	CI/CD, Git, Docker, Kubernetes, Terraform, Jenkins, Cloud Platforms (AWS, Azure, GCP), Linux	AWS Certified DevOps Engineer, Docker Certified Associate, Kubernetes Administrator (CKA)

Game Developer	Unity, Unreal Engine, C++, C#, 3D Modeling, Game Physics, AI for Games	Unity Certified Programmer, Unreal Engine Certification
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2. IT Support & System Administration

Role	Skills Required	Certifications Needed
IT Support Specialist	Troubleshooting, Windows/Linux, Networking Basics, Ticketing Systems	CompTIA A+, ITIL Foundation
System Administrator	Windows/Linux Admin, Scripting (Bash, PowerShell), Virtualization, Security	Microsoft Certified: Windows Server Admin, Red Hat Certified Engineer (RHCE)
Network Administrator	Networking (TCP/IP, DNS, DHCP), Firewalls, VPN, VLANs, Load Balancing	Cisco Certified Network Associate (CCNA), CompTIA Network+
Help Desk Technician	Customer Support, Troubleshooting, Active Directory, Ticketing Systems	CompTIA A+, HDI Desktop Support Technician
IT Technician	Hardware & Software Troubleshooting, Basic Networking, OS Configuration	CompTIA A+, Apple Certified Support Professional

3. Cybersecurity

Role	Skills Required	Certifications Needed
Cybersecurity Analyst	SIEM Tools, Threat Analysis, Incident Response, Firewalls, Endpoint Security	CompTIA Security+, Certified SOC Analyst (CSA)
Ethical Hacker / Penetration Tester	Kali Linux, Metasploit, Wireshark, Exploit Development, Scripting	Certified Ethical Hacker (CEH), Offensive Security Certified Professional (OSCP)

Security Engineer	Security Architecture, Firewalls, IDS/IPS, Encryption, Risk Assessment	GIAC Security Essentials (GSEC), Certified Information Systems Security Professional (CISSP)
Security Architect	Security Frameworks (NIST, ISO 27001), Threat Modeling, Zero Trust Security	CISSP, Certified Information Security Manager (CISM)
Incident Response Analyst	Digital Forensics, Malware Analysis, SIEM Tools, Threat Hunting	GIAC Certified Incident Handler (GCIH), CompTIA Cybersecurity Analyst (CySA+)

4. Data Science & Analytics

Role	Skills Required	Certifications Needed
Data Analyst	SQL, Excel, Power BI, Tableau, Python/R, Data Visualization	Microsoft Certified: Data Analyst Associate, Tableau Desktop Specialist
Data Scientist	Python, Machine Learning, Deep Learning, Big Data, Statistics	IBM Data Science Professional Certificate, Google TensorFlow Developer
Data Engineer	SQL, ETL, Apache Spark, Hadoop, Cloud Data Warehouses	Google Cloud Certified: Data Engineer, AWS Certified Data Analytics
Business Intelligence (BI) Analyst	Data Warehousing, SQL, Power BI, Tableau, Reporting Tools	Microsoft Certified: Power BI Data Analyst Associate
Machine Learning Engineer	Deep Learning, TensorFlow, PyTorch, NLP, AI	TensorFlow Developer Certificate, AWS Certified Machine Learning

5. Cloud Computing & Infrastructure

Role	Skills Required	Certifications Needed
Cloud Engineer	AWS/Azure/GCP, Virtualization, Kubernetes, Terraform	AWS Certified Solutions Architect, Microsoft Azure Administrator
Cloud Architect	Cloud Security, DevOps, Hybrid Cloud, Cost Optimization	Google Professional Cloud Architect, AWS Certified Solutions Architect - Professional
Site Reliability Engineer (SRE)	CI/CD, Kubernetes, Observability, Incident Response	Google Cloud SRE Professional Certification
Database Administrator (DBA)	SQL, NoSQL, Database Security, Performance Optimization	Oracle Certified MySQL Database Administrator, Microsoft Certified: Azure Database Administrator

6. Networking

Role	Skills Required	Certifications Needed
Network Engineer	TCP/IP, Routing, Switching, Firewalls	Cisco CCNA, Juniper JNCIA
Network Security Engineer	Firewalls, VPN, Intrusion Detection, Secure Access	Cisco CCNP Security, Palo Alto Networks PCNSE
Wireless Network Engineer	Wi-Fi Standards, Signal Optimization, Security	CWNP Certified Wireless Network Administrator (CWNA)

7. IT Project Management & Business Analysis

Role	Skills Required	Certifications Needed
IT Project Manager	Agile, Scrum, Budgeting, Risk Management	PMP, PRINCE2, PMI Agile Certified Practitioner

Business Analyst	Process Modeling, SQL, Data Visualization, Documentation	Certified Business Analysis Professional (CBAP), PMI-PBA
Scrum Master	Agile Frameworks, Kanban, Sprint Planning	Certified ScrumMaster (CSM), PMI Agile Certified Practitioner
Product Owner	Roadmapping, User Stories, Stakeholder Communication	Professional Scrum Product Owner (PSPO)

8. Quality Assurance & Testing

Role	Skills Required	Certifications Needed
QA Engineer	Manual Testing, Test Cases, Bug Reporting	ISTQB Foundation Level
Software Tester	Test Automation, Selenium, JUnit	ISTQB Advanced Level
Automation Tester	Selenium, Python/Java, Jenkins	Certified Selenium Tester Foundation

9. UI/UX & Product Design

Role	Skills Required	Certifications Needed
UI/UX Designer	Figma, Wireframing, User Research	Google UX Design Certificate
Product Designer	Prototyping, Design Systems	Nielsen Norman Group UX Certification
Interaction Designer	Motion Design, Usability Testing	Certified Usability Analyst (CUA)

10. Artificial Intelligence & Machine Learning

Role	Skills Required	Certifications Needed
AI Engineer	Neural Networks, Python, TensorFlow	Microsoft AI Engineer Associate
NLP Engineer	Natural Language Processing, Transformers	Google AI ML/NLP Certification

Computer Vision Engineer	OpenCV, Deep Learning, Image Processing	IBM AI Engineering Professional Certificate
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11. Database & Storage

Role	Skills Required	Certifications Needed
Storage Engineer	SAN, NAS, Cloud Storage, RAID	NetApp Certified Storage Associate

12. Emerging Technologies & Specialties

Role	Skills Required	Certifications Needed
Blockchain Developer	Solidity, Ethereum, Smart Contracts	Certified Blockchain Developer
IoT Engineer	Embedded Systems, IoT Security	Cisco IoT Certification
AR/VR Developer	Unity, 3D Modeling, C#	Meta AR Developer Certification