



COMPARING THE 002 & 003 EXAM

What are the changes to the Data Center Program?

The program was updated and aligned with the most recent Job Task Analysis (JTA). While design is still a central part of the DCDC™ description, it was found that DCDCs are being utilized within all facets of data centers, including strategic planning, operations, management, and evaluation.

In addition to the expansion of topical areas, this version will also see modifications to align with the Job Task Analysis (JTA) to both the eligibility and recertification requirements of the DCDC credential.

Why are you changing the current program?

BICSI performs a Job Task Analysis (JTA) every 3 -5 years for all of its programs to reflect the changes and evolution within the ICT industry. This is an essential process to ensure that the credential requirements and exam content accurately reflect current job-related activities and professional standards. For the DCDC, participants from around the globe within the Data Center Design Consultant JTA identified new or expanded areas of import, such as operational and security assessments that are increasing being requested.

The Registrations & Credentials Supervision Committee (RCSC), the volunteer leaders who manage BICSI's credentials, were in Tampa with a select globally dynamic group of subject matter experts (SME) that conducted a credentialing best practice activity on the DCDC Program Credentials. The team was facilitated by third party experts in testing and certification. The group participated in a Job Task Analysis Study (JTA) at the Hampton Inn Avion Park, Tampa.

- A **JTA** is conducted every 3-5 years with SME volunteers in the ICT industry. Professionals who hold the given credential participate in the study and provide industry expertise on the work a Data Center Design Consultant conducts. The study is facilitated by third party expert test and certification development professionals who guide the SMEs through a three-day meeting to determine the activities and attributes involved in a Data Center Design Consultant's job. This process involves input from the SMEs on the job duties, job tasks and steps, knowledges, skills and abilities and the competencies needed to be successful as a Data Center Design Consultant.

This is a very important credentialing industry best practice that yields value to the certification and to the individuals who earn them. Performing these studies on our credentialing programs ensures that BICSI stays at the forefront of the industry and that our members, credential holders and other ICT professionals remain relevant and at the top of their respective fields.

DCDC™ -002 EXAM

DUTY LETTER	DUTY/TASK STATEMENT	IMPORTANCE RATING
A.	Architectural and space planning	10%
	<ul style="list-style-type: none"> • Identify space planning constraints • Apply availability requirements • Apply IT equipment capacity requirements • Apply IT equipment space requirements • Determine people requirements • Determine infrastructure requirements • Determine support requirements • Estimate growth rate • Develop space adjacencies recommendations • Provide functional space requirements • Compile and interpret external requirements 	
B.	Site Selection	3%
	<ul style="list-style-type: none"> • Develop criteria for natural environment • Develop criteria for utility environment • Evaluate regulation requirements (local, regional, national) • Develop criteria for location environment (e.g., transportation, job market) • Develop financial criteria (e.g., cost, tax incentives) • Evaluate criteria for site selection • Compile and interpret external requirements 	
C.	Electrical Systems	16%
	<ul style="list-style-type: none"> • Develop site utility requirements (e.g., medium voltage, underground, overhead) • Develop criteria for utility environment • Know main components of electrical system • Differentiate among availability levels • Differentiate among power distribution systems • Compile and validate user requirements • Understand advantages/disadvantages among various solutions • Compile and interpret external requirements 	
D.	Mechanical Systems	16%
	<ul style="list-style-type: none"> • Develop site utility requirements (e.g., water use/storage, gas use) • Apply mechanical systems criteria (e.g., chilled water vs dx) • Know main components of mechanical system • Differentiate among availability levels • Differentiate among mechanical systems • Compile and validate user requirements • Understand advantages/disadvantages among various solutions • Compile and interpret external requirements 	

DCDC™ -002 EXAM

DUTY LETTER	DUTY/TASK STATEMENT	IMPORTANCE RATING
E.	Ancillary Systems (Fire Protection, Security, Building Automation Systems [BAS])	7%
	<ul style="list-style-type: none"> • Develop site requirements for each ancillary system • Apply ancillary systems criteria • Know main components of each ancillary system • Differentiate among security systems • Differentiate among BAS systems • Differentiate among fire protection systems • Compile and validate user requirements <ul style="list-style-type: none"> • Understand advantages/disadvantages among various solutions • Interpret facility and data driven security plans • Differentiate among availability of BAS • Compile and interpret external requirements 	
F.	Information Technology	16%
	<ul style="list-style-type: none"> • Apply IT systems criteria (e.g., server, SAN, switches) • Describe networking fundamentals (e.g., OSI, architecture) • Compile and interpret network connectivity media requirements (e.g., copper and optical fiber cabling) • Describe fundamental network components (e.g., servers, switches, routers, storage) • Describe basic data center network communications (e.g., Ethernet, TCP/IP, Fibre Channel, WAN circuits) • Compile and interpret external requirements <ul style="list-style-type: none"> • Compile and interpret user requirements • Recognize contemporary and emerging technologies and how they relate to design of a data center • Develop site utility requirements (e.g., underground, overhead) • Apply telecommunications systems criteria (e.g., network infrastructure, LAN, WAN, pathways) • Differentiate among high availability solutions • Understand advantages/disadvantages among various solutions 	
G.	Commissioning	10%
	<ul style="list-style-type: none"> • Describe phases of commissioning process • Describe types of commissioning <ul style="list-style-type: none"> • Describe testing as a component of commissioning • Describe commissioning documents 	

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DUTY LETTER	DUTY/TASK STATEMENT	IMPORTANCE RATING
H.	Data Center Operations and Maintenance	3%
	<ul style="list-style-type: none"> • Describe Owner's operation and maintenance processes' impact on design (e.g., equipment accessibility, equipment adjacencies) • Describe Owner's monitoring and control processes' impact on design (e.g., environmental, power, IT service availability) • Describe operations and maintenance best practices solutions 	
I.	Sustainable Data Center	3%
	<ul style="list-style-type: none"> • Translate sustainability requirements into the design recommendations • Describe 3rd party sustainability certification levels (e.g., LEED, European Code of Conduct) • Describe thermal management methodologies • Describe power consumption best practices (e.g., power management, EnergyWise, EnergyStar) 	
J.	Design Process	6%
	<ul style="list-style-type: none"> • Describe project delivery methods • Describe facility design phases • Describe technology design phases • Describe data center documentation • Recognize 3rd party certification organizations 	
K.	Risk Analysis	10%
	<ul style="list-style-type: none"> • Identify assets (e.g., people, property, operations, information) • Manage threat assessment (identification, frequency, impact) • Coordinate security audit (building inspections, security surveys, security analysis) • Verify against objectives (ascertain security status, current state, protection levels) • Identify countermeasures (physical, electronic, organizational) • Coordinate cost benefit/feasibility/present value studies • Translate client's business continuity plan (BCP) requirements into availability design recommendations • Translate client's disaster recovery plan (DRP) requirements into recovery design recommendations 	

DCDC™ -003 EXAM

TASK	EXAM DOMAIN	% OF EXAM
A.	<p>Concept Planning & Analysis</p> <ul style="list-style-type: none"> • Conduct needs assessment with client to determine their objectives, operational needs, and suitability of data center model (e.g., cloud, colocation, on premise build) needed for the end user for a new data center construction or existing data center • Identify future growth of data center (project phasing, shell space) • Conduct site search to collect necessary information and site circumstances (e.g., to confirm topography, adjacent areas, comparison of multiples sites) • Collect risk/benefit factors for natural environment to determine impact on the data center (e.g., flood plain, wind, seismic activity, storm activity, water availability, green power, economized cooling, sunlight) • Collect risk/benefit factors for the utility environment to determine impact on the data center (e.g., availability and cost of power, telecommunications infrastructure, water, gas) • Determine regulation and code requirements (local, regional, national) to assess risk/benefit factors that may impact the data center • Determine financial implications (e.g., cost, tax incentives) of site selection and ultimate cost • Evaluate how well potential site(s) met criteria to determine overall appropriateness of site • Develop feasibility report based on client requirements and site evaluation and selection search findings 	25%
B.	<p>Systems: Architectural and Space Design / Mechanical/ Electrical</p> <p>Architectural and Space Design</p> <ul style="list-style-type: none"> • Design space based upon client requirements and feasibility analysis to ensure functionality of a complete data center • Apply IT equipment capacity and space requirements to the space design in order to ensure suitable layout of equipment • Apply ancillary systems space requirements (e.g., fire protection system, security, building automation) to determine the total impact on architectural space design • Determine personnel requirements to ensure proper functionality and safety of the data center • Determine physical security requirements to ensure proper security of the data center • Determine support area/space needs and adjacencies as required by data center functions <p>Mechanical Systems</p> <ul style="list-style-type: none"> • Identify site utility requirements (e.g., water use/storage, fuel storage, gas use, sewer, storm water) that may impact the data center availability and overall detailed design • Coordinate client's mechanical systems criteria (e.g., plumbing, HVAC, fuel distribution) with mechanical engineer to verify design meets the client's design intent 	24%
		5%
		9%

DCDC™ -003 EXAM

TASK	EXAM DOMAIN	% OF EXAM
B.	Systems: Architectural and Space Design / Mechanical/ Electrical	
	Electrical Systems	10%
	<ul style="list-style-type: none"> Identify site utility requirements (e.g., medium voltage, underground, overhead) that may impact the data center availability and overall detailed design Coordinate client's power systems criteria (e.g., backup systems, distribution systems, voltage criteria) with electrical engineer to verify design meets the client's design intent 	
C.	Information Technology / Ancillary Systems/ Communications Connectivity	16%
	Information Technology	2%
	<ul style="list-style-type: none"> Identify information technology site requirements (e.g., equipment, standards, facility layout) that may impact the overall detailed design Coordinate client's information technology criteria (e.g., cabinets, racks, SAN, standalone equipment, network requirements, physical systems/network security) with other discipline designers to verify design meets the client's design intent 	
	Ancillary Systems	8%
	<ul style="list-style-type: none"> Identify ancillary systems site requirements (e.g., fire protection, security, building automation systems) that may impact the data center availability and overall detailed design Coordinate client's ancillary systems criteria (e.g., fire protection, security, building automation systems) with other discipline designers to verify design meets the client's design intent 	
	Communications Connectivity	6%
	<ul style="list-style-type: none"> Identify site communications requirements (e.g., fiber, copper, pathways) that may impact the data center availability and overall detailed design Coordinate IT stakeholders communications criteria (e.g., fiber, copper, pathways) with RCDD and other discipline designers to verify design meets the client's design intent 	

DCDC™ -003 EXAM

TASK	EXAM DOMAIN	% OF EXAM
D.	Data Center Operations & Maintenance Assessment	13%
	<ul style="list-style-type: none"> Conduct optimization study to ensure data center meets client goals or requirements Assess current system state of data center (e.g., mechanical, electrical, ancillary) Assess current efficiency of data center systems (e.g., mechanical, electrical, ancillary) Assess current capacity and growth capacity level of data center Assess aging of technology and need for refresh Assess utility (e.g., availability and cost of power, telecommunications infrastructure, water, gas) Assess physical security of data center (e.g., electronic systems, architectural security, bollards) Assess operational performance (e.g., personnel, policies, maintenance operations procedures, etc.) Assess data center's suitability against client's IT requirements (e.g., network, Disaster Recovery Plan) Assess operations documentation (e.g., historical commission reports and logs) Assess safety procedures (e.g., lock out/ tag out procedures) Develop report that captures findings from assessment 	
E.	Security Assessment	12%
	<ul style="list-style-type: none"> Manage threat assessment (identification, frequency, impact) Coordinate security audit (building inspections, security surveys, security analysis) Verify against objectives (ascertain security status, current state, protection levels) Identify countermeasures (physical, electronic, organizational) Coordinate cost benefit/feasibility/ present value studies Translate client's disaster recovery plan (DRP) requirements into recovery design recommendations 	
F.	Construction Administration & Commissioning	10%
	Construction Administration	4%
	<ul style="list-style-type: none"> Assist client in overall bid process and award Assist client or contractors with coordination during construction phase Assist client or contractors with coordination during project close-out phase 	
	Commissioning	6%
	<ul style="list-style-type: none"> Assist client with pre-commissioning activities to verify the commissioning tests meet the project design requirements Assist client or commissioning agent in the development of the commissioning plan Assist client or commissioning agent in execution of commissioning activities to verify the commissioning test results have met the project design intent 	