PROFESSIONAL EDUCATION AND DEVELOPMENT
Offering Education and Training for Data Center and Enterprise Systems Professionals

Courses are delivered 100% online, instructor-led.
Study at your convenience.

www.idcp.org
# TABLE OF CONTENTS

About the IDCP .................................................................................................................................3

Program Staff ....................................................................................................................................4

Certificate Programs Overview ...........................................................................................................5-8

Enterprise Systems Course Descriptions

- Systems Programming Track ........................................................................................................9-11
- Application Programming Track ................................................................................................12-13
- Enterprise UNIX Systems Certificate .......................................................................................14

Emerging Technologies Course Descriptions

- High Availability Storage Networking ......................................................................................15
- Business Analytics .......................................................................................................................15
- Dynamic Infrastructure ..............................................................................................................15

Data Center Technologies Course Descriptions

- Associate Certificate in Systems & Software ..............................................................................16
- Associate Certificate in Facilities Management .........................................................................17
- Associate Certificate in Networking ........................................................................................17
- Associate Certificate in Security .............................................................................................18
- Associate Certificate in Operations and Process Management ..............................................19
- Associate Certificate in Product Development and Financial Planning ..............................20
- Greening of the Data Center ......................................................................................................21
- Advanced Facilities Management ............................................................................................21

General Information ......................................................................................................................22
About the IDCP

The Marist College Institute for Data Center Professionals (IDCP) was founded in 2004 with support and funding from the National Science Foundation. In partnership with professional, industry and governmental organizations, the IDCP has been providing individuals and corporate teams with skills-based education and credentialing supporting the data center and enterprise computing environments of the future.

Professionals working in the data center and enterprise computing realm are critical resources for the nation’s economic stability and national security, yet there is a significant skills shortage as experienced professionals are retiring from the workforce and traditional educational programs are not yet addressing this challenge.

The Institute for Data Center Professionals offers a variety of online certificate programs for the working professional. All courses offered through the IDCP utilize the Marist College Premier iLearn course management system delivering multimedia content. In addition, the Knowledge Center at Marist College provides students with a hands-on virtual laboratory environment.
PROGRAM STAFF

IDCP Program Director
Dr. Roger L. Norton, Dean
roger.norton@marist.edu

Director of Large Systems Education
Angelo F. Corridori
angelo.corridori@marist.edu

Director of Corporate Outreach
Susan Scanlon
susan.scanlon@marist.edu

Administrative Staff
Roberta Diggins, Administrator, Enterprise Systems Education
roberta.diggins@marist.edu
Andrea Ohms, Administrator
andrea.ohms@marist.edu

Program Information Help Desk
idcphelp@marist.edu
learnzos@marist.edu
learnaix@marist.edu

Marist College Technical Support Help Desk: helpdesk@marist.edu
Systems Programming Track

**z/OS Associate Certificate**
- NCRT 110 or ITS 315: Introduction to z/OS and Major Subsystems
- NCRT 120 or ITS 316: z/OS Networking
- NCRT 130 or ITS 317: z/OS Security

**z/OS Professional Certificate**
- NCRT 210 or ITS 465: z/OS Advanced Topics
- NCRT 220 or ITS 466: z/OS Reliability, Availability, Serviceability and Problem Determination (RAS and PD)
- NCRT 230 or ITS 467: z/OS Emerging Technologies

**z/OS Expert Certificate**
- NCRT 320: z/OS Installation
- NCRT 330: DB2 Fundamentals
- NCRT 340: z/OS Performance Fundamentals

Application Programming Track

**COBOL Certificate**
- NCRT 110 or ITS 315: Introduction to z/OS and Major Subsystems
- NCRT 420: Basic COBOL Programming
- NCRT 430: Advanced COBOL Programming

**IMS Certificate**
- NCRT 110 or ITS 315: Introduction to z/OS and Major Subsystems
- NCRT 520: IMS Fundamentals
- NCRT 530: IMS Application Programming

**Assembler Certificate**
- NCRT 110 or ITS 315: Introduction to z/OS and Major Subsystems
- NCRT 620: Basic Assembler Language Programming
- NCRT 630: Advanced Assembler Language Programming

**DB2 Certificate**
- NCRT 110 or ITS 315: Introduction to z/OS and Major Subsystems
- NCRT 820: DB2 Fundamentals
- NCRT 830: DB2 Application Programming
# Certificate Programs Overview

## Enterprise Unix Systems Certificate

### AIX on Power Certificate Program
- **NCRT P01** Introduction to AIX on Power
- **NCRT P02** Fundamentals of AIX Administration

### Emerging Technologies

#### High Availability Storage Networking Certificate Program
- High Availability Storage Networking I
- High Availability Storage Networking II

#### Business Analytics Certificate Program
- Business Intelligence
- Data Mining and Predictive Analytics

#### Dynamic Infrastructure Certificate Program
- Dynamic Infrastructure in Theory and Practice
- Virtualization
# Certificate Programs Overview

## Data Center Technologies

### Certified Data Center Professional

- Associate Certificate in Systems and Software
- Associate Certificate in Facilities Management
- Associate Certificate in Networking
- Associate Certificate in Security
- Associate Certificate in Operations and Process Management
- Associate Certificate in Product Development and Financial Planning

### Associate Certificate in Systems and Software

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
</tr>
</thead>
<tbody>
<tr>
<td>ITS 130</td>
<td>Information Technology and Systems Concepts</td>
</tr>
<tr>
<td>CMSC 119</td>
<td>Introduction to Programming</td>
</tr>
<tr>
<td>ITS 321</td>
<td>Architecture of Hardware and Software</td>
</tr>
</tbody>
</table>

### Associate Certificate in Facilities Management

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
</tr>
</thead>
<tbody>
<tr>
<td>ITS 130</td>
<td>Information Technology and Systems Concepts</td>
</tr>
<tr>
<td>ITS 482</td>
<td>Introduction to Facilities</td>
</tr>
</tbody>
</table>

### Associate Certificate in Networking

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
</tr>
</thead>
<tbody>
<tr>
<td>ITS 130</td>
<td>Information Technology and Systems Concepts</td>
</tr>
<tr>
<td>ITS 406</td>
<td>Data Communication</td>
</tr>
<tr>
<td>ITS 415</td>
<td>Internetworking</td>
</tr>
</tbody>
</table>

### Associate Certificate in Security

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
</tr>
</thead>
<tbody>
<tr>
<td>ITS 130</td>
<td>Information Technology and Systems Concepts</td>
</tr>
<tr>
<td>ITS 410</td>
<td>System Administration and Management</td>
</tr>
<tr>
<td>ITS 420</td>
<td>Internet Security</td>
</tr>
</tbody>
</table>

### Associate Certificate in Operations and Process Management

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
</tr>
</thead>
<tbody>
<tr>
<td>ITS 130</td>
<td>Information Technology and Systems Concepts</td>
</tr>
<tr>
<td>ORG 101</td>
<td>Managing IT Organizations</td>
</tr>
<tr>
<td>ITS 430</td>
<td>System Design and Analysis</td>
</tr>
<tr>
<td>ITS 378</td>
<td>Project Management</td>
</tr>
</tbody>
</table>

### Associate Certificate in Product Development and Financial Planning

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
</tr>
</thead>
<tbody>
<tr>
<td>ITS 130</td>
<td>Information Technology and Systems Concepts</td>
</tr>
<tr>
<td>ORG 203</td>
<td>Accounting for the Data Center</td>
</tr>
<tr>
<td>ITS 378</td>
<td>Project Management</td>
</tr>
</tbody>
</table>
Non-Credit Programs

Greening Certificate

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
</tr>
</thead>
<tbody>
<tr>
<td>NCRT 710</td>
<td>10-week course on The Greening of the Data Center</td>
</tr>
</tbody>
</table>

Advanced Facilities Management Certificate

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
</tr>
</thead>
<tbody>
<tr>
<td>NCRT 720</td>
<td>12-week course in Advanced Facilities Management</td>
</tr>
</tbody>
</table>

“I did like that there was a strong component of ongoing evaluation through quiz scores rather than an emphasis on just one or two exams.”

-Student Testimonial
NCRT 110 (non-credit) or ITS 315 (credit)

**Introduction to z/OS and Major Subsystems**

This class introduces operating systems and data processing concepts in the context of large system computing using a combination of hands-on exercises and lecture presentations. The course content covers modern hardware, operating system, and middleware functions and features. This includes hardware concepts such as virtualization, logical partitioning, multi-processing, and high performance I/O. The operating system concepts covered include virtual storage and memory management, workload management (batch and transactional) dispatching, job control language, security, networking, and other operating system functions. The course concludes with an overview of key middleware (transaction and database managers as well as messaging software) and its contribution to an overall hardware/software configuration needed to process large workloads.

**Offered Fall and Spring**

NCRT 120 (non-credit) or ITS 316 (credit)

**z/OS Networking**

The course is based on the IBM Redbook entitled “Introduction to the New Mainframe: Networking.” This course is not designed to prepare students to be a System z network administrator but it will enable students to discuss data center issues with network administrators as informed and active participants. The class is half theory and basic architecture, and half description of the business problem that is solved and the actual implementation. The class is 50% TCP/IP, 30% SNA, and 20% administration and operations.

**Prerequisite: Introduction to z/OS and Major Subsystems**

NCRT 130 (non-credit) or ITS 317 (credit)

**z/OS Security**

The course is based on the IBM Redbook entitled “Introduction to the New Mainframe: Security.” The class is structured to develop the student’s understanding of information security from a business implementation perspective. The basic concepts of security are explained, as well as how these concepts have been implemented on the System z hardware and the z/OS operating system and its components.

**Prerequisite:** Introduction to z/OS and Major Subsystems

**Follows NCRT 120 or ITS 316**
NCRT 210 (non-credit) or ITS 465 (credit)

**z/OS Advanced Topics**

This course is designed to go into some detail on key technical areas of interest to personnel working with System z and z/OS. Several topics are extensions to basic materials covered in the Introduction to z/OS and Major Subsystems class while others cover new material. Topics covered include business continuity and disaster recovery, business intelligence and data warehousing, a look inside the coupling facility, z/OS installation overview, z/OS performance basics, global resource serialization and System z virtualization. Other topics such as an introduction to machine components and data representation cover material related to the System z architecture and reinforce and expand on concepts discussed in earlier classes.

**Prerequisite:** Completion of the z/OS Associate Certificate or Qualifying Examination

**Offered in Fall**

-----------------------------

NCRT 220 (non-credit) or ITS 466 (credit)

**z/OS Reliability, Availability, Serviceability and Problem Determination (RAS and PD)**

This course provides an overview of Reliability, Availability, and Serviceability (RAS) principles and their importance to the System z hardware and z/OS operating system. The course introduces the major characteristics of the different aspects of RAS, distinguishing serviceability and problem determination. It also covers the broad area of Reliability and Availability functions and the value that they bring to the System z installation, as well as the management processes required by an installation to ensure that the highest levels of Availability can be attained. The topics covered include an introduction to RAS concepts, general approaches for enabling a highly available environment, System z hardware and software availability features including parallel sysplex, z/OS reliability including program recovery environments, z/OS serviceability including storage dumps, logging, and tracing, z/OS messages, operational problem determination and an introduction to using IPCS to analyze storage dumps.

**Follows NCRT 210 or ITS 465**

-----------------------------

NCRT 230 (non-credit) or ITS 467 (credit)

**z/OS Emerging Technologies**

This course provides an overview of technologies that are expected to have significant impact on large scale computing environments over the next several years. In some cases the technologies discussed are relatively new and in other cases they have been around in one form or another for some time. In either case, this course looks at these technologies from the perspective of the System z hardware and software and the value and uniqueness of these technologies when used on System z. The topics covered include service-oriented architecture, Web 2.0, WebSphere process server, WebSphere message broker, XML on System z, JAVA on System z, content manager, information integration, z/OS simplification, Rational Developer for System z, z/OS Healthchecker, z/OS System REXX and zLinux on System z.

**Follows NCRT 220 or ITS 466**
Systems Programming Track
Expert Certificate

NCRT 320 (non-credit)

**z/OS Installation**

This course provides instruction on the use of SMP/E to perform z/OS installation and related activities. Practical exercises are used to build z/OS installation skills. The topics covered in this course include z/OS installation overview, SMP/E basic topics, SMP/E advanced topics, planning for z/OS, z/OS software offerings, ordering z/OS software, cloning, upgrading a z/OS product, z/OS migration, configuration and customization, z/OS deployment, ServerPac and best practices for maintenance.

**Prerequisite:** Completion of the z/OS Professional Certificate

**Offered in Fall**

NCRT 330 (non-credit)

**DB2 Fundamentals**

The DB2 Fundamentals class provides an introduction to the DB2 relational database system as implemented on z/OS. It introduces the major DB2 concepts, structures, functions and features and includes an introduction to DB2, DB2 concepts, system overview, system structures, database services, DB2 environment, attachment facilities, workload management, distributed data facility, SQL overview, DB2 interface, SQL journeys, database and application implementation, concurrency control, security, logging and recovery, startup and restart, commands, utilities and tools, system performance and fundamental query optimization.

**Follows NCRT 320**

NCRT 340 (non-credit)

**z/OS Performance Fundamentals**

The z/OS Performance Fundamentals class provides a practical approach to understanding z/OS performance concepts and techniques. The class includes an introduction to the discipline of z/OS performance fundamentals, formula fundamentals, resources that need to be performance-managed, managed workloads that will be using the managed resources, the discipline of computer performance measurement and monitoring, common methodologies used to conduct a performance analysis and review, processor performance fundamentals, processor storage (memory) and paging subsystem performance fundamentals, DASD I/O subsystem performance fundamentals, workload manager performance fundamentals, sysplex and parallel sysplex performance fundamentals and workload performance fundamentals.

**Follows NCRT 330**
Application Programming Track
COBOL Application Programming Certificate

NCRT 420 (non-credit)
Basic COBOL Programming
The basic COBOL application programming class provides the student an opportunity to exercise a number of programming techniques using the COBOL programming language. COBOL has been widely used to develop commercial applications and is still in wide use in a number of large organizations today. The class covers the use of structured programming techniques to develop COBOL programs, and the design coding and testing of COBOL programs. A number of programming projects will be assigned to give the student ample opportunity to design, code and test structured COBOL programs that use multidimensional arrays, I/O, math operations, searches and sorts.
Prerequisite: NCRT 110 or ITS 315
Offered in Fall

NCRT 430 (non-credit)
Advanced COBOL Programming
This course will begin with a review of single dimensional array processing techniques before beginning multidimensional array processing techniques. File processing techniques including sorts, merges, and transaction processing will be covered. Structured Programming techniques and modularization including both internal and external subroutines will be taught and used in all programming projects. Finally interactive COBOL using CICS will be taught and used to develop an interactive user program. This course uses extensive programming projects to enable the student to practice what is being taught. These programming projects will be entered, compiled and executed on the Marist College z/OS mainframe computer using TSO.
Follows NCRT 420

Application Programming Track
IMS Application Programming Certificate

NCRT 520 (non-credit)
IMS Fundamentals
This course is designed to present an introduction to the basic facilities of IMS, how these facilities work together and how application programs interact with them. The course presents the IMS Database System, the IMS Transaction Manager, and their use in today’s modern enterprise systems. An introduction to IMS Parallel Sysplex and high availability will be provided.
Prerequisite: NCRT 110 or ITS 315
Offered in Fall

NCRT 530 (non-credit)
IMS Application Programming
This course is designed to present the skills needed to write application programs that interface with the IMS Transaction Manager, and use DL/I to process IMS databases. Topics include DL/I Environment, Call Processing, Retrieval Calls, and Update Calls, programming techniques, advanced segment search arguments, system service calls, message processing programming, message format services and IMS Transaction Manager additional facilities.
Follows NCRT 520
Application Programming Track
Assembler Language Application Programming Certificate

NCRT 620 (non-credit)
Basic Assembler Language Programming
The class includes programming assignments that are introduced and assigned at various points in the course. The class provides usage of the zXDC program for debugging and stepping through the assembler program. Topics include number systems, machine components, language comparison, addressing main storage, linkage conventions, a walkthrough of a simple program and macro, condition code, comparisons, loops, characters, character string instructions, debugging, messages, bit manipulation, binary conversions, multiple CSECTs and addressing virtual storage.
Prerequisite: NCRT 110 or ITS 315
Offered in Spring

NCRT 630 (non-credit)
Advanced Assembler Language Programming
A number of programming exercises will be used to allow the student to become proficient in z/OS assembler language programming techniques. In particular, this class will expose the student to and provide an opportunity to develop z/OS assembler code that uses tables, lists and linked lists, z/OS units of work such as TCB’s and multitasking, z/OS assembler techniques and services to provide high levels of availability, z/OS assembler instructions and techniques for serialization, z architecture instructions, z/OS multitasking using non-privileged system services, programs with multiple CSECTs and re-entrant code. The exercises used in the class will allow the student to continue to develop good practices for designing, coding and testing well structured and well-documented z/OS assembler code. In addition, the student will have the opportunity to practice debugging and reading existing z/OS assembler code. This approach is used to simulate a job assignment where z/OS assembler code is being used or modified, but new development may not be using z/OS assembler language.
Follows NCRT 620

Application Programming Track
DB2 Application Programming Certificate

NCRT 820 (non-credit)
DB2 Fundamentals
The DB2 Fundamentals class provides an introduction to the DB2 relational database system as implemented on z/OS. It introduces the major DB2 concepts, structures, functions and features and includes an introduction to DB2, concepts, system overview, structures, database services, DB2 environment, attachment facilities, workload management, distributed data facility, SQL overview, DB2 interface, SQL journeys, database implementation, application implementation, concurrency control, DB2 security, logging and recovery, startup and restart, DB2 commands, utilities and tools, system performance and fundamental query optimization.
Prerequisite: NCRT 110 or ITS 315
Offered in Spring

NCRT 830 (non-credit)
DB2 Application Programming
This course presents the fundamental concepts and programming techniques required to access DB2 data through application programs. Students will learn to code programs with embedded SQL and to use a variety of attachment facilities to run those programs against DB2 for z/OS databases. The course includes many hands-on programming exercises which give students the opportunity to develop programming skills, learn good programming techniques and implement programming best practices while accessing DB2 data. Students taking this course should have a basic understanding of relational databases (preferably DB2 for z/OS) and a basic knowledge of SQL.
Follows NCRT 820
Enterprise UNIX Systems Certificate
AIX on Power Certificate

NCRT P01 (non-credit)
Introduction to AIX on Power
In this first AIX on Power course, students learn the fundamentals of the AIX operating system. The course provides a survey of the IBM Power platform as well as a hands-on exploration of essential AIX and UNIX tools and techniques. Topics include advantages and features of POWER platform, AIX documentation, Korn shell features and customization, POSIX commands and utilities, files systems and directory hierarchy, process monitoring and job control, Vi editor, text processing and filters, shell programming and scripting languages, common desktop environment and alternatives, and the similarities and differences between AIX and Linux.

No Unix/Linux experience is assumed, but any prior exposure will be helpful
Offered in Fall and Spring

NCRT P02 (non-credit)
Fundamentals of AIX Administration
The second course in the AIX on Power certificate program provides an examination of specific features and software used to install and maintain an AIX system along with common services. Students gain direct experience with a variety of administrative tasks and tools, with an emphasis on best practices. Students gain an appreciation for the advantages of the AIX/POWER platform. Topics include the System Management Interface Tool (SMIT), AIX installation and boot procedures, software packages, bundles and filesets, logical volume manager, enhanced journaled file system, backup/restore strategies, role-based access control, security files and printing subsystem.

Prerequisite: NCRT P01

"I have absolutely no regrets having taken this class. This class exceeded my expectations and prepared me for the courses to follow."

-Student Testimonial
Emerging Technologies

High Availability Storage Networking Certificate

High Availability Storage Networking I (Credit)
This course begins with an introduction to traditional networking referencing topics covered in Internetworking I and then moves into the area of converged networking. Fiber Channel, iSCSI, SANs, basic networking theory and practice, among other protocols will be discussed in a theoretical and practical approach for the first third of this course. The next two thirds of the course will focus on converged networking theory and practice utilizing converged networking adapters, fabric switches, storage arrays, servers and software.

Prerequisites: Completion of the Data Center Associate Certificate in Networking, Internetworking I (ITS 415), Computer Networks Lab (MSCS 561) or Cisco Certification (CCNA)

High Availability Storage Networking II (Credit)
This course begins with a review of Converged Enhanced Ethernet (CEE) referencing topics covered in Internetworking I and Converged Networking I. The effects of integrating CEE into an FC environment, migrating from traditional SANs to a CEE environment, integrating virtualization into the network, troubleshooting and load testing will be researched and discussed in depth.

Prerequisite: Completion of High Availability Storage Networking I

Emerging Technologies

Business Analytics Certificate

ITS 438 (Credit)
Business Intelligence
Business Intelligence (BI) is a broad category of disciplines and technologies for gathering, storing, providing access and analyzing data to help enterprise users make better, faster business decisions. Effective BI increases the quality of strategic and operative planning and reduces the time used for decision-making processes. The purpose of BI is to be able to anticipate the activities of customers and competitors, as well as the trends prevailing in the markets. BI includes such tasks as data sourcing, data warehousing and OLAP, data mining and decision support. This course aims to introduce the emerging BI technologies. On completion of this course, students should be able to understand the application of various information technologies for BI that support transformation and analysis of massive amounts of transaction data.

Prerequisites: Knowledge of Data Management and Introductory Statistics

Data Mining and Predictive Analytics (Credit)
Data Mining and Predictive Analytics is the name given to a group of disciplines, technologies, applications and practices for analyzing data (usually based on past business performance) and building models to help enterprise users make better, faster business decisions. This course introduces basic concepts, tasks, methods and techniques in data mining. On completion of this course students should recognize the need for data mining applications, identify appropriate tools and techniques to solve data mining tasks and learn how to use data mining software in a number of business-related scenarios. The emphasis is on various data mining problems and their solutions.

Prerequisite: ITS 438

Dynamic Infrastructure Certificate

Emerging Technologies

With ever increasing expectations and fiscal pressure, data center and enterprise computing professionals must find innovative ways to improve service, cut costs and manage risk. This new two-course certificate in Dynamic Infrastructure addresses current operational challenges by integrating virtualization, energy efficiency, standardization and automation, freeing up operational resources for capital investment. The program will address alternative approaches such as cloud computing to deliver new services with agility and speed.
**Data Center Technologies**

**Associate Certificate in Systems and Software**

**ITS 130 (Credit)**

**Information Technology and Systems Concepts**

This course establishes a foundation for the understanding of information systems in organizations. Applications and technologies are studied in relation to organizational objectives. The student studies different types of systems such as MIS, DSS, EIS and basic applications to a data center environment. The student studies an overview of technology including hardware, software, Internet, World Wide Web, e-Commerce, database and objects.

**This course is required for any of the Associate-level Certificates leading to the CDCP**  
**Offered several times throughout the IDCP calendar year**

**CMSC 119 (Credit)**

**Introduction to Programming**

The objectives of this course are to introduce a disciplined approach to problem-solving methods and algorithm development. Students will learn basic program design, coding, debugging, testing and documentation using good programming style. The course provides familiarity with computer hardware and software technology and provides a foundation for further studies in computer science.

**Prerequisite:** Three years of high school mathematics

**Pre or Corequisite:** ITS 130

**ITS 321 (Credit)**

**Architecture of Hardware and Software**

This course introduces computer architecture, data representation, machine and assembly language, the fetch-execute cycle and operating systems. It gives students a solid background in the hardware and software technologies that support business-information systems. The course emphasizes the relationships between hardware and systems software, emphasizing the support that hardware provides for today’s multitasking/multiuser operating systems.

**Prerequisite:** CMSC 119 or experience with computer programming

“The hands on work was challenging and I learned a lot from the labs. I feel my experiences in these classes will help me advance in my career.”  

-Student Testimonial
Data Center Technologies

Associate Certificate in Facilities Management

ITS 130 (Credit)
Information Technology and Systems Concepts
This course establishes a foundation for the understanding of information systems in organizations. Applications and technologies are studied in relation to organizational objectives. The student studies different types of systems such as MIS, DSS, EIS and basic applications to a data center environment. The student studies an overview of technology including hardware, software, Internet, World Wide Web, e-Commerce, database and objects.

This course is required for any of the Associate-level Certificates leading to the CDCP
Offered several times throughout the IDCP calendar year

ITS 482 (Credit)
Introduction to Facilities
This course introduces the student to all facets of data center facilities management including deployment, support, major site infrastructures (power, cooling, etc.), downtime windows, security, maintenance procedures and relationships (IT systems, processes, management). The majority of the course, however, concentrates on the physical aspects of data centers.

Pre- or Co-requisite: ITS 130

Data Center Technologies

Associate Certificate in Networking

ITS 130 (Credit)
Information Technology and Systems Concepts
This course establishes a foundation for the understanding of information systems in organizations. Applications and technologies are studied in relation to organizational objectives. The student studies different types of systems such as MIS, DSS, EIS and basic applications to a data center environment. The student studies an overview of technology including hardware, software, Internet, World Wide Web, e-Commerce, database, and objects.

This course is required for any of the Associate-level Certificates leading to the CDCP
Offered several times throughout the IDCP calendar year

ITS 406 (Credit)
Data Communication
This course examines the concepts and mechanisms of data-transport systems, including information in the form of data, voice, and image. Network architecture, terminology, control and general topologies will be discussed. Current equipment and physical interconnection will be explored in an applied model incorporating a range of network services to support application development, distributed processing, information centers and distance learning. Emphasis is placed on the impact of data-communications technology on organizations and on the design of future information systems.

Prerequisite: ITS 130

ITS 415 (Credit)
Internetworking
This course will provide the student with a theoretical and practical approach to the overall understanding, operation and configuration of advanced networking knowledge. The course will provide an understanding of internetworking technologies, routing protocols, and their operation. Lab exercises with hands-on experience in setting up, configuring and troubleshooting networks are also covered.

Prerequisite: ITS 406
Data Center Technologies
Associate Certificate in Security

ITS 130 (Credit)
Information Technology and Systems Concepts
This course establishes a foundation for the understanding of information systems in organizations. Applications and technologies are studied in relation to organizational objectives. The student studies different types of systems such as MIS, DSS, EIS and basic applications to a data center environment. The student studies an overview of technology including hardware, software, Internet, World Wide Web, e-Commerce, database and objects.
This course is required for any of the Associate-level Certificates leading to the CDCP
Offered several times throughout the IDCP calendar year

ITS 410 (Credit)
System Administration and Management
This course is a survey of tools and techniques used in the administration of an internetworking computing environment. Included will be system installation, file systems and file and directory-permission structures, device configuration and management, and user-account administration. Also included will be service administration and security and privacy issues. Students completing this course will have experience in administering an internetwork of computers with a variety of services, including file service, print service, remote-access service, application service, name service, ftp service, Web service and others.
Prerequisite: ITS 415

ITS 420 (Credit)
Internet Security
Internet Security is the study of mechanisms through which remote parties can authenticate each other’s identity and then communicate securely with each other. Topics covered will include basic cryptographic mechanisms, Public Key Infrastructure (PKI) for distributed security, grammatical mechanisms used to specify security protocols, and current government initiatives impacting Internet security. Also covered will be security artifacts that occur in large networks to support and enhance the PKI—these are things like virtual private networks, the secure sockets layer mechanism embedded in all browsers, and directory services such as LDAP which are used as distributed repositories for hold certificates. Included, as well, will be the study of methods that have been used by hackers to break into computer systems.
Prerequisite: ITS 130

“The IDCP program helped me in my pursuit to become a better educated, more effective Data Center Manager. Earning the CDCP certification is a real mark of achievement and definitely assisted me throughout my career.” -Student Testimonial
Data Center Technologies

Associate Certificate in Operations and Process Management

ITS 130 (Credit)
Information Technology and Systems Concepts
This course establishes a foundation for the understanding of information systems in organizations. Applications and technologies are studied in relation to organizational objectives. The student studies different types of systems such as MIS, DSS, EIS and basic applications to a data center environment. The student studies an overview of technology including hardware, software, Internet, World Wide Web, e-Commerce, database and objects.
This course is required for any of the Associate-level Certificates leading to the CDCP
Offered several times throughout the IDCP calendar year

ORG 101 (Credit)
Managing IT Organizations
This course provides an introduction to the management of organizations. Students will learn about organizational structures, the history of management, and the tasks, roles and responsibilities of managers. Planning, organizing, directing and controlling the management process will be discussed. Critical and ethical decision making will be emphasized throughout the course.
Pre- or Corequisite: ITS 130

ITS 430 (Credit)
System Design and Analysis
The primary objective of this course is to introduce participants to basic concepts and techniques for analyzing problems and the designing of information systems that address those problems. Participants, upon completion of the course, will have a working understanding regarding identifying requirements, clarifying and refining requirements, process modeling, data modeling, and logic modeling within an object-oriented analysis framework. In the process of completing the course and actively using systems analysis techniques, participants will develop an understanding of the systems development life cycle, systems analysts’ roles and responsibilities, and the interpersonal skills necessary to analyze business problems.
Prerequisite: ITS 130

ITS 378 (Credit)
Project Management
This course discusses the factors necessary for successful project management. Topics include project management concepts, needs identification, the project manager, teams, project organizations, project communications, project planning, scheduling, control and associated costs. Project management software tools will be an integral part of the course and a major project will be assigned related to a typical data center business application.
Prerequisite: ITS 130

“I have been told twice this week by vendors that it’s rare that they work with Data Center Managers who have the knowledge that we have.” -Student Testimonial
Data Center Technologies
Associate Certificate in Product Development and Financial Planning

ITS 130 (Credit)
Information Technology and Systems Concepts
This course establishes a foundation for the understanding of information systems in organizations. Applications and technologies are studied in relation to organizational objectives. The student studies different types of systems such as MIS, DSS, EIS and basic applications to a data center environment. The student studies an overview of technology including hardware, software, Internet, World Wide Web, e-Commerce, database and objects.

This course is required for any of the Associate-level Certificates leading to the CDCP
Offered several times throughout the IDCP calendar year

ORG 203 (Credit)
Accounting for the Data Center
This course introduces students to the principles and concepts of financial accounting. Students will develop a basic understanding of business transactions, balance sheets and financial statements.

Pre- or Corequisite: ITS 130

ITS 378 (Credit)
Project Management
This course discusses the factors necessary for successful project management. Topics include project management concepts, needs identification, the project manager, teams, project organizations, project communications, project planning, scheduling, control and associated costs. Project management software tools will be an integral part of the course and a major project will be assigned related to a typical data center business application.

Prerequisite: ITS 130

“It’s making a difference in my day to day activities as a system programmer. Because of the training, new tasks are less daunting and I’m more familiar with resources to assist me.”

-Student Testimonial
Greening of the Data Center

NCRT 710 (Non-Credit)

Greening of the Data Center
This course discusses methods to improve the environmental performance of the data center. It will focus primarily on the data center power and cooling facilities and ways to operate them in an energy-efficient manner. Students will be provided with a historical awareness of energy consumption in the IT industry and learn what metrics are used to assess energy-efficient deployment of IT equipment.

This class will include fundamental sessions on power and cooling systems in the data center. No prior experience in power and cooling is necessary but completion of ITS 482 or data center experience is highly recommended.

-------------------------------------------

Advanced Facilities Management

NCRT 720 (Non-Credit)

Advanced Facilities Management
This course will expand upon the concepts learned in ITS 482, providing a technical overview of critical infrastructure, including energy conservation, generation/transmission, electrical safety, facilities engineering, systems maintenance, energy security, UPS systems, ATS’s, standby generators and energy efficiency.

Completion of ITS 482 or Greening of the Data Center is recommended, though not required.

“The zNetworking course was an eye opener for me. I had some basic knowledge but this course made everything so much clearer.”

-Student Testimonial
General Information

Certificate Programs
Students must achieve a grade of C or above in each course within a certificate program in order to receive the IDCP certificate. The courses that comprise the IDCP certificates are 100% online, instructor-led and asynchronous allowing students across all time zones to participate and collaborate in a virtual classroom environment. Students should expect to devote a minimum of 9 to 12 hours per week as each course is comparable to a traditional undergraduate class.

Enrollment, Fees and Tuition
All students must complete an enrollment form when registering for a course or certificate program. Tuition is payable in full at the time of registration. For some courses (credit-bearing), students may complete a Marist College Tuition Deferment form if they are receiving corporate sponsorship. Tuition varies depending on the specific course or program. Please visit www.idcp.org for more details. In some cases, programs may be offered at significant introductory discounts. There are additional discounts when multiple students enroll from a company.

Payment may be made by check or credit card. Checks should be made payable to Marist College and mailed to the address indicated on the enrollment form. There are no additional registration fees. However, some courses do require textbooks. Textbooks may run $75 to $150 per course. Some courses do not require any textbook purchase as the materials are provided or downloadable.

Course Delivery
Students interact with the iLearn course management system asynchronously. All that is required is a high speed Internet connection and an up-to-date work station. Students do not have to be “present” at any specific time for class participation; therefore courses are accessible across all time zones and geographies.

Refunds
Refunds are issued according to specific policies governing non-credit or credit programs. For non-credit courses, tuition is non-refundable once the classes have started. For credit-bearing programs, refunds are provided in accordance with Marist College policies. A policy guide will be sent to all students enrolling in credit-bearing courses.

Cancellation Policy
Marist College and the Institute for Data Center Professionals reserve the right to cancel any course for which there is insufficient enrollment, restrict registration in a course, provide additional teaching assistants or change instructors if necessary. In the event of course cancellations or schedule changes, every effort will be made to notify registered students as quickly as possible.

Office Hours
Marist College Help Desk (for technical support)
Hours of operation during the fall and spring semesters (beginning the first day of classes):
Monday - Thursday 7:30a.m.-10:00p.m., Friday 7:30a.m.-5:00p.m.

Hours of operation during fall and spring semester breaks are:
Monday - Thursday 7:30a.m. - 7:00p.m., Friday - 7:30a.m. - 5:00p.m.

Hours of operation during the summer are:
Monday - Friday 8:00a.m. - 7:00p.m. (as of May 17, 2011)
Institute for Data Center Professionals Administrative Offices
Monday- Friday 8:30a.m.-5:00p.m.