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| Butler Community College Career and Technical Education Division | Larry Evans New Spring 2013  Implemented Fall 2013 Textbook Update Spring 2015 |
| **COURSE OUTLINE**  **Designing and Implementing a Server Infrastructure** | |

# Course Description

IN 277. Designing and Implementing a Server Infrastructure. 3 hours credit. This course will enable the student to plan, design, and deploy a Windows Server 2012 highly virtualized infrastructure, including the Active Directory, storage, security, and networking services as necessary. The student will also learn to validate the planning, configuration, and implementation of the Windows Server 2012 services, such as server deployment, server virtualization, and network access and infrastructure.

# Course Relevance

Networked services are at the heart of all modern business environments. The theories and applications learned in this course build a foundation from which the student can pursue Microsoft’s 70-413 certification and possible employment as a Windows Server 2012 Infrastructure IT Professional.

# Required Materials

Farrell. *Designing and implementing a server infrastructure.* Microsoft Press.

\* - For complete textbook information, refer to [http://www.butlercc.bkstr.com](http://www.butlercc.bkstr.com/)

# Butler Assessed Outcomes

The intention is for the student to be able to

1. Plan and design a Windows Server 2012 highly virtualized infrastructure.
2. Deploy a Windows Server 2012 highly virtualized infrastructure.

**Learning PACT Skills that will be developed and documented in this course** Through involvement in this course, the student will develop ability in the following PACT skill area(s):

# Technology Skills

1. Discipline-specific technology
   * By planning, configuring, and deploying a Windows Server 2012 highly virtualized infrastructure, the student will demonstrate the skills and knowledge necessary for designing, deploying, and maintaining infrastructure services in a Windows Server 2012 environment.

# Major Summative Assessment Task(s)

These learning outcomes and the Learning PACT skills will be demonstrated by

1. Completing a summative laboratory assignment involving the design and deployment of a Windows Server 2012 highly virtualized infrastructure for a given business scenario.

# Course Content

* 1. Skills or Competencies – Actions that are essential to achieve the course outcomes:
     1. Plan and deploy a server infrastructure
     2. Design and implement Network Infrastructure Services
     3. Design and implement Network Access Services
     4. Design and implement an Active Directory infrastructure (logical)
     5. Design and implement an Active Directory infrastructure (physical)

# Learning Units

1. Plan and deploy a server infrastructure
   1. Design an automated server installation strategy
   2. Plan and implement a server deployment infrastructure
   3. Plan and implement server upgrade and migration
   4. Plan and deploy Virtual Machine Manager services
   5. Plan and implement file and storage services
2. Design and implement Network Infrastructure Services
   1. Design and maintain a Dynamic Host Configuration Protocol (DHCP) solution
   2. Design a name resolution solution strategy
   3. Design and manage an IP address management solution
3. Design and implement Network Access Services
   1. Design a VPN solution
   2. Design a Direct Access solution
   3. Implement a scalable remote access solution
   4. Design a network protection solution
   5. Implement a network protection solution
4. Design and implement an Active Directory infrastructure
   1. Design a forest and domain infrastructure
   2. Implement a forest and domain infrastructure
   3. Design a Group Policy strategy
   4. Design an Active Directory permission model
5. Design and implement an Active Directory infrastructure (physical)
   1. Design an Active Directory sites topology
   2. Design a domain controller strategy
   3. Design and implement a branch office infrastructure

# Learning Activities

Independent and collaborative learning activities will be assigned to assist the student in achieving the intended learning outcomes. Examples of activities which contribute to the learning process include, but are not limited to the following: instructor lectures, class

discussions, group task, quizzes, exams, labs, assignments, handouts, study guides and individual conferences with the instructor.

# Grade Determination

The student will be graded on learning activities and assessment tasks. Grade determinants may include the following: daily course work, quizzes, chapter or unit test, comprehensive examinations, student projects, student presentations, class participation, and other methods of evaluation at the discretion of the instructor.