IT – Database Administration – AAS

Spring 2019 Outcomes

1. Function effectively within teams.
2. Demonstrate professionalism, including presentation skills, utilizing research for problem solving, working independently and in teams, being accountable and meeting deadlines.
3. Implement security measures while performing database administration tasks.
4. Generate database-driven reports to support business intelligence.
5. Demonstrate appropriate ethical and security practices in handling data.
6. Establish interconnectivity of databases and web services.
7. Apply testing and debugging methods to assure quality and workability of finished product.
8. Devise backup and recovery measures in a database environment.
9. Demonstrate knowledge of the software development life cycle and how the database layer is managed and administered.

**Course Outcomes**

MATH1100 - World of Math

1. Apply mathematical reasoning to a broad range of problems.
2. Interpret and state mathematical problems in a clear manner.
3. Choose or create modes of representation appropriate to understanding and solving various mathematical problems.
4. Produce solutions and explanations with an appropriate level of rigor and detail.
5. Represent and illustrate solutions to problems in a manner that is clear to a mathematician.
6. Seek connections between seemingly different mathematical problems.
7. Recognize and apply a spectrum of mathematical problem-solving tools.
8. Practice generalizing problems and solutions.
9. Develop fluency in moving between levels of abstraction.
10. Know some history of important developments in mathematics.

CPTR1170 - Web Engineering I

1. Describe components of an URL.
2. Describe the process of obtaining an Internet domain address.
3. Describe the need for, and legal requirements of, Web site policies.
4. Describe layouts, structure, design principles, and considerations for well-designed Web sites.
5. Evaluate Web sites using principles of good format, structure, design, and programming practices.
6. Install and configure Web page programming tools.
7. Use current Web programming languages to create and maintain a Web page.
8. Incorporate an e-mail link on a Web page.
9. Incorporate internal and external hypertext links on a Web page.
10. Incorporate tables on a Web page.
11. Incorporate forms on a Web page.
12. Create client-side scripting code to handle error checking in Web forms.
13. Describe the security concerns of Web server administrators.
14. Configure Web server software.
15. Compare Web server operating systems and software.

CPTR1001 - Introduction To Programming and Scripting

1. Describe the features and syntax of a programming language.
2. Understand how software can be written to solve business problems.
3. Use debugging and testing to create error-free code.
4. Demonstrate industry standard code development techniques.
5. Develop logic structures.
6. Develop loop structures.
7. Develop control structures.
8. Understand datatypes.
9. Understand functions.
10. Create, update, and process data files.
11. Understand techniques required for security in computer programming.

CPTR1106 - Microcomputer Databases

1. Create database reports.
2. Create table relationships.
3. Define referential integrity.
4. Create database queries.
5. Manipulate database data.
6. Perform data import operations.
7. Create data entry forms.
8. Demonstrate database programming concepts.
9. Create database tables.
10. Create and manage a switchboard.
11. Create database macros.

CPTR1108 - CISCO 1

1. Compare various networking models.
2. Compare the various types of networking media.
3. Demonstrate a working knowledge of the TCP/IP protocol stack.
4. Recognize the components involved with assembling a network.
5. Design and assemble small working networks.
6. Recognize the tools necessary to troubleshoot networks.
7. Solve network hardware and software problems.
8. Use network monitoring tools to troubleshooting equipment failures.
9. Explain IP addressing and subnetting.

CPTR2210 - Database Report Generation

1. Apply querying techniques to generate reports.
2. Analyze and contrast leading software packages relating to database reporting.
3. Publish database reports from relational data sets.
4. Publish database reports from eXtensible Markup Language (XML) datasets.
5. Present database reports to the class to demonstrate understanding of problems.
6. Identify business factors involved in report distribution.
7. Identify and analyze security and ethical issues related to database reporting.
8. Demonstrate database optimization techniques for database reporting.
9. Analyze use cases of database reporting.
10. Explain current trends in database reporting.
11. Demonstrate best practices of database reporting.

MATH1114 - College Algebra

1. Analyze characteristics of linear functions and their graphs.
2. Analyze characteristics of the inverses of linear functions and their graphs.
3. Analyze characteristics of quadratic functions and their graphs.
4. Analyze characteristics of the inverses of quadratic functions (on an appropriate domain) and their graphs.
5. Analyze characteristics of polynomial functions and their graphs.
6. Analyze characteristics of rational functions and their graphs.
7. Analyze characteristics of exponential functions, their inverses and their graphs.
8. Analyze characteristics of logarithmic functions, their inverses and their graphs.
9. Analyze characteristics of radical functions.
10. Solve linear systems of equations by substitution, elimination, and graphing.
11. Determine real and complex zeros of polynomials.
12. Perform function operations including composition.
13. Use mathematical modeling to solve application problems.

CSCI1121 - Computer Science I

1. Design algorithms to solve problems.
2. Understand the syntax of a high-level programming language.
3. Produce correct, clear, and concise documentation for programs.
4. Demonstrate effective debugging techniques.
5. Construct programs utilizing elementary data structures.
6. Determine proper control structures for implementation of problem solutions.
7. Construct algorithms using logical and relational operators.
8. Manage program input from multiple sources.
9. Direct program output to multiple destinations.
10. Code programs that demonstrate the use of selection structures.
11. Write programs that include proper use of looping structures.
12. Write programs utilizing object oriented design.

CPTR2224 - Linux I

1. Create Linux accounts.
2. Manage Linux accounts.
3. Prepare appropriate documentation.
4. Analyze graphical environments.
5. Write simple shell scripts.
6. Manage application software.
7. Manage security.
8. Evaluate fault-tolerance solutions.
9. Use appropriate software and commands.
10. Manage printing.

CPTR2230 - Structured Query Language

1. Create a subquery in a SQL statement.
2. Join multiple tables in a SQL query utilizing the WHERE clause.
3. Create group restrictions utilizing the GROUP BY and HAVING command in a SQL query.
4. Utilize the COUNT, SUM, MAX, and MIN statistical functions in a SQL query.
5. Specify query selection criteria utilizing the FROM and WHERE clauses.
6. Correct data errors and delete records in a table utilizing the UPDATE and DELETE commands.
7. View data in a table utilizing the SELECT command.
8. Specify the INSERT command in SQL to load data into tables.
9. Specify data types in SQL.
10. Utilize the CREATE TABLE and DROP TABLE SQL commands.
11. Use the ORDER BY command and DESC operator to sort results in a SQL query.
12. Describe integrity constraints and support.
13. Specify compound conditions in a SQL select query.
14. Utilize comparison operators in a SQL select query.

HUM2236 - Technology in the Humanities

1. Students will demonstrate an understanding of the relationship between advances in technologies and changes in the daily lives of societies that adopt them.
2. Students will be able to recognize how various technologies have impacted on today's social order and anticipate advantages and difficulties associated with emerging technologies
3. Students will be able to draw connections between advances in technology and inevitabilities such as changes in how education is demanded and delivered
4. Students will be able to identify specific philosophical, political and social movements and how they helped foster technical innovation or prevent natural technical evolution
5. Students will recognize how changes in technology such as paint, sound recordings and motion pictures have affected the range of expressions available to artists.
6. Students will demonstrate the importance of understanding technology both an aid to ethical and productive self expression and a hindrance to responsible social interaction.
7. Students will draw connections between modes of expression and associated limitations resulting from inequities in education and economic and social class.
8. Students will demonstrate an understanding of how major technical advances such as the printing press promoted global communication and cultural exchanges.
9. Students will be able to identify which applications of modern technology improve ethnic diversity and which applications promote intolerance.
10. Students will be able to identify which apparently small improvements in military technology were responsible for major political changes on a global scale.
11. Students will be able to posit workable solutions for addressing inequities in matters of global social and economic development imposed by changes in technology.

CPTR2234 - Linux II

1. Manage network communication.
2. Manage Internet services.
3. Manage server services.
4. Manage log files.
5. Evaluate security solutions.
6. Evaluate ethical choices.
7. Manage system start up.
8. Apply best practices to server operation.
9. Manage messaging.
10. Manage Linux client services.
11. Manage Linux security.

CPTR2272 - Network Operating Systems

1. Manage network accounts and groups.
2. Configure remote network access.
3. Manage network services.
4. Design network domain structures.
5. Describe multi-domain network structures.
6. Create fault-tolerant resource plans.
7. Manage security settings and policies.
8. Analyze network resource utilization.
9. Document network configuration.

CPTR2230 - Structured Query Language

1. Create a subquery in a SQL statement.
2. Join multiple tables in a SQL query utilizing the WHERE clause.
3. Create group restrictions utilizing the GROUP BY and HAVING command in a SQL query.
4. Utilize the COUNT, SUM, MAX, and MIN statistical functions in a SQL query.
5. Specify query selection criteria utilizing the FROM and WHERE clauses.
6. Correct data errors and delete records in a table utilizing the UPDATE and DELETE commands.
7. View data in a table utilizing the SELECT command.
8. Specify the INSERT command in SQL to load data into tables.
9. Specify data types in SQL.
10. Utilize the CREATE TABLE and DROP TABLE SQL commands.
11. Use the ORDER BY command and DESC operator to sort results in a SQL query.
12. Describe integrity constraints and support.
13. Specify compound conditions in a SQL select query.
14. Utilize comparison operators in a SQL select query.

MATH1213 - Introduction to Statistics

1. Demonstrate knowledge of statistical terms and concepts.
2. Organize and represent data using frequency distributions.
3. Organize and represent data using graphs.
4. Summarize data using measures of central tendency.
5. Summarize data using measures of variation and position.
6. Find probability of an event using probability properties.
7. Find probability of an event using counting techniques.
8. Analyze the characteristics of discrete probability distributions including binomial.
9. Analyze the characteristics of a normal distribution, including the central limit theorem.
10. Identify the confidence interval for mean, proportion, variance, and standard deviation.
11. Demonstrate the process of hypothesis testing for specific values of mean, proportion, variance, and standard deviation.
12. Test the difference between two means, two variances, and two proportions.
13. Perform a linear correlation and regression analysis.
14. Perform chi-square test for goodness of fit, independence and homogeneity of proportions.
15. Perform a one way analysis of variance.

CPTR2245 - Enterprise Network Technologies

1. Analyze the cause and cost of network downtime.
2. Develop strategies for high availability.
3. Analyze SAN technology.
4. Analyze server virtualization.
5. Analyze active and passive server clustering.
6. Evaluate concepts for cloud computing.
7. Design an enterprise network.
8. Implement server virtualization.
9. Develop electronic documents supporting an enterprise network design.
10. Evaluate options for green technologies.

CPTR2275 - Data Analytics

1. Compare and contrast database reporting and database analytics.
2. Distinguish the components of database architecture and design.
3. Explain wants and needs in business intelligence.
4. Examine business cases of data mining.
5. Generate database performance metrics.
6. Look for patterns in data using pattern discovery.
7. Optimize database management systems (DBMSs) using database scalability.
8. Recommend business decisions based on predictive analysis.
9. Summarize data to reduce storage footprint.
10. Utilize data compression techniques.

CPTR2240 - Database Administration

1. Practice installation, configuration and management of a database management system (DBMS).
2. Apply and practice knowledge of importing and restoring data into a DBMS.
3. Apply and practice knowledge of exporting and backing up data from a DBMS.
4. Construct a database using object-oriented modeling.
5. Learn and demonstrate entity-relationship (ER) database modeling.
6. Evaluate current vendor DBMS offerings.
7. Compare and contrast current technologies of a relational database (DB), object-oriented DB, NoSQL and flat file.
8. Understand, differentiate and demonstrate database replication and mirroring.
9. Employ appropriate tools to ensure health of DBMS.
10. Define database normalization.
11. Apply database optimization methods.
12. Communicate database designs and changes to appropriate stakeholders.

ENGL1101 - College Writing

1. Demonstrate the writing process through invention, organization, drafting, revision, editing and presentation.
2. Participate effectively in groups with emphasis on listening, critical and reflective thinking and responding.
3. Locate and evaluate information from diverse academic sources.
4. Synthesize information from diverse academic sources.
5. Construct logical and coherent arguments.
6. Use authority, point-of-view and individual voice and style in writing.
7. Respond critically via discussion.
8. Respond critically via writing.
9. Employ syntax and usage appropriate to academic disciplines and the professional world.
10. Select appropriate communication choices for specific audiences.
11. Use a discipline-appropriate style guide to responsibly credit and document information.