Course Number and Title: DAT 101 Introduction to Data Analytics and Visualization

Campus Location:
Georgetown, Dover, Stanton, Wilmington

Effective Date:
2020-51

Prerequisite:
ENG 006 or ENG 007, MAT 010, SSC 100 or concurrent

Co-Requisites:
None

Course Credits and Hours:
3.00 credits
2.00 lecture hours/week
3.00 lab hours/week

Course Description:
This course introduces data analytics and visualization using spreadsheet software. The focus is on applying concepts to plan, implement, and evaluate solutions to complex real world data problems.

Required Text(s):
Obtain current textbook information by viewing the campus bookstore - https://www.dtcc.edu/bookstores online or visit a campus bookstore. Check your course schedule for the course number and section.

Additional Materials:
Spreadsheet program (TBD by instructor)

Schedule Type:
Classroom Course

Disclaimer:
None

Core Course Performance Objectives (CCPOs):

1. Apply organizational and calculation features of a spreadsheet program. (CCC 3, 6)
2. Examine different data visualizations and techniques, and determine when or when not to use them. (CCC 2, 6)
3. Given a problem, design a method to aid decision making using a combination of the following: mathematical modeling, charts, logical functions, pivot tables, advanced sorting and filtering. (CCC 1, 3, 4, 6)

See Core Curriculum Competencies and Program Graduate Competencies at the end of the syllabus. CCPOs are linked to every competency they develop.

Measurable Performance Objectives (MPOs):
Upon completion of this course, the student will:

1. Apply organizational and calculation features of a spreadsheet program.
    1. Consolidate data from different sources to one workbook and sheet.
    2. Use tools to display data in a visually appealing fashion, including color, borders, and number formatting.
    3. Sort and filter data.
    4. Use the password protection feature to ensure confidentiality of a workbook.
    5. Use the name manager to name cells and ranges, and use them in formulas.
    6. Identify, describe, and use logical, lookup, and financial functions.
    7. Explain the difference between relative, absolute, and mixed cell references.
    8. Use the correct cell reference(s) while performing calculations.
    9. Import data from external sources.
    10. Run, record, and edit a macro.
    11. Create and edit professional data visualizations including: bar charts, line charts, pie charts, scatter charts, bubble charts, surface charts, and a histogram.
    12. Create and edit pivot tables.
    13. Edit pivot tables by filtering.
    14. Create one and two variable data tables.
2. Examine different data visualizations and techniques, and determine when or when not to use them.
    1. Distinguish between a line chart and a scatter chart.
    2. Distinguish between a bar chart and a histogram.
    3. Defend the use of a certain data visualization to display a data set.
    4. Defend the use of color choices and typography for a data visualization.
    5. Defend the use of normalized data.
3. Given a problem, design a method to aid decision making using a combination of the following: mathematical modeling, charts, logical functions, pivot tables, advanced sorting and filtering.
    1. Create simple mathematical and/or logical models to aid in a solution.
    2. Formulate a plan to use data visualization and/or analysis techniques to solve a problem.
    3. Implement and evaluate this plan.
    4. Modify the plan taking into account the evaluation.
    5. Re-implement the plan.
    6. Defend the solution to the problem.

Evaluation Criteria/Policies:
Students must demonstrate proficiency on all CCPOs at a minimal 75 percent level to successfully complete the course. The grade will be determined using the Delaware Tech grading system:

92	–	100	=	A
83	–	91	=	B
75	–	82	=	C
0	–	74	=	F

Students should refer to the Student Handbook - https://www.dtcc.edu/handbook for information on the Academic Standing Policy, the Academic Integrity Policy, Student Rights and Responsibilities, and other policies relevant to their academic progress.

Core Curriculum Competencies (CCCs are the competencies every graduate will develop):

1. Apply clear and effective communication skills.
2. Use critical thinking to solve problems.
3. Collaborate to achieve a common goal.
4. Demonstrate professional and ethical conduct.
5. Use information literacy for effective vocational and/or academic research.
6. Apply quantitative reasoning and/or scientific inquiry to solve practical problems.

Program Graduate Competencies (PGCs are the competencies every graduate will develop specific to his or her major):
None

Disabilities Support Statement:
The College is committed to providing reasonable accommodations for students with disabilities. Students are encouraged to schedule an appointment with the campus Disabilities Support Counselor to request an accommodation needed due to a disability. A listing of campus Disabilities Support Counselors and contact information can be found at the disabilities services - https://www.dtcc.edu/disabilitysupport web page or visit the campus Advising Center.