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| **Assurance of Student Learning Report**  **2022-2023** | |
| Gordon Ford College of Business | Analytics & Information Systems |
| Business Data Analytics 504# | |
| Assessment Coordinator: Ray Blankenship | |

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| ***Use this page to list learning outcomes, measurements, and summarize results for your program. Detailed information must be completed in the subsequent pages.*** | | | |
| **Student Learning Outcome 1: Model and computationally analyze business-oriented data** | | | |
| **Instrument 1** | **In-class examinations and projects** | | |
| **Instrument 2** | **Analysis of Capstone Projects** | | |
| **Instrument 3** |  | | |
| **Based on your results, check whether the program met the goal Student Learning Outcome 1.** | | **Met** | **Not Met** |
| **Student Learning Outcome 2: Critically identify appropriate data structures to solve business problems** | | | |
| **Instrument 1** | **In-class examinations and projects** | | |
| **Instrument 2** | **Analysis of Capstone Projects** | | |
| **Instrument 3** |  | | |
| **Based on your results, check whether the program met the goal Student Learning Outcome 2.** | | **Met** | **Not Met** |
| **Student Learning Outcome 3: Understand how to present and communicate graphical information related to various data analytic models** | | | |
| **Instrument 1** | **In-class examinations and projects** | | |
| **Instrument 2** | **Analysis of Capstone Projects** | | |
| **Instrument 3** |  | | |
| **Based on your results, check whether the program met the goal Student Learning Outcome 3.** | | **Met** | **Not Met** |
| **Program Summary (Briefly summarize the action and follow up items from your detailed responses on subsequent pages.)** | | | |
| The business program underwent a significant curriculum revision last year. It will take two years for students to matriculate through the program before any negative impact can be identified. The assessment of BDAN 420 (Predictive Analytics) poster presentations has been eliminated and replaced with a comprehensive project. Curriculum changes were made in BDAN 330 (Structured Data Analysis) due to changes in the course materials. | | | |

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| **Student Learning Outcome 1** | | | | | | | |
| **Student Learning Outcome** | **Model and computationally analyze business-oriented data** | | | | | | |
| **Measurement Instrument 1** | **NOTE: Each student learning outcome should have at least one direct measure of student learning. Indirect measures are not required.**  Direct measures of student learning. Students were given a final and written project that required them to synthesize their work in the program’s core courses.  Consider the following list of example sources for INDIRECT measures of student learning: student surveys, alumni surveys, employer surveys, graduate school placement and success rates, employer internship performance appraisals, written surveys and questionnaires, external examiner, external advisory boards, focus groups, exit interviews. Again, these are not required. | | | | | | |
| **Criteria for Student Success** | Students at the end of the program should be able to create an analytical model to solve a current business problem. | | | | | | |
| **Program Success Target for this Measurement** | | | 90% of the students will be proficient in their ability to analyze data | | **Percent of Program Achieving Target** | 90% | |
| **Methods** | Students were given data to analyze in the following courses:  BDAN 420 – Predictive Analytics  BDAN 430 - Data Visualization and Digital Dashboards | | | | | | |
| **Measurement Instrument 2** | **Analysis of Capstone Projects /** | | | | | | |
| **Criteria for Student Success** | **Students will develop practical presentations to demonstrate the selection of adequate solutions to specific business problems.** | | | | | | |
| **Program Success Target for this Measurement** | | 90% of the students will be proficient in their ability to present their data analytic findings. | | **Percent of Program Achieving Target** | | **90%** | |
| **Methods** | Students presented the analysis of their projects in the following courses:  BDAN 420 – Predictive Analytics  BDAN 430 - Data Visualization and Digital Dashboards | | | | | | |
| **Measurement Instrument 3** | Do you have other measures of assessment for SLO 1? If so, please add that here along with all the information below. If not, you may delete this section and move on to **“… whether the program met the goal Student Learning Outcome 1.”** | | | | | | |
| **Criteria for Student Success** |  | | | | | | |
| **Program Success Target for this Measurement** | |  | | **Percent of Program Achieving Target** | |  | |
| **Methods** |  | | | | | | |
| **Based on your results, highlight whether the program met the goal Student Learning Outcome 1.** | | | | | | **Met** | **Not Met** |
| **Actions** (Describe the decision-making process and actions for program improvement. The actions should include a timeline.) | | | | | | | |
| The introductory core course (BDAN 250, Introduction to Analytics) continues to be revised with updates to content and assessment. Implementation of the new updates will begin in Fall 2023. | | | | | | | |
| **Follow-Up** (Provide your timeline for follow-up. If follow-up has occurred, describe how the actions above have resulted in program improvement.) | | | | | | | |
| The department evaluates all the major and service courses each year for student and market relevance. Examples of changes brought about by these discussions are listed in the “Actions” section. | | | | | | | |
| **Next Assessment Cycle Plan** (Please describe your assessment plan timetable for this outcome) | | | | | | | |
| The core curriculum changes for the college were implemented in the Fall of 2022. It will take two years before all students will have taken the new core course for the department.  BDAN 420 and BDAN 430 will continue to be revised and evaluated each year. BDAN 499 Senior Assessment in Business Data Analytics will be used to assess the 300 and 400 level courses and the program. This course is scheduled to be offered in the Spring of 2024. | | | | | | | |

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| **Student Learning Outcome 2** | | | | | | | |
| **Student Learning Outcome** | **Critically identify appropriate data models to solve business problems** | | | | | | |
| **Measurement Instrument 1** | **NOTE: Each student learning outcome should have at least one direct measure of student learning . Indirect measures are not required.**  Students were given a final and written project that required them to synthesize their work in the program’s core courses. | | | | | | |
| **Criteria for Student Success** | Students will convert data modeling results into insights that are useful in making decisions. | | | | | | |
| **Program Success Target for this Measurement** | | | 90% | | **Percent of Program Achieving Target** | 90% | |
| **Methods** | Students were given SQL assignments to complete in the following courses:  BDAN 330 - Structured Data Analysis  A new book with automated SQL assessment was implemented for this course. | | | | | | |
| **Measurement Instrument 2** | **Analysis of Capstone Projects** | | | | | | |
| **Criteria for Student Success** | **Students will be able to explain their data modeling results and give insights about the interpretation of the data.** | | | | | | |
| **Program Success Target for this Measurement** | | **90%** | | **Percent of Program Achieving Target** | | **90%** | |
| **Methods** | Students presented the analysis of their projects in the following courses:  BDAN 420 – Predictive Analytics  BDAN 430 - Data Visualization and Digital Dashboards | | | | | | |
| **Measurement Instrument 3** |  | | | | | | |
| **Criteria for Student Success** |  | | | | | | |
| **Program Success Target for this Measurement** | |  | | **Percent of Program Achieving Target** | |  | |
| **Methods** |  | | | | | | |
| **Based on your results, circle or highlight whether the program met the goal Student Learning Outcome 2.** | | | | | | **Met** | **Not Met** |
| **Actions** (Describe the decision-making process and actions planned for program improvement. The actions should include a timeline.) | | | | | | | |
| The number of students meeting the criteria in BDAN 330 has declined. The faculty member will revise the course materials and the new course will be implemented in the Fall of 2023. | | | | | | | |
| **Follow-Up** (Provide your timeline for follow-up. If follow-up has occurred, describe how the actions above have resulted in program improvement.) | | | | | | | |
| The department evaluates all the major and service courses each year for student and market relevance. Examples of changes brought about by these discussions are listed in the “Actions” section. | | | | | | | |
| **Next Assessment Cycle Plan** (Please describe your assessment plan timetable for this outcome) | | | | | | | |
| BDAN 330, BDAN 420, and BDAN 430 will be accessed in the spring of 2024 using the new assessment course, BDAN 499, to be implemented in spring 2024. | | | | | | | |

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| **Student Learning Outcome 3** | | | | | | | |
| **Student Learning Outcome** | **Understand how to present and communicate graphical information related to various data analytic models** | | | | | | |
| **Measurement Instrument 1** | **Understand how to present and communicate graphical information related to various data analytic models** | | | | | | |
| **Criteria for Student Success** | Students will be able to present and explain their results using various analytical tools. | | | | | | |
| **Program Success Target for this Measurement** | | | 90% | | **Percent of Program Achieving Target** | 90% | |
| **Methods** | Students were required to present their final research project in BDAN 420, Predictive Analytics by creating a video. The videos can be found at  <https://www.wku.edu/da/capstone_projects/>.  Students in BDAN 430, Data Visualization and Digital Dashboards, were required to complete a final project in the course. The project was evaluated with a newly created rubric. | | | | | | |
| **Measurement Instrument 2** | **Analysis of Capstone Projects /** | | | | | | |
| **Criteria for Student Success** | Students will be able to present and explain their model results in a research project. | | | | | | |
| **Program Success Target for this Measurement** | | **90%** | | **Percent of Program Achieving Target** | | **90%** | |
| **Methods** | Students were required to present their research findings BDAN 420, Predictive Analytics and BDAN 430, Data Visualization and Digital Dashboards. | | | | | | |
| **Measurement Instrument 3** |  | | | | | | |
| **Criteria for Student Success** |  | | | | | | |
| **Program Success Target for this Measurement** | |  | | **Percent of Program Achieving Target** | |  | |
| **Methods** |  | | | | | | |
| **Based on your results, circle or highlight whether the program met the goal Student Learning Outcome 3.** | | | | | | **Met** | **Not Met** |
| **Actions** (Describe the decision-making process and actions for program improvement. The actions should include a timeline.) | | | | | | | |
| A new instructor will begin teaching BDAN 430 in the spring of 2024. This course will be evaluated at the end of 2024(fall) to determine how the Student Learning Outcome can be improved. | | | | | | | |
| **Follow-Up** (Provide your timeline for follow-up. If follow-up has occurred, describe how the actions above have resulted in program improvement.) | | | | | | | |
| The department evaluates all the major and service courses each year for student and market relevance. Examples of changes brought about by these discussions are listed in the “Actions” section. | | | | | | | |
| **Next Assessment Cycle Plan** (Please describe your assessment plan timetable for this outcome) | | | | | | | |
| The department also created a new one hour courses, which will be used to evaluate junior and senior level courses.  This new course is BDAN 499 Senior Assessment in Business Data Analytics. This course is scheduled to be offered in the spring of 2024. | | | | | | | |

**\*\*\* Please include Curriculum Map (below/next page) as part of this document**

***ANALYTICS & INFORMATION SYSTEMS DEPARTMENT ASSURANCE OF LEARNING***

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|  | ***Department Outcome/Goal:*** | ***College Outcome/Goal:*** |
| ***PLO 1:***  *Students will demonstrate the ability to computationally analyze business-oriented data.* | *Upon graduation students will be able to computationally analyze business-oriented data.* | *Upon graduation students will have the business data analytics skills to computationally analyze data for success and leadership in the business community.* |
| ***PLO 2:***  *Students will demonstrate the ability to critically identify appropriate data structures in a business context.* | *Upon graduation students will be able to identify data structures relevant for business opportunities.* | *Upon graduation students will be able to explain how the structure of data impacts business opportunities.* |
| ***PLO 3:***  *Students will demonstrate the ability to interpret graphical information related to various data analytics.* | *Upon graduation students will have the ability to interpret graphical information related to various data analytics.* | *Upon graduation students will be effective at using and understanding visualizations of data for success and leadership in the business community.* |

***Curriculum Map Matrix***

*(Where are PLOs Introduced, Developed, and Mastered)?*

**BDAN 250: Introduction to Analytics (fall 2022)**

**BDAN 305: Principles of MIS with Spreadsheet**

**BDAN 310: Business Data Analytics**

**BDAN 320: Web Analytics   
 BDAN 350: Data Management (fall 2022)**

**BDAN 330: Structured Data Analysis**

**BDAN 410: DSS Analysis and Design**

**BDAN 420: Data Mining**

**BDAN 430: Data Visualization**

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|  | **BDAN  250** | **BDAN**  **305** | **BDAN**  **310** | **BDAN**  **320** | **BDAN**  **330** | **BDAN  350** | **BDAN**  **410** | **BDAN**  **420** | **BDAN**  **430** |
| ***PLO 1:***  *Students will demonstrate the ability to computationally analyze business-oriented data.* | *I,D* | *I,D* | *D* |  |  |  |  | *M* |  |
| ***PLO 2:***  *Students will demonstrate the ability to critically identify appropriate data structures in a business context.* |  |  |  | *I,D* | *I,D* | *I,D* | *M* |  |  |
| ***PLO 3:***  *Students will demonstrate the ability to interpret graphical information related to various data analytics.* | *I* |  | *I,D* |  |  |  |  | *D* | *M* |

*Place an I, D, or M in each cell above to indicate where the program content related to each SLO is introduced (I), developed (D), and/or mastered (M). SLO content may be delivered in more than just six courses as indicated in the above table.*