



Republic of the Philippines  
OFFICE OF THE PRESIDENT  
**COMMISSION ON HIGHER EDUCATION**



**CHED MEMORANDUM ORDER (CMO)**

No. 12  
Series 2013

**SUBJECT:        ADDENDUM TO CMO NO. 53, S. 2006 POLICIES, STANDARDS AND  
GUIDELINES FOR INFORMATION TECHNOLOGY EDUCATION  
(ITE) PROGRAMS PRESCRIBING SPECIALIZATION TRACK ON  
BUSINESS ANALYTICS**

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In accordance with the pertinent provisions of Republic Act (RA) No. 7722, otherwise known as the "Higher Education Act of 1994" and pursuant to *Commission En Banc (CEB) Resolution No. 169-2012* dated July 4, 2012, taking into consideration the demands of local and international business environments to become more globally competitive, spanning across all industries, the following standards and guidelines are hereby adopted by the Commission.

**ARTICLE I  
INTRODUCTION**

**Section 1.        Rationale and Background**

The growing demand of leaders to make better and faster business decisions makes Business Analytics and Optimization a huge market opportunity. Vast quantities of data continue to come from both structured and unstructured sources including social media, thus organizations need to quickly leverage analytics in new ways to address market uncertainty, complexity, volatility and revenue growth. Business analytics is expected to rapidly deliver significant competitive advantage and increased productivity across industries.

By 2015, the global market opportunity for analytics is estimated at US\$160 billion. However, the biggest challenge is the availability of the appropriate human capital. The May 2011 New McKinsey Global Institute Report on Big Data reported a global shortage of about 500,000 to 3 million people by 2018. Even in the United States, a shortage of 140,000 to 190,000 people with analytical and managerial expertise and 1.5 million skilled managers and analysts to understand and make decisions based on the study of big data is expected.

This is a big opportunity for the Philippines to take the lead in analytics. The Philippines could be the global center for analytics due to its English communication skills, low costs,

growing technical skills and proven success and experience in business process outsourcing (BPO), being already the home to several large, global companies. The Philippines will be home to top consulting, technical and support skills for the sales, solutioning and delivery of advanced business analytics globally and will be a core point of knowledge and responsibility for business analytics where best practices will be developed and implemented.

The Philippines offers substantial savings relative to mature markets and remains very competitive with regard to global labor costs. Base technical skills are good but higher level complex analytics skills would require educational development. Technical graduates number 60,000 per year out of a total of 410,000 graduates and there is a need to increase the skilled graduate pipeline.

Thus, there is a need to develop a comprehensive education plan to achieve the vision of the Philippines to be the global center for analytics. Core to this aspiration is human capital development which is very much in line with the government's national agenda. One of the main thrusts of the government is to make education the central strategy for investing in its people, reducing poverty and building national competitiveness. Business analytics specialization track in Higher Education Institutions (HEI) would be a sourcing strategy to bring competitive advantage and increased productivity, specifically within the Philippine National Development Plan flagship industries of tourism, offshore services, agribusiness and technology.

Against this backdrop, IBM proactively consulted with Industry, Center of Development (CoDs) and Center of Excellence (CoEs) to come up with a specialization track focusing on Business Analytics. This specialized track aims to prepare students from the ITE programs for a career in Business Analytics by equipping them with the required competencies needed for entry- to higher-level positions.

The Business Analytics Specialization Track uses an integrated approach and takes into consideration the interrelationships among the functional areas of business as well as sensitivity to the economic, social, technological, legal, and international environment in which business must operate. The objective of the program is not simply to impart basic business knowledge, but to instill and nurture important qualities and skills in our students that are essential for future business leadership and organizational success in the industry.

## **ARTICLE II AUTHORITY TO OPERATE**

### **Section 2.**

All higher education institutions (HEIs) with existing permit and recognition to offer any of the ITE programs need not apply for separate authority to offer the Business Analytics Specialization Track. However, the HEI shall inform the CHED on its intent to offer the





Business Analytics (BA) Specialization Track and its compliance with the minimum requirements for courses in General Education, Core Courses, Professional Courses and Electives as prescribed in Memorandum Order 53, s. 2006 for the ITE programs.

### **ARTICLE III PROGRAM SPECIFICATIONS**

#### **Section 3. Program Name**

The specialization track herein shall be called **Business Analytics (BA)**. Higher Education Institutions (HEIs) that would like to offer the business analytics track shall adopt the “Business Analytics Specialization Track” (BA Specialization Track).

#### **Section 4. Program Description and General Objectives**

The program and curriculum dedicated for specialized track on business analytics incorporate awareness of ethical norms in each subject as well as compliance to corporate code of ethics, policies, rules, regulations, best practices, applicable laws governing confidentiality, non-disclosure agreement, proper conduct in the course apprenticeship/on the job training phases of the program. The Business Analytics specialization includes six (6) areas, primarily Fundamentals of Business Analytics, Fundamentals of Enterprise Data Management, Fundamentals of Analytics Modeling, Analytics Techniques & Tools, Analytics Application and Analytics Internship, which include internship, industry immersion and integration. The Business Analytics specialization track program description, objectives, curriculum and course description may be referred to in Annex A.

#### **Section 5. Specific Professions, Careers, Occupations, or Trades**

##### **5.1 Entry-level jobs for information technology (IT) sector**

- a. Database Developer
- b. Report Developer
- c. Data Engineer
- d. Data Warehouse Developer
- e. Business Intelligence Developer
- f. Junior Data Analyst
- g. Junior Business Analyst

##### **5.2 Entry-level jobs for Business Process Outsourcing (BPO) sector**

- a. Customer Service Representative
- b. Virtual Assistant
- c. Accounts Payable Analyst
- d. Financial Data Analyst
- e. General Accounting Data Analyst
- f. Travel and Expense Analyst



### **5.3 Entry level jobs for all sectors**

- a. Junior Business Analyst
- b. Executive Operations Assistant
- c. Site Analyst (website analytics)
- d. Marketing Representative
- e. Risk Analyst
- f. Operations Analyst
- g. Healthcare Analyst
- h. Disaster Prediction Analyst
- i. Supply Chain Analyst
- j. Human Resource Associate
- k. Training Associate
- l. Administrative Associate
- m. Quality Assurance Analyst
- n. Accounting Data Analyst
- o. Facilities Associate

## **ARTICLE IV COMPETENCY STANDARDS**

**Section 6.** Graduates of the Business Analytics (BA) Specialization Track should be able to:

- 6.1 Understand data management concepts and criticality of data availability in order to make reliable business decisions
- 6.2 Demonstrate understanding of business intelligence including the importance of data gathering, data storing, data analyzing and accessing data
- 6.3 Describe where to look for data in an organization and create required reports
- 6.4 Apply different analytics modeling concepts on enterprise data
- 6.5 Understand the functions and data access constraints of various departments within an organization and provide compliance reports
- 6.6 Work on various analytics tools available in the market for various business functions
- 6.7 Participate actively in business discussions with various departments and create common reports or specific/unique reports with regard to predictive and prescriptive analytics
- 6.8 Understand the business processes as they relate to data analysis and optimization
- 6.9 Convey results of data analysis to organizational stakeholders at various levels
- 6.10 Perform high-quality tasks required by the organization in particular, and the industry in general



## ARTICLE V CURRICULUM

### Section 7. Curriculum Description

The curriculum for the Business Analytics (BA) Specialization Track is a supplement to the existing ITE programs offered by HEIs. The specialization track covers a balance of functional areas, which increases competencies in understanding data structures, data analysis and data interpretation. This knowledge can be applied to any industry where data can be used for operational optimization and competitive advantages. This can cater to both local and international industry demands for analytics skills.

The curriculum for the Business Analytics specialization track should be consistent with the school's philosophy, mission and vision statements. Access to analytics tools, software, computers and related digital materials as well as the Internet should be provided to faculty members and students. Preferably, the maximum class size for each subject under the Business Analytics (BA) Specialization Track should be forty (40).

### Section 8. Curriculum Outline

The following is a list of required courses for the BA Specialization Track. These may take the place of the electives and internship program.

|             |  |    |
|-------------|--|----|
| BAFBAN1     | Fundamentals of Business Analytics         | 3  |
| BAFEDM2     | Fundamentals of Enterprise Data Management | 3  |
| BAFANAM     | Fundamentals of Analytics Modeling         | 3  |
| BAANTEC     | Analytics Techniques & Tools               | 3  |
| BAANAP1     | Analytics Application                      | 3  |
| BAANAP2     | Analytics Internship                       | 6  |
| TOTAL UNITS |  | 21 |

### Section 9. Sample Program of Study (Minimum Units)

| FLOWCHART |         |           |         |                      |                      |                      |                      |
|-----------|---------|-----------|---------|----------------------|----------------------|----------------------|----------------------|
| FRESHMAN  |         | SOPHOMORE |         | JUNIOR               |                      | SENIOR               |                      |
| 1st Sem   | 2nd Sem | 1st Sem   | 2nd Sem | 1st Sem              | 2nd Sem              | 1st Sem              | 2nd Sem              |
| Regular   | Regular | Regular   | Regular | Regular              | Regular              | Regular              | Regular              |
|           |         |           |         | BAFBAN1<br>(3 units) | BAFANAM<br>(3 units) | BAANAP1<br>(3 units) | BAANAP2<br>(6 units) |
|           |         |           |         | BAFEDM2<br>(3 units) | BAANTEC<br>(3 units) |                      |                      |





## **Section 10. Practicum/Internship Requirements**

The internship begins with a memorandum between Higher Education Institutions (HEIs) and industry partners such as members of Management Association of the Philippines (MAP), Bankers Association of the Philippines (BAP), Philippine Marketing Association (PMA), Philippine Institute of Certified Public Accountants (PICPA), Philippine Computer Society (PCS), Philippine Software Industry Association (PSIA), Business Processing Association of the Philippines (BPAP) and others.

The students will then choose a business function (e.g. marketing, operations, finance, human resources) and conduct an analysis on the organization's data with the end-goal of producing a report (descriptive, predictive or prescriptive) that will be presented to management for evaluation. The organization's evaluation of the report will be part of the students' final grade for the subject.

## **ARTICLE VI FACULTY**

**Section 11.** The faculty members should possess the educational qualifications, professional experience, and teaching ability based on CMO 53, s. 2006 for the successful conduct of a school's program(s).

- 11.1 Industry practitioners will be allowed to teach with a designated faculty member provided they have at least a bachelor's degree.
- 11.2 Industry associations such as Business Processing Association of the Philippines (BPAP), government departments such as the Department of Science and Technology (DOST) and the Commission on Higher Education (CHED) and private companies, may provide opportunities for faculty development to enable faculty members to keep up with developments and techniques in their field, improve their teaching skills and course materials, continue their professional growth, and contribute to research and other scholarly pursuits
- 11.3 Faculty from various HEIs are encouraged to participate in Business Analytics courses offered in other parts of the world to build teaching skills.

## **ARTICLE VII ADMISSION, RETENTION, RESIDENCE, AND GRADUATION REQUIREMENT**

### **Section 12.**

- 12.1 Admission, retention, and graduation requirements will be governed by the institution's policy on the program.
- 12.2 As a general rule, transfers of students shall be governed by the institutional policy on residence and transfer.



- 12.3 For students who go on leave, re-admission to the program will be subject to the school's re-admission policies.


### **ARTICLE VIII REPEALING CLAUSE**

- Section 13.** All pertinent rules and regulations of parts thereof that are inconsistent with the provisions of this policy are hereby repealed or modified accordingly.

### **ARTICLE IX EFFECTIVITY CLAUSE**

- Section 14.** These policies and standards for the Business Analytics (BA) Specialization Track shall be effective after publication in the Official Gazette or in a newspaper of general circulation.

Quezon City, Philippines May 14, 2013

  
**PATRICIA B. LICUANAN, Ph.D.**  
**Chairperson**



**Annex A****The Business Analytics Specialization Track**

|                    |  |
|--------------------|--|
| Course Name        | <b>Fundamentals of Business Analytics (BAFBAN1)</b>  |
| Course Objectives  | <ol style="list-style-type: none"><li>1. Describe the various sources of data (structured, unstructured) and the concept of data management;</li><li>2. Describe the importance of data, how data can be used by an organization towards competitive advantage, and how it enables organizations to make quicker and better business decisions;</li><li>3. Describe basics of business intelligence including data gathering, data storing, data analyzing and providing access to data;</li><li>4. Describe how statistical analysis can help to better understand past events and predict future events;</li><li>5. Understand the fundamentals of project risk management, various methods used for effort and cost estimation, various phases within a project, dependencies and critical path;</li><li>6. Describe various database models like the hierarchical database model and network model; and</li><li>7. Develop an awareness of the ethical norms as required under policies and applicable laws governing confidentiality and non-disclosure of data/information/documents and proper conduct in the learning process and application of business analytics.</li></ol> |
| Course Description | The course provides students with an overview of the current trends in information technology that drives today's business. The course will provide understanding on data management techniques that can help an organization to achieve its business goals and address operational challenges. This will also introduces different tools and methods used in business analytics to provide the students with opportunities to apply these techniques in simulations in a computer laboratory.   |
| Learning Outcomes  | <ol style="list-style-type: none"><li>6.1 Understand data management concepts and criticality of data availability in order to make reliable business decisions</li><li>6.2 Demonstrate understanding of business intelligence including the importance of data gathering, data storing, data analyzing and accessing data</li><li>6.3 Describe where to look for data in an organization and create required reports</li><li>6.10 Perform high-quality tasks required by the organization in particular, and the industry in general</li></ol>  |
| Course Credit      | 3 units  |
| Contact Hours/Week | 54 hrs (3 hrs per week)  |
| Prerequisite       | Basic computer knowledge, basic Mathematics, basic Statistics  |





|                    |  |
|--------------------|--|
| Course Name        | <b>Fundamentals of Enterprise Data Management (BAFEDM2)</b>  |
| Course Objectives  | <ol style="list-style-type: none"> <li>1. Understand database management systems;</li> <li>2. Describe the process of data discovery and data patterns in large data sets;</li> <li>3. Understand various methods related to intersection of artificial intelligence, machine learning, statistics, and database systems;</li> <li>4. Understand various techniques related to data extraction and data preprocessing before using for data modeling;</li> <li>5. Understand the concept of master data management (MDM);</li> <li>6. Describe data inference considerations, interestingness metrics, complexity considerations;</li> <li>7. Understand various techniques used for post-processing of discovered structures and visualization;</li> <li>8. Describe the importance of data warehouses (DW or DWH) for reporting and data analysis and understand the differences from operational data source (ODS);</li> <li>9. Describe formalized means of organizing and storing of documents and other content in an organization related to the organization's processes;</li> <li>10. Describe the need and policy around data security and privacy (information security) and techniques to restrict information from unauthorized access, use, disclosure, disruption, modification, perusal, inspection, recording or destruction;</li> <li>11. Describe online fraud and their consequences and understand predictive analytics for detection of fraudulent activities; and</li> <li>12. Develop an awareness of the ethical norms as required under policies and applicable laws governing confidentiality and non-disclosure of data/information/documents and proper conduct in the learning process and application of business analytics.</li> </ol> |
| Course Description | <p>The course is designed to introduce students to the fundamentals of database management systems, enterprise data management using data warehouse (DW or DWH), which can be used for further data mining, reporting and data analysis purposes. It describes various activities involved in data mining tasks like data anomaly detection (outlier/change/deviation detection), data association rule learning (dependency modeling), data clustering, data classification, data regression and data summarization. This course also introduces students to formalized means of organizing and storing structured and unstructured data in an organization. It describes how Enterprise Content Management (ECM) can manage corporate information effectively through simplifying storage, security, version control, process routing, and retention. The course also describes the seriousness of information security and provides techniques to use predictive analytics for detection of fraudulent activities.</p>  |
| Learning Outcomes  | 6.1 Understand data management concepts and criticality of data  |



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|--------------------|--|
|                    | <p>availability in order to make reliable business decisions</p> <p>6.2 Demonstrate understanding of business intelligence including the importance of data gathering, data storing, data analyzing and accessing data</p> <p>6.3 Describe where to look for data in an organization and create required reports</p> <p>6.5 Understand the functions and data access constraints of various departments within an organization and provide compliance reports</p> <p>6.10 Perform high-quality tasks required by the organization in particular, and the industry in general</p> |
| Course Credit      | 3 units  |
| Contact Hours/Week | 54 hrs (3 hrs per week)  |
| Prerequisite       | Basic computer knowledge, basic Mathematics, basic Statistics  |

|                   |   |
|-------------------|---|
| Course Name       | <b>Fundamentals of Analytics Modeling (BAFANAM)</b>   |
| Course Objectives | <ol style="list-style-type: none"> <li>1. Provide an overview of latest industry trends of enterprise-level information management as it relates to predictive data analytic modeling;</li> <li>2. Describe high-level business process modeling concepts, techniques (regression analysis), and methods;</li> <li>3. Describe business decision modeling and relationship between all the elements of a decision – known data, the decision, and the forecast results of the decision in order to predict future trends and behavior patterns;</li> <li>4. Describe optimization modeling and regression model impacts;</li> <li>5. Describe risk management as a result of business analytic model interpretations to predict and benefit from a future scenario;</li> <li>6. Communicate model results, recommendations and impact to business;</li> <li>7. Explain degrees of complexity of business analytics and know where modeling fits in regards to descriptive, predictive and prescriptive analytics;</li> <li>8. Provide an overview of data modeling output to anticipate answers to primary predictive analytics questions (What will happen next if? What could happen? What if these trends continue? What actions are needed?);</li> <li>9. Understand vendor-specific and open source software modeling tools and algorithms used to predict categorical and continuous outcomes in the areas of business process, organizational change, business decisions, optimizations and risk management; and</li> <li>10. Develop an awareness of the ethical norms as required under policies and applicable laws governing confidentiality and non-disclosure of data/information/documents and proper conduct in the learning process and application of business analytics.</li> </ol> |





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| Course Description | The course is designed to introduce students to the fundamental techniques of using data to make informed management decisions. In particular, the course focuses on various ways of modeling, or thinking structurally about, decision problems in order to enhance decision-making skills. Topics include business process modeling, business decision modeling, optimization modeling and risk management.   |
| Learning Outcomes  | 6.1 Understand data management concepts and criticality of data availability in order to make reliable business decisions<br>6.2 Demonstrate understanding of business intelligence including the importance of data gathering, data storing, data analyzing and accessing data<br>6.3 Describe where to look for data in an organization and create required reports<br>6.4 Apply different analytics modeling concepts on enterprise data<br>6.7 Participate actively in business discussions with various departments and create common reports or specific/unique reports with regard to predictive and prescriptive analytics<br>6.8 Understand the business processes as they relate to data analysis and optimization<br>6.10 Perform high-quality tasks required by the organization in particular, and the industry in general |
| Course Credit      | 3 units   |
| Contact Hours/Week | 54 hrs (3 hrs per week)   |
| Prerequisite       | Fundamentals of Business Analytics, Fundamentals of Enterprise Data Management  |

|                    |  |
|--------------------|--|
| Course Name        | <b>Analytics Techniques &amp; Tools (BAANTEC)</b>  |
| Course Objectives  | 1. Understand various techniques used in descriptive, predictive and prescriptive analytics;<br>2. Understand various analytics tools available in the market and match with the appropriate techniques;<br>3. Use a tool that offers reporting, planning and the full range of capabilities for business intelligence and performance management;<br>4. Utilize a tool that enables organizations to conceptualize and predict future events, allowing for decisions to be made at the point of impact and ultimately better business outcomes;<br>5. Test a process that provides optimization and constraint programming modeling for planning and scheduling, combining mathematical programming and constraint programming with a tightly integrated modeling language; and<br>6. Develop an awareness of the ethical norms as required under policies and applicable laws governing confidentiality and non-disclosure of data/information/documents and proper conduct in the learning process and application of business analytics. |
| Course Description | The course aims to provide the student with the techniques and tools   |



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|                    | that help organizations identify patterns and anomalies in business data, conduct deep trend analyses using statistical and financial management tools, perform predictive modeling to anticipate potential threats and opportunities, and produce accurate financial and regulatory reports for proactive planning and budgeting.  |
| Learning Outcomes  | 6.1 Understand data management concepts and criticality of data availability in order to make reliable business decisions<br>6.3 Describe where to look for data in an organization and create required reports<br>6.4 Apply different analytics modeling concepts on enterprise data<br>6.6 Work on various analytics tools available in the market for various business functions<br>6.7 Participate actively in business discussions with various departments and create common reports or specific/unique reports with regard to predictive and prescriptive analytics<br>6.8 Understand the business processes as they relate to data analysis and optimization<br>6.9 Convey results of data analysis to organizational stakeholders at various levels<br>6.10 Perform high-quality tasks required by the organization in particular, and the industry in general |
| Course Credit      | 3 units (with laboratory)   |
| Contact Hours/Week | 54 hrs (3 hrs per week)   |
| Prerequisite       | Fundamentals of Business Analytics, Fundamentals of Enterprise Data Management  |

|                   |   |
|-------------------|---|
| Course Name       | <b>Analytics Application (BAANAP1)</b>  |
| Course Objectives | <ol style="list-style-type: none"> <li>1. Apply a tool that provides an organization with a universal view of customers that will help grow the customer base, retain the most profitable customers, and increase satisfaction;</li> <li>2. Use spatial data mining techniques to find patterns in data with respect to geography;</li> <li>3. Use a model that gives an organization the insight needed to become a more agile organization that is able to anticipate and respond to changes, better align operations with demand, and take advantage of emerging opportunities;</li> <li>4. Utilize a framework that makes an organization gain a holistic view of risk, fraud and compliance information across the organization;</li> <li>5. Test a process that helps an organization transform the financial processes to gain more visibility, insight and control over performance throughout the enterprise; and</li> <li>6. Develop an awareness of the ethical norms as required under policies and applicable laws governing confidentiality and non-disclosure of data/information/documents and proper conduct in the learning process and application of business analytics.</li> </ol> |





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| Course Description | The course aims to provide the student with applications that help organizations develop insights to make better timely decisions and automate processes. It provides a solid foundation of strategic analytics products and services to take advantage of all the data sources, including structured and unstructured data, and ultimately get the support needed to stay one step ahead of the competition.  |
| Learning Outcomes  | 6.1 Understand data management concepts and criticality of data availability in order to make reliable business decisions<br>6.3 Describe where to look for data in an organization and create required reports<br>6.4 Apply different analytics modeling concepts on enterprise data<br>6.5 Understand the functions and data access constraints of various departments within an organization and provide compliance reports<br>6.6 Work on various analytics tools available in the market for various business functions<br>6.7 Participate actively in business discussions with various departments and create common reports or specific/unique reports with regard to predictive and prescriptive analytics<br>6.8 Understand the business processes as they relate to data analysis and optimization<br>6.9 Convey results of data analysis to organizational stakeholders at various levels<br>6.10 Perform high-quality tasks required by the organization in particular, and the industry in general |
| Course Credit      | 3 units (with laboratory)  |
| Contact Hours/Week | 54 hrs (3 hrs per week)  |
| Prerequisite       | Fundamentals of Analytics Modeling, Analytics Techniques & Tools   |

|                    |   |
|--------------------|---|
| Course Name        | <b>Analytics Internship (BAANAP2)</b>   |
| Course Objectives  | 1. Immerse students in the corporate environment, providing them with comprehensive hands-on training relevant to business practices in analytics, to enable readiness towards strategic job-fit and eventual employment in industry;<br>2. Engage students in mining of actual data, apply an analytics technique and create a report for submission to the organization's management;<br>3. Perform assessment processes as a means to provide the industry information on pre-employment baseline competencies and skill sets of the students; and<br>4. Develop an awareness of the ethical norms as required under policies and applicable laws governing confidentiality and non-disclosure of data/information/documents and proper conduct in the learning process and application of business analytics. |
| Course Description | The course aims to prepare students for their eventual jobs and careers   |



|                    |   |
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|                    | in business analytics. Students on their last year of study will be tasked to produce an analytics report for a real organization. The course begins with the immersion of the students in an organization for familiarization with its business process or practices. The students will then choose a business function (e.g. marketing, operations, finance, human resources) and conduct an analysis of the organization's data with the end-goal of producing a report (descriptive, predictive or prescriptive) that will be presented to management for evaluation. The organization's rating of the report will be part of the students' final grade for the subject.  |
| Learning Outcomes  | 6.1 Understand data management concepts and criticality of data availability in order to make reliable business decisions<br>6.3 Describe where to look for data in an organization and create required reports<br>6.4 Apply different analytics modeling concepts on enterprise data<br>6.6 Work on various analytics tools available in the market for various business functions<br>6.7 Participate actively in business discussions with various departments and create common reports or specific/unique reports with regard to predictive and prescriptive analytics<br>6.9 Convey results of data analysis to organizational stakeholders at various levels<br>6.10 Perform high-quality tasks required by the organization in particular, and the industry in general |
| Course Credit      | 6 units   |
| Contact Hours/Week | 480 hours (may be credited towards the internship hours of the main program)  |
| Prerequisite       | Analytics Application   |





**Annex B**  
**Summary of Competency Matrix**

**COMPETENCY STANDARDS (as per Article IV, Section 6)**

Graduates of the Business Analytics (BA) Specialization Track should be able to:

- 6.1 Understand data management concepts and criticality of data availability in order to make reliable business decisions
- 6.2 Demonstrate understanding of business intelligence including the importance of data gathering, data storing, data analyzing and accessing data
- 6.3 Describe where to look for data in an organization and create required reports
- 6.4 Apply different analytics modeling concepts on enterprise data
- 6.5 Understand the functions and data access constraints of various departments within an organization and provide compliance reports
- 6.6 Work on various analytics tools available in the market for various business functions
- 6.7 Participate actively in business discussions with various departments and create common reports or specific/unique reports with regard to predictive and prescriptive analytics
- 6.8 Understand the business processes as they relate to data analysis and optimization
- 6.9 Convey results of data analysis to organizational stakeholders at various levels
- 6.10 Perform high-quality tasks required by the organization in particular, and the industry in general

**Competency/Learning Outcomes mapped to suggested Business Analytics Courses**

| Courses |  | Learning Outcomes (Section 6) |     |     |     |     |     |     |     |     |      |
|---------|--|-------------------------------|-----|-----|-----|-----|-----|-----|-----|-----|------|
| Code    | Title                                      | 6.1                           | 6.2 | 6.3 | 6.4 | 6.5 | 6.6 | 6.7 | 6.8 | 6.9 | 6.10 |
| BAFBAN1 | Fundamentals of Business Analytics         | x                             | x   | x   |     |     |     |     |     |     | x    |
| BAFEDM2 | Fundamentals of Enterprise Data Management | x                             | x   | x   |     | x   |     |     |     |     | x    |
| BAFANAM | Fundamentals of Analytics Modeling         | x                             | x   | x   | x   |     |     | x   | x   |     | x    |
| BAANTEC | Analytics Techniques & Tools               | x                             |     | x   | x   |     | x   | x   | x   | x   | x    |
| BAANAP1 | Analytics Application                      | x                             |     | x   | x   | x   | x   | x   | x   | x   | x    |
| BAANAP2 | Analytics Internship                       | x                             |     | x   | x   |     | x   | x   |     | x   | x    |



**Annex C**

**Draft memorandum of Agreement between University / College and Industry Partner as Internship Host**

**MEMORANDUM OF AGREEMENT**

Know All Men By These Presents:

This Agreement entered into this \_\_\_ day of \_\_\_\_\_, 20\_\_\_, at \_\_\_\_\_  
\_\_\_\_\_ by and between:

*<Name of the Higher Education Institution>* , a school duly organized and existing under the laws of the Republic of the Philippines, with principal office address at *<address in PHILIPPINES>*, represented by its President/Dean - Academic Affairs, *<Name>*, and hereinafter referred to as "*HEI*";

-and-

*<COMPANY>* , a corporation duly organized and existing under Philippine Laws with principal offices at *<complete address>* herein represented by its *<position>*, *<complete name>*, and hereinafter referred to as "*<Company Initials>*" or the Industry Partner.

***WITNESSETH: That –***

WHEREAS, HEI is looking for industry immersion for their students to take up a real time business challenge as a project to fulfill their education requirements prescribed for Business Analytics specialization track;

WHEREAS, Industry Partner is an organization in the IT industry or Business industry in the country; is a corporation engaged in promoting the competitive advantages and the growth potential of the Philippines in existing and new areas of Business and IT outsourcing primarily in the area of Banking, Tourism, Food, Agriculture, Technology and others.

WHEREAS, Industry Partner in response to the challenge of building competency in human resource development and in pursuit of the foregoing objectives, has assumed the implementation of the **Business Analytics Specialization Track (BAST)**, an academic program that aims to develop skills and competencies on Business Analytics that can bring operation optimization and competitive advantage for an Industry.

WHEREAS, the Industry Partner is aware of the urgency for concerted policies and programs focusing on building competency in human resource development by way of cooperative partnerships among stakeholders in government, academe and industry for planning, sourcing and developing sustainable talent pool for the industry.





WHEREAS, the Industry Partner supports the call of HEI to collaborate in the implementation of the Business Analytics Specialization Track, to enable sustained development of talent pool needed by the industries.

WHEREAS, the Business Analytics Specialization Track is an outcome-based multidisciplinary approach to education and harmonization of competencies with global standards, with the goal of developing qualified individuals with contemporary skills and competencies essential for future business leadership and organizational success which can span across all industries in Philippines.

NOW THEREFORE, for and in consideration of the foregoing premises, both parties have agreed to jointly implement the integration and conduct of the BAST in academic institutions with the following roles and responsibilities:

A. HEI shall:

1. Nominate a single point of contact to coordinate all activities envisaged under this Agreement.
2. Provide Industry Partner with the BAST Curriculum content and instructional materials in the form of Syllabus, Teacher presentation slides, Teacher Workbook and Student Guide
3. Recommend to Industry Partner, prospective partner academic institutions
4. Certify industry facilitators and/or faculty members of Academic Institutions to conduct the BAST and institute measures to monitor adherence to course content and instructional methods prescribed.
5. Coordinate and schedule meetings with relevant officials of the Industry Partner as may be required by HEI to fulfill their obligations under the terms of this Agreement in a timely manner.

B. The Industry Partner shall:

1. Conduct faculty immersion program in accordance to HEI prescribed methodology in order to gain better appreciation and understanding of the Industry.
2. Accept student interns undertaking BAST and act as mentors in accordance to prescribed instructional methodologies by HEI and academic requirements of partner academic institutions:
  - a. Provide partner school with accomplished Intern requirement checklist. It is understood and agreed that the Industry Partner shall have the sole discretion and prerogative to select and choose the students who will undergo the Internship Program through its screening and selection process, in accordance with its requirements and based on its standards/qualifications or criteria.
  - b. Document the agreement between Industry Partner and Academic institutions providing Interns on the scope of work, company rules and regulations, and other procedures and policies guiding work performance and workplace decorum imposed upon by Industry partner to Interns which may stipulate any or all of the following terms and conditions:

1. Assign Interns work, tasks or projects, as well as determination of work schedules;
  2. Screen and supervise of the Interns vis-à-vis work assignments;
  3. Periodically monitor and rate Intern's work, behavior or attitude and performance through the Partner Industry prescribed Internship Performance Evaluation Forms.
  4. Recommend to the partner school the midterm and final grades of the Intern following the grade submission dates as scheduled and advised by partner school.
  5. Upon the completion of the Intern's training, issue, through its Human Resources Division, a "Certificate of Completion" showing the number of hours rendered by the Intern, the period covered, the department assigned and other pertinent details relevant to the said internship training.
  6. Industry Partner may grant subsidies, allowances or stipends to Interns, at its sole prerogative, in accordance with and subject to the company's policies, procedures and practices.
3. Provide industry practitioners as "Industry-Professors" in support of BAST classroom teaching and learning practices which may be conducted in the following manner:
    - a. Industry-Professor as Teacher Trainer following prescribed content and methodology by HEI facilitating a minimum of one Teacher Training conduct per school year.
    - b. Industry-Professor as Resource Person providing classroom teaching support by way of:
      1. Providing additional case studies relevant to the subject matter and essential to Industry practice in order to provide context and real work examples of the concepts taught.
      2. Conducting a number of classes co-teaching with faculty necessary to enhance subject or topic, the schedules of which are negotiated with faculty handling the class.
    - c. Industry professor as faculty committing to deliver a subject at specific schedules following prescribed number of units and / or class hours within one semester or term.
    - d. Maintain the right to recruit, select, offer job to interns; likewise and position Industry Partner brand to potential future hires.

#### C. Other Terms and Conditions

1. This agreement shall be effective for a period of 24 months commencing on \_\_\_\_\_, and shall be renewable upon mutual agreement of both parties.
2. HEI and Industry Partner may release information about this partnership in any information or marketing materials subject to prior approval of both parties.





IN WITNESS WHEREOF, the parties hereto have signed this Agreement on the date and place first above written.

By: HEI

By: (INDUSTRY PARTNER)

Name: \_\_\_\_\_  
Position: \_\_\_\_\_

Name: \_\_\_\_\_  
Position: \_\_\_\_\_

SIGNED IN PRESENCE OF:

\_\_\_\_\_

### ACKNOWLEDGMENT

REPUBLIC OF THE PHILIPPINES )  
\_\_\_\_\_ ) S.S.

BEFORE ME, a Notary Public for and in \_\_\_\_\_, this \_\_\_\_\_ day of \_\_\_\_\_, 2013 personally appeared the following:

| <u>Name</u> | <u>CTC/Passport No.</u> | <u>Date and Place of Issue</u> |
|-------------|-------------------------|--------------------------------|
|-------------|-------------------------|--------------------------------|

all known to me and to me known to be the same persons who executed the foregoing Memorandum of Agreement consisting of \_\_\_\_\_ ( ) pages, including this page on which the acknowledgment is written, and they acknowledged before me that the same is their free and voluntary act and deed as well as the free and voluntary act and deed of the entities which they respectively represent.

WITNESS MY HAND AND SEAL on the place and date first written above.

Doc. No. \_\_\_\_;  
Page No. \_\_\_\_;  
Book No. \_\_\_\_;  
Series of 2013.

