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| **Course** | ITEP203 – Quantitative Method including Modeling and Simulation |
| **Sem/AY** | Second Semester/2021-2022 |

**ITEP203 COURSE GUIDE**

**COURSE OBJECTIVES**

At the end of the course, you should be able to

1. Knowledgeable about the basic concepts of data analysis and descriptive statistics, how to manipulate, analyze and visualize data in Excel and Google Sheets, Business metrics across a wide range of business areas (marketing, sales, growth and finance). Finally, learn about forecasting sales and financial metrics.
2. Write SQL to query a single table and query multiple tables.
3. Use a data set containing financial performance data from companies to create an income statement and forecast financial metrics.
4. Build interactive dashboards with Tableau and use them to discover and communicate insights from data.

**COURSE CONTENT/OUTLINE**

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| --- | --- |
| In this lesson you will learn about data types, measures of center, and the basics of statistical and mathematical notation. | **Descriptive Statistics I** |
| In this lesson you will learn about the measures of spread, shape, and outliers as associated with quantitative data. | **Descriptive Statistics II** |
| In this lesson you will learn the basic functionality for software, use cell referencing and menu shortcuts. Learn basic spreadsheet function: sort and filter data, use text and match functions, split columns and remove duplicates. Learn how to summarize data with aggregation and conditional functions. Learn how to use pivot tables and lookup functions. Build data visualizations for quantitative and categorical data: create pie, bar, line, scatter, histogram, and boxplot charts, and build professional presentations. | **Spreadsheets** |
| This lesson will cover how to calculate business metrics used by business analysts across a range of business functions. You will also learn how to calculate and interpret key performance metrics. Will cover the fundamentals of sales and financial forecasting models. You will learn how to create forecast models using advanced lookup and data validation tools in Excel and Sheets. | **Metrics** |
| In this lesson you will learn about basic SQL commands including SELECT, FROM, WHERE, and corresponding logical operators. | **Basic SQL** |
| In this lesson you learn to combine data tables using SQL joins to answer more complex business questions. | **SQL Joins** |
| This lesson introduces aggregation of data in SQL including COUNT, SUM, MIN, and MAX functions. You will learn to write CASE and DATE functions, as well as work with NULL values. | **SQL Aggregation** |
| In this lesson you learn to evaluate the quality of data visualizations and build high quality visualizations, starting with the fundamentals of data dashboards. Learn to implement the best design practices, and to use the most appropriate chart for a particular situation. | **Data Visualizations Fundamentals & Data Design** |
| This lesson teaches you how build data visualizations in Tableau using data hierarchies, filters, groups, sets, and calculated fields, as well as create map-based data visualizations in Tableau. | **Tableau Visualizations** |
| In this final lesson you learn how to build interactive Tableau dashboards and tell impactful stories using data. | **Dashboards and Stories** |

**COURSE MATERIALS/READINGS/RESOURCES**

The main references of this course are the following:

1. Module 1-10
2. Digital Prints
3. Digital Visual Display
4. Pre-recorded video lessons
5. Software Applications (Google Sheet or Excel, MySQLyog, Tableau)

**COURSE CALENDAR/SCHEDULE**

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| --- | --- | --- | --- |
| **Week** | **Date/Period** | **Activity** | **Task** |
| **1-2** |  | **Course Orientation**  **Thinking About Data,**  **Working with Data** | **Project: Interpret a Visualization** |
| **3-4** |  | Statistics |  |
| **5-6** |  | Spreadsheets |  |
| **6-7** |  | Metrics |  |
| **8** |  | **Project Week** | **Project: Analyze NYSE Data** |
| **9-11** |  | SQL |  |
| **12** |  | **Project Week** | **Project: Query a Digital Music Store Database** |
| **13-14** |  | Data Visualization |  |
| **15-17** |  | Tableau |  |
| **18** |  | **Project Week** | **Project: Build Data Dashboards** |

**COURSE REQUIREMENTS**

As LSPU students, you know that for the most part you will be studying on your own. **Do read/view the resources, guided by the Course Syllabus**. This way you will be able to keep up with the discussion, assignments and other requirements.

#### **Participation in the Discussion**

Software Engineering Ii is an online learning course. Class discussions will be online live streaming using Google Meet, Google Classroom for Learning Materials, Resource and Examinations and YouTube Channel Videos.

Please participate in the online discussions since this is an opportunity for you to clarify what you have learned on your own not only with your facilitator but also with other members of the class. It is also a good way to learn from one another. Depending on the size of the class, a tutor other than myself, may facilitate online discussions.

**Your contribution to the discussion boards will be graded.** Your postings should answer the discussion questions in a concise way and with as much insight and reflection as possible. There are usually no right or wrong answers to the questions, only honest and well thought out ones. And please be guided by the following marking scheme (middle values may be given).

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| **Rubrics for Discussion Postings** | | | | |
| **Answer to Guide Question** |  |  |  | **Score** |
| The answer shows a deep understanding of the ideas in the course materials. | 5 | 7 | 10 |  |
| They reflect an incisive analysis of theory, practice and personal experience. | 5 | 7 | 10 |  |
| They are well supported by valid arguments, appropriate examples/illustrations/details and relevant personal experiences. | 5 | 7 | 10 |  |
| **Reaction/Comments** |  |  |  |  |
| The reactions/comments reflect understanding and analysis of the DB postings concerned. | 1 | 3 | 5 |  |
| They are reasonable and well supported by theory/practice/ personal experience/logical examples/illustrations. | 1 | 3 | 5 |  |
| Timeliness |  |  |  |  |
| The postings are timely/up-to-date (i.e., contributed within the assigned schedule/time frame). | 1 | 3 | 5 |  |
| Organization and Mechanics |  |  |  |  |
| The postings are organized, clear, concise, and grammatically correct. | 1 | 3 | 5 |  |
| **TOTAL** |  |  |  | /50 |

B. Performance Tasks Accomplishment

This course requires performance tasks assigned in each of the modules. For Online Activities, you may refer to the assigned Google Classroom intended for this course. For Offline Activities, you can accomplish your tasks either saved in a flash drives or writing on the printed modules.

**Submission Guidelines**. Activity Sheets may be submitted online as email attachments in Google Classroom or with the designated email address of the Faculty-in-Charge.

*Online submissions:* Activity sheets submitted online as email attachments to the designated Google Classroom. This should carry this file name:

Examples: ITEP203\_Week1\_DelosSantosR.doc

ITEP203\_Week1\_DelosSantosR.pdf

#### **C. Final Exam/Major Performance Task**

There are only two major examinations in ITEP203 the Mid-Term and Final exam. This will cover the major concepts and principles of the course. **This exam is scheduled on the 9th and 18th week of the course, as per the LSPU Academic Calendar for AY 2021-2022. Please mark this early in your calendar so you free this date for the exam and can make necessary arrangements with your employer, if needed.** Examinations are given ONLINE, with the permission and scheduled given by your facilitator, using Google Classroom.

GRADING SCHEME

Following are the allotted points for each course requirement. The table shows the transmutation values for the final course grade.

Course Discussion 20%

Activity Sheets 40%

Exam/ Outputs 40%

**TOTAL 100 %**

HOUSE RULES

1. Participate on time and actively in each discussion date to maximize your learning.
2. Follow the Course Syllabus.

3. Submit activity sheets on or before their due dates. You will be duly informed and reminded about the deadline for each activity sheet. **Late activity sheets will be accepted, provided there is a valid reason for the delay. However, they cannot be awarded the highest possible score.**

4. Activity sheets should be written in English. Be grammatical. Write as effectively as possible (i.e., with clarity and coherence, organization, as well as conciseness).

5. Do your activity sheet assignments yourself and observe the ethics of scholarship. You may discuss your work with each other (for example during online study sessions or in a study group off schedule).

If you “borrow” or use an idea from another source (meaning someone other than yourself), be sure to cite that source (or sources). Enclose quoted material in quotation marks or use italics and write   
the source. But as much as possible, paraphrase, do not lift. **Be reminded that as per LSPU policy, plagiarism can be grounds for suspension or expulsion**.

Acknowledge sources and make a bibliography of them at the end of the assignment following APA (American Psychological Association) guidelines. You can consult <http://owl.english.purdue.edu/owl/resource/560/01/> for the APA formats.

6. Always keep a duplicate copy of your activity sheets in your files just in case you need to resubmit them (e.g., they are lost in transit; or there is a technological glitch).

7. **SMS and phone calls should be kept to a minimum, should be sent/made only when necessary, and only between 9am and 7pm, Monday to Saturday.**

CONTACT INFORMATION

I am your Faculty-in-Charge. There is more information about me in our course website in LMS. You may reach me at:

Name of Faculty: Mark P. Bernardino

Laguna State Polytechnic University

Campus: Santa Cruz, Laguna

Telegram: @Bookmark101888

Email: markbernardino@lspu.edu.ph

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**Technical support contact information**:

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**Student support contact information (Dean’s Office)**:

Associate Dean: Reynalen C. Justo, MM-ITM, LPT

College of CCS

Laguna State Polytechnic University

Campus: Santa Cruz, Laguna

Campus Address:

Email:

Mobile: