Republic of the Philippines
Laguna State Polytechnic University
Province of Laguna
ISO 9001:2015 Certified
Level I Institutionally Accredited

LSPU Self-Paced Learning Module (SLM)

Course	System Integration and Architecture 1
Sem/AY	First Semester/2020-2021
Module No.	1
Lesson Title	**Business Functions and Business Process**
Week Duration	**1-2**
Date	**October 5 - October 9; October 12 – October 16**
Description of the Lesson	This module explains the purposes for, and information systems requirements of, main business functional areas—Marketing and Sales, Supply Chain Management, Accounting and Finance, and Human Resources.

Learning Outcomes

Intended Learning Outcomes	Students should be able to meet the following intended learning outcomes: Describe how a business process works across activities within business functional areas and recognize the significance of an integrated information system.
Targets/ Objectives	At the end of the lesson, students should be able to: 1. name the main functional areas of operation used in business; 2. differentiate between a business process and a business function; 3. identify the kinds of data each main functional area produces; 4. identify the kinds of data each main functional area needs; 5. define integrated information systems, and explain why they are essential in today's globally competitive business environment.

Student Learning Strategies

Online Activities (Synchronous/ Asynchronous)	A. Online Discussion via Google Meet For this module you will be directed to engage in a one-hour synchronous discussion and two hour asynchronous activities. To access to the online course materials please check your Google Classroom Account. These are the list of course materials provided on the LMS: ✓ **01 Module 1** Business Functions and Business Process - SLM ✓ **02 Module 1** Business Functions and Business Process – Presentation ✓ **03 Module 1** Business Functions and Business Process – Video Lecture ✓ **04 Module 1 -** Performance Task No 1 Short Answer Essay ✓ **05** Laboratory Activity No 1 The one-hour synchronous discussion will be on the schedule reflected on your certificate of registration and will be done in **Google Meet**. Please be reminded

	to prepare and be ready 15 minutes prior to the said schedule to lessen connection issues. For those who cannot attend the session recordings will be available after and will be posted with 24 hours. In case you may not be able to attend the session, ensure to notify your instructor. Please be reminded of the web conference etiquettes and reminders uploaded on you LMS. You will be given time to complete all performance tasks and activity provided on the LMS as listed below: 1. Watch the video lecture 2. Read the SLM 3. For further study: Watch this video with this url: https://youtu.be/R5JlLCesfxk 4. For Lecture Activities and Assessment Tasks: Accomplish performance tasks using work sheet provided and online task for Module 1 Performance Task 1 (PT1) 5. For Laboratory Activities: Accomplish Lab Exercises 6-16 (For further instructions, refer to your Google Classroom and see the schedule of activities for this module) ***Note:*** *The insight that you will post on online discussion forum using Learning Management System (LMS) will receive additional scores in class participation.*
Offline Activities (e-Learning/Self-Paced)	For offline classes, please refer to the following learning guide questions and highlight the answer and add your own discussion in the module: 1. Why do we need to study the business functions and business process in understanding system integration? 2. Distinguish between a business function and a business process. 3. Describe how a business process cuts across functional lines in an organization. 4. How might a manager organize his or her staff in terms of business processes rather than functional departments? 5. What benefits would there be with this type of organization? What challenges would it pose? *For online classes, this might serve as a topic for online discussion or forum.*
Module Content	Topics Covered for Module 1: **Business Functions and Business Process** 1.1 Functional Areas and Business Processes i. Functional Areas of Operation ii. Business Processes 1.2 Functional Areas and Business Processes of a Very Small Business i. Marketing and Sales ii. Supply Chain Management iii. Accounting and Finance iv. Human Resources 1.3 Functional Area Information Systems

i. Marketing and Sales
ii. Supply Chain Management
iii. Accounting and Finance
iv. Human Resources

This module provides a background for learning about ERP and system integration. Adopted from the 1st chapter of the book entitled Concepts in Enterprise Resource Planning by Monk and Wagner. Shared in an Open Education Open Educational Resources (OER) by Anvari.Net Team in the website with the url: http://cbafaculty.org/anvari-net-team/. OER, a part of the global open content movement, are shared teaching, learning, and research resources available under legally recognized open licenses -- free for people to reuse, revise, remix, and redistribute.

Enterprise Resource Planning (ERP) programs: Core software used by companies to coordinate information in every area of business. It helps manage company-wide business processes and use common database and shared management reporting tools

Business process: Collection of activities that takes some input and creates an output that is of value to the customer

1.1 Functional Areas and Business Processes

To understand Systems Integration and Architecture, it is vital to know how a business works. Let's begin by looking at a typical business's areas of operation. These areas, called functional areas of operation, are broad categories of business activities.

Functional Areas of Operation

Most businesses have these four main functional areas of business operation:

a. Marketing and Sales (M/S)
b. Supply Chain Management (SCM)
c. Accounting and Finance (A/F)
d. Human Resources (HR)

And each area is composed of a variety of narrower **business functions**, which are activities specific to that functional area of operation. Examples of the business functions of each area are shown in Figure 1.1

Functional area of operation	Marketing and Sales	Supply Chain Management	Accounting and Finance	Human Resources
Business functions	Marketing a product	Purchasing goods and raw materials	Financial accounting of payments from customers and to suppliers	Recruiting and hiring
	Taking sales orders	Receiving goods and raw materials	Cost allocation and control	Training
	Customer support	Transportation and logistics	Planning and budgeting	Payroll
	Customer relationship management	Scheduling production runs	Cash-flow management	Benefits
	Sales forecasting	Manufacturing goods		Government compliance
	Advertising	Plant maintenance		

Figure 1.1 Examples of functional areas of operation and their business functions
Source: Monk and Wagner

As seen on the illustration in functional areas of operations are separate and not closely related to what will happen to other function. However, functional areas are interdependent, each requiring data from the others. The better a company can integrate the activities of each functional area, the more successful it will be in today's highly competitive environment. Each area's information system depends on data from other functional areas. An **information system (IS)** includes the people, procedures, software, and computers that store, organize, analyze, and deliver information.

This module will particularly illustrate the need for information sharing between functional areas and the effects on the business if this information is not integrated. In later sections, you will also see some examples of typical business processes and how these processes routinely cross functional areas.

Business Processes

Let us first understand, business processes, more managers are now thinking in terms of business processes rather than business functions. A **business process** is a collection of activities that takes one or more kinds of input and creates an output that is of value to the customer. The customer for a business process may be a traditional external customer (the person who buys the finished product), or it may be an internal customer (such as a colleague in another department). As illustrated in Figure 1.2.

Input	Functional area responsible for input	Process	Output
Request to purchase smartphone	Marketing and Sales	Sales order	Order is generated
Financial help for purchase	Accounting and Finance	Arranging financing in-house	Customer finances through the smartphone company
Fulfillment of order	Supply Chain Management	Shipping and delivery	Customer receives smartphone
Technical support	Marketing and Sales	24-hour help line available	Customer's technical query is resolved

Figure 1.2 Sample business processes related to the sale of a personal smartphone

Thinking in terms of business processes helps managers look at their organization from the customer's perspective. Consider the example illustrated in Figure 1.2 of a customer who wants to purchase a new smartphone.

Let us slice the sample business process on the customer perspective as illustrated in the Figure 1.2:

Customer is concern	Customer is not concerned
• wants information about the company's products so she can select a smartphone and various high-tech accessories for the phone • wants to place her order quickly and easily, and perhaps even arrange for financing through the company • expects quick delivery of the correct model of smartphone, and she wants 24-hour customer support for any problems • wants the satisfaction of having the latest in mobile phone technology at a reasonable price.	• about how the smartphone was marketed, how its components were purchased, how it was built, or how the delivery truck will find the best route to her house.

On that note, we may realize that businesses must always consider the customer's viewpoint in any transaction.

So, what is the difference between a business function and a business process from the customer's point of view?

Through this module will help you understand the benefits of integrated information systems and the problems that can occur when information systems are not integrated. Research has shown that integrated information systems can help managers better control their organizations. With enhanced information flow, communication between parts of the company improves, productivity increases, and costs decrease. In effect, integrating the information systems can make for a more effective overall organization—hence, more efficient business processes. Figure 1.3 illustrates the process view of business operations.

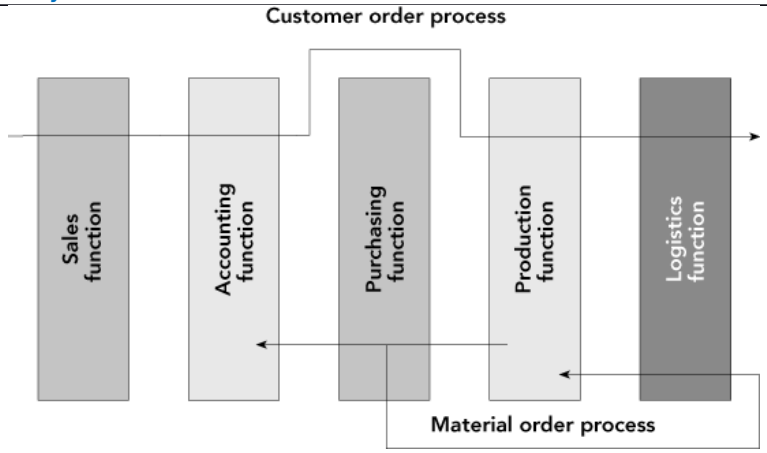

Figure 1.3 A process view of business

Businesses take inputs (resources) in the form of material, people, and equipment, and transform these inputs into goods and services for customers. Effectively managing these inputs and business processes requires accurate and up-to-date information.

For example, the sales staff takes a customer's order, and production employees schedule the manufacturing of the product. Logistics employees schedule and carry out the delivery of the product. If raw materials are needed to make the product, production prompts purchasing staff to arrange for their purchase and delivery. Logistics will receive the raw material, verify its receipt to accounting so the vendor can be paid, and deliver the goods to production. Throughout, accounting keeps appropriate transaction records.

1.2 Functional Areas and Business Processes of a Very Small Business

In this section, we will look at the way business processes involve more than one functional area, using a fictitious small business as an example—a coffee shop that you own.

Marketing and Sales (M/S): Sales include operations and activities involved in promoting and selling goods or services. Marketing includes the process or technique of promoting, selling, and distributing a product or service. While sometimes grouped separately, sales and marketing functions overlap. Those businesses that recognize the critical areas of overlap may get more value out of their teams by combining efforts. After all, both sales and marketing have the same end goal: **increasing sales.**

M/S functions are:

- formulating advertising and promotions on socials
- determining and offer competitive pricing
- providing optimum customer service like taking orders and ensuring waiting time is short
- providing discounts repeat customers
- providing perfect ambiance for specific customers
- keep track of your customers and identify repeat customers

- product development can be done informally
- historical sales records to spot trends and helps create a sales forecast to ensure the successful operation

Supply Chain Management (SCM): Supply chain management is the management of the flow of goods and services and includes all processes that transform raw materials into final products. It involves the active streamlining of a business's supply-side activities to maximize customer value and gain a competitive advantage. This is the marketplace.

Specifically the functions within SCM includes:

- developing production plans,
- ordering raw materials from suppliers,
- receiving the raw material into the facility,
- manufacturing products,
- maintaining facilities,
- shipping products to customers.

In our coffee shop example SCM functions are:

- making the coffee (manufacturing/production)
- buying raw materials (purchasing)

Accounting and Finance(A/F): Performs financial accounting to provide summaries of operational data in managerial reports, and it is also responsible for tasks such as controlling accounts, planning and budgeting, and cash-flow management.

A/F functions includes:

- recording raw data about sales transactions;
- raw material purchases;
- payroll.
- receipt of cash from customers.

Human Resources: describe formal systems devised for the management of people within an organization. Essentially, the purpose of HR is to maximize the productivity of an organization by optimizing the effectiveness of its employees. Even a simple business needs employee to support the Marketing and Sales and Supply Chain Management.

HR Functions includes:

- recruit;
- train;
- evaluate;
- compensate employees.

HR uses sales forecasts developed by the individual departments to plan personnel needs. In fact, it is impossible to discuss the processes in one functional area without discussing the links to other functional areas—connections that invariably require the sharing of data. Systems that are integrated using ERP software provide the data sharing that is necessary between functional areas.

1.3 Functional Areas and Information System

This section will describe potential inputs and outputs for each functional area of a business. The information systems maintain relationships between all functional areas and processes. As shown in Figure 1.4, the Marketing and Sales (M/S) area needs information from all other functional areas to effectively complete the business activities for which it is responsible.

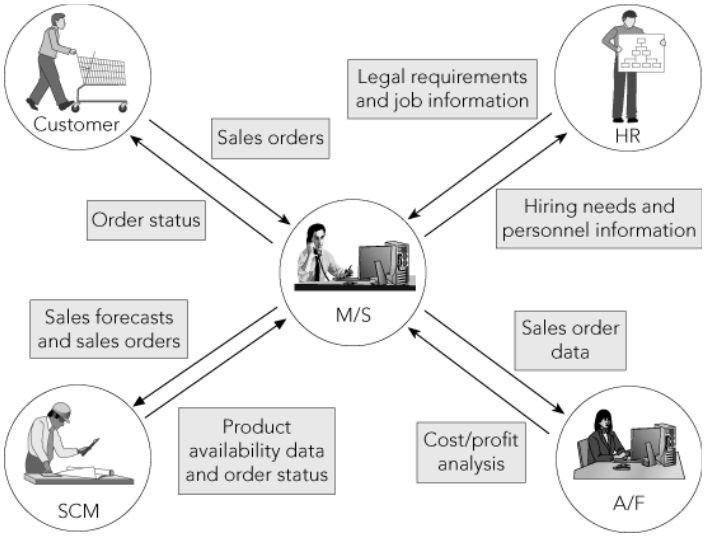

Figure 1.4 The Marketing and Sales functional area exchanges data with customers and with the Human Resources, Accounting and Finance, and Supply Chain Management functional areas

Marketing and Sales: Needs information from all other functional areas. Customers communicate orders to M/S in person or by telephone, e-mail, fax, the Web, etc.M/S has a role in determining product prices:

- Pricing might be determined based on a product's unit cost, plus some percentage markup
- Requires information from Accounting and Finance, and Supply Chain Management data

To summarize, inputs and outputs for Marketing and Sales could include the following as reflected on the table:

Marketing and Sales	
INPUTS	OUTPUTS
• Customer data • Order data • Sales trend data • Per-unit cost • Company travel expense policy	• Sales strategies • Product pricing • Employment needs

Supply Chain Management Supply Chain Management (SCM) also needs information from the various functional areas, as shown in Figure 1.5

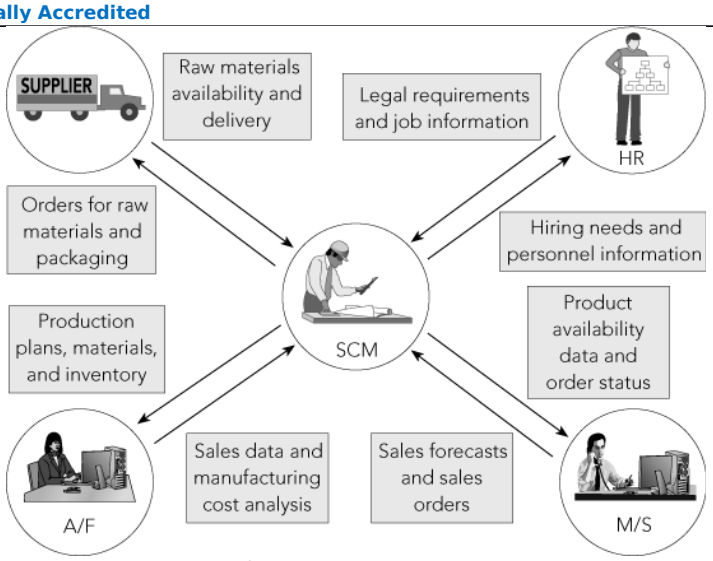

Figure 1.5 The Supply Chain Management functional area exchanges data with suppliers and with the Human Resources, Marketing and Sales, and Accounting and Finance functional areas
Source Line: Course Technology/Cengage Learning.

Supply Chain Management: Needs information from various functional areas such as *Marketing and Sales, Accounting and Finance* and *Human Resources.* Production plans based on information about product sales (actual and projected) that comes from *Marketing and Sales.*

- With accurate data about required production levels:
  - Raw material and packaging can be ordered as needed
  - Inventory levels can be kept low, saving money
- Supply Chain Management data and records can:
  - Provide data needed by **Accounting and Finance** to determine how much of each resource was used
  - Support the M/S function by providing information about what has been produced and shipped

Supply Chain Management interacts in some ways with *Human Resources* for example HR informs Supply Chain Management of the company's layoff and recall policy, which might pertain to workers in the plant.

To summarize, inputs for Supply Chain Management could include the following:

Supply Chain Management	
INPUTS	OUTPUTS

• Product sales data
• Production plans
• Inventory levels
• Layoff and recall company policy
	• Raw material orders
	  • Packaging orders
	• Resource expenditure data
	  • Production and inventory reports
	  • Hiring information

Accounting and Finance (A/F) needs information from all the other functional areas to complete its tasks accurately, as shown in Figure 1-6

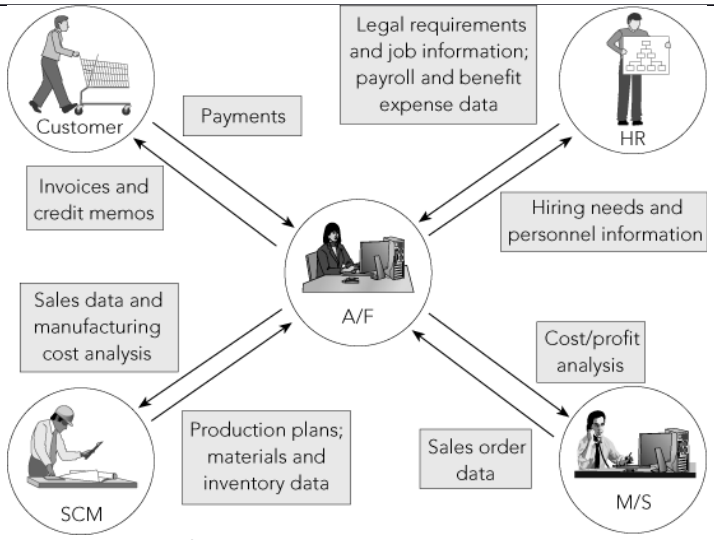

Figure 1.6 The Accounting and Finance functional area exchanges data with customers and with the Human Resources, Marketing and Sales, and Supply Chain Management functional areas

Accounting and Finance A/F: Needs information from all other functional areas. A/F personnel:

- Record company's transactions in the books of account
- Record accounts payable when raw materials are purchased and cash outflows when they pay for materials
- Summarize transaction data to prepare reports about company's financial position and profitability

Also, people in other functional areas provide data to A/F:

- M/S provides sales data
- SCM provides production and inventory data
- HR provides payroll and benefit expense data

M/S personnel require data from A/F to evaluate customer credit

To summarize, inputs and output for Accounting and Finance could include the following:

Supply Chain Management	
INPUTS	OUTPUTS
• Payments from customers • Accounts receivable data • Accounts payable data • Sales data • Production and inventory data • Payroll and expense data	• Payments to suppliers • Financial reports • Customer credit data

Like the other functional areas, Human Resources (HR) needs information from the

other departments to efficiently complete its business activities, as shown in Figure 1.7.

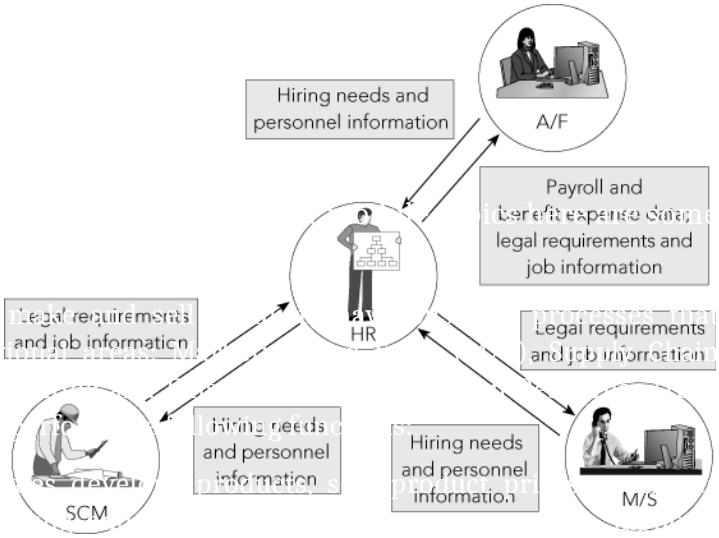

Figure 1.7 The Human Resources functional area exchanges data with the Accounting and Finance, Marketing and Sales, and Supply Chain Management functional areas

Human Resources: HR needs information from the other departments. Tasks related to employee hiring, benefits, training, and government compliance are all responsibilities of HR. HR needs accurate forecasts of personnel needs from all functional units. HR needs to know what skills are needed to perform a particular job and how much the company can afford to pay employees

To summarize, inputs and outputs for Human Resources could include the following:

Human Resources	
INPUTS	OUTPUTS
• Personnel forecasts • Skills data	• Regulation compliance • Employee training and certification • Skills database • Employee evaluation and compensation

As shown in Figure 1.4 through Figure 1.7, a significant amount of data is maintained by and shared among the different functional areas. The timeliness and accuracy of these data are critical to each area's success and to the company's ability to make a profit and generate future growth. These functional areas are significant to organization on the next module we will discuss the evolution of information system and how ERP software provide a common database so accurate, real-time information is available.

Performance Task

For the lecture activities:

1. Watch the video lecture
2. Read the SLM
3. For further study: Watch this video with this url: **https://youtu.be/R5JlLCesfxk**
4. Accomplish performance tasks using work sheet provided and online task for Module 1 - Performance Task No 1 Short Answer Essay [PT1]
5. For online classes, participate in the discussion forum and for offline e-learning always consult your instructor once a week through text or messenger.

Activity Information			
Topic:	Module 1: Business Functions and Business Process	**Week No.**	1-2
Course Code:	ITEP 308	**Term:**	1st Semester
Course Title:	Systems Integration and Architecture 1	**Academic Year:**	2020-2021
Activity Name	Performance Task No. 1: Short Answer Essay	**Number of items**	**5**
Due date		**Overall Points**	**20**

use the worksheet provided, for online classes please see visit the LMS for online discussion instructions

For the Laboratory:

1. Watch the video, follow and perform the instructions on this particular week we have laboratory exercises:
   a. Excel Basics 6: Customize Quick Access Toolbar (QAT) and Show New Ribbon Tabs
   b. Excel Basics 7: Keyboard Shortcut
   c. Excel Basics 8: Default Data Alignment In Excel
2. Watch the video, follow and perform the instructions on this particular week we have 3 Machine Problems:
   a. Machine Problem 1: **EB03-CountingAddingWithCriteria.xlsx**
   b. Machine Problem 2: **EB04-SUMIFSandPivotTables.xlsx**
   c. Machine Problem 3: **EB05-PivotTableCalculationsLayout.xlsx**

Week 1: Excel Basic

Laboratory Exercises

Laboratory Exercise 1: Excel Basics 1

Video to watch: **Excel Basics 1: Introduction To Excel 1: Formatting, Formulas, Cell References, Page Setup (01:02:54 min)**

Start file for Video/Class Project to download: None

Practice file for Video/Class Project to download: **EB01-Gradebook-Finished.xlsx**

Handout to download (pdf notes): **Office2016Class13-ExcelBasics01-IntroductionToExcel01.pdf**

Laboratory Exercise 2: Excel Basics 2

Video to watch: **Excel Basics 2: Introduction to Excel 2: Excel's Golden Rule for Formulas, Formula Inputs, & Charts (37:49 min)**

Start file for Video/Class Project to download: None

Practice file for Video/Class Project to download: **EB02-NetIncomeProjections.xlsx**

Handout to download (pdf notes): **Office2016Class14-ExcelBasics02-IntroductionToExcel02.pdf**

Machine Problems

Machine Problem 1: HW # 1 - 3 at the end of the Excel workbook for this video.

Video to watch: **Excel Basics 3: Count & Add with COUNT, COUNTA, SUM, COUNTIFS, SUMIFS Functions (Intro Excel #3) (21:06 min)**

Start file for Video/Class Project to download: **EB03-CountingAddingWithCriteria.xlsx**

Handout to download (pdf notes): **Office2016Class15-ExcelBasics03-IntroductionToExcel04.pdf**

Machine Problem 2: HW # 1 - 3 at the end of the Excel workbook for this video.

Video to watch: **Excel Basics 4: PivotTables & SUMIFS Function to Create Summary Reports (Intro Excel #4) (33:25 min)**

Start file for Video/Class Project to download: **EB04-SUMIFSandPivotTables.xlsx**

Handout to download (pdf notes): **Office2016Class16-ExcelBasics04-IntroductionToExcel04.pdf**

Machine Problem 3: HW # 1 - 3 at the end of the Excel workbook for this video.

Video to watch: **Excel Basics 5: Power of PivotTables to Create Reports with Various Calculations & Layouts (20:19 min)**

Start file for Video/Class Project to download: **EB05-PivotTableCalculationsLayout.xlsx**

Handout to download (pdf notes): **Office2016Class17-ExcelBasics05PivotTableCalculationsLayout.pdf**

Summary(pdf notes): Office2016Class17- ExcelBasics05PivotTableCalculationsLayout.pdf

Week 1 - Week 2 Deliverables

Machine Problem 1: EB03-CountingAddingWithCriteria.xlsx
Machine Problem 2: EB04-SUMIFSandPivotTables.xlsx
Machine Problem 3: EB05-PivotTableCalculationsLayout.xlsx

Lecture Submission Instructions:

For online classes: Please use this: **ActivityCode-Section-LastNameFirstName:** eg. **PT2-BSIT3A-DIAZ-JOHNRENTIE** and submit your output by uploading it on the submission link provided on the LMS.

For offline classes: Compile your work per week and follow the sample naming convention online. Week 1 – Lecture Deliverables please use this: **ActivityCode-Section-LastNameFirstName:** eg. **PT2-BSIT3A- DIAZ-JOHNRENTIE**

Laboratory Submission Instructions:

For online classes: links are provided at the LMS for naming convention submission, please use this **SECTION-LASTNAME-FIRSTNAME- ActivityCode.xlsx : eg. BSIT3A-DIAZ-JOHNRENTIE- MP4.xlsx**

For offline classes: Compile your work per week and follow the sample naming convention online. Week 1 – Laboratory Deliverables please use this **SECTION-LASTNAME-FIRSTNAME- ActivityCode.xlsx : eg. BSIT3A- DIAZ-JOHNRENTIE - MP4.xlsx**

Reminders:

- ✓ For online classess, all contents and materials are posted on the LMS, submission link is provided.
- ✓ For offline elearning, all all contents and materials are available labeled per week.
- ✓ If you have any queries regarding the materials please email, chat or text the instructor.

Understanding Directed Assessment

Performance Task Rubrics for rating per item:

Score	Content	Organization	Development	Use of Language
4	Answer is appropriate to the question. Content is factually correct.	Clear sense of order. Begins with a thesis or topic sentence. Supporting points are presented in a logical progression.	Develops each point with many specific details. Answers question completely.	Uses technical or scientific terminology appropriately and correctly. No major grammatical or spelling errors.
3	Answer is appropriate to the question. Content may have one or two factual errors.	May lack a thesis sentence, but points are presented in a logical progression.	Each point supported with some details and evidence. All important points included.	Accurate word choice. No more than 2 major errors and a few minor errors.
2	Content relates peripherally to the question; contains significant factual errors.	Logic of argument is minimally perceivable. Points presented in a seemingly random fashion, but all support argument.	Sparse details or evidence. Question only partially answered.	Ordinary word choice: use of scientific terminology avoided. Some serious errors (but they don't impair communication).
1	Content unrelated to question.	Lacks clear organizational plan. Reader is confused.	Statements are unsupported by any detail or explanation. Repetitious, incoherent, illogical development.	Limited vocabulary: errors impair communication.

Adapted from the Creator: Denise Lim, Biology, Cabrillo College

Machine Problem Rubrics for rating per item:

Criteria	Excellent 10 pts	Good 7 pts	Fair 4 pts	Poor 1 pts
Formulas	Excellent The formulas were used wherever appropriate. There were no numbers typed in to do any calculations.	Good Most of the numbers that needed to be calculated were done by formulas.	Fair Some of the numbers that needed to be calculated were done by formulas.	Poor Only 1 or 2 of the numbers that needed to be calculated were done by formulas.
Organization	Excellent The spreadsheet is very organized and very easy to read.	Good The spreadsheet is a little difficult to read. Some of the data and the chart are scattered or cluttered.	Fair The spreadsheet appears to have some order. It can be read, but is very difficult.	Poor The spreadsheet is all over the place. The data is not organized and the graph does not accompany the data.
Required Data	Excellent All the information is present and it good form.	Good The spreadsheet is missing 1 or 2 items.	Fair The spreadsheet is missing 3 or 4 items.	Poor The spreadsheet is missing 5 or more items.
Graph	Excellent The graph is present and represents the data appropriately.	Good The graph is present and is in good form with data, but lacks a couple key figures.	Fair The graph is present, but does not represent the data.	Poor There is no graph.
Formatting Requirements	Excellent The graph has all the headings, column labels, number labels, and is easy to read.	Good The graph is missing one of the requirements	Fair The graph is missing 2 of the requirements.	Poor The graph is missing all the formatting requirements.
Extra Formatting	Excellent The graph has extra features that makes the graph more attractive and is still easy to read.	Good The graph has extra features, but it makes the graph more difficult to read.	Fair The graph has a couple extra features, but it makes the graph difficult to read.	Poor The graph has no extra formatting features.

Adapted from the Creator: https://www.rcampus.com/rubricshowc.cfm?code=R74A8X&sp=true

Learning Resources

- Monk, E., & Wagner, B. (2013). Concepts in enterprise resource planning / Ellen F. Monk, Bret J. Wagner. (Fourth ed., Excellence in Information Systems).
- Girvin, M. (2020). Excel is Fun!. Retrieved 15 September 2020, from https://people.highline.edu/mgirvin/excelisfun.htm