

## **SIGNIFICANCE OF BINDTECH AUTOMOTIVE TECHNOLOGY COURSES: FACULTY-BASED DECISION-MAKING FOR BAT CURRICULUM REVISION**

**ZALDY A. FERNANDEZ**

Mariano Marcos State University

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### **ABSTRACT**

The study focused on the assessment of the level of significance of the automotive courses offered under the Bachelor of Industrial Technology (BIndTech) program major in Automotive Technology as perceived by the faculty members of the Bachelor in Automotive Technology (BAT) Department of the Mariano Marcos State University- College of Industrial Technology, Laoag Campus. The results served as basis of the administrators of the BAT Department in decision-making regarding the issue of aligning the BAT program to the BIndTech program major in Automotive Technology. Descriptive method of research was utilized in the course of this investigation using survey questionnaire as the primary data- gathering tools. Results showed that only four out of the sixteen automotive courses in the BIndTech program were recognized by the BAT Faculty as very significant. It implies that the department's faculty members opposed the BAT to BIndTech totally alignment activity and preferred courses enhancement.

**Keywords:** administrator, decision-making, program revision, program alignment.

### **CHAPTER 1**

#### **INTRODUCTION**

##### **Situation Analysis**

Automotive technology plays a crucial role in a country's economic growth, as it is closely linked to the transportation industry. This technology is necessary for the production, maintenance, and repair of vehicles, which are vital components of an efficient transportation system. The Philippines has experienced significant growth in the automotive sector, resulting in an increased demand for skilled technicians.

However, there is a shortage of qualified workers due to insufficient enrolment in automotive technology programs offered by state universities and colleges (SUCs) in region 1. Studies have shown that most SUCs lack the necessary equipment, facilities, and staff to provide quality education in this field. To address this issue, the government of the Philippines has implemented programs to improve the skills of workers in the automotive industry, including training for SUCs. Enhancing the quality of automotive technology programs offered by SUCs is crucial to meeting the demands of the industry and the country as a whole, and producing skilled professionals for the automobile sector. (National Statistical Office of the Philippines, 2020).

The automotive sector in the Philippines has been experiencing a period of significant expansion over the course of the past several years. The production of motor vehicles in 2019 increased by 26.4% in comparison to the production in the previous year (NSOP, 2020). Because of this development, there will be a greater need for qualified automotive mechanics who are able to create, maintain, and repair these vehicles. This demand is expected to continue to climb. It is required to conduct an assessment and revisions of the automotive technology programs that are provided by state universities and colleges (SUCs) in order to guarantee that these programs meet the requirements of the industry as a whole as well as the requirements of the individual states.

The education provided by public universities and colleges is a vital component in the process of creating skilled labourers. According to PSAE, the Philippines is now experiencing a scarcity of experienced professionals in the automotive industry (Philippine Society of Automotive Engineers, 2018). This scarcity can be attributable to both the low number of students enrolling in programs that provide training and education in automotive technology and the inadequate training and education that is provided in these programs. In the report of the ASEAN Automotive Federation, the automotive industry in the Philippines has experienced tremendous growth. When compared to the previous year, the number of motor vehicles that were manufactured in 2019 observed a 26.4% increase (ASEAN Automotive Federation, 2020).

As a result of this rise, there will be an increased demand for professional automotive technicians who are able to produce, maintain, and repair these vehicles. According to the findings of a study that was carried out by the Commission on Higher Education (CHED) in the Philippines, there is a requirement for there to be an improvement in the quality of the automotive technology programs that are offered in SUCs. According to the findings of the study, the majority of SUCs that offer degrees in automotive technology do not have the requisite equipment, facilities, or staff members to provide students with a quality education (Commission on Higher Education, 2016). Hence, continuous curricular revision activity must be the practices of schools offering automotive technology program. The yearly funding of laboratories and facilities improvement must be adequate and proportion with the demand or trends of technology of automotive.

The DOLE has prioritized the automobile industry as a sector for the training and development of workers' skills. It initiated a number of programs with the intention of strengthening the skill sets of workers in the automotive industry. One of these programs involves the provision of training to SUCs that provide automotive technology programs (Department of Labor and Employment, Philippines, 2019).

Moreover, Ong (2017) states that the curriculum for automotive technology in the Philippines has to be revised in order to keep up with the changes that are occurring in the automotive industry. Community colleges that already provide training in automotive technology should update their course offerings to reflect the most recent developments in the relevant industry. The automotive industry in the Philippines is enduring difficulties as a result of a scarcity of employees who have received proper training. This scarcity is attributed to the low number of students enrolling in automotive technology programs at SUCs, as well as the inadequate training and education provided in these programs (Rivera, 2018). Additionally, this scarcity

is attributed to the fact that there are not enough students enrolling in these programs. In addition, this scarcity might be related to the dearth of trained automotive technicians that are now available in the workforce.

Dacanay (2019), stress it out that the automotive sector in the Philippines confronts issues in terms of meeting the expectations of the market because there are not enough skilled personnel in the business. Community colleges that already offer degrees in automotive technology should update their training to reflect the most recent developments and innovations in the sector. The Philippines' automotive sector is significantly influenced by the trends and advances occurring in other parts of the world. New technologies, such as autonomous driving and electric vehicles, are forecasted to bring about significant shifts in the sector over the next few years, as stated in research published by McKinsey (2019). Colleges and universities that offer programs in automotive technology have a responsibility to remain current with these advances in order to guarantee that their graduates are proficient in the relevant abilities and information.

The World Bank (2018), revealed that there is a requirement to improve the quality and relevance of programs that are intended to provide technical and vocational education and training (TVET) in the Philippines. State universities and community colleges (SUCs) that offer programs in technical and vocational education and training (TVET) should work to improve the overall quality of the programs they offer by introducing more recent course material, more cutting-edge equipment, and more.

The Philippines is home to a sizable youth population, yet, it is anticipated that the nation will face a scarcity of competent employees in the years to come. This is despite the fact that the Philippines has a high birthrate. In order to overcome this shortfall, the government should make investments in education and the development of skills. The production of skilled people for the automobile sector can be significantly aided by the efforts of SUCs that provide educational programs in automotive technology.

Meanwhile, the very long-awaited policies, standards and guidelines of the Bachelor of Science in Industrial Technology (BSIT) program was approved and released by CHED already. This action for the BSIT giving its new name Bachelor of Industrial Technology (BIndTech) bounded with its PSG is one of the new pathways of the government to strengthen technology programs offerings of SUC's and enhance the capability of students to be competent, ready as skilled workers of the country and globally competitive in their area of specialization. School administrators are mandated to re-align their programs with this new program. Hence, the President of MMSU released a MEMO addressed to the Dean of the College of Industrial Technology with BSIT offering to re-align immediately the program courses into the BIndTech curriculum. The Dean of the college informed the concerned department head of the BSIT including the chairman of the Bachelor in Automotive Technology (BAT) Department.

The Chairman of the BAT created a committee to look into the possibilities of aligning the program into the BIndTech, but faculty members of said department became chaotic in the sense that the action may might losing the existing program which is currently on its high impact with the needs and trends of the automotive industry. The BAT program may have the possibility to be converted as a major offering of the BIndTech program if the automotive courses be totally aligned with the BIndTech Major in Automotive Technology. This clearly

dissolving the BAT program. The chairman is currently pressured and need to decide whether to totally align the whole program with the BIndTech or to have a smarter decision without compromising the memorandum of the higher administrators.

It is necessary to find a solution to this problem, hence this study explored a convincing solution through understanding the perceptions of the faculty members of the BAT program on the level of significance of the automotive courses offered under the BIndTech major in automotive technology. In this sense, the output may serve as a basis for the department chair to decide whether to align or not the program with BIndTech.

### **Statement of the Problem**

The goal of this study was to determine the possible alignment of the Bachelor in Automotive Technology (BAT) program with the BIndTech program.

Specifically, it sought to:

1. determine the courses offered under the Bachelor of Industrial Technology (BIndTech), major in Automotive Technology.
2. assess the level of significance of the BIndTech, major in Automotive Technology courses as perceived by the faculty members of the BAT department of the MMSU-CIT, Laoag Campus.
3. identify and recommend automotive courses to be incorporated in the Bachelor in Automotive Technology from the BIndTech, major in Automotive Technology curriculum.

### **Significance of the Study**

The result of the study provides an overview on the possible conversion of the Bachelor in Automotive Technology curriculum with the BIndTech program. The study output may directly benefit the teachers, students, school administrators and curriculum developers.

### **Scope and Limitation of the Study**

This study focused on the significance of the courses offered in the Bachelor of Industrial Technology (BIndTech) program major in automotive technology as basis of the department head of the Bachelor in Automotive Technology (BAT) department in decision-making whether to revise the BAT through aligning to the program of BIndTech major in automotive.

### **Definition of Terms**

The following terms are defined as to how they are being utilized in the study:

**Alignment.** These refers to the totally re-alignment of the BAT program with the BIndTech program major in Automotive Technology.

**Automotive Technology Courses.** These refers to the technical subjects regarding automotive offered under the curriculum of BIndTech program major in automotive technology.

**Assessment.** These refers to the process of evaluating the level of significance of the automotive courses offered under the BIndTech major in automotive technology.

**Bachelor in Automotive Technology (BAT) Program.** These refers to a four-year degree offering of MMSU-College of Industrial Technology regarding automotive technology. It comprises automotive courses (Basic, Common and Core), General Education Courses, OJT Courses, and Professional Courses.

**BIndTech Program.** These refers to a four-year degree offering brought out by CHED CMO-No, -13, -S-2023. This new program with PSG is originally a Bachelor of Science in Industrial Education (BSIT).

**Decision-Making.** These refers to the responsibility of agency head in their day-to-day function. This study served as a decision-making guide for the concerned heads in their final decision regarding the issue presented in this study.

**Level of Significance.** These refers to the process of statistical presentation of data and interpretation of the study.

**Revision.** These refers to the act of enhancing the BAT curriculum through the incorporation of BIndTech automotive courses descriptions with the existing course descriptions of BAT courses.

### Framework of the Study

Based on the reviewed literature and studies, the researcher conceptualized this study in response to the decision-making of a certain leader in an organization. Decision-making is a critical component of every administrator in their day-to-day navigation of their organization. In every decision made, it may have an impact in the workplace in different ways (<https://www.risely.me/why-decision-making-is-important-for-managers/>. Retrieve July 18, 2024). Hence, administrator must be always a keen observer on his/her surrounding before giving decisions on various issues related to the continuous operation of the organization.

This study served as a steeping board of the department head of the Bachelor in Automotive Technology department of MMSU, Laoag Campus to settle the current issue regarding the advised of the higher administrator to align the BAT curriculum with the new BIndTech program which has already a PSG from CHED. The issue aggravated by the contrasting idea of the faculty members of the BAT department wherein most of them are resisting in the alignment activity of the program. Their notion is, there will be a possibility of losing the program in the future and totally absorb by the BIndTech program, major in Automotive Technology. Therefore, this study opens other avenues to settle the issue without compromising the higher administration advise. It will be a win-win situation between the faculty members and the administrators.

The study also reveals the individual faculty concerned regarding the alignment activity in which the department head may use as a concrete justification of whatever decision he may provide. He may use this study as an attachment of his proposal as his response to the advice of aligning the BAT program to BIndTech from the higher administrators.

The framework used the input, process, and output (IPO) paradigm for this study. Input variables included (1) the determination of courses offered under the BIndTech, major in Automotive Technology; (2) level of significance of the BIndTech, major in Automotive Technology courses as perceived by the faculty members of the BAT department of the CIT of MMSU, Laoag Campus: and, (3) the identification and recommendation of automotive courses to be incorporated in the BAT from the BIndTech, major in Auto. Technology curriculum.

The process involved (1) Matrix preparation of BIndTech major in Auto. Tech courses; (2) Assessing the level of significance of the automotive courses under the BIndTech program as perceived by the faculty members of BAT department, MMSU-CIT, Laoag Campus: and, (3) Identifying and recommending automotive courses from the BIndTech program to be incorporated in the BAT curriculum.

The output is the list of automotive courses to be incorporated in the BAT curriculum. The figure below is the framework of the study.

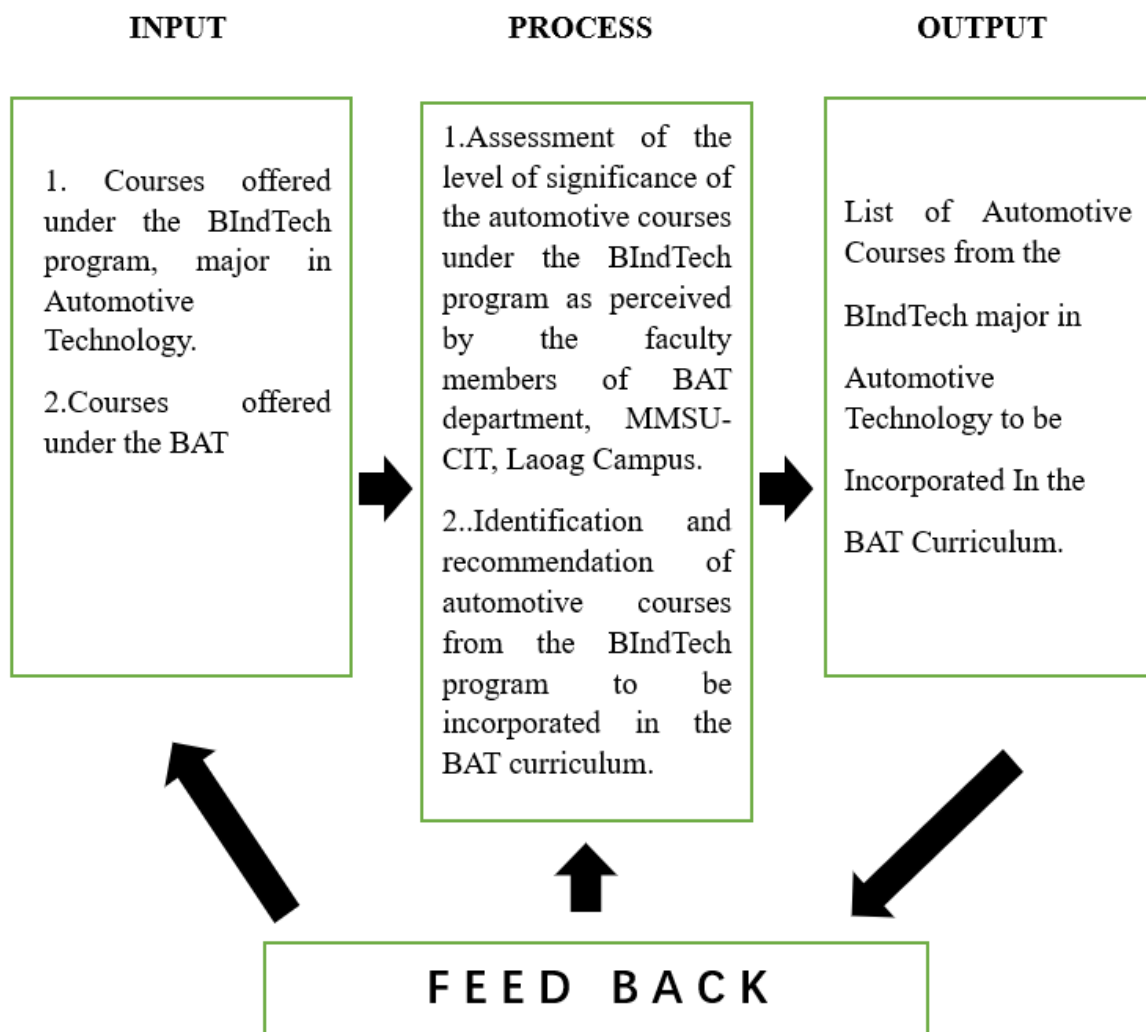


Fig. 1. Framework of the Study

## CHAPTER 2

### METHODOLOGY

#### Research Design

The descriptive method of research was utilized in the course of this investigation. Calderon and Gonzales (2014) cited that this type of research is used to evaluate or appraise the prevailing situation at the time of the study. It also intends to validate the answers of the respondents reflected in the analysis of data that included (1) the determination of courses offered under the Bachelor of Industrial Technology (BIndTech), major in Automotive Technology; (2) the assessment of the level of significance of the BIndTech, major in Automotive Technology courses as perceived by the faculty members of the BAT department of the College of Industrial Technology, Mariano Marcos State University (MMSU), Laoag Campus; and, (3) the identification and recommendation of automotive courses to be incorporated in the Bachelor in Automotive Technology from the BIndTech, major in Automotive Technology curriculum.

Gillaco (2014) said that the descriptive method aims to gather facts about a current situation, focusing on the description, comparison, analysis, and interpretation of existing data. In this study, descriptive design was used to evaluate the technical features of the developed system. The collected data was interpreted based on descriptive ratings. Descriptive research studies are designed to obtain the nature of the situation, as it exists at the time of study (Ary 1990).

As a sampling technique, purposive and random sampling was employed in selecting participants for the study. Purposive sampling, also known as judgmental, selective, or subjective sampling, involves researchers selecting individuals based on their judgment and expertise (Rai & Thapa, 2015; Mujere, 2016; Sharma, 2017). Said sampling research will be suitable for this study. Participants will be carefully chosen to provide essential data in response to the objectives of this study.

#### Sources of Data

This study was conducted at the College of Industrial Technology, Mariano Marcos State University (MMSU-CIT), Laoag Campus, Laoag City, Ilocos Norte, Philippines during the school year 2024-2025.

The respondents of the study were those faculty members of the BAT department with five years of experience in handling various courses of the BAT curriculum. The total respondents of this study are 20 purposely selected faculty members of the said department.

The data gathering instrument used in this study was the survey questionnaire. Protocols were executed. After which, survey activity was conducted. Table 1 shows the distribution of respondents.

#### Table 1. Distribution of Respondents

Here is the two-column table that you can easily copy and paste directly into Microsoft Word, Excel, or Google Docs:

Years of Experience	Number
5 years	1
6–10 years	2
11–15 years	15
16–20 years	2
<b>Total</b>	<b>20</b>

The preceding Table 2 presents the coverage of respondents of the study. They are categorized according to their years of experience; One faculty from five years; two faculty from six to ten years; fifteen faculty from eleven to fifteen years; and, two faculty from sixteen to twenty years, a total of twenty respondents. All of these faculty members of the department are teaching automotive courses under the BAT curriculum.

### Instrumentation

The questionnaire checklist was used to gather data along the specific problems of the study. The questionnaire used designed based on the CHED CMO-No, -13, -S-2023 of the BIndTech-Major in Automotive Technology curriculum. The developed checklist became the standard evaluation instrument relative to the level of significance of the courses offered in the BIndTech major in Automotive Technology Courses.

### Data Collection

Raw data were gathered, collated, tabulated, analysed, and interpreted descriptively. The data were classified, analysed and subjected to appropriate statistical treatment to answer specific questions of the study. The main statistical tool for the analysis of data was weighted mean. Frequencies were used in tallying the responses of the respondent per item. Percentages, means, and weighted means were computed where appropriate/applicable.

Categorization of data. The following scales and descriptive equivalents were used in the assessment of the variables relative to the study.

Here is the data formatted as a clean three-column table that you can highlight, copy, and paste directly into Microsoft Word, Excel, or Google Docs:

Point Rating	Rating Scale	Descriptive Equivalent
5	4.50–5.00	Extremely Significant (ES)
4	3.50–4.49	Very Significant (VS)
3	2.50–3.49	Moderately Significant (MS)
2	1.50–2.49	Insignificant (I)
1	1.00–1.49	Highly Insignificant (HI)

## CHAPTER 3

### RESULTS AND DISCUSSIONS

The Automotive Courses of the Bachelor of Industrial Technology (BIndTech) Major in Automotive Technology

The following tables 2 and 3 presents the automotive courses.

The Table 3, present the matrix of the BIndTech, major in automotive technology courses which was used as the vital part of the survey questionnaire tool to determine their level of significance as perceived by the faculty members of the Bachelor in Automotive Technology (BAT) department. The conducted assessment aided the researcher to distinguished the automotive courses from the BIndTech program to be incorporated in the BAT program.

**Table 2. Matrix of the Automotive Courses from the BIndTech, Major in Automotive Technology Program.**

Course	Course Title	UNITS
1.Occupational Health and Safety	The course introduces the students to basic occupational safety and health. The students will learn safe work practices and principles in industries and to identify and prevent illnesses, accidents, and injuries associated in with work. The course will also cover the Philippines governing laws on OSH and tackles key concepts, principles, and almost all industries. It also focuses on the identification of components of effective OSH programs and demonstration of some skills in identifying hazards and corresponding control measures at the workplace.	3
2.Fundamentals of Automotive Technology	This course deals with the basic principles of thermodynamics, which serves as the fundamental of the gas cycle employed in the in the operation of engine. It also deals with the construction, basic operation, function of basic components parts of engine operation and performance of gasoline and diesel engine.	3
3.Automotive Electrical System	This course deals with the basic principles in applied electricity in automotive. It also includes the circuits in electrical system of automobile from body system to engine systems. The course equips the student with an entry-level skill required by the industry as an automotive electrician.	3
4.Automotive Electronics	This course focuses in semiconductor components and integrated circuits, digital fundamentals, microcomputer systems, computerized engine controls, and electronic equipment as applied to automotive technology.	3
5.Power Train and Conversion System	This course provides the students the technical knowledge and skills in troubleshooting repair and maintenance of different aspects of the auto power train. This course covers the clutch assembly, transmission	3

	auxiliary, the drive lines and driving axle. It includes the use and maintenance of mechanic hand tools, testing instrument devices.	
6. Automotive CAD	Automotive Design comprises of various courses, which includes industry specific CAD software that are used by Automotive Designer for accomplishing preliminary tasks like designing, manufacturing and operating automobiles.	2
7. Small Engine Repair and Motorcycle Servicing	This course deals with the basic fundamentals of motorcycle and small engine operation and function. It also deals with testing, servicing motorcycle electrical system and engine overhauling.	3
8. Car Care Servicing, Emission Control and Tune-up	This course deals with the principle and techniques in conducting preventive maintenance in automotive vehicles both gasoline and diesel following the required Periodic Maintenance Schedule (PMS). It enables the students to get familiarize in the use of service manual and acquired skills based upon standard requirements of the industry.	3
9. Body Repair and Painting	This course deals basic tools, equipment, supplies and materials used in auto body repair and painting services. This will equip the students the basic techniques in auto body and chassis collision repair with hands on activity in performing jobs related to auto body repair and painting. This includes the observance and implementation of proper usage of PPE's, tools and equipment.	3
10. Engine Overhauling and Performance Testing	This course covers the related technical knowledge and jobs information which the students have to perform most of the time in auto engine repair. It also covers analysis of wear services and maintenance procedure, precision measurements of components, engine and components overhaul.	3
11. Hybrid and Electric Vehicle	This course will provide a broad technical knowledge and practical expertise of hybrid and electric vehicle (HEV) technologies, analysis, design, component selection and sizing at both system and vehicle level.	3
12. Automotive LPG System	This course deals with alternative fuel/LPG that involves knowledge and demonstration skills in parts and operation. It includes the basic functions of components in LPG system. The manipulative skills involve in layouting, installation of components and testing with utmost observance of safety measures.	3
13. Automotive Air Conditioning	This covers the principles of refrigeration with emphasis on the particular problems of application to automotive air conditioning. The course also covers an automotive	3

	heating system which includes heater cores, blower motors, vents systems and the electronic controls for them. The students will learn how to use refrigeration recovery and charging equipment and will have hands-on experience in the laboratory with the equipment.	
14.Body Management and Under chassis Electronic Control System	This course deals with the basic principles of electronic body management, repair, services and troubleshooting on electronically control unit. It includes features in under chassis components improving performance and stability of the automobile.	3
15.Driving Education	This course deals with understanding of the basic concepts of driving education, developing safe driving attitudes and acquired skills to become a good driver.	3
16.Electronics Engine Management Control System	This course deals with the study of engine management control unit which include sensors, controller, engine control strategies, engine design, engine management components, actuators, engine air flow, and exhaust recirculation.	3

The table 3 below shows the matrix of the automotive courses from the BAT program of the College of Industrial Technology of MMSU, Laoag Campus. It is observed that there are more courses being offered in the said program than the BIndTech program. It has 18 automotive courses while the BIndTech has 16 only and almost all the automotive courses offered in the BIndTech were also offered in the BAT program, hence, the courses that been identified as significant from the BIndTech, automotive courses will just be incorporated in the descriptions of courses of the BAT curriculum.

**Table 3. Matrix of the Automotive Courses from the BAT Program.**

Course Code	Course Title	UNIT S
1.BAT 100	Automotive Service & Shop Work	3
2.BAT 101	Automotive Engines, Their Systems Principles, Operations, & Trouble Diagnosis	3
3.BAT 121	Welding Principles & Fabrication Process	3
4.BAT 111	Automotive Chassis System Service	3
5.BAT 112	Automotive Drive Trains Service	3
6.BAT 102	Automotive Electrical/Electronic System Principles & Operation	3
7.BAT 113	Automotive Electrical/Electronic System Diagnosis & Service	3
8.BAT 121	Automobile Driving Techniques	3
9.BAT 114	Small Engine Repair & Servicing	3
10.BAT 115	Automotive Engine Test, Overhauling & Rebuilding	3
11.BAT 131	Automotive Air Heater/Cooling Repair & Servicing	3

12.BAT 117	Microcontroller Circuits for Automotive	2
13.BAT 141	Automotive CAD & Blue Print Reading	3
14.BAT 118	General Automotive Servicing I	3
15.BAT 122	Lathe Machine & Milling Operations	3
16.BAT 119	General Automotive Servicing II	3
17.BAT 123	Automotive Body Repair & Rebuilding	3
18.BAT 124	Automotive Body Paint & Surface Finishing Application	3
19.BAT 120	General Automotive Servicing III	3
BAT 197	Capstone Project	6
OJT 194 A	Local Shop	5
OJT 194 B	Machine Shop	5
OJT 195	Regional/National/International Industry	9
Total		84

Assessment of the Significance of the BIndTech, Major in Automotive Technology Courses

The table 4 below shows the significance of the BIndTech, major in Automotive Technology courses as perceived by faculty members of the BAT department.

**Table 4. Level of Significance of the BIndTech, Major in Automotive Technology Courses as Perceived by the Faculty Members of the BAT Department of the MMSU-CIT, Laoag Campus.**

Legend:

Course Title and Description	Mean Rating	Descriptive Interpretation
1. Occupational Safety and Health	3.70	VS
2. Fundamentals of Automotive Technology	2.00	I
3. Automotive Electrical System	2.00	I
4. Automotive Electronics	2.40	I
5. Automotive Cad	2.90	MS
6. Power Train And Conversion System	3.55	VS
7. Small Engine Repair and Motorcycle Servicing	2.20	I
8. Car Care Servicing, Emission Control and Tune-Up	2.05	I
9. Body Repair and Painting	2.10	I
10. Engine Overhauling and Performance Testing	2.20	I
11. Hybrid and Electric Vehicle	3.85	VS
12. Automotive Lpg System	2.00	I
13. Automotive Air Conditioning	1.95	I
14. Body Management and Underchassis Electronic Control System	3.55	VS
15. Driving Education	2.20	I
16. Electronics Engine Management Control System	3.90	VS
<b>General Mean</b>	<b>2.66</b>	<b>MS</b>

The table shows that the course “AUTOMOTIVE AIR CONDITIONING” received the lowest mean ratings of 1.95 indicating they are considered Insignificant (I) by the respondents. In contrast, “ELECTRONICS ENGINE MANAGEMENT CONTROL SYSTEM” received the highest mean rating of 3.90, classified as Very Significant (MS).

In deep analyzation of the data presented above, Courses like "OCCUPATIONAL SAFETY AND HEALTH," "POWER TRAIN AND CONVERSION SYSTEM," "HYBRID AND ELECTRIC VEHICLE," and "ELECTRONICS ENGINE MANAGEMENT CONTROL SYSTEM" received high ratings, classified as Very Significant (VS) with mean ratings between 3.55 and 3.90. This rating supported by the comments and suggestions of the respondents such as:

*“I believe we only enhance our curriculum through inserting some of the vital courses from BIndTech”*

Respondent no.7

*“There are automotive courses of the BIndTech descriptions which are not present in the BAT curriculum”*

Respondent no.14

Meanwhile, most other courses fall into the “Insignificant” (I) category with mean ratings ranging from 1.95 to 2.40. Majority of the courses were scored by the respondents very low as signifies by their beliefs and perspectives which was carried out from their comments and suggestions such as the following:

*“I observed that most of the offerings of the BIndTech are recycled courses from the old BSIT curriculum”*

Respondent no. 2

*“Most of the courses offered in the BIndTech are offered in the BAT curriculum. No need for alignment”*

Respondent no. 15

*“Try to visit the Old BSIT Major in Automotive Technology curriculum, most of the courses offered in the BIndTech are still base from the old curriculum”*

Respondent no. 18

*“The BAT curriculum is still par with the trends of automotive technology”*

Respondent no. 3

*“The BAT Curriculum has more automotive course, therefore, it is better than the BIndTech”*

Respondent no.19

*“For now, no need to align the BAT curriculum to BIndTech”*

Respondent no. 5

*“For me forget alignment, but revision may do”*

Respondent no.11

*“The BAT program is unique, why align it to BIndTech?”*

Respondent no. 10

*“If we align to BIndTech, the program may back to zero”*

Respondent no. 12

*“Deferred the program alignment since the BAT curriculum is within the standards of automotive industries”*

Respondent no.1

*“Our curriculum effectiveness was proven as per automotive linkages appreciated much the output of our OJT students and employed graduates”*

Respondent no. 13

*“Our BAT program existed for almost 17 years and had surpassed accreditations. So why align to BIndTech if there’s a possibility of losing the program in the future”*

Respondent no. 9

*“The BAT curriculum is a stand out program of the college. If we align for now, to BIndTech, accreditors may observe the redundancy of courses so they may recommend that the program should be under the BIndTech which is more authorized for implementation because it has its PSG”*

Respondent no. 4

Besides of the above majority statements of the BAT faculty regarding the alignment issue of the program into the BIndTech, there are responses contrary, such as the following:

*“For me, status quo. I mean we offer the BAT curriculum as well as the BIndTech major in automotive technology since they have their own courses uniqueness”*

Respondent no. 8

*“Curriculum revision is a continuous process; hence, we revise the BAT curriculum where students will be more benefitted”*

Respondent no.6

*“The PSG of a certain program is a big factor during accreditation. Maybe we can align now the BAT for future advantages”*

Respondent no.16

*“The birds can fly because they think they can” Therefore, we should always believe with admin ideas”*

Respondent no.17

List of BIndTech Automotive Courses for Incorporation in the BAT Curriculum

The table below shows the matrix of the BindTech Automotive courses identified from the survey to be incorporated in the BAT curriculum.

**Table 5. Matrix of the BIndTech Automotive Courses Identified from the Survey to be Incorporated in the BAT Curriculum.**

Course Title	Description
1.Occupational Health and Safety	The course introduces the students to basic occupational safety and health. The students will learn safe work practices and principles in industries and to identify and prevent illnesses, accidents, and injuries associated in with work. The course will also cover the Philippines governing laws on OSH and tackles key concepts, principles, and almost all industries. It also focuses on the identification of components of effective OSH programs and demonstration of some skills in identifying hazards and corresponding control measures at the workplace.
2.Hybrid and Electric Vehicle	This course will provide a broad technical knowledge and practical expertise of hybrid and electric vehicle (HEV) technologies, analysis, design, component selection and sizing at both system and vehicle level.
3.Body Management and Under chassis Electronic Control System	This course deals with the basic principles of electronic body management, repair, services and troubleshooting on electronically control unit. It includes features in under chassis components improving performance and stability of the automobile.
4.Electronics Engine Management Control System	This course deals with the study of engine management control unit which include sensors, controller, engine control strategies, engine design, engine management components, actuators, engine air flow, and exhaust recirculation.

Out of the sixteen automotive courses of the BIndTech major in Automotive Technology program, only four automotive courses were identified as courses to be incorporated in the BAT curriculum. This data was based on the perception of the respondents of this study. Although the BAT curriculum had also offered these subjects, it can be observed from the descriptions of the BAT courses a lacking of the new knowledge and skills that are present from the identified four automotive courses of BIndTech, therefore, the descriptions of the BAT curriculum may enhance through inserting or adopting this new knowledge and skills.

## **CHAPTER 4**

### **CONCLUSIONS AND RECOMMENDATIONS**

#### **Summary**

The study focused on the assessment of the level of significance of the automotive courses offered under the Bachelor of Industrial Technology (BIndTech) program major in Automotive Technology as perceived by the faculty members of the Bachelor in Automotive Technology (BAT) Department of the Mariano Marcos State University- College of Industrial Technology, Laoag Campus.

The results served as basis of the administrators of the BAT Department in decision-making regarding the issue of aligning the BAT program to the BIndTech program major in Automotive Technology or revise the BAT curriculum with the incorporation of identified BIndTech Automotive Technology courses only.

Descriptive method of research was utilized in the course of this investigation using survey questionnaire as the primary data- gathering tools. The questionnaires were administered to the twenty faculty members of the BAT department. These faculty were purposely selected by the study with their five years-above experienced as faculty members of the department.

Results showed that only four of the sixteen automotive courses in the BIndTech program were recognized by the BAT Faculty to be included in the BAT curriculum. It implies that the department's faculty members opposed the BAT to BIndTech alignment activity and preferred curricular reform only and not to totally alignment of the program with the BIndTech major in Automotive Technology curriculum.

#### **CONCLUSIONS**

The following conclusions were formulated based on the findings of the study:

1. The BAT automotive curriculum is having more automotive courses offerings than the BIndTech major in Automotive Technology curriculum.
2. Most of the automotive courses of BIndTech are present in the BAT curriculum.
3. The alignment activity of the BAT program into the BIndTech major in Automotive Technology curriculum is not necessary.
4. Enhancement of the BAT curriculum is necessary through revising the descriptions of some of the automotive course's base on the identified four automotive courses of the BIndTech major in Automotive Technology.

## Recommendations

Based on the findings and conclusions, the following recommendations were formulated:

1. It is recommended that the alignment of BAT program to BIndTech major in Automotive Technology program be deferred.
2. Strengthen the BAT curriculum through enhancing the course descriptions of the automotive courses. Hence, it is strongly recommended that the department head formulate a proposal regarding the revision of the curriculum but not aligning totally with the BIndTech
3. This study may use as a valid and strong justification for the decision-making of the head of the BAT department.

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