

# EMPLOYABILITY STATUS OF THE GRADUATES FROM THE COLLEGE OF ENGINEERING OF CEBU TECHNOLOGICAL UNIVERSITY – DANA O CAMPUS A.Y. 2022-2024

Elvie A. Colis<sup>1</sup>, Gladez Bracero, <sup>1</sup>, Kyla M. Patente <sup>1</sup>, Mia C. Vanguardia, John Paul I. Batausa<sup>1</sup>, Althea S. Guinita <sup>1</sup>, Abegail P. Calderon<sup>1</sup> and Engr. Delfa G. Castilla

Department of Industrial Engineering  
Cebu Technological University- Danao Campus  
Cebu, Philippines

*bracerogladez6@gmail.com, calderonabegail6@gmail.com, coliselve@gmail.com, miavanguardia18@gmail.com, patentekyla@gmail.com, elianeeeeee.10@gmail.com, johnpaulbatausa1@gmail.com, delfa.castilla@ctu.edu.ph*

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## Abstract

This tracer research followed the growth of engineering graduates from Cebu Technological University-Danao Campus from 2022-2024. It aimed to evaluate how well the education and training provided by the university align with the demands of the job market. The study looked at five engineering programs: Industrial Engineering (IE), Mechanical Engineering (ME), Civil Engineering (CE), Electrical Engineering (EE), and Computer Engineering (CpE). Using surveys and interviews with alumni who graduated between 2022-2024, the study found that most respondents are employed, with many working in jobs relevant to their field of study. However, some gaps in soft skills and practical training were noted. The report also emphasized the alumni's high levels of job satisfaction, demonstrating the value of their education in their chosen employment. Furthermore, a significant proportion of the graduates pursued additional education, proving their dedication to ongoing personal and professional development. The survey shed light on the industries in which the graduates found work as well as their job titles. Overall, the tracer study validated the educational programs' quality and provided guidance for future modifications to satisfy industry requirements.

**Keywords:** Employment Trends, Graduate Careers, Graduate Outcomes, Industry Needs, Program Effectiveness

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## 1. Introduction

In today's competitive job market, ensuring that graduates possessed the necessary skills and qualifications to meet industry demands was necessary for both educational institutions and society. Numerous people claimed that graduates were products of higher education institutions (HEI). According to Abelha et al. (2020), higher educational institutions should be talent engines that foster innovation and competence development, resulting in highly qualified graduates who could eventually compete in a local and global arena. HEI was always the key player in fostering lifelong learning. This institution ensured that all students developed the skills necessary to respond to rapidly changing labour market requirements and conditions. Soupezz J. (2023) stated that employability skills in the curriculum were crucial for higher education, particularly as graduate attributes were increasingly considered more important than their actual degree.

Cebu Technological University-Danao Campus (CTU-DC), a prominent HEI in the Philippines, offered a range of programs designed to meet the evolving demands in the industry, particularly the College of Engineering, which played a significant role in shaping future engineers who were essential contributors to economic and technological advancement. As the engineering profession continued to evolve due to rapid technological change, it was imperative

to assess whether the skills, knowledge, and competencies that the graduates acquired during their time at CTU aligned with industry requirements and expectations. The graduates faced the challenge of acquiring employment right away after graduation because not only did they lack experience, but they also needed to acquire precise information and abilities to suit the requirements of the industry where they wanted to work. One of the measures to consider in determining the efficiency of the institutions of higher learning was through the employment ratings of the graduates (Magtaas et al., 2020). This tracer study conducted to track the employability status of the engineering graduates at CTU-DC. It assessed the long-term impact or effectiveness of the program by following up on its respondents to gather data on their subsequent careers, educational paths, or life experiences. The researchers were conducting a tracer study for graduates of 2022 to 2024, which included the five engineering programs of CTU-DC. The following programs are Bachelor of Science in Industrial Engineering (BSIE), Bachelor of Science in Civil Engineering (BSCE), Bachelor of Science in Electrical Engineering (BSEE), Bachelor of Science in Computer Engineering (BSCpE), and Bachelor of Science in Mechanical Engineering (BSME) that aimed to assess the relevance of the curricula, expertise, and skills learned by the graduates for their work.

The main objectives of this study is to provide valuable insights into the employability status of CTU engineering graduates and to know their recent whereabouts. Abelha et al. (2020) define employability in higher education as a collection of accomplishment skills, knowledge, and personal qualities that increase graduates' chances of landing a job and succeeding in their chosen fields, which benefits the workforce, the economy, the community, and themselves. The study aimed to evaluate how well the college of engineering prepared its students for the labor market by tracing the sectors that graduates employed in the relevance of their roles to their academic training and the challenges they faced in securing jobs. Furthermore, this study aimed to explore how higher education institutions could better align their offerings with the evolving needs of employers and support students in achieving professional success. With the growing importance of employability as a benchmark for educational success, this research would have been instrumental in informed decision-making processes within CTU-DC and ensured that graduates were well equipped to thrive in their careers.

### *1.1 Statement of the Problem*

This tracer study aimed to gather comprehensive data on the employability of CTU Danao Campus engineering graduates from academic year 2022-2024. This study would evaluate the engineering graduates' employment status and determine if the program skills align with the industry demands, with the ultimate goal of improving the curriculum to meet the needs of both students and employers.

This tracer study explicitly responded to the following questions specifically:

1. What is the profile of the respondents?
2. What are the skills contribution of the undergraduate studies to the job of the respondents?
3. Does the Program Outcome (PO) achieved by the Engineering graduates?
4. Is there a significant difference in the alignment of job to the program?
5. 5. Based on the findings, what are the areas that needed improvement in the Engineering Program?

### *1.2 Scope and Limitations*

This tracer study aimed to assess the employment status of engineering alumni from CTU-DC who graduated between 2022 and 2024. This study was limited only to the College of Engineering graduates of CTU-DC and because some of the graduates were already in their respective jobs and busy with their everyday lives, delayed responses from the respondents due to miscommunication were expected and could constraint the study

## **2. Research Methodology**

### *2.1. Research Design*

This study used descriptive quantitative research. The CHED Questionnaire was used for this Tracer Study. Variables relevant to the study include academic performance, technical expertise, and workplace experience. Methods for converting these inputs into beneficial outputs, such as data collection and analysis tools, were part of the process.

## 2.2 Data Collection and Analysis

The researchers were conducting a tracer study of the employability status of engineering graduates of CTU-Danao Campus, which is required annually for the accreditation of the College of Engineering. To carry out the study, the researchers requested a copy of the GTS questionnaire and a list of all the graduates from all departments within the College of Engineering from the Academic Year 2009 to 2024, including their corresponding addresses. The researchers used Google Forms, the most practical method for distributing the queries online. The researchers distributed the forms via email, Facebook, and SMS, when feasible, along with a standardized invitation letter. Phone interviews or paper-based questionnaires used for the respondents who do not have an email address or Facebook account. The researchers utilized the chain-referral strategy whenever feasible, contacting friends, family, and other graduates who have contact with the respondents. After that, Microsoft Excel used to total, and evaluate the responses.

Table 1. Distrubution of Engineering Graduates and Responses

Distribution of Engineering Graduates and Responses			
Engineering Courses	Academic Year	Total Number of Graduates	Percentage of Responses
BSCE	2021-2022	38	14%
	2022-2023	18	
	2023-2024	38	
	<b>Total</b>	<b>94</b>	
BSCpE	2022-2023	62	19%
	2023-2024	68	
	<b>Total</b>	<b>130</b>	
BSEE	2021-2022	28	13%
	2022-2023	35	
	2023-2024	24	
	<b>Total</b>	<b>87</b>	
BSIE	2021-2022	118	47%
	2022-2023	143	
	2023-2024	60	
	<b>Total</b>	<b>321</b>	
BSME	2021-2022	23	7%
	2022-2023	13	
	2023-2024	13	
	<b>Total</b>	<b>49</b>	
<b>Overall Total</b>		<b>681</b>	<b>100 %</b>

### 3. Results and Discussion

#### 3.1 Employment Status and Job Experiences

##### Employment Status

After graduation, securing a job proved to be the most challenging phase; however, the graduates exhibited resilience and successfully obtained jobs. The BSIE graduates had the highest employment rate, followed by BSCE, BSCpE, BSEE, and lastly, the BSME.

##### Tenure Status

Among the various engineering programs, BSIE graduates have the highest regular employment rate, accounting for 74% of employed graduates. BSCE graduates with 52%, BSCpE graduates with 51%, BSCE graduates with 49%, and BSEE graduates with 43% followed this. For unemployed graduates, BSME has the highest unemployment rate at 39%, followed by BSEE at 37%, BSCE at 29%, BSCPE at 19%, and BSIE at 9%. In terms of contractual employment, BSCPE graduates have the highest rate at 15%, followed by BSIE at 10%. Meanwhile, BSCE at 9%, BSME at 8, and BSEE all have the lowest contractual employment rate at 3%. When it comes to self-employment, BSCpE graduates lead with a rate of 3%, followed by BSIE at 2% each. BSCE and BSEE graduates have a self-employment rate of 1%, while BSME graduates have the lowest rate, recorded at 0%. Finally, for temporary employment, BSCPE graduates once again have the highest rate at 13%, followed by BSCE with the rate of 10%. BSIE and BSME graduates has a rate 8% and BSIE has the lowest rate of 5%.

##### Nature of Work

About 55.67 percent of the graduates' nature of work was professional, technical, or supervisory, and the others were rank and clerical, followed by managerial or executive positions.

##### Work Location

The majority of respondents were employed locally, with 99.45% of the graduates working within the country. Only .55% of the respondents secured employment abroad. This trend reflected that most engineering graduates either preferred or were constrained to local employment. The low percentage of graduates working abroad attributed to their perceived lack of work experience and the belief that the knowledge they had gained was insufficient compared to the standard foreign engineers.

##### Job Retention and Change

Majority of graduates started their professional careers with their first job immediately after graduation, indicating that they often lacked prior work experience when entering the job market (Teixeira et al., 2020). This study indicates that 84.28% of the engineering graduates that their current job was their first job after college. Among them, BSIE graduates made up the largest group with 240 respondents, followed by 93 BSCpE graduates, 58 BSCE graduates, 50 BSEE graduates and 20 BSME graduates. Only 15.72 % had previous work experience. This highlighted that the majority of graduates started their careers with their current jobs.

##### Job Search Strategies

The most common approach was being **recommended by someone**, cited by **28.98%** of respondents, highlighting the importance of personal connections in securing employment. Following closely, **27.56%** found jobs as **walk-in applicants**, demonstrating the relevance of direct applications. Responses to advertisements accounted for **25.67%**, highlighting the effectiveness of job postings. **Information from friends** was the method for **10.87%**, while school-arranged placements and job fairs were rarely used, each making up less than **1%**. Lastly, **5.98%** utilized other

unspecified methods. These findings emphasize the critical role of networking and proactive job-seeking strategies in landing first jobs.

### *3.2 Competencies and Skills Acquired*

In terms of the competencies that BSCE graduates learned in college that they find useful in their jobs are problem-solving skills, which have an exceptional contribution; critical thinking skills, which have a strong contribution; and communication skills, which have a moderate contribution. In BSCpE, the information technology skills pioneered the competencies they learned and find useful in their jobs, followed by problem-solving skills and critical thinking skills. Critical thinking skills are the most helpful competencies BSEE learned during college, followed by problem-solving skills and human relations skills. While BSIE graduates learned that communication skills have the most exceptional contribution, followed by problem-solving and critical thinking skills. The majority of the BSME graduates find that information technology skills contributed exceptionally followed by problem-solving and communication skills.

### *3.3 Attainment of the Program Outcomes*

In evaluating the attainment of the program outcomes of the five engineering programs, the majority of the program outcomes were fully attained, and few were also highly attained, indicating that their programs aligned with industry standards, therefore, there is a significant difference in the alignment of jobs to the program across the different courses. This highlighted that students have acquired the necessary knowledge and skills to perform well in their field of work; it indicates that the program has been effective in delivering its intended results.

## **4. CONCLUSION AND RECOMMENDATION**

The tracer study revealed that many graduates secured employment shortly after graduation, indicating the effectiveness of the programs in preparing graduates for the workforce. Graduates were employed across diverse industries, reflecting the versatility of the skills and knowledge imparted during their studies. The BSCE program had the highest passing rate, followed by BSEE and BSME. Many graduates pursued certifications such as Certified Industrial Engineer (CIE) and Civil Service Examination (CSE).

Most graduates were satisfied with their jobs, indicating that the education and training they received equipped them well for their chosen careers. The majority of graduates pursued further studies or professional development activities, demonstrating a commitment to lifelong learning. The study concluded that the programs were generally effective, but some areas required improvement, such as enhancing computer and technical skills for self-employment and ensuring stronger alignment between job roles and program-specific competencies. The study also highlighted the importance of enhancing career placement and job search assistance, as some graduates struggled to secure their first job.

The employability of recent graduates from the BSCE, BSIE, BSME, and BSEE programs has decreased, while the employment status of BSCpE graduates has remained stable. To maintain employability, the institution should implement targeted measures to support graduates in balancing exam preparation and further studies.

To enhance graduates' employability, the researchers recommend strengthening support for licensure and professional certifications, enhancing practical training, and integrating advanced information technology skills. Career readiness programs should be established, including pre-employment orientations, mock interviews, and career fairs. Enhanced job placement services and guidance in navigating employment opportunities are also recommended.

In 2022 and 2023, only a few graduates were unemployed, indicating a positive development in employability. To maintain and improve the high employment rate, the researchers recommend strengthening industry partnerships, offering more internship opportunities, and ensuring the curriculum remains relevant to current market demands. The institution should invest in career services and additional training and certification programs to enhance graduates' qualifications.

Future researchers and academic advisors should focus on one engineering department at a time to collect more accurate and detailed information about its graduates. Each department should create its own Graduate Tracer

Study (GTS) questionnaire to ensure the questions are directly relevant to the skills, knowledge, and career paths of its graduates.

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