OUTCOME-BASED EDUCATION IN POLYTECHNIC INSTITUTES OF BANGLADESH: IMPLEMENTATION MODALITIES, CHALLENGES, AND SUCCESS

RESEARCH REPORT

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Abstract

Diploma in Engineering Education is very important in the labor market as they work as a mid-level professional expert with their own hands to know the basic technical rules and industrial methods. OBE can help them understand better to gain appropriate skills, knowledge, and attitudes to prepare for future professions. To implement OBE in polytechnic institutes of Bangladesh it needs to formulate an OBE curriculum with a specific vision, mission, PO, PEO, PLO, generic skills or graduate profile, curriculum framework, distribution of courses, course description, CLO, mapping with CLO and PLO, QF, HOTS, SLT, teaching and learning procedures and strategies, assessment or evaluation procedure and strategies and grading system. A comprehensive approach is required to increase enrollment. Some special programs are needed to increase the enrollment of female students. Students should attain all learning outcomes completely to get suitable jobs in the national and global labor market. It should incorporate teachers, industry experts, policymakers, and other stakeholders to formulate the OBE curriculum. The teaching and learning environment of polytechnic institutes should be OBE-friendly so that students can feel comfortable taking education. Learning materials should be available to each of the students. The content of the OBE syllabus should be current and meet the future labor market demand by the graduates to fit working with modern technology. Sufficient modern tools and equipment should be set up in the laboratories and workshops to attain the skills of the students according to the curriculum need. There should be lifelong learning facilities in the institutes so that graduates can learn up-to-date knowledge and skills when required. Students should actively engage in real-world problem-solving projects to enhance their critical thinking and problem-solving skills to meet the individual needs of each student by the institutes to improve academic performances. Professional training of teachers should be need-based to ensure maximum effectiveness of the program so that they can teach completely to the students in classes and laboratories. Students should be engaging in co-curricular activities regularly to enhance social connections and contribute to a well-rounded educational experience. Assessment processes should be well-structured with sufficient rubrics so that the context and steps are clear to all students and teachers with varied locations and times and can accurately measure the knowledge, skills, and attitudes of the students that the learning outcomes should attain in the curriculum. There needs to be a well-defined grading system that can accurately express the attainment of the students according to the curriculum. There should be a well-defined feedback system for both teachers and students for further improvement. Job placement and entrepreneurship guidelines help the graduates engage in a suitable profession. The curriculum of the Diploma in Engineering should be standard and accredited by well-renowned international organizations for global acceptance of the graduates. There should be strategies for CQI and monitoring to find out the gaps and future needs of the education system.

Circulation of educational scholarships, loans, and aids can help financial crisis of the students to be attentive in their education. Pedagogical tools help the students to attain learning outcomes. Teachers should follow the lesson plan in the classes to complete the syllabus in time with the competencies of students. A modern digitized institutional management system helps teachers manage a large volume of students easily. There should be an update on the internal and external evaluation processes in polytechnic institutes for academic and administrative activities to ensure the effective implementation of OBE. Class size should be favorable to attain the learning outcomes of each student. To make students ready for OBE, there needs to be campaigns, seminars, and workshops to encourage teachers, students, and guardians.

Record-keeping and analysis systems should be systematic and digitized so that teachers can track student progress, identify areas for improvement, and make data-informed decisions to enhance teaching effectiveness and student outcomes. SWOT analysis helps the institutes find out the field of improvement. The goals and objectives of OBE would be to make students for the labor market to enhance the socio-economic status of students. There should be specific action plans to implement OBE in polytechnic institutes of Bangladesh. A strong review process is required for the successful implementation of OBE.

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Acronyms and Abbreviation

APAC	The Asia Pacific Accreditation Cooperation
BPSC	Bangladesh Public Service Commission
BTEB	Bangladesh Technical Education Board
CBT	Competency Based Training
CLO	Course Learning Outcomes
CO	Course Outcome
CPD	Continuous Professional Development
CQI	Continual Quality Improvement
DTE	Directorate of Technical Education
HEI	Higher Education Institution
EMS	Education Management System
HOTS	Higher Order Thinking Skills
IR	Industrial Revolution
ISC	Industry Skills Councils
KII	Key Informant Interviews
MoU	Memorandum of Understanding
OBE	Outcome-Based Education
PEO	Program Educational Objectives
PLO	Program Learning Outcome
PO	Program Outcomes
QF	Qualification Framework
SLR	Secondary Literature Review
SLT	Student Learning Time
TMED	Technical and Madrasah Education Division
TVET	Technical and Vocational Education and Training
UNESCO	The United Nations Educational, Scientific and Cultural Organization

SECTION ONE: INTRODUCTION

1.1 Background

Outcome-based education (OBE) is a systematic education process that focuses on specific attainment after the completion of the course. It focuses on measuring students' performance in terms of outcomes at different levels of their education. In this system, courses with certain outcomes are offered to the students, and at the end of the course, all of them have to achieve all of the knowledge, skills, and attitudes to get the certificate. Outcomes are the final results of the education process. Teachers and students have a clear understanding of overall learning and assessment processes at an academic level. Students have self-paced motivation to acquire all of the targets assigned in the courses. During the assessment, teachers measure students' performances using predetermined approaches. In the OBE system, there is a specific vision, mission, program outcomes (PO), program educational objectives (PEO), program learning outcome (PLO), generic skills or graduate profile, curriculum framework, distribution of courses, course description, course learning outcomes (CLO), mapping with CLO and PLO, qualification framework (QF), higher order thinking skills (HOTS), student learning time (SLT), teaching and learning procedures and strategies, assessment or evaluation procedures and strategies, and grading system. OBE emphasizes assessment that functions through predetermined standards according to the demand of the local and global workforce markets. Parameters of qualification or unit standards of OBE guide the students, teachers, and employers about qualities, values, attitudes, knowledge, and skills achieved throughout the education. Students can contextually demonstrate the outcomes of the learning process that they have understood in the classroom, laboratories, and other activities. Graduates can demonstrate the knowledge, skills, attitudes, and values they have achieved through education in the context of the workplace or real-world situations.

The main objective of OBE is to enrich the students with knowledge, competencies, and orientations that are essential for a successful professional career after leaving the educational institutes. William G. Spady (1994), the father of outcome-based education, developed four essential principles of OBE: clarity of focus on culminating outcomes of significance, expanding opportunity and support for success, high expectations for all to succeed, and designing down from ultimate outcomes. The fundamental principle of OBE emphasizes that the focus of all educational activities, such as teaching and assessment, should not solely be on the content to be taught, but rather on the desired learning outcomes for the learners. This approach places importance on what the learners are expected to do and the level of proficiency they are expected to achieve. (Rani, 2020).

The main principles of outcome-based education are student-centeredness, clarity, and flexibility. There are four major components of outcome-based teaching and learning: (1) curriculum design; (2) teaching and learning methods; (3) assessment; and (4) continual quality improvement (CQI) and monitoring. Practical: understanding how to do things and having the capability to make decisions. OBE has three characteristics: a) practical: understanding, knowing how to accomplish tasks, and having the ability to decide; b) fundamental: understanding what students are doing and why; and c) reflective: learning and adopting through self-contemplation; adopting proper knowledge and responsibility. By using the OBE system, students can work creatively, solve problems, be devoted to lifelong learning, learn above-average communication skills, be up-to-date with the latest technical advancements,

adapt easily to the workplace, take part in management processes and decision-making, and collaborate with others.

Outcome-based education is rooted in earlier ideas, such as Tyler's objectives, Spady's outcomes, Glaser's criterion-referenced measurement, Bloom's mastery learning, 1970s accountability concerns, and the 1960s competency-based education movement (King & Evans, 1991).

In the OBE approach, there must be a performer – the student (learner), the teacher, something performable (thus demonstrable or assessable) to perform and focus on the performance, not the activity or task to be performed. There is a definite focus on organizing everything in an educational system around what is necessary for all students to be capable of doing efficiently at the end of their learning experiences. This starts with a clear idea of what is important for students. Outcomes are clear learning results that we choose students to display at the top of extensive getting-to-know experiences. They are now not values, beliefs, attitudes, or psychological states of mind. Learning outcomes describe what learners should know, be able to do, and value as a result of integrating knowledge, skills, and attitudes learned throughout the course. They are stated in measurable terms. The structural set-up of teaching-learning under OBE is set up of teaching components for each course outcome, theory (for understanding), application (to develop skill), seminar (for communication skill), problems, assignments, and projects (small, group, etc.) (Nerkar, 2023). OBE pedagogical models are very effective for those who have a hard time understanding the lesson and answer those during tests because of its performance-oriented evaluation system.

OBE helps graduates get suitable jobs after their education, which focuses on occupational competencies. The unemployment problem in society will reduce, and industry can recruit competent manpower for their production. The socio-economic conditions of Diploma in Engineering graduates will improve by achieving outcome-based education. The main aim of OBE is to create a competent future generation. The objectives of outcome-based education are described with four main points: course outcomes (COs), program outcomes (POs), program educational objectives (PEOs), and global opportunities for students. OBE is important for students because of a more directed and coherent curriculum; graduates will be more “relevant” to industry and other stakeholders (more well-rounded graduates); and continuous quality improvement (CQI) is in place. OBE shifts from measuring input and process to include measuring output (outcome).

The OBE system complies with outcome-focused, learner-centric training models, up-to-date content, better opportunities, adaptable educational structure, in-depth analysis of students, skill enhancement, continuous improvement, and integrated assessment tests so that it has some unrivaled benefits like transparency in the learning process, assessing and comparing every student’s achievement records, analyzing students’ performance, higher student participation, and self-development and career progression, which is helpful for the students. OBE is the future of learning because it enables students to transcend traditional learning paradigms. OBE is a more adaptive, scalable, and individualized approach to learning where teachers and learners actively engage and collaborate toward a common purpose. OBE makes education simple to integrate into classrooms and creates a more inclusive and diverse learning environment (Chopra, 2023).

There has some steps involved in successful implementation OBE: establish mission statements, program educational objectives, map mission statements with program educational objectives (PEOs), define PLO with Bloom's Taxonomy (Anderson et al., 2001), map program educational objectives with PLO, define CO (Course Objectives), define CLO (Course Learning Outcomes) with Bloom's Taxonomy for each course, map courses with PLO at suitable levels of Bloom's Taxonomy, map CLO with PLO at suitable levels of Bloom's Taxonomy, map assessment pattern with CLO of each course, map topics with CLOs, define pedagogical tools for course outcomes delivery, preparing session-wise course lesson planner, map Questions with CLOs at Bloom's Taxonomy levels & assessments, define rubrics with Bloom's Taxonomy and CLO, track students' performance by proposing proper remedial measures, measure students' performance against CLO threshold, course-wise, measure students' performance against the PLO threshold, semester-wise, measure the attainment of each PLO through direct/indirect assessments, compare PLO for the last 3 academic years and propose remedial actions and assess the attainment of program educational objectives (Suvin, 2023).

The main factors that can influence student learning outcomes are learning objectives based on Bloom's Taxonomy, assessment methods, learning styles, and industry requirements for graduates (Syamsudin and Maulana, 2023).

According to National Education Policy 2010, the aims and objectives of TVET are:

- to increase competent manpower in diverse sectors including Information and Communication Technology at a fast pace keeping in mind the national and international demands;
- to build up skilled manpower at a fast pace to create opportunities for economic development and to increase the dignity of labor;
- to create wide-ranging employment opportunities through the export of skilled manpower and to enhance foreign currency earnings.

Bangladesh's TVET system offers a Diploma-in-Engineering program through polytechnic institutes. This program equips graduates with the necessary skills and knowledge to become mid-level technical professionals, also known as diploma engineers. There are 34 technologies in the Diploma in Engineering education with a duration of 8 semesters (2 semesters in 1 year and a total of 4 years), of which 50 government polytechnics have an enrollment capacity of 21200 and 4100 private polytechnics have an enrollment capacity of 60000 (BTEB, 2016).

In Bangladesh, polytechnic education faces numerous challenges that hinder its ability to prepare students for the demands of the modern workforce effectively. One significant challenge is the mismatch between the skills imparted by polytechnic institutes and the needs of industries. The curricula often lack relevance to current industry requirements, leading to a gap between graduates' skills and employers' expectations (Rahman et al., 2019). Additionally, inadequate infrastructure and outdated equipment hinder practical learning experiences, limiting students' ability to acquire hands-on skills essential for their future careers (Rahman & Rahman, 2018). Furthermore, the shortage of qualified faculty members and limited professional development opportunities contribute to the declining quality of education in polytechnic institutes (Sultana et al., 2018). Moreover, socio-economic factors such as poverty and a lack of awareness about the value of technical education often discourage students from pursuing polytechnic education, exacerbating the skilled labor shortage in Bangladesh (Sarwar, 2019). Addressing these challenges requires concerted efforts from policymakers, educational

institutions, and industry stakeholders to reform curricula, upgrade infrastructure, enhance faculty capacity, and promote technical education as a viable pathway for socio-economic development.

Education is a prerequisite for the progress of a nation. Quality education is the key factor in the sustainable development of a country. OBE helps ensure quality education that confirms students' performance throughout their learning period. OBE is a contemporary educational system that focuses on students achieving specific outcomes, i.e., skills, knowledge, and attitudes, after completion of the course that are relevant to their occupation. OBE is a learner-centered approach that makes students able to do in real-world situations for a particular learning outcome. OBE has clear learning outcomes so that the life skills and employability of students will be higher, which leads to a successful life. In the OBE system, students are assessed based on their competencies, which shows whether they need more practice or are competent in attaining the outcomes. So, OBE is a flexible, dynamic, student-centered, clear, specific, target-based, lifelong education system. OBE is being widely used in Australia, Canada, China, Hong Kong, India, Ireland, Japan, Korea, Malaysia, New Zealand, Pakistan, the Philippines, Russia, Singapore, South Africa, Sri Lanka, the United Kingdom, Taiwan, Turkey, and the United States.

1.2 Statement of the Problem

The implementation of OBE in polytechnic institutes in Bangladesh presents a multifaceted problem with significant implications for educational quality and workforce preparedness. Despite the potential benefits of OBE in fostering learner-centered approaches and aligning educational outcomes with industry needs, its successful implementation faces several challenges. These challenges include ambiguity in defining learning outcomes, limited faculty training and capacity building in OBE methodologies, inadequate infrastructure and resources for practical skill development, and a lack of stakeholder awareness and buy-in (Alam et al., 2020; Khan, 2019; Rahman & Rahman, 2020). Furthermore, cultural and institutional barriers may impede the adoption of OBE practices, hindering the effective integration of competency-based education into the curriculum and assessment frameworks of polytechnic institutes (Khan, 2019; Sultana et al., 2018). Addressing these challenges is critical for realizing the potential benefits of OBE in enhancing the quality and relevance of technical education in Bangladesh and ensuring graduates' readiness for the evolving demands of the labor market.

1.3 Importance of the Study

The study of OBE in polytechnic institutes in Bangladesh holds significant importance in the context of improving the quality and relevance of technical education in the country. Bangladesh is undergoing rapid economic transformation, with a growing demand for skilled workers in various sectors. OBE offers a learner-centered approach that emphasizes the acquisition of competencies and skills relevant to industry needs, thereby enhancing graduates' employability and contribution to national development (Alam et al., 2020; Khan, 2019).

The NSDA Act 2018 defines skill as follows:

> "Skill includes the knowledge and technique acquired for doing any specific work, or the capability and ability to produce goods and services as per required standard of industrial and professional demand of national and international markets."

By investigating the implementation modalities, challenges, and successes of OBE in polytechnic institutes, this study contributes to a deeper understanding of how technical education can better align with industry requirements and societal needs to develop the skills of students. Furthermore, the findings of this research can inform policy and practice initiatives aimed at strengthening the effectiveness and sustainability of OBE in polytechnic education, ultimately leading to enhanced educational outcomes and socio-economic advancement in Bangladesh.

1.4 Scope of the Study

The scope of this study on OBE in polytechnic institutes in Bangladesh encompasses a comprehensive examination of the implementation modalities, challenges, and successes of OBE within the context of technical education. The study will focus on identifying the current practices and strategies employed in integrating OBE principles into the curriculum, instruction, and assessment processes of polytechnic institutes. Additionally, it will explore the challenges encountered by stakeholders, including faculty members, administrators, and students, in adopting and implementing OBE methodologies. Furthermore, the study will assess the outcomes and effectiveness of OBE in enhancing students' learning experiences, skills acquisition, and employability in alignment with industry requirements. The goal of the research is to introduce OBE and ensure sustainability in polytechnic education in Bangladesh.

1.5 Objectives of the Study

The objectives of the study are:

i. To make an overview of the OBE practices in polytechnic institutes of Bangladesh.
ii. To identify the critical success factors to implement the OBE in polytechnic institutes.
iii. To formulate a strategic plan for an effective OBE system for Polytechnic Institutes.

1.6 Research Questions

The following Questions will be resolved throughout the study work:

Main Research Questions

A. What are the important factors in implementing OBE in polytechnic institutes?

Specific Research Questions

B. Which are the most influencing factors in current OBE practices?
C. What challenges will be faced in implementing OBE in polytechnic institutes?
D. What should be the strategic plan to implement OBE at the polytechnic institute?

1.7 Methodology of the study

These paragraphs contribute to the broader research field by offering a comprehensive explanation of the different methodologies used for data collection and analysis, demonstrating their application and impact on the findings relevant to the specific research area. The methodologies will include areas such as research design, research area, sample size, data tools, data gathering processes, data analysis techniques, ethical issues, and limitations of the study.

1.7.1 Research Design

For our study on OBE in polytechnic institutes in Bangladesh, we will employ a mixed-methods research design. This approach combines qualitative and quantitative methods to provide a comprehensive understanding of the implementation modalities, challenges, and success of OBE in the context of polytechnic education.

A mixed-methods approach is well-suited for our research questions and objectives, as it allows for the triangulation of data from multiple sources and provides a precise analysis. Qualitative methods such as key informant interviews (KII) were conducted among principals of government and non-government polytechnic institutes and curriculum specialists of the Bangladesh Technical Education Board (BTEB), and document analysis will allow us to explore the perspectives, experiences, and perceptions of stakeholders involved in OBE formulation and implementation in polytechnic institutes in Bangladesh.

Additionally, quantitative methods such as questionnaire surveys conducted among teachers of government and non-government polytechnic institutes and graduates who are working in industries and statistical analysis enable us to gather quantitative data on factors such as student performance, satisfaction levels, and institutional outcomes related to OBE. By combining qualitative and quantitative data, we can gain a comprehensive understanding of the complexities and challenges of OBE implementation in polytechnic institutes.

1.7.2 Research Area

The research area of this study focuses on educational policy and practice within the context of technical and vocational education and training (TVET) in Bangladesh's polytechnic institutes. Specifically, the study emphasizes OBE as an innovative approach to curriculum development, instructional strategies, and assessment methods in the TVET sector. By investigating the implementation modalities, challenges, and successes of OBE within polytechnic institutes, the research aims to contribute to a deeper understanding of educational reform efforts and their impact on student learning outcomes, institutional effectiveness, and workforce development in Bangladesh. This research area encompasses a wide range of factors, including curriculum design, faculty development, stakeholder engagement, and the broader socio-economic context shaping TVET policies and practices in the polytechnic education system of Bangladesh.

1.7.3 Sample Size, types, and location

The sample size for this research study consists of a diverse group of participants from various stakeholders within polytechnic institutes in Bangladesh. Data was collected from a total of 577 individuals from different regions of the country. The sample consisted of 20 principals, 243 male teachers, 67 female teachers, 231 male graduates, and 16 female graduates. Data was collected from 512 individuals directly and from 65 graduates using online platforms. This stratified sampling approach ensures representation from key groups involved in OBE implementation, including principals, teachers, graduates, and administrative officers. By including a substantial number of participants from each category, the research aims to capture a comprehensive range of perspectives and experiences related to OBE within the polytechnic education system. The sample size is designed to provide sufficient statistical power for meaningful analysis and interpretation of the data, allowing for robust conclusions and recommendations to inform educational policy and practice in Bangladesh. Details of sample size and location are listed in Appendices A1, A2, A3, A4, and A5.

1.7.4 Tools for Data Collection

The data collection tools utilized for this research encompass a combination of key informant interviews (KII) and questionnaire surveys tailored to the diverse stakeholders within polytechnic institutes in Bangladesh. KII is employed to gather insights and perspectives from principals, who serve as pivotal decision-makers within these institutions. These interviews provide in-depth qualitative data on the implementation modalities, challenges, and successes of OBE from an administrative standpoint. Additionally, questionnaire surveys are administered to both teachers and graduates to capture a broad spectrum of experiences and opinions regarding OBE. The surveys are designed to elicit quantitative data on various aspects of OBE, including perceptions of its effectiveness, challenges encountered, and suggestions for improvement. By employing a mix of qualitative and quantitative data collection methods tailored to the specific needs and roles of different stakeholders, this research ensures a comprehensive and nuanced understanding of OBE implementation in polytechnic institutes in Bangladesh.

1.7.5 Data Sources and Methods

This study utilizes different types of data collected from various sources. These include written document analysis, sample questionnaire survey, and KIIs.

Secondary Literature Review (SLR)

To visualize the current status of the polytechnic education system in Bangladesh, a review of secondary literature has been done. Secondary information sources include published reports, books, e-books, pdfs, websites, articles, databases, dissertations, and newspapers. The secondary literature review was utilized to create questionnaires and guidelines for the sample survey and KIIs involving different stakeholders, such as principals and BTEB curriculum specialists.

Questionnaire Survey

The questionnaire survey was conducted among government and non-government polytechnic teachers and graduates who are employed in various organizations. A draft questionnaire was prepared and tested, and then a final version was fixed for the field survey to collect data. The purpose of the questionnaire survey among the teachers is to determine the current state and challenges of the polytechnic education system (Appendix B1 contains the sample survey questionnaire for polytechnic teachers). The graduates were surveyed to gather their opinions and experiences regarding the polytechnic education system, as well as the challenges they faced during their education (Appendix B2 contains the sample survey questionnaire for polytechnic graduates).

Key Informant Interviews (KIIs)

A set of open-ended questionnaires was prepared for the head of the institute, the principal of polytechnic institutes, and curriculum experts of the Bangladesh Technical Education Board (BTEB) to know about their views about the polytechnic education system, present challenges, and OBE implementing strategies (Appendix B3 contains the sample KIIs).

1.7.6 Data Gathering Processes

The data-gathering processes for this research involve several steps to ensure the effective collection of information from key stakeholders within polytechnic institutes in Bangladesh.

Before initiating data gathering, thorough planning and preparation are essential. This involves developing interview protocols for key informant interviews, designing structured questionnaires for surveys, obtaining necessary approvals and permissions from the supervisor, and conducting research and knowledge management cell data collection among the respondents.

For key informant interviews, participants are selected based on their roles as principals within polytechnic institutes. Recruitment may involve contacting potential participants through official channels or personal networks and explaining the purpose and significance of their involvement in the study. Similarly, for questionnaire surveys, teachers and graduates are invited to participate through various communication channels, such as email, online platforms, or direct contact.

Key informant interviews are conducted in person. During interviews, open-ended questions are posed to encourage participants to share their insights, experiences, and perspectives on OBE implementation. On the other hand, questionnaire surveys among teachers are administered in print format. Participants are asked to respond to a series of structured questions related to their perceptions, experiences, and opinions regarding OBE. Questionnaire surveys among graduates are conducted on both print and online platforms.

Throughout the data-gathering process, detailed notes are taken during key informant interviews to capture participants' responses accurately. Additionally, responses from questionnaire surveys are recorded systematically, ensuring data integrity and reliability.

1.7.7 Data Analysis Techniques

The data analysis techniques employed in this research encompass a comprehensive approach to derive meaningful insights and draw informed conclusions from the collected data. Descriptive analysis is utilized to summarize and present the characteristics, trends, and patterns observed within the dataset, providing a clear overview of the variables under study. Inferential analysis is employed to make inferences and generalize findings from the sample to the broader population, allowing for the identification of relationships, associations, and differences between variables of interest. Thematic analysis is utilized to analyze qualitative data obtained from key informant interviews, identifying recurring themes, patterns, and meanings within the narratives shared by participants. Univariate and bivariate analysis techniques are applied to examine the distribution and relationship between individual variables and to explore correlations and associations between multiple variables, respectively. Additionally, significance testing is employed to determine the statistical significance of observed relationships and differences, providing empirical evidence to support research findings. By employing a combination of descriptive, inferential, thematic, univariate, bivariate, and significance data analysis techniques, this research ensures a comprehensive and precise analysis of the data, leading to meaningful conclusions and implications for policy and practice in the implementation of OBE in polytechnic institutes in Bangladesh (Creswell, 2012).

1.7.8 Ethical Issues

Several ethical issues were taken into consideration throughout the research process. Firstly, ensuring informed consent from participants is crucial, emphasizing transparency about the purpose, risks, and benefits of participation. Confidentiality must be maintained to safeguard the privacy and anonymity of participants, particularly when dealing with sensitive information. Moreover, participants should have the freedom to withdraw from the study at any time without repercussions. Additionally, researchers must uphold integrity in data collection, analysis, and reporting, avoiding bias and manipulation. Special attention should be given to vulnerable groups, such as graduates or teachers, to protect their rights and well-being. Furthermore, any potential conflicts of interest or sources of funding should be disclosed transparently to maintain research integrity. Overall, adherence to ethical guidelines ensures the trustworthiness, credibility, and ethical conduct of the research, fostering a responsible approach to knowledge generation and dissemination.

1.7.9 Limitations of the Study

It is essential to acknowledge certain limitations when conducting OBE research in polytechnic institutes in Bangladesh. Firstly, the reliance on face-to-face interviews and in-person surveys may introduce potential biases, such as social desirability bias or interviewer effects, which could impact the validity and reliability of the data collected. Additionally, conducting surveys through online platforms may introduce limitations related to access and technological literacy,

potentially excluding individuals who lack internet connectivity or proficiency with digital tools. Furthermore, despite efforts to ensure representativeness through diverse sampling techniques, the sample size may still be limited, which could affect the generalizability of the findings to the broader population of polytechnic institutes in Bangladesh. Moreover, the use of representatives to collect data introduces the risk of interpretation bias or misrepresentation of respondents' perspectives. Finally, the dynamic nature of OBE implementation and the evolving educational landscape in Bangladesh may pose challenges in capturing the full spectrum of OBE practices and experiences. Despite these limitations, efforts have been made to mitigate biases and maximize the rigor and validity of the research findings.

Section Outline of the report:

The research report is further discussed in four main sections:

Section two illustrates an overview of the OBE practices in polytechnic institutes of Bangladesh.

Section three encompasses the critical success factors to implement the OBE in polytechnic institutes.

Section four stands for the strategic plan for an effective OBE system for Polytechnic Institutes.

Section five states the general conclusion of the study including the requirement for further study and actions followed by other parts like references and appendix.

SECTION TWO: THE PRESENT SCENARIO OF OBE PRACTICES IN THE POLYTECHNIC INSTITUTES OF BANGLADESH

This section aims to provide an up-to-date overview of the current state of the education system in the Polytechnic Institutes of Bangladesh. This information is based on the findings obtained through ongoing research work, which will be discussed in the following paragraphs.

2.1 Curriculum Objectives of Diploma in Engineering

OBE emphasizes the acquisition of specific skills, knowledge, and attitudes that align with industry standards. The main aim of this approach to education is to prepare graduates for the demands of the workforce. Customizing educational programs to meet the needs of employers can be done by OBE curriculum designers with a focus on industry standards. (Syeed et al., 2022).

The key elements of OBE are program educational objectives, teaching design, teaching outcome, and teaching assessment (Ying Wu, 2023). OBE focuses on the development of soft skills, basic or core skills, professional skills, vocational skills, intellectual skills, inter-personal and intrapersonal skills, with the integration of theory, practical, project work, assignments, community collaboration, extension work, cultural celebrations, festivals, and curricular and co-curricular activities (Roy, 2023).

The components included in the teaching-learning process in OBE are as below (Kavitha, 2023).

- Syllabus
- Course Plan
- Resources planning
- Instructor’s perception of students’ abilities and motivation
- Observations on Instruction
- Additional sessions are conducted by the instructor beyond the scheduled hours.
- Assessment tools
- Feedback to students after every assessment
- Report on observations on assessment tools and student performance
- Student feedback during the course.

The survey results indicate that a majority of respondents (55%) believe the current Diploma in Engineering curriculum has a strong focus on skills, knowledge, and attitudes according to industry standards. However, a significant portion (43%) are unsure or disagree with this statement. The mean score of 1.40 suggests a slight leaning toward agreement, but the standard deviation of 0.538 highlights a moderate level of dispersion in the responses processes (please see the details of mean and standard deviation in Appendix D1). This means there's a mix of opinions among polytechnic teachers on this issue.

Reasons for answering no are lack of teaching staff, the syllabus should be more updated day by day, there is no skilled manpower to teach the students practical works, an old syllabus, a lack of updated facilities, a bilateral communication gap with industries, the need to update textbooks and books, the need to introduce advanced technology in the syllabus, industry visits that need to be included every semester, the syllabus being too big to complete, the need technology-based practical knowledge, and skills that are not according to CBT.

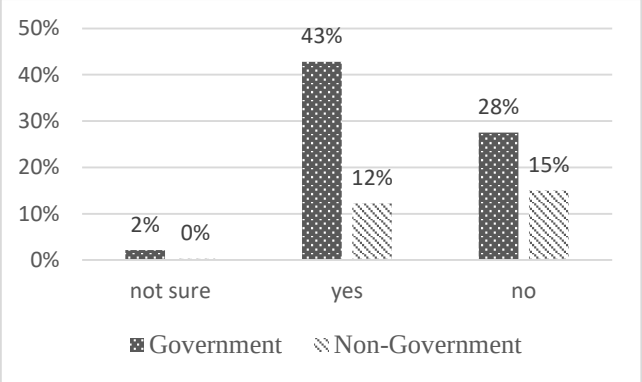

Figure 1 Teacher's Opinion on Curriculum Focuses on Skills, Knowledge, and Attitudes.

Among the teachers, 43% of government polytechnic teachers think that the current curriculum has a strong focus on skills, knowledge, and attitudes according to industry standards; on the other hand, 12% of non-government polytechnic teachers differ with them.

About 70% of graduates expressed their opinion that educational institutions involve students in curriculum design and refinement, and 30% thought that students have a lot of opportunities to take part in curriculum preparation processes (please see the details of mean and standard deviation in Appendix D2).

Most polytechnic principals stated that they have a Memorandum of Understanding (MoU) with relevant industries, and related industry personnel sometimes come to the institute and take part in teaching the students. In those classes, students can learn more about industry-related knowledge and skills. Curriculum specialists said that BTEB has Industry Skills Councils (ISCs) to formulate and monitor the curriculum when preparing it and ensure the relevance of industry-related knowledge and skills in the curriculum. It also related that industry professionals in each subject took part in the syllabus preparation processes.

There is a need to include more industry-relevant topics with the consultation of stakeholders in the curriculum design and implementation policies to convert the existing curriculum to OBE.

2.2 Student Enrollment Status in Diploma in Engineering Curriculum

82% of polytechnic graduates thought that students had more interest in taking polytechnic education. On the other hand, 18% of graduates feel that students are losing interest in a diploma in engineering education. They thought the reasons for less interest in education were a low-quality system, a lack of awareness about education, fewer opportunities to get suitable jobs in the labor market, and fewer self-employment opportunities.

Reviewing the annual report of BTEB 2022-223, the trend of the total registration number of students was decreasing every year, especially for non-government polytechnic institutes (Please see the Appendix C1 and C2 for details of admission status in the first semester of government and non- government polytechnic institutes in the year 2024).

Upon analyzing the admission data for the first semester of 2024, it appears that 90% of the seats have already been filled. Mohila Polytechnic Institutes did not get enough female students to be admitted. The technologies that have the most vacant seats are Architecture, Electromedical, Electronics, Environmental, Food, Glass, Mechatronics, Refrigeration and Air

Conditioning, and Telecommunication Technology. Non-government polytechnics have a total seat capacity of 89,310. However, only 31,560 seats have been filled, which is 35% of the total capacity (Details of Non-government Polytechnic Institutes enrollment status of first semester in 2024 given in Appendices C).

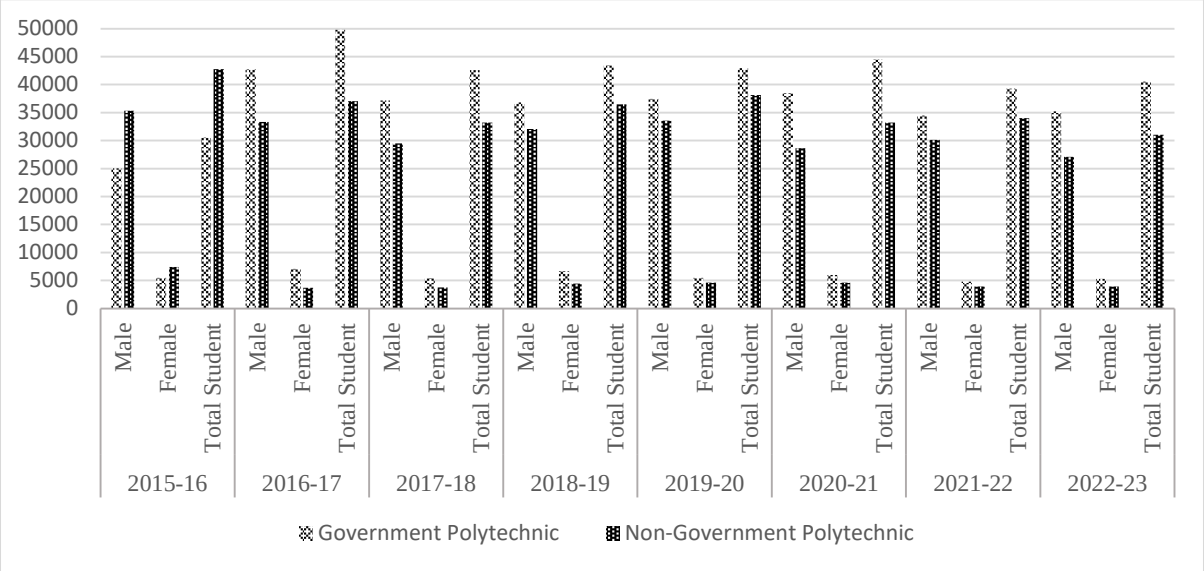

Figure 2 Year Wise Student Registration Number (BTEB, 2023).

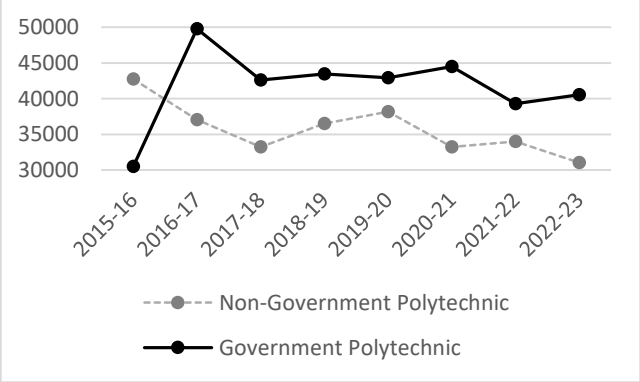

Figure 3 Student Registration Trend (BTEB, 2023).

Of the male and female students for Civil Technology, the most popular technology students are 86% and 14% in the government polytechnic institutes, and 98% of male and 2% of female students enroll in the private institutes in the first semester (BTEB, 2022).

The major causes of dropout of students in the Diploma in Engineering program were financial difficulties, loss of interest in the program due to the inadequacy of educational equipment, academic difficulties, social naivetés, teaching delivery quality, lack of awareness of the guardians about the benefit of Diploma graduates, as well as job and family obligations (Amin et al., 2023).

Increasing student enrollment in the Diploma in Engineering curriculum requires a comprehensive approach that addresses both perception and accessibility. Initiatives such as targeted awareness campaigns highlighting the benefits of engineering, career counseling services emphasizing the diverse opportunities in the field, and partnerships with industries to

provide practical experience can attract prospective students. Community engagement and digital marketing efforts can further amplify awareness and reach. By implementing these measures collaboratively, DTE, polytechnic institutions, and BTEB can enhance the appeal and accessibility of diploma engineering education, ultimately contributing to the development of a skilled workforce and the advancement of Bangladesh's economy and society.

2.3 Learning Outcomes in Diploma in Engineering Curriculum

The current curriculum of the Diploma in Engineering helps the students exactly develop the qualities of adaptability, creativity, innovation, collaboration, communication, critical thinking, problem-solving, empathy, curiosity, global citizenship, technology literacy, and lifelong learning (21st-century skills).

OBE curriculum preparation has been tedious, challenging, and laborious, and there have been limitations in the time, training, and tools of teachers (Alata, 2019). There are two basic types of outcomes from any educational system. The first type includes performance indicators such as test results, completion rates, post-course employment rates, etc. The second type of outcome is less tangible and is usually expressed in terms of what students know, can do, or are like as a result of their education (Killen, 2000). 60% of the first semester of civil technology could achieve learning competencies fully, 32% partially, and 8% not achieved at all (BTEB, 2022).

About half of the polytechnic teachers perceive that the current curriculum moderately (50%) supports the development of 21st-century skills among students. A substantial portion of respondents also indicated that the curriculum slightly (19.0%) or very strongly (23%) supports the development of these skills.

A smaller percentage of teachers reported that the curriculum does not support the development of 21st-century skills at all (2%), while an even smaller percentage felt that it supports it to an extreme extent (6%).

The reasons for answering poor are low budget, lack of infrastructure and policy, insufficient modern tools, not proper budget and problem for a high budget machine, good, lack of proper source of challenging money, use of old equipment, lack of knowledge, need update instrument, missing of some equipment, lack of proper experience, equipment no enough, budget issues, need more expansive and updated equipment, lack of training, advanced tools and machinery, lack of effective manpower, not modern equipment, and low-quality tools.

The mean response value of 2.77 suggests that teachers perceive the current curriculum to moderately support the development of 21st-century skills among students. The standard deviation of 0.903 indicates considerable variability in responses, suggesting differing levels of agreement among respondents.

While the majority of teachers believe that the curriculum does support the development of these skills to some extent, there is room for improvement, particularly in enhancing the curriculum's effectiveness in fostering adaptability, creativity, innovation, collaboration, communication, critical thinking, problem-solving, empathy, curiosity, global citizenship, technology literacy, and lifelong learning among students.

About one-third of the graduates said that academic programs are adequate for students to understand the learning outcomes. Students got computer-related training, short subjective

training courses, seminars, workshops, and industrial training for their personal development. Two-thirds of the graduates differed from others because all of the institutes did not have such types of student development programs to adopt the learning outcomes of the curriculum.

Table 1 Year Wise Passing Rate Diploma in Engineering Curriculum (BTEB, 2023).

Year	Government Institute							Non-Government Institute						
	Examinee			Passing Number				Examinee			Passing Number			
	Male	Female	Total	Male	Female	Total	%	Male	Female	Total	Male	Female	Total	%
2017	18795	3104	21899	16366	2796	19162	87.50	25721	1209	26930	15321	878	16199	60.15
2018	18040	3571	21611	16369	3367	19736	91.32	24987	1117	26104	17450	916	18366	70.36
2019	19030	4191	23221	17517	3959	21476	92.49	22657	1228	23885	16519	1050	17569	73.56
2020	28025	5054	33079	24986	4563	29549	89.33	19005	1376	20381	13851	1087	14938	73.29
2021	28402	4358	32760	25607	4358	29965	91.47	15888	1511	17399	12007	1511	13518	77.69
2022	29339	5389	34728	24634	5389	30023	86.45	19147	2053	21200	13577	1611	15188	71.64

Table 2 Semester Wise Passing Rate Diploma in Engineering Curriculum Result published on 03-03-2024 (Examination held in December, 2023).

Institute Type	Semester	Total Examinee	Passing Number	Passing Rate (%)
Government	1	578	19	3.29
Non-Government	1	864	35	4.05
Government	2	32,299	13,900	43.04
Non-Government	2	18,084	5,376	29.73
Government	3	749	28	3.74
Non-Government	3	1,083	35	3.23
Government	4	29,994	16,856	56.20
Non-Government	4	17,449	6,742	38.64
Government	6	33,144	23,178	69.93
Non-Government	6	16,773	8,126	48.45
Government	8	30,278	28,011	92.51
Non-Government	8	16,328	13,278	81.32
Government	Irregular	1,609	775	48.17
Non-Government	Irregular	2,806	1,023	36.46
	Total =	202,038	117,382	58.10

Reviewing the previous year's results, it was found that government institutes had a passing rate of 90% and non-government institutes had a passing rate of 71%. To elevate learning outcomes in the Diploma in Engineering curriculum, a multifaceted strategy is imperative. This includes enhancing the quality of teaching through professional development programs for instructors, integrating hands-on practical training and project-based learning into the curriculum, ensuring access to modern facilities and equipment, promoting collaborative learning environments, and fostering industry-academic partnerships to align education with real-world challenges.

2.4 Current Content in Diploma in Engineering Curriculum

To implement OBE in the Diploma in Engineering curriculum, the syllabus contents should be sufficient, current, and authentic according to market demand. Half of the graduates thought that the syllabus contained contemporary topics according to industry needs.

The syllabus is the most important part of the curriculum and should be clear to teachers and students. Half of the teachers have the perception that the syllabus is understandable to the students, 44% are partially understandable, and 6% are not understandable (BTEB, 2022).

The majority of polytechnic teachers (80%) indicated that they perceive the curriculum to be dynamic and adaptable to changing needs. Conversely, 19% of respondents disagreed with this assertion, suggesting that they do not believe the curriculum is always dynamic according to needs. A small percentage (1%) expressed uncertainty regarding this aspect.

2.50 weighted means that teachers thought that there were opportunities for practical work in the existing curriculum, whereas students had a weighted mean of 1.92 (BTEB, 2022).

The mean response value of 1.18 indicates that teachers lean towards the belief that the curriculum is dynamic and responsive to evolving needs. The relatively low standard deviation of 0.418 suggests a degree of consensus among respondents regarding their perceptions of the curriculum's dynamism.

To incorporate current content into the syllabus of the Diploma in Engineering curriculum, a systematic approach is essential. This involves establishing a curriculum review committee comprising industry experts, educators, and policymakers to identify emerging trends and technologies relevant to engineering practice. Regular updates should be made to course materials, textbooks, and teaching methods to integrate contemporary topics such as renewable energy, digitalization, and sustainability. Collaboration with industry partners can provide insights into the latest advancements and industry needs. Furthermore, faculty training programs should be organized to ensure instructors are equipped to deliver up-to-date content effectively, fostering a dynamic and relevant learning experience for students.

2.5 Inclusivity of Diploma in Engineering Curriculum

In OBE, inclusivity is vital to ensuring that all students, regardless of background or abilities, have equitable access to educational opportunities. By embracing inclusivity, OBE promotes diversity, fosters a supportive learning environment, and enhances the potential for every student to achieve their learning outcomes effectively.

The majority of polytechnic teachers (85%) expressed that polytechnic education is easily accessible to all people in society, with 59% agreeing and 26% strongly agreeing. Conversely, a smaller percentage (15%) disagreed with the statement, with 13% disagreeing and 1% strongly disagreeing. Only a small fraction (1%) remained undecided.

The mean response value of 1.98 suggests that polytechnic teachers tend to agree with the statement. This indicates a prevailing perception among respondents that polytechnic education is accessible to individuals across different segments of society. The relatively low standard deviation of 0.925 indicates a moderate level of agreement among respondents, although there is some variability in opinions.

In the year 2020, female students' enrollment was 17% in the Diploma in Engineering curriculum. The enrollment status was 5.5% in the Diploma in Engineering curriculum of total educational institutes (DTE, 2022).

Social stigma towards technical education, skill gaps among teachers and students, poor quality of practical classes, lack of quality education, limited hostel facilities, low stipends, limited job opportunities for girls, financial crises of student families, lack of higher education facilities, and low interest in engineering are the main factors responsible for the declining enrollment of female students. (Mojumder et al., 2023; Hasan et al., 2023).

Ensuring inclusivity in education involves implementing policies and practices that accommodate diverse needs and backgrounds. This includes providing accessible facilities, resources, and support services; fostering a culture of respect and acceptance; offering diverse perspectives on curriculum content; and actively addressing barriers to participation and success.

2.6 Presence of OBE in Diploma in Engineering Curriculum

The presence of OBE in the existing curriculum is determined by this research.

According to the revised version of Bloom's Taxonomy, there are six levels of cognitive learning: remembering, understanding, applying, analyzing, evaluating, and creating (Anderson et al., 2001).

The integration of OBE into the existing curriculum is perceived by the majority of polytechnic teachers as moderate. Specifically, 70% of respondents indicate that OBE constitutes above 50% of the existing curriculum, while a significant portion (30%) believes it comprises less than half (below 50%).

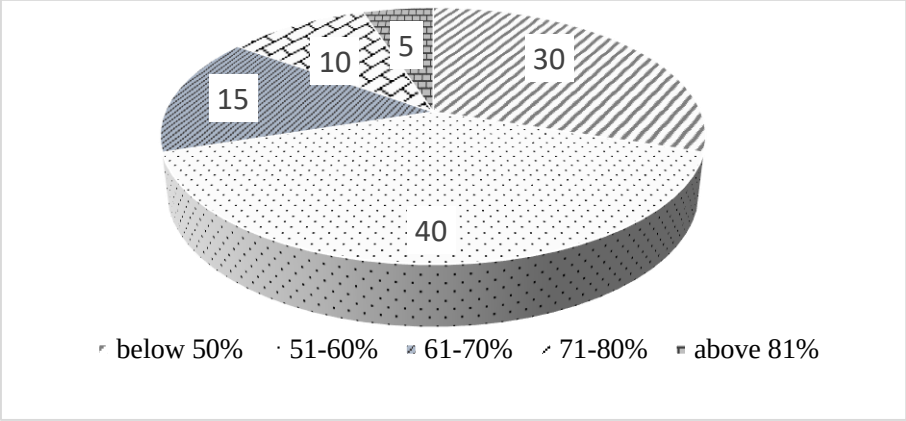

Figure 4 Presence of OBE in Diploma in Engineering Curriculum.

Conversely, a smaller percentage of respondents perceive higher levels of integration. For instance, 15% state that OBE covers 61–70% of the curriculum, with 10% reporting 71–80%, and only 5% indicating that OBE constitutes more than 81% of the curriculum.

The mean response value of 2.18 suggests an average perception among polytechnic teachers that OBE is moderately integrated into the existing curriculum. The standard deviation of 1.107 underscores a moderate level of variability in responses, indicating differing perceptions among respondents regarding the extent of OBE integration.

70% of the graduates expressed that students understand the objectives of the subject and the assessment process through the current curriculum, and the other 30% of the graduates differ with the arguments.

The findings reveal that a significant majority of polytechnic teachers (65%) perceive the presence of time flexibility in the learning and assessment process. In contrast, 31% of respondents disagreed, indicating a lack of time flexibility. A small proportion (4%) remained undecided on the matter.

75% of the graduates stated that students could get social, cultural, and moral values from the existing curriculum.

80% of the graduates specified that students were able to acquire all the knowledge, skills, values, and attitudes mentioned in the curriculum. The effectiveness of the curriculum in emphasizing knowledge and content (cognitive domain), skills and competencies (psycho-motor domain), and values and attitudes (affective domain) were priorities during formulation.

The mean response value of 1.27 suggests that polytechnic teachers tend to believe that there has been time flexibility in the learning and assessment process. The standard deviation of 0.537 indicates a moderate level of agreement among respondents, with some variability in opinions.

Implementing OBE in the Diploma in Engineering curriculum syllabus will be helpful, and there needs to be less change in the contents.

2.7 Teaching and Learning Environment of Diploma in Engineering Curriculum

The teaching and learning environment profoundly impact on student engagement, motivation, and learning outcomes. A conducive environment fosters collaboration, creativity, and critical thinking among students. It sets the stage for effective instruction and enhances the overall educational experience.

OBE creates a flexible environment for learners and the learning process for better progress by involving students. Students are expected to own their learning so that they gain a full understanding of their strengths and their areas of concern (Roy, 2023).

About 60% of the graduates specified that the education system is not emphasizing skill development. On the other hand, 40% stated that the education system helped them enhance their skills.

It was seen during the research that the government polytechnic institutes faced challenges due to the shortage of teachers. About 70% of teacher posts were vacant. The average teacher-student ratio was 1:70. There were no teacher posts vacant in non-government polytechnic institutes, and the average teacher-student ratio was 1:30.

Public polytechnics have a teacher-student ratio of 1:48, while non-government polytechnics have a ratio of 1:23. (BTEB, 2022). Teacher and student ratios of TVET institutes were found to be 1:36 to 1:92, and the recommended class size was 1:40 in theory class and 1:20 in practical class. 85% of teacher posts were vacant (Aziz and Hoque, 2022).

Many educational institutions were operating with less than 50% of their teaching capacity. Despite an increase in student enrollment, the introduction of double shifts, and the creation of

new technology and groups, there has been no corresponding increase in teaching or support staff positions. The average teacher-student ratio of polytechnic institutes was 1:80 (DTE, 2021). Another study reported that 64% of teacher posts were vacant in polytechnic institutes (DTE, 2022).

In classrooms, the 2.45 weighted mean of teachers using modern pedagogy and the 2.23 weighted average of the teachers indicate that the labs and workshops have adequate equipment. (BTEB, 2022).

DTE and TMED should ask BPSC for immediate teacher recruitment to fill up the deficit and enhance government polytechnic institutes' teaching and learning environments.

2.8 Readiness of Polytechnic Institutes for OBE

Institutes should prepare for OBE to ensure alignment with educational goals and objectives. OBE facilitates a focus on measurable learning outcomes, enabling institutions to assess student achievement more effectively.

The majority of polytechnic teachers (90%) perceive that students' exposure to content related to IR 4.0 and 5.0 is either moderate (43%) or low (45%). A smaller proportion of respondents believe that students' exposure is high (7%), while a negligible percentage indicated none (3%).

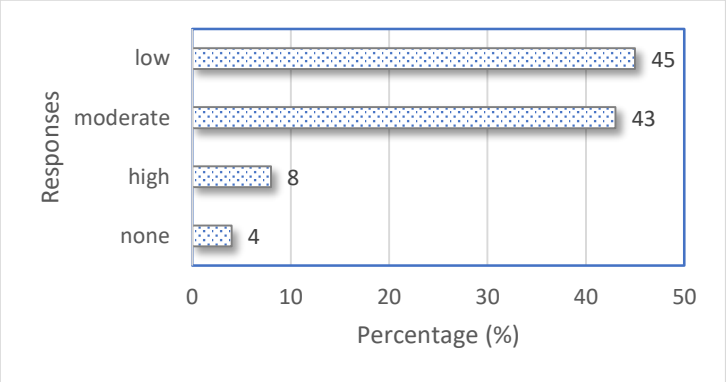

Figure 5 Readiness of Polytechnic Institutes for OBE

The mean response value of 2.31 suggests that Polytechnic Teachers tend to perceive students' exposure to IR 4.0 and 5.0-related content as moderate. The standard deviation of 0.766 indicates a moderate level of agreement among respondents, with some variability in opinions. The Government of Bangladesh sets targets for skill development for emerging technologies, including 4IR and digital skills, as follows:

> To develop a digital system to ensure that services are delivered efficiently in an effort to transform the country into a knowledge-based society by 2041 (National ICT Policy 2018, Sections 2.1 & 2.2).

Hasan and Hasan, 2022 found that about 90% of the students agreed that the polytechnic syllabus was relevant to the latest technology.

BTEB should incorporate IR 4.0 and 5.0 topics in their syllabus, and institutes must arrange modern tools and equipment to prepare for OBE.

2.9 Availability of Learning Materials for OBE in Polytechnic Institutes

The availability of learning materials ensures access to diverse resources that provide various learning styles and preferences. It empowers students to explore topics deeply, reinforce concepts, and engage in self-directed learning. Additionally, access to learning materials promotes equity by providing all students with the tools they need to succeed academically.

The availability of modern tools, equipment, raw materials, machines, furniture, teaching aids, learning materials, and technical support in polytechnic institutes is perceived by the majority of polytechnic teachers as adequate. Specifically, one-third of the respondents rated it as excellent, while 42% considered it somewhat sufficient. However, a notable proportion of teachers (23%) rated the availability as poor, and a small fraction (5%) remained unsure.

The mean response value of 1.82 suggests that polytechnic teachers perceive the availability of modern resources and technical support in polytechnic institutes to be moderately satisfactory. The standard deviation of 0.832 indicates a moderate level of variability in opinions among respondents, highlighting differing perceptions regarding resource adequacy.

89% of teachers thought that text books of diplomas in engineering education were not satisfactory, and only 11% were satisfied with textbooks (BTEB, 2022).

70% of the students agreed that laboratory equipment was commensurate, and half of the respondents agreed that laboratory equipment was enough for every student (Hasan and Hasan, 2022).

Institutes allocate a large portion of the budget for procuring modern tools and equipment each year, but to keep up with rapidly evolving technology, institutes must assign additional financial support to purchase modern tools and equipment.

2.10 Learning Processes in Polytechnic Institutes

In OBE, the learning processes typically involve clear articulation of learning outcomes, alignment of instructional strategies with those outcomes, and continuous assessment and feedback loops to ensure student mastery of the desired competencies.

The graduates had disagreement in the lifelong learning opportunities in polytechnic institutes. One-third of the graduates affirmed that they got lifelong learning facilities, one-third expressed that there had no lifelong learning facilities and the other one-third were not sure about the facilities.

In the modern world, science, technology, education, health, the economy, and agriculture are all changing quickly. Collaboration, critical thinking, communication, creativity, and problem-solving are among the talents that are necessary for lifelong learning and job advancement in the twenty-first century. These skills are also expected to help graduates adapt to change and deal with the new normal. The benefit of lifelong learning is found in its capacity to provide graduates with the skills, values, information, and comprehension they'll need throughout their lives to adapt to a variety of circumstances (Thwe & Kálmán, 2023).

Polytechnic institutes should create lifelong learning facilities for the students to enhance their knowledge, skills, and competencies according to demand.

2.11 Active Engagement of Students in Education

Active engagement of students in education is essential because it promotes deeper understanding and retention of knowledge. It fosters critical thinking, problem-solving skills, and the ability to apply knowledge in real-world contexts.

The overwhelming majority of polytechnic teachers (85%) perceive that students are interested in innovation and prepare subject-related projects. A smaller proportion of respondents (14%) indicated otherwise, stating that students are not interested in such activities. Only a negligible percentage (1%) remained unsure.

The main reasons for answering no are that students are not attentive, half of the students engage in innovation, need more time to innovate, need extra expenditure, lack of facilities, and a memory-based examination system.

The mean response value of 1.15 suggests that, on average, polytechnic teachers strongly believe that students are interested in innovation and have prepared subject-related projects. The low standard deviation of 0.369 indicates a high level of agreement among respondents, with minimal variability in opinions.

To actively engage the students in class rooms, it needs interactive teaching methods, incorporating technology, hands-on activities, gamification, varied assessment techniques, creating a positive learning environment, tailoring content to student interests, a flipped classroom approach, socratic questioning, peer-to-peer learning, real-world connections, flexibility in learning styles, regular feedback, classroom dynamics, and time management (Jobirovna, 2023).

For active engagement of students in education, BTEB should include more project-based problem-solving activities in the syllabus.

2.12 Individual Needs of Students in Education

Addressing individual needs is significant in education as it boosts personalized learning experiences that enhance academic performance to ensure that each student can reach full outcomes.

The Rights and Protection of Persons with Disabilities Act, 2013 calls for action to improve opportunities for persons with disabilities by increasing their access and privileges and participation in skills development programs.

The responses from polytechnic teachers indicate a predominant perception (85%) that the particular needs of each student receive some level of emphasis in the classroom. Specifically, half of the teachers reported that this emphasis occurs frequently, while one-third noted it as occasional. Conversely, a minority of respondents (15%) stated that student needs are rarely addressed, with only a minimal percentage (1%) indicating never.

The mean response value of 1.67 suggests that polytechnic teachers believe the attention given to individual student needs in the classroom is of a moderate extent. The standard deviation of 0.740 reflects a moderate level of variability in opinions among respondents, indicating differing perceptions regarding the degree of emphasis placed on student needs.

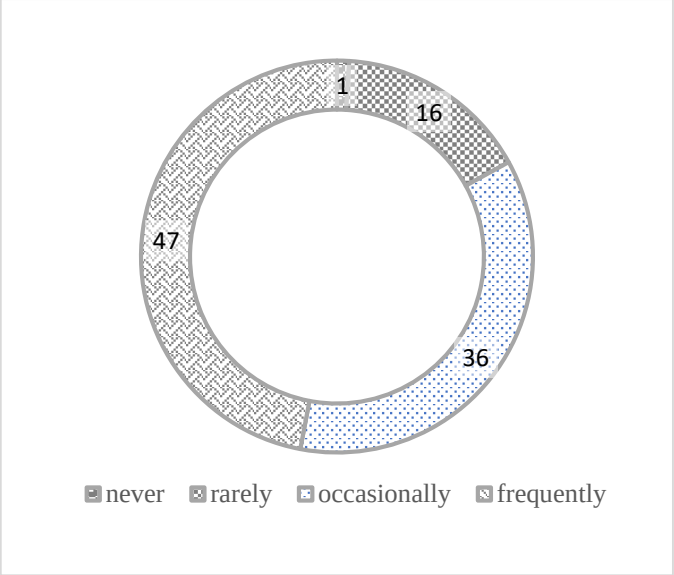

Figure 6 Teachers Responses on Individual Needs of Students in Education (%).

Polytechnic teachers need to give importance in the classroom to the particular needs of the students to ensure that all students can achieve their educational outcomes. BTEB should include issues about the special needs of individual students in the Diploma in Engineering curriculum.

2.13 Effectiveness of Teacher Training Program

Effective teacher training programs are essential for enhancing the teachers' ability to successfully deliver high-quality instruction and engage the students in the classroom.

Various practical implementation challenges concerned with OBE are curriculum development, instructional implications, appropriate measurement, and staff development (King and Evans, 1991).

Nearly half (49%) of the polytechnic teachers stated that they have not received adequate training in related occupational standards, while 48% indicated that they have. A small percentage (3%) expressed uncertainty regarding their training in this area.

The main reasons for disagreeing were that they did not get subjective training, they did not get any training, there was a lack of training arrangements and opportunities, there was mismanagement in the selection processes, the authority did not select them for training, there was some financial shortage for the training program, there was a shortage of practical-based training institutes, there was a there was a lack of official support, and there was a there was a lack of scope for training.

The mean response value of 1.46 suggests that polytechnic teachers perceive their training in related occupational standards to be insufficient. The relatively high standard deviation of 0.557 indicates a moderate level of variability in opinions among respondents.

Challenges of subject-based skill training for government polytechnic teachers in Bangladesh e.g, insufficient infrastructural facilities such as classrooms & hostel; insufficient workshop facilities such as training materials, machines and equipment; insufficient ICT facilities for teachers training, training curriculum not matching industries demands; technology/subject

wise limited training scope; unavailability of teachers training institute; lack of training facilities for female teachers; lack of sufficient number of subject-wise trainers; lack of industries experience of Training institute subjective trainer; insufficient funding of training programs; lack of planning and adequate monitoring and management of teachers training (Hasan and Rahman, 2022).

Teacher training programs promote the quality of education and the success of students and ensure a supportive learning environment. DTE, BTEB, and polytechnic institutes should work jointly to provide teacher training programs at home and abroad.

2.14 Co-curricular Activities in Polytechnic Institute

Co-curricular activities play a vital role in education by providing students with opportunities to develop a wide range of skills beyond the academic curriculum, including leadership, teamwork, and creativity. Engaging in co-curricular activities fosters holistic development, enhances social connections, and contributes to a well-rounded educational experience for students.

About half of the graduates stated that co-curricular activities and social services were encouraged and practiced occasionally in polytechnic institutes. Only 10% of the graduates expressed their opinion that they participated in co-curricular activities frequently during their education. About 30% of the graduates rarely participated in co-curricular activities, and 10% did not get any co-curricular activities to perform in the institutes.

More than half of the graduates (60%) reported the existence of co-curricular activities in their institutions, while 41% denied it. According to them, the main co-curricular activity at their institutes is the Rover Scout (87%), with some activities of different clubs (27%). Only one-third of graduates (33%) were involved in co-curricular activities, while the rest (67%) were not (BTEB, 2022).

Among the total students of the Diploma in Engineering, 67% participated in social activities, 43% were net surfers, 57% played sports, and 41% participated in cultural activities. 80% of the students had good communication skills, 75% had good negotiation skills, 80% had good leadership skills, 85% had good time management skills, 80% had good presentation skills, 80 had a good ability to work under pressure, and 90% had good teamwork abilities (Rahman et al., 2023).

According to The Accreditation Manual of Bangladesh Accreditation Council of Section Standard 6: Student Admission & Support Services, Subsection Criterion 6-7 stated that,

> "POE ensures and facilitates the participation of students in cocurricular activities and community services under the management of the HEI on a regular basis to promote creativity, social responsiveness, leadership qualities, values, molding personality towards holistic development."

More co-curricular activities should be included in the curriculum by BTEB, and institutes must conduct these programs routinely for the physical and mental development of the students.

2.15 Assessment Accuracy in Diploma in Engineering Education

The purpose of assessment accuracy is to provide teachers with reliable data to make informed decisions to support student progress and individualized learning needs.

The majority of polytechnic teachers (63.0%) perceive that the correctness of answers is consistently measured through examinations. A significant portion of respondents (29%) indicated that this measurement occurs sometimes, while a smaller percentage (6%) reported that it rarely happens. A minority of respondents (2%) chose not to respond to the question.

The average response score of 1.38 indicates that polytechnic teachers generally mention a moderate emphasis on correctness in examinations. Additionally, the standard deviation of 0.634 suggests a moderate level of variability in opinions among respondents.

There need to be guidelines for teachers from the BTEB to assess the correctness of answers measured through the examination.

2.16 Context of Assessment in Diploma in Engineering Education

The context of assessment is crucial, as it ensures that teachers are meaningful and relevant to the specific learning objectives, environments, and cultural backgrounds of students, thereby fostering a fair and equitable measurement of their knowledge and abilities.

The study reveals that the vast majority of respondents (90%) perceive clarity in understanding the assessment process among teachers and students. Specifically, 47% rated it as excellent, and 43% considered it somewhat clear. However, a small proportion (7%) expressed dissatisfaction with the clarity of ideas, while a minority (3%) chose not to respond.

With a mean response value of 1.56, polytechnic teachers generally believe that the clarity regarding the assessment process is relatively high. However, the standard deviation of 0.662 indicates a moderate level of variability in opinions among respondents, suggesting some differing perspectives on the extent of clarity.

Three-fourths of the graduates agreed that they had clear ideas about the assessment process for diplomas in engineering education. Only 10% of the students did not get clear ideas about the assessment process during their education.

BTEB should include details about the context of assessment in the curriculum so that teachers and students can get an idea about assessment systems.

2.17 Evidence of Assessment in Diploma in Engineering Education

Preserving evidence of assessment is vital as it allows for ongoing reflection, validation, and improvement of educational practices, ensuring accountability, transparency, and the maintenance of standards in the assessment process.

Over 80% of polytechnic teachers believe all assessment evidence is formally preserved. However, a significant minority (14%) disagree, suggesting not all evidence is documented formally. A small percentage (6%) remain unsure.

Polytechnic teachers tend to agree with this statement, as evidenced by the mean response value of 1.08. The relatively low standard deviation (0.439) indicates moderate agreement, with some variation in individual opinions.

BTEB should provide clear instructions about the preservation of assessment evidence for further scrutiny and analysis.

2.18 Completeness of Assessment in Diploma in Engineering Education

To achieve the complete outcomes of education, students should perform all of the tasks in the examination.

One-fifth of the graduates stated that they could perform all of the questions and tasks during the assessment. 43% of the graduates could occasionally and 30% rarely answer all of the questions in the examination. On the other hand, 6% of the graduates never answer all of the questions in the examination.

To achieve learning outcomes in the OBE system, there need to be guidelines so that all of the students can perform all tasks during their assessment.

2.19 Assessment Procedure and Tools in Diploma in Engineering Education

The assessment procedure and tools are significant for teachers to precisely measure student learning, identify areas for improvement, and adapt instructional strategies to effectively meet individual needs.

91% of polytechnic teachers believe adequate assessment tools and procedures are used to measure learning outcomes, although the extent varies. Nearly half (48%) reported they are always used, while the rest (43%) said it happens occasionally. However, a small minority (9%) believe these tools are rarely used effectively.

The mean response value of 1.59 indicates that polytechnic teachers have positive answers to the questions. However, the standard deviation (0.648) indicates a moderate level of disagreement among individuals, suggesting some variability in opinions.

BTEB should provide specific procedures and tools for the assessment to all of the teachers and students in the same manner to avoid anomalies.

2.20 Assessment of Critical Thinking and Problem-Solving Skills

Critical thinking and problem-solving skills are essential for students to enhance their capacities to analyze information, evaluate situations, and generate innovative solutions, fostering adaptability and resilience in navigating complex challenges across various domains of life.

Over two-thirds (68%) of polytechnic teachers believe critical thinking and problem-solving skills are assessed in evaluations. However, a significant minority (24%) disagree, suggesting these skills might not be comprehensively assessed. Additionally, a small portion (8%) are unsure about how well these skills are assessed.

The reasons for negative answers were lack of skilled manpower, not having enough time to complete the tasks, lack of practical skills, teacher shortage in the institutes, lack of standard

questions, lack of practical skills, weakness in the curriculum, teachers overloaded with their extra work, and not being included in the evaluation process.

Polytechnic teachers tend to agree with the statement, as indicated by the mean response value of 1.17. However, the standard deviation of 0.546 suggests a moderate range of opinions among respondents.

BTEB should include critical thinking and problem-solving skills in the curriculum and set out the evaluation processes in the Diploma in Engineering education.

2.21 Assessment of Knowledge, Skills, and Attitudes of the Students

To evaluate the learning outcomes of the students, it is necessary to measure their knowledge, skills, and attitudes during the assessment processes.

Over 85% of polytechnic teachers believe students' knowledge, skills, competencies, values, and attitudes are assessed to some degree during evaluations. While 42% report this happens consistently and 43% say it occurs occasionally, a noteworthy 14% believe these aspects are rarely assessed, and a small portion (1%) report it never happens.

The reasons for negative answers were lack of skilled manpower, too many students in a group, not enough time allocation for assessment, and a shortage of teacher’s proficiency.

The mean response value of 1.70 indicates that polytechnic teachers tend to agree with this statement. However, the standard deviation of 0.716 indicates a moderate range of opinions among respondents.

BTEB should prepare a proper guideline to assess the knowledge, skills, and attitudes of the students to ensure the learning outcome is attained.

2.22 Grading System of Diploma in Engineering Education

The grading system should express the overall learning outcome and attainment of the students.

81% of polytechnic teachers believe the grading system reveals students' skills and knowledge to some degree. Nearly half (45%) find it reveals them to a great extent, while a third (35%) see it as somewhat revealing. However, a significant minority (13%) believe it reveals very little, and a small portion (7%) say it reveals nothing at all.

The reasons for negative answers were: lack of proper assessment tools; no benchmark for grading; it is just a traditional examination; knowledge and experience not correctly measured; lack of competency standards; weakness in the examination system; average tendency of grading; no specific rating system for each outcome; inappropriate curriculum; and teaching provided by lots of guest teachers.

The mean response value of 1.56 reflected that polytechnic teacher tend to agree with the relevancy of the knowledge and grading system. However, the standard deviation of 0.792 indicates a moderate range of opinions among respondents, suggesting not everyone shares this sentiment.

Table 3 2nd, 4th, 6th, and 8th Semester Diploma in Engineering Result Summary published on 03-03-2024 (Examination held in December, 2023).

Technology Code	Technology Name	Total examinee	Total passed	Total referred	Total failed	GPA 4	GPA 3.99_3.75	GPA 3.50_3.74	GPA 3.25_3.49	GPA 3.00_3.24	GPA 2.75_2.99	GPA 2.50_2.74	GPA 2.25_2.49	GPA 2.00_2.24
61	Architecture Technology	2,800	1,607	1,109	84	0	58	266	359	399	323	207	140	15
62	Automobile Technology	2,380	1,203	1,016	161	0	83	196	303	294	263	148	87	22
63	Chemical Technology	679	459	217	3	4	49	69	79	99	118	66	20	12
64	Civil Technology	41,185	25,813	13,367	2,005	162	3,324	6,168	7,096	5,808	3,342	1,483	428	44
65	Civil (Wood) Technology	311	185	112	14	2	10	26	43	39	35	27	20	4
66	Computer Technology	21,611	14,867	5,991	753	29	1,417	4,109	4,582	2,998	1,515	665	198	20
67	Electrical Technology	44,501	26,717	14,791	2,993	105	2,393	5,206	7,502	6,441	3,953	1,785	635	95
68	Electronics Technology	13,417	7,711	4,859	847	7	443	1,135	1,863	2,247	1,425	777	298	34
69	Food Technology	3,159	1,748	1,240	171	5	101	244	406	401	356	230	102	22
70	Mechanical Technology	19,746	11,790	6,826	1,130	23	926	2,218	2,996	2,753	1,907	1,056	361	40
71	Power Technology	7,916	4,342	3,153	421	9	245	651	1,079	1,112	798	453	193	21
72	Refrigeration and Air-Conditioning Technology	5,173	2,764	2,065	344	2	141	408	692	733	607	318	138	10
76	Ceramic Technology	798	247	455	96	0	3	10	38	71	87	39	22	3
77	Glass Technology	181	67	89	25	0	0	5	7	22	16	14	13	4
78	Surveying Technology	2,156	1,441	598	117	1	101	428	487	259	174	78	23	0
79	Marine Technology	1,322	815	421	86	1	54	133	234	184	142	84	30	3
80	Shipbuilding Technology	797	506	248	43	0	26	78	129	121	90	62	22	0
82	Aircraft Maintenance (Aerospace) Technology	37	16	20	1	0	2	3	6	3	2	1	0	1
83	Aircraft (Maintenance) Technology	5	2	3	0	0	0	0	2	0	1	0	0	0
84	Data Telecommunication and Networking Technology	162	145	17	0	0	30	44	46	16	11	2	0	0
85	Computer Science and Technology	22,537	8,787	10,908	2,842	12	436	1,363	2,233	2,516	1,828	850	230	31
86	Electro-Medical Technology	2,291	1,238	794	259	4	91	169	274	331	256	134	73	8
87	Architecture and Interior Design Technology	1,518	1,147	364	7	3	95	298	378	238	123	51	17	0
88	Construction Technology	2,002	1,154	754	94	2	52	129	200	295	285	183	88	15
90	Environmental Technology	1,343	581	670	92	0	13	51	110	138	142	125	67	19
91	Instrumentation and Process Control Technology	198	159	38	1	0	5	22	47	54	24	8	1	0
92	Mechatronics Technology	1,369	500	724	145	1	26	84	148	150	96	31	4	2
93	Mining and Mine Survey Technology	70	36	32	2	1	6	6	12	9	4	0	0	0
94	Telecommunication Technology	1,383	703	600	80	0	26	101	196	219	135	71	17	4
95	Printing Technology	220	141	70	9	0	1	4	12	23	40	39	21	6
96	Graphic Design Technology	763	486	249	28	0	16	40	79	93	132	83	62	18
98	Footwear Technology	8	5	3	0	0	0	6	1	0	0	0	0	0
	Total =	202,038	117,382	71,803	12,853	373	10,173	23,670	31,639	28,066	18,230	9,070	3,310	453

Table 4 2nd, 4th, 6th, and 8th Semester Diploma in Engineering Result Summary of Male and Female Students published on 03-03-2024 (Examination held in December, 2023).

Institute Type	Male_appeared	Male_pass	Male passing rate (%)	Female_appeared	Female_pass	Female passing rate (%)	Total_appeared	Total_pass	Total passing rate (%)
Govt. Polytechnic	111,022	70,271	63	17,629	12,496	71	128,651	82,767	64
Non-Govt. Polytechnic	66,493	30,807	46	6,894	3,808	55	73,387	34,615	47
Total =	177,515	101,078	57	24,523	16,304	66	202,038	117,382	58

The table showed that female passing rate is higher than the male students. Government polytechnic has a higher pass rate than non-government polytechnic institutes.

Table 5 1st, 3rd, 5th, and 7th Semester Result Summary published on 19-10-2023 (Examination held in held in July- August, 2023).

Technology Code	Technology Name	Total examinee	Total passed	Total referred	Total failed	GPA 4	GPA 3.99_3.75	GPA 3.50_3.74	GPA 3.25_3.49	GPA 3.00_3.24	GPA 2.75_2.99	GPA 2.50_2.74	GPA 2.25_2.49	GPA 2.00_2.24
61	Architecture Technology	3,085	1,594	1,260	231	2	63	193	392	467	360	151	50	8
62	Automobile Technology	2,716	1,120	1,240	356	7	104	191	294	344	235	125	40	7
63	Chemical Technology	712	379	294	39	1	35	44	64	86	107	59	16	2
64	Civil Technology	44,894	24,283	16,611	4,000	105	2,184	4,418	6,495	6,267	4,011	1,716	489	44
65	Civil (Wood) Technology	328	153	151	24	1	5	11	26	43	45	23	11	0
66	Computer Technology	22,408	13,231	8,488	689	59	1,319	3,747	4,342	2,865	1,507	689	229	16
67	Electrical Technology	48,314	25,294	18,665	4,355	98	1,828	4,397	7,298	7,284	4,102	1,548	446	57
68	Electronics Technology	14,291	7,079	6,018	1,194	17	273	823	1,506	2,234	1,740	838	223	8
69	Food Technology	3,398	1,657	1,536	205	4	113	272	426	498	390	128	34	1
70	Mechanical Technology	21,062	12,101	7,716	1,245	53	1,068	2,545	3,578	3,129	1,882	766	247	27
71	Power Technology	8,350	4,421	3,418	511	11	274	648	1,094	1,244	878	554	189	17
72	Refrigeration and Air-Conditioning Technology	5,679	2,416	2,637	626	1	105	317	539	728	545	305	115	14
76	Ceramic Technology	884	223	528	133	0	1	8	31	45	68	67	35	6
77	Glass Technology	194	48	108	38	0	0	4	10	23	17	12	8	0
78	Surveying Technology	2,274	1,224	831	219	0	63	248	357	347	182	54	2	0
79	Marine Technology	1,454	784	506	164	1	27	108	165	210	189	95	38	0
80	Shipbuilding Technology	843	454	340	49	2	16	48	72	114	120	79	23	1
82	Aircraft Maintenance (Aerospace) Technology	42	24	16	2	0	3	5	8	2	5	2	0	0
83	Aircraft (Maintenance) Technology	5	4	1	0	0	0	1	1	2	0	0	0	0
84	Data Telecommunication and Networking Technology	165	146	16	3	0	41	52	40	15	8	1	0	0
85	Computer Science and Technology	26,449	10,063	12,065	4,321	16	630	1,707	2,819	2,841	1,629	580	123	18
86	Electro-Medical Technology	2,525	1,106	1,195	224	2	59	152	222	289	248	143	34	6
87	Architecture and Interior Design Technology	1,584	1,090	479	15	0	80	276	280	229	184	91	20	0
88	Construction Technology	2,110	1,100	898	112	2	44	111	172	300	312	205	55	2
90	Environmental Technology	1,519	598	789	132	0	10	43	110	169	158	130	62	11
91	Instrumentation and Process Control Technology	212	160	51	1	0	0	11	44	80	38	5	0	0
92	Mechatronics Technology	1,486	536	830	120	1	24	89	171	203	145	42	9	1
93	Mining and Mine Survey Technology	80	42	36	2	0	6	7	8	15	12	1	0	0
94	Telecommunication Technology	1,506	681	681	144	0	47	116	199	234	118	39	8	1
95	Printing Technology	242	129	91	22	0	0	1	14	23	44	39	12	8
96	Graphic Design Technology	826	470	296	60	0	11	38	65	106	137	102	35	5
98	Footwear Technology	10	5	4	1	0	0	0	0	5	0	0	0	0
TOTAL =		219,647	112,615	87,795	19,237	383	8,433	20,631	30,842	30,441	19,416	8,589	2,553	260

Table 6 2nd, 4th, 6th, and 8th Semester Result Summary published on 15-05-2023 (Examination held in held in Jan-Mar, 2023).

Technology Code	Technology Name	Total examinee	Total passed	Total referred	Total failed	GPA 4	GPA 3.99_3.75	GPA 3.50_3.74	GPA 3.25_3.49	GPA 3.00_3.24	GPA 2.75_2.99	GPA 2.50_2.74	GPA 2.25_2.49	GPA 2.00_2.24
61	Architecture Technology	2,094	1,188	807	99	2	71	227	310	267	190	112	41	3
62	Automobile Technology	2,501	1,191	1,103	207	0	105	238	283	245	160	140	56	10
63	Chemical Technology	688	429	218	41	3	34	80	105	94	71	29	17	5
64	Civil Technology	43,161	26,135	14,290	2,736	110	3,637	6,773	7,203	5,330	2,817	1,027	252	29
65	Civil (Wood) Technology	294	181	108	5	0	16	29	57	42	22	18	8	1
66	Computer Technology	34,046	19,167	12,536	2,343	31	2,616	6,109	5,520	3,280	1,457	631	212	19
67	Electrical Technology	49,517	27,036	17,942	4,539	79	3,026	6,422	7,577	5,739	3,100	1,307	362	60
68	Electronics Technology	14,442	7,953	5,349	1,140	13	674	1,563	2,131	1,965	1,107	504	168	17
69	Food Technology	3,441	2,158	1,119	164	7	220	439	503	466	271	189	76	26
70	Mechanical Technology	20,949	12,243	7,434	1,272	25	1,254	2,720	3,210	2,563	1,631	729	250	13
71	Power Technology	8,215	4,622	3,251	342	4	368	907	1,291	1,016	647	329	120	14
72	Refrigeration and Air-Conditioning Technology	5,645	2,979	2,255	411	1	144	565	844	660	467	295	96	11
76	Ceramic Technology	762	280	437	45	0	1	16	55	79	85	35	16	1
77	Glass Technology	208	80	108	20	0	0	6	22	24	18	12	3	1
78	Surveying Technology	2,087	1,442	539	106	0	117	396	422	281	162	74	19	2
79	Marine Technology	1,482	998	408	76	2	120	217	251	234	96	67	22	2
80	Shipbuilding Technology	964	692	244	28	0	64	148	178	138	104	57	16	1
82	Aircraft Maintenance (Aerospace) Technology	42	29	10	3	0	3	10	4	6	2	2	1	1
83	Aircraft (Maintenance) Technology	13	11	2	0	0	5	4	2	0	0	0	0	0
84	Data Telecommunication and Networking Technology	267	186	63	18	0	38	66	48	34	3	2	0	0
85	Computer Science and Technology	12,979	5,457	5,983	1,539	2	361	933	1,319	1,592	990	456	94	3
86	Electro-Medical Technology	2,366	1,332	913	121	0	121	294	317	303	199	109	36	6
87	Architecture and Interior Design Technology	2,371	1,723	627	21	2	252	579	447	239	135	65	29	3
88	Construction Technology	2,021	1,164	779	78	1	84	145	237	279	267	142	58	14
90	Environmental Technology	1,406	640	696	70	0	30	102	160	162	113	90	23	2
91	Instrumentation and Process Control Technology	343	215	112	16	0	17	43	80	54	18	7	1	0
92	Mechatronics Technology	1,430	538	723	169	1	46	121	152	120	65	33	13	1
93	Mining and Mine Survey Technology	105	55	49	1	1	6	15	18	9	6	0	0	0
94	Telecommunication Technology	1,440	738	614	88	0	44	146	195	221	102	40	7	0
95	Printing Technology	224	167	54	3	0	1	6	26	37	34	35	30	0
96	Graphic Design Technology	785	529	215	41	0	25	40	71	128	154	89	28	5
98	Footwear Technology	9	9	0	0	0	9	0	0	0	0	0	0	0
TOTAL =		216,297	121,567	78,988	15,742	284	13,509	29,359	33,038	25,607	14,493	6,625	2,054	250

From the previous three results, it was found that a large number of students got a GPA between 3.00 to 3.49. To focus on the learning outcome of GPA BTEB should formulate detailed guidelines about the assessment system.

2.23 Feedback System of Diploma in Engineering Education

Feedback is very important to the enhancement of student learning outcomes.

Over 70% of the polytechnic teachers said that they always provide feedback to students after assessments. Additionally, nearly 20% report providing feedback occasionally, and a smaller group (6%) does so rarely. Only a small minority (4%) indicated they never provide feedback.

The reasons for the negative answer were that they did not have enough time in the routine, the class size was too large, and the environment was unfavorable.

The mean response value of 1.28 indicates that polytechnic teachers tend to frequently provide feedback to the students. However, the standard deviation of 0.615 suggests a moderate range of practices, indicating some variation among individual teachers.

Also, 70% of the graduates thought that they could provide feedback about the teacher's teaching methodology during the class season, and the other 30% did not take part in feedback processes.

There should be a well-defined feedback system for both teachers and students to incorporate into the Diploma in Engineering curriculum.

2.24 Student Satisfaction with Diploma in Engineering Education

For CQI and monitoring, it is important to follow up on student satisfaction with their education and achievements.

About 70% of the graduates thought they were satisfied with their academic performance, but 30% disagreed with them.

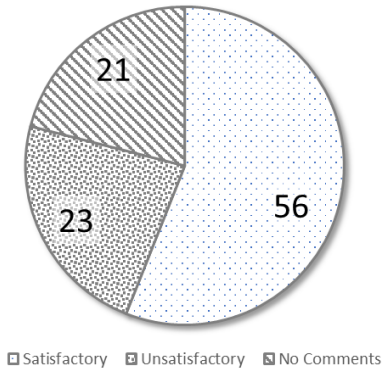

Figure 7 Salary Satisfaction of Diploma Graduates (%).

The study revealed that 56% of the graduates were satisfied with their salary, 23% were not satisfied, and the other 21% had no comments about satisfaction.

A study by BTEB found that 68% of the diploma graduates were satisfied with their salary, and another 32% were not satisfied (BTEB, 2022).

The National Skills Development Policy 2020 mentions reskilling, upskilling, and lifelong learning (LLL) facilities that,

> "Rapid technological changes including use of digital technologies, ever-increasing trends of remote work, digitization of businesses and commerce, and spectacular growth of technology-based occupations will make profound impact on the labor market including on the skills requirements for the old as well as new workers."

There should be processes introduced by BTEB to measure students' satisfaction with their learning outcomes and make up for the deficit to improve the education system.

2.25 Job Placement Facilities in Polytechnic Institutes

Job placement facilities at a polytechnic institute help the freshmen get a suitable job immediately.

The majority of teachers, constituting 81% (36% always and 45% occasionally), perceive that the institute offers opportunities for students to secure suitable jobs either frequently or occasionally. This indicates a positive perception among a significant portion of the respondents. However, a notable percentage, comprising 17% (14% rarely + 3% never), perceive that such opportunities are infrequent or absent within the institute. This highlights a concern that a minority of teachers have regarding the institute's efforts in this aspect.

The teacher conducts their job placement by MOU with industries; teachers help them by providing jobs with placement cells, arranging job fairs, sharing job circulars, and arranging training in industries.

The mean value of 1.81 suggests that respondents perceived the institute as providing opportunities for students to secure suitable jobs, leaning towards the "occasionally" category. The standard deviation of 0.814 indicates a moderate level of dispersion around the mean.

About half of the diploma graduates engaged in a job in various organizations, including government, private, and NGOs; 7% were self-employed; 22% remained unemployed; and the other 44% underwent higher study (BTEB, 2022).

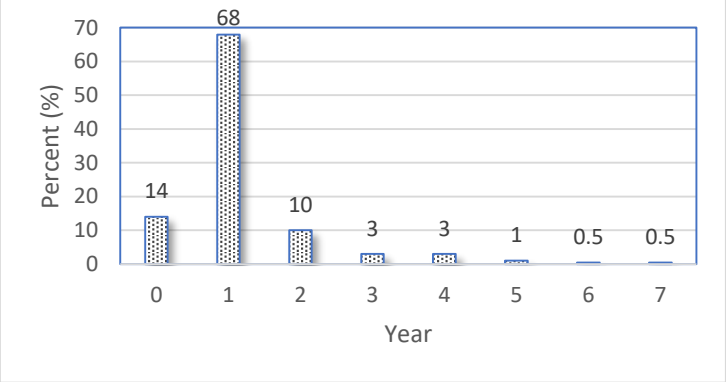

Figure 8 Time to Get First Job of Diploma Graduates.

It was found in the study that 14% of the graduates got a job before publishing the final result; a majority (68%) of the graduates got a job within 1 year; 10% got one within 2 years; and others took time to get a job.

A study of DTE 2021 found that 34% of graduates got jobs before their final result, 48% within 6 months of graduation, 13% within 1 year of graduation, and 5% within or around 2 years of graduation.

Another study by BTEB in 2022 also found that nearly half (46%) of the employed graduates were involved in jobs within six (06) months after completing their diploma, while 16% of graduates got jobs within 6–12 months. 16% of graduates took more than 18 months after

completing their diploma to get their jobs, while 12% of graduates started their jobs during diploma courses.

Apprenticeship is a well-known and time-tested workplace-based training modality. It is an effective way for preparing people for the world of work and addressing unemployment. The NSDA Rules 2020 defines apprenticeship as follows:

> "Apprenticeship is a particular method of skills training through which an employer signs a contract to employ one or more persons as apprentice (s) and train them in systematic way in an industry or training institution in any occupation for predetermined period of time."

37% of diploma graduates went for jobs, 11% for higher education, 2% for self-employment, and the other 50% did not get jobs, employment, or training. Among the job holders, 69% worked in private organizations, 12% in multinational companies, 8% in private organizations, and 6% in NGOs (DTE, 2021).

About 70% of the graduates were unsatisfied, and 20% were unsatisfied in the workplace (Rubel et al., 2023).

Every polytechnic should create effective job placement facilities for their graduates and track the career paths of those graduates for at least five years.

2.26 Industry Linkage Facilities of Polytechnic Institutes

Collaboration between industries and institutes helps achieve overall educational outcomes by integrating up-to-date technology.

The objectives of the National Skills Development Policy, 2020 are:

> "to strengthen industry- institute linkage for demand-driven skills development and job placement;"

Polytechnic teachers' perceptions indicate varying degrees of collaboration between their institutes and the industry. While a significant portion (41%) perceive the collaboration to be somewhat strong, a notable proportion (31%) perceive it as poor. Additionally, 26% rated the collaboration as excellent. A small percentage (2%) chose not to respond.

Teachers conduct their industry linkage through MOU signing, teacher communication with industry through meetings and phone calls, industrial visits, guest teacher hiring from industries, conducting seminars and workshops, and sharing job opportunities with graduates.

Each student must take industrial training in eight semesters for three months in the industry. It was found that only 44% of diploma graduates were aware of the duration of their industrial training. The majority of these graduates lacked a clear understanding of how long their internship should last. While 37% of graduates, 50% of instructors, and 57% of principals believed the duration of industrial training was adequate, others expressed concerns that it was insufficient. 95% of graduates, 97% of teachers, and 91% of principals assumed that industrial training was necessary for the skill development of students (BTEB, 2022).

60% of students took industrial training at a training center, 14% went to government organizations, and 8% completed it in the industry. A collaborative framework is needed for effective industry linkage to the institutes (Haque et al., 2023).

Polytechnic teachers perceive the collaboration between their institutes and the industry as moderate (mean response: 2.02). The standard deviation of 0.80 indicates a moderate level of variability in opinions among respondents.

2.27 Standardization and Accreditation of Diploma in Engineering Education

The standardization and accreditation of educational institutes are crucial as they ensure consistency in educational quality, facilitate recognition and comparability of qualifications, and uphold accountability to stakeholders, ultimately contributing to the credibility and effectiveness of the education system.

The curriculum of the Diploma in Engineering was formulated as a guideline for education policy and UNESCO.

To quote at length from the Qudrat-e-Khuda Education Commission-1972,

> "The main aim of technical education at the diploma level is to produce such a section of trained man-power as will be able to perform with competence their work in the technical field with their own hands, will be fully aware about basic technical rules and industrial methods and will have the necessary capacity to direct industrial labour effectively."

The Medium-Term Strategy for 2021-2023 (MTS-III) sets out how UNESCO-UNEVOC will support TVET institutions to meet the demands of dynamic labour markets and provide quality skills training for a sustainable future of work. According to UNESCO-UNEVOC Medium-Term Strategy for 2021-2023,

> "Technical and vocational education and training (TVET) institutions are expected to address multiple economic and societal demands by helping youth and adults develop the skills they need for employment, decent work and entrepreneurship. They are also key players in steering the transition towards sustainable societies and greener economies. In most Member States, TVET institutions have been undergoing important transformations to meet the changing demands of labour markets and the need for sustainable development."

Incorporation with DUBLIN ACCORD (The Dublin Accord Is An International Agreement Establishing The Required Educational Base For Engineering Technicians), SYDNEY ACCORD (The Sydney Accord Is An International Agreement Between Bodies Responsible For Accrediting Engineering Technology Academic Programmes), APAC (The Asia Pacific Accreditation Cooperation), and other international accreditation organizations enrich the Diploma in Engineering curriculum for acceptance and mobilization of students and graduates in the global labor market.

2.28 Strategies for Continual Quality Improvement (CQI) and Monitoring

Stakeholder consultation in education is vital as it fosters collaboration, gathers diverse perspectives, and ensures that educational policies and practices align with the needs, values, and expectations of all involved parties, thereby promoting transparency, inclusivity, and effectiveness in decision-making processes.

BTEB consults with stakeholders while formulating regulations and syllabi. On the other hand, principals of polytechnic institutes expressed their views that they have few opportunities to take part in policy-making processes.

Engaging various stakeholders, including students, faculty, administrators, employers, and accrediting bodies, is crucial for successful OBE implementation (Sharma, 2023).

The majority (75%) of polytechnic teachers expressed positive views, indicating that their institutions emphasize the use of new technologies in the classroom. However, a significant portion (19%) held a contrasting opinion, suggesting that technology may not be receiving the necessary focus. A smaller group (5%) remained uncertain on the issue, and a minority (1%) did not respond.

The mean response value of 1.13 suggests that polytechnic teachers perceive a moderate level of prioritization for new educational technologies. Additionally, the standard deviation of 0.481 indicates a moderate degree of variability in their opinions.

Teachers with scores of weighted means of 2.23 stated that instruments are sufficient in laboratories (BTEB, 2022).

The dropout rate of government polytechnic institutes in the first semester of Civil Technology was 2%, and that of non-government polytechnic institutes was 11%. The promotion rate for the next class of the first semester of Civil Technology was 12% (BTEB, 2022).

BTEB, DTE, and polytechnic institutes should give priority to stakeholder consultation to introduce modern technologies and innovations.

2.29 Entrepreneurship Facilities in Polytechnic Institute

The importance of entrepreneurship lies in its capacity to drive innovation, create economic opportunities, and foster resilience in adapting to changing circumstances, ultimately contributing to socioeconomic development and prosperity.

The NSDA Rules, 2020 has stated about entrepreneurship that,

> "An area of immense importance is skills development for entrepreneurships, particularly for the young people. As the number of formal jobs is limited compared to the number of job seekers, alternative occupations in the form of entrepreneurships (mostly for self-employment) is now a widely accepted option for the young people. A good example is the freelancing modality and start-ups using online platforms and digital technologies which has become an emerging area with high growth potentials. So, the skills development system will include necessary components for entrepreneurships training."

About 20% of the graduates agreed that they got financial support to become entrepreneurs. They got financial support from bank loans. 80% of the graduates did not get financial opportunities to become entrepreneurs.

7% of the total graduates could become entrepreneurs after completing their studies (BTEB, 2022).

The institute should help innovative graduates become entrepreneurs with a minimum rate of interest.

2.30 Conclusion

The present scenario of the education system in polytechnic institutes is favorable to OBE. BTEB should take the initiative to formulate the OBE curriculum with objectives, syllabus,

learning outcomes, assessment rubrics, and grading system for the Diploma in Engineering program. Students should be encouraged to take OBE education so that enrollment may increase to achieve the government target of 50% within 20240 years. Competencies should be set according to industry standards so that graduates can easily get a job with a satisfactory salary. OBE education should be inclusive of all people in society. It needs to create a teaching and learning environment for better education quality at OBE. Learning materials should be available to the students. There is a need more training programs to develop teachers' skills. The diploma in engineering curriculum should have standardization and accreditation by international organizations for acceptance by graduates in the global labor market. It has been essential to develop a strong monitoring system for the continual improvement of academic and administrative facilities. Adequate opportunities should be created for students to develop as entrepreneurs.

SECTION THREE: CHALLENGES FACE TO IMPLEMENT OBE IN POLYTECHNIC INSTITUTES

3.1 Credibility and Recognition for Successful Results

Credibility and recognition are essential for successful results as they validate achievements, inspire confidence among students, and enhance the reputation and constancy of students, thereby opening doors to further opportunities and improvements.

80% of graduates assumed that they got educational scholarships, loans, and aid for their successful results. They got government and development project-funded stipends for meritorious results in the previous examination. Others did not get any financial support from institutes.

Students come to study a Diploma in Engineering Education from Low Income (<$1036) 5%, Lower Middle Income ($1036-4045) 70%, Upper Middle Income ($4045-12535) 24%, and High Income (>$12535). 3% of families (BTEB, 2022).

There needs to be a fair amount of scholarship facilities to encourage poor and meritorious students to study better.

3.2 Use of Pedagogical Tools in Teaching

Use of pedagogical tools in teaching to enhance student engagement, facilitate learning, and provide diverse learning styles and needs effectively.

Polytechnic teachers provided varied responses regarding the use of adequate pedagogical tools in the teaching process. A majority (62%) reported that such tools are used sometimes, while a notable percentage (26%) indicated that they are used always. Conversely, 11% of respondents reported rare utilization of pedagogical tools, and a small portion (1%) expressed disinterest in responding to the question.

Teachers commonly use PPTs as pedagogical tools.

The mean response value of 1.83 suggests that polytechnic teachers perceive the use of adequate pedagogical tools in the teaching process to be moderate. The standard deviation of 0.628 indicates moderate variability in respondents' opinions.

Project-based learning, collaborative learning, learning by doing, etc. are modern methods used in Finland, Sweden, Korea, and other countries that employ contemporary techniques to strive for educational excellence (Queiroz-Neto, 2015).

Teachers should use a variety of pedagogical tools to better understand and engage students in education.

3.3 Ensure the Lesson Plan in Teaching

A lesson plan lies in its ability to provide structure, coherence, and clarity to teaching sessions, ensuring that educational objectives are met effectively while maximizing student engagement and learning outcomes.

Polytechnic teachers provided varied responses regarding the preparation and adherence to lesson plans. Two-thirds reported always preparing and following lesson plans appropriately. However, a significant proportion (28%) indicated doing so occasionally, while a smaller percentage (6%) reported rarely adhering to lesson plans. A negligible portion (1%) reported never preparing or following lesson plans.

The reasons for a negative answer from teachers were not included in the syllabus properly: insufficient time in a period, fewer monitoring facilities, insufficient teacher training programs, a deficient teacher's attitude, semester time being too short, class schedules not matching, and some political issues.

The mean response value of 1.41 suggests that polytechnic teachers perceive the preparation and adherence to lesson plans to be moderate. The respondents' opinions varied moderately, as shown by a standard deviation of 0.614.

A key component of a successful teaching-learning process is lesson planning, which gives the instructor a clear structure for instruction and helps the class go more smoothly. It can be

viewed as a teacher's blueprint for what they believe their students should learn and how to accomplish it in class (Sehweil et al., 2022).
There needs to be teacher training on lesson plans, and strong monitoring should imply the proper implementation of the lesson plan.

3.4 Institutional Management System

Institutional management systems streamline administrative tasks, optimize resource allocation, and maintain organizational efficiency within educational institutions, ultimately facilitating smooth operations and enhancing the overall learning environment.
Educational institutions must carefully plan and organize their operations to educate the next generation, modernize pedagogical and scientific practices, and incorporate cutting-edge technologies (Shadiyev, 2023).
To develop the institute management system, the principals of polytechnic institutes assumed that there was a need for training and capacity building to implement OBE.

3.5 Evaluation Processes

It is important to have both internal and external evaluation processes in polytechnic institutes for academic and administrative activities to ensure effective implementation of OBE.
Principals of the polytechnic institute expressed their views that there needs to be evaluation after every semester so that improvements can be made periodically.
The Internet of Things (IoT) can be used to enhance motoring and evaluation processes in educational institutes (Ramani et al., 2023).
DTE and BTEB should make a checklist for internal and external evaluation processes in polytechnic institutes for academic and administrative activities for successful OBE.

3.6 Learning Environment of Polytechnic Institutes

The learning environment is important as it significantly influences student motivation, engagement, and academic success by fostering a supportive, inclusive, and conducive atmosphere for learning and growth.
Principals of polytechnic institutes stated that to create an OBE-friendly learning environment, they need to set up modern laboratories and workshops, specific training programs for teachers, industrial collaboration, and create awareness among students and guardians.
The psychological, social, cultural, and physical context of the learning environment influences students' motivation and achievement (Rusticus et al., 2023).
DTE should facilitate the enhancement of the learning environment in polytechnic institutes.

3.7 Teaching Methods and Assessment Processes

Teaching methods and evaluation processes help students attain learning outcomes.
Polytechnic teachers overwhelmingly perceive the necessity of preparing appropriate teaching methods and evaluation processes for OBE. The vast majority (94%) strongly believe in the importance of tailoring teaching methods and evaluation processes to align with OBE principles. A small proportion (3%) expressed disagreement with this notion, while a minority (3%) remained unsure.
The mean response value of 1.00 suggests that polytechnic teachers strongly endorse the necessity of preparing appropriate teaching methods and evaluation processes for OBE. The extremely low standard deviation of 0.254 indicates a high level of consensus among respondents, with minimal variability in opinions.
Teaching methods and assessment indicators that can be used in class rooms are lecture, pedagogical technologies, information technologies, demonstration, multimedia, presentation, work with the book, debate/discussion, interactive terminals, problem teaching, personal

experience/practical work, projects, oral, story, and conversation. modular teaching, differentiated teaching (Ergashevich, 2023).
BTEB should prepare a strong guideline for teaching methods and evaluation processes for successful OBE in polytechnic institutes.

3.8 Class Size

Class size is significant for quality education.
Polytechnic teachers provided varied responses regarding the perceived optimum class size for OBE. About half of the respondents indicated that class sizes of 11–20 students would be optimal for OBE implementation. Additionally, a significant proportion (41%) favored slightly larger class sizes of 21–40 students. Fewer respondents preferred smaller class sizes of 10 students (8%) or larger class sizes of 41–50 students (3%). The reasons were: teaching comfort in low-class-size classrooms; students wanting to learn practically; making students skilled; achieving outcomes; and providing suitable jobs in the future for the students.
The mean response value of 2.39 suggests that polytechnic teachers lean towards favoring class sizes between 11 and 40 students for OBE. The moderate standard deviation of 0.677 indicates some variability in opinions among respondents.

The average class size in the US is 20 students, with most classes having 15 to 26 students. With an average classroom size of 900 square feet (84 m^2), this results in an estimated average of 45 square feet (4.2 m^2) per student (Haapanen, 2024).

In The Accreditation Manual of Bangladesh Accreditation Council of Section Standard 8: Facilities & Resources, Subsection Criterion 8-1 mentioned that,

> "The POE maintains a policy for student enrollment in a class/semester on the basis of capacity in terms of free space, number and size of class room, common room, washroom and other facilities like technology and equipment as necessary for attainment of learning outcomes depending on the nature of the program and discipline."

DTE should formulate policies for favorable class sizes for teachers, especially in practical classes, to attain complete learning outcomes for the students.

3.9 Readiness for OBE

Before implementing OBE in polytechnics, students need to be ready for OBE.

OBE has the potential for dramatic and even revolutionary changes in education. In OBE, it is important to define educational outcomes, the emphasis on learning over teaching, the centrality of rigorous assessment, the need for flexibility and individualization in the curriculum, and the shifting roles and responsibilities of teachers and learners (Gruppen, 2012).

OBE is underpinned by three basic premises:

- All students can learn and succeed, but not all at the same time or in the same way.
- Successful learning promotes even more successful learning.
- Schools (and teachers) control the conditions that determine whether or not students are successful at school learning (Killen, 2000).

About two-thirds of graduates suggested that students are ready to take OBE for a better professional career. 11% thought that students were not ready yet for OBE, and 19% remained undecided about the statements.

Polytechnic teachers provided varied insights into students' interest in converting to OBE. A considerable portion of teachers (45%) expressed certainty that students are interested, while a slightly larger proportion (43%) indicated that students probably have an interest. Conversely, a minority of teachers reported skepticism, with 6% stating that students probably do not have an interest and a small percentage (1%) remaining unsure.

Polytechnic teachers provided opinions about student paradigms to OBE because they will get better facilities and education, they can learn faster, they get proper guidance, there are fewer students in class, they can learn better skills and knowledge, and they can face challenges to success.

The mean response value of 1.52 suggests that polytechnic teachers perceive moderate student interest in converting to OBE. The standard deviation of 0.738 indicates some variability in opinions among respondents.

There are campaigns, seminars, and workshops to encourage teachers, students, and guardians about OBE.

3.10 Individualized Instruction

Instructions should be clear and well-understood by all of the students.

Polytechnic teachers provided insights into the comprehensibility of instructions related to OBE for students. The majority of teachers (70%) indicated that instructions related to OBE are comprehensible to students some of the time. However, a significant portion (11%) reported that students seldom find the instructions comprehensible, while smaller proportions stated that instructions are never (6%) or most of the time (13%) comprehensible.

The teachers suggest that the steps to be taken to make OBE acceptable to students are: arrange a workshop webinar; raise effectiveness for practical class; they are not informed about it; teachers' iteration; need student counseling; strong implementation of good governance; lack of publicity; lack of teachers; seminar and program arrangement; and advertisement.

The mean response value of 1.85 suggests that, on average, polytechnic teachers perceive the comprehensibility of instructions related to OBE to be moderate, with a standard deviation of 0.687 indicating some variability in opinions among respondents.

Individualized instruction is crucial as it allows teachers to structure learning experiences to meet the individual needs of all students, including those with disabilities, economic challenges, limited language proficiency, and varying learning styles (Tate and DeBroux, 2001).

BTEB should prepare instructions that are clear and easily comprehensible to all of the students.

3.11 Student Support Services

Student support services help backward students attain learning outcomes.

Student support services include counseling, tutoring, mentorship, career planning assistance, financial aid programs, and scholarships. It also provides personalized counseling for personal, career, and academic guidance. They also participate in activities and instruction, introducing them to various career options and cultural events (Amber, 2023).

90% of the graduates thought that students required support services for OBE. Others (10%) thought that polytechnic institutes provided proper support services for students. From the point of view of graduates, the supports required for students were more practical work, learning well by discussing each topic, strategies for teachers to improve students' talent, motivation, financial help, laboratory modernization, project-based work, and understanding OBE facilities.

Polytechnic institutes should provide support services to help students attain learning outcomes.

3.12 Conclusion

There are some challenges to implementing OBE in polytechnic institutes. Students should be provided with handsome scholarships for successful results to encourage and support education. Teachers need to have proper training for using pedagogical tools and follow lesson plans in the classes. The current evaluation should turn into the OBE system to assess the student's attainments. The class size should be favorable for the teacher to teach and engage the students. Support services should be practiced in the institutes to help backward students attain learning outcomes.

SECTION FOUR: THE MOST EFFECTIVE STRATEGIES FOR SUCCESSFUL IMPLEMENTATION OF THE OBE SYSTEM IN THE POLYTECHNIC INSTITUTE OF BANGLADESH

4.1 Record Keeping and Analysis System of Polytechnic Institutes

Record-keeping and analysis systems are important as they enable teachers to track student progress, identify areas for improvement, and make data-informed decisions to enhance teaching effectiveness and student outcomes.

The principals of polytechnic institutes said that they keep their records in both manual register systems and computer software-based systems according to the rules of the government. Some of the institutes have EMS software to maintain records.

Record-keeping in educational institutes is crucial as it enables institute heads to maintain continuity in the educational process, understand the background and progress of each student, and provide information for students, teachers, and administrators when needed. Properly kept records serve as an information bank for school staff, parents, and prospective employers, providing insights into students' achievements and problems. Additionally, accurate records are essential for the successful planning of financial, physical, and human resources in the school system. There are various ways of keeping records in educational institutes, including maintaining admission registers, attendance registers, weekly diaries of work, log books, visitor's books, staff record registers, staff minutes books, institute timetables, punishment books, institute accounts books, and education edicts and regulations manuals. Additionally, principals and teachers can delegate the keeping of day-to-day administrative records to senior teachers, record events as they occur in appropriate record booklets, keep accurate custody of record materials and books in their offices, check every item of information in the records before appending their signatures, and monitor teachers' adherence to instructions on record keeping (Owo, 2014).

It needs to integrate an online system for all polytechnic institutes for record-keeping and analysis where graduates can be tracked automatically.

4.2 Strengths of Polytechnic Institutes

Modern laboratories and workshops, large infrastructure, skilled teachers, available resources, industrial collaboration, a large number of interested students, a well-structured syllabus, the willingness and sincerity of teachers, and available utility services are the strengths of polytechnic institutes that are helpful for OBE.

The great strength of polytechnic institutes is their industrial training, where students can learn skills such as specialist knowledge, information technology, time management, communication skills, the ability to prioritize tasks, and teamwork (Lina, 2017).

4.3 Weaknesses of Polytechnic Institutes

Key challenges of implementing OBE are content-based curriculum, policies of teaching, learning, and assessment, the lack of basic infrastructure and facilities, and teachers' workload (Katawazai, 2021). It showed that more than three-fourths (78.0%) of the permanent posts were

vacant in public institutes, while there was a very limited vacancy (only 7%) in private institutes (BTEB, 2022).

There are some weaknesses in polytechnic institutes. These are shortage of sufficient teachers, industrial training facilities for students, fewer co-curricular activities, scarcity of hostel facilities for students, especially for female students, number of pieces of equipment in the laboratory, negative mindset of some teachers, scarcity of training facilities for teachers, large number of students in a class, shortage of time in practical class, lack of predetermined outcomes in the curriculum, scarcity of budget, insufficient learning environment, scarcity of support staff, and limited job placement facilities for graduates.

The weakness of polytechnic institutes is that practical skills are not explicitly achieved by the industrial training program (Lina, 2017).

DTE and BTEB can support the institutes to mitigate these weaknesses and implement OBE.

4.4 Opportunities of Polytechnic Institutes

Polytechnic institutes in Bangladesh offer opportunities for students to gain practical skills and technical knowledge in various fields such as engineering, agriculture, and technology, aligning with the country's growing industrial and economic sectors. These institutes provide hands-on training, industry collaborations, and internship opportunities, preparing graduates for employment in both local and international markets, thereby contributing to workforce development and socioeconomic growth in Bangladesh. Additionally, polytechnic education fosters entrepreneurship and innovation, empowering graduates to become drivers of technological advancement and economic progress in the nation.

4.5 Threats of Polytechnic Institutes

The changing nature of the labor market, impact of globalization, knowledge-based economic growth, information and communication revolution, the fact that some graduates are forced to change their professional track, the scarcity of job opportunities for female graduates in industries, decreasing willingness for student admission, global economic fluctuations, the reluctance of students to class, a poor learning environment, and multidisciplinary competition in the job market are the major threats to polytechnic institutes.

Frequent violence due to student politics, students were socially not encouraged to go for diploma engineering, education was expensive for the students, they did not get the subject as expected, and students' personal problems were the major causes of their dropping out of polytechnic institutes (Abdullah-Al-Mamun, 2012).

The threats to management education include economic hardship leading to a corrupt business environment, declining morality, potential ethnic strife, and damaged economic links with other republics (Safavi, 1997).

An integrated approach is needed to overcome these threats and implement OBE.

4.6 Goals and Objectives of Education

It is needed to set educational goals and objectives for OBE.

Components of OBE implementation and success are the principles of clarity, collaboration, competence, and commitment (Alata, 2019).

Setting the curriculum according to the job market, emphasizing IR 4.0, initiating lifelong learning, making skilled manpower, formulating an outcome-based assessment system, having teachers be facilitators, and making entrepreneurs will be the major goals of OBE.

4.7 Action Plans of OBE

Action plans for OBE are:

Sl	Tasks	Implementer	Time frame	Remarks
1	OBE Guidelines	BTEB	1 year	
2	Formulation of Syllabus	BTEB	2 years	
3	Teacher Training	DTE	2 years	
4	Set teacher and student ratio in class	DTE	1 year	
5	Modernization of Laboratories	Institute	2 years	
6	Outcome-Based Assessment System	BTEB	1 year	
7	Teaching Module	BTEB	2 years	
8	Industrial Collaboration	Institute	1 year	
9	Labor Market Analysis	DTE	1 year	
10	OBE Curriculum Development	BTEB	2 years	
11	OBE piloting	BTEB	1 year	
12	Student and guardian orientation	BTEB	1 year	

To implement authentic OBE successfully, it will be necessary to make the following changes in every component of the existing education system: paradigm, leadership, outcomes, learning opportunities, learning styles, delivery, assessment, the role of the learner, and the role of the teacher. It is essential that the action planning process be cascaded from top leadership downwards to include all components and levels (Collier, 2023).

4.8 Continuous Professional Development (CPD)

CPD refers to the ongoing process of learning, skill development, and knowledge enhancement that professionals engage in throughout their careers to maintain competence, stay abreast of advancements in their field, and adapt to changing industry standards and practices. CPD activities can include attending workshops, seminars, conferences, pursuing further education, participating in mentorship programs, or undertaking self-directed learning initiatives aimed at improving professional practice and facilitating career advancement.

There are several methods of professional learning, including action research, self-directed study, using distance learning, receiving on-the-job coaching, mentoring, or tutoring, school-based and off-site courses of various lengths, job shadowing and rotation, personal reflection, experiential assignment, and collaborative learning; case discussions; lesson study; and examining student work (Luneta, 2012).

4.9 Review Processes

In reviewing the education system, several key aspects should be considered: curriculum, teaching methodologies, assessment practices, resource allocation, teacher training and support, equity and inclusivity, and stakeholder engagement.

In an OBE system, there are three major steps in instructional planning: deciding on the outcomes that students are to achieve, deciding how to assist students to achieve those outcomes (i.e., deciding on content and teaching strategies), and deciding how to determine when students have achieved the outcomes (i.e., deciding on assessment and reporting procedures) (Killen, 2000).

For the successful implementation of OBE, it needs to review the system to determine its effectiveness in the global labor market every three to five years.

4.10 Conclusion

There are some strategies to implement OBE in polytechnic institutes. Record-keeping and analysis should be digitized, as data can be found and used easily as required. Laboratories, resources, and skilled teachers are the strengths of the polytechnic institutes that help implement OBE. The shortage of adequate teachers is a weakness of polytechnic institutes, so vacant posts need to fill up as soon as possible. Skilled graduates can move everywhere in the world with prestigious jobs. There is a need to set educational goals and objectives according to the analysis of future job market demand. There should be a review process of the education system according to need.

SECTION FIVE: CONCLUSION

The implementation of OBE in polytechnic institutes in Bangladesh will mark a breakthrough step towards aligning technical education with industry demands and fostering student-centered learning. Throughout the study, it explores the multifaceted landscape of OBE implementation, scrutinizing modalities, challenges, and success factors.

The key challenges of implementing OBE are: a specific vision, mission, PO, PEO, PLO, generic skills or graduate profile, curriculum framework, distribution of courses, course description, CLO, mapping with CLO and PLO, QF, HOTS, SLT, teaching and learning procedures and strategies, assessment or evaluation procedures and strategies, and grading system. It is necessary to create an OBE-friendly learning environment in polytechnic institutes to attract students. Modernization of laboratories and workshops can help students take OBEs in accordance with industry standards. Educational materials and resources should be available to students. Class size should be favorable for teachers and students to ensure quality education. Project-based problem-solving activities enrich the students' skills to work in real-world situations. The individual needs of students are significant in boosting personal learning experiences. Training at home and abroad can enhance the skills of teachers, which can be transferred to the students. Co-curricular activities can help to develop among the students the abilities of teamwork, creativity, and leadership. The assessment system should be precise, complete, and context-based. Assessment procedures and tools should be clear to teachers and students. Critical thinking and problem-solving skills should be measured during assessment. The knowledge, skills, and attitudes of the students should be measured during the assessment process. The grading system should reflect the competencies of the students. Positive feedback can help the students improve in the future. Assessment evidence needs to be stored for future analysis and improvement. Job placement facilities encourage students to pursue education. Industrial collaboration informs the institutes about upcoming technologies, which is essential for future graduates. For the global movement of graduates, there needs to be accreditation of curricula by international organizations. A strong monitoring system is essential for further improvement. Graduates will increase their financial capacity as they become entrepreneurs.

There need to be scholarships for students' achievements. Teachers should use a variety of pedagogical tools in teaching to enhance student engagement and facilitate effective learning. Teachers should follow the lesson plan to provide better education with time constraints. Both internal and external evaluation processes are needed for academic and administrative activities to ensure the effective implementation of OBE in polytechnic institutes.

Polytechnic institutes have modern laboratories and workshops, large infrastructure, skilled teachers, available resources, industrial collaboration, a large number of interested students, a well-structured syllabus, the willingness and sincerity of teachers, and available utility services, which are helpful for OBE. A shortage of sufficient teachers and industrial training facilities for students is a weakness in implementing OBE in polytechnic institutes. There are some opportunities for students to gain practical skills and technical knowledge in various fields to get a suitable job worldwide. There are some threats, like the changing nature of the labor market and global economic fluctuations, to demotivate the graduates to take OBE. There needs to be an effective action plan to implement OBE, which should be reviewed according to the needs.

Recommendations:

Drawing from our research findings, the following recommendations are proposed to enhance the implementation of OBE in polytechnic institutes in Bangladesh:

Investment in Faculty Development: Polytechnic institutes should prioritize comprehensive faculty development programs, encompassing OBE principles, curriculum design, assessment strategies, and student-centered teaching methodologies.

Infrastructure and Resource Allocation: Adequate provision of infrastructure and resources is necessary to support OBE implementation effectively. Polytechnic institutes must allocate resources judiciously, prioritizing the development of laboratories, libraries, and technology-enhanced learning environments.

Strengthening Institutional Support: Institutional support for OBE should be enhance through the formulation of clear policies, guidelines, and incentives. Administrators must promote OBE principles and provide the necessary support to faculty members and students.

Engagement with Industry Partners: Collaboration with industry partners should be prioritized to ensure the relevance and currency of OBE programs. Establishing mechanisms for industry engagement, such as advisory boards and internship programs, facilitates mutually beneficial partnerships.

Continuous Evaluation and Improvement: Regular evaluation and feedback mechanisms are essential to monitor the effectiveness of OBE implementation. Polytechnic institutes should solicit feedback from stakeholders and leverage insights to refine and enhance their OBE practices continually.

Research and Knowledge Sharing: Further research is necessary to explore the nuanced challenges and success factors specific to OBE implementation in the context of polytechnic institutes in Bangladesh. Knowledge-sharing platforms should be established to facilitate the dissemination of best practices and lessons learned.

By embracing these recommendations, polytechnic institutes in Bangladesh can overcome the challenges associated with OBE implementation and unlock its potential to revolutionize technical education in the country. Through collaborative efforts and a commitment to excellence, OBE can help raise innovation, employability, and socioeconomic development.

Future Research Directions

This research opens doors for further investigation into specific aspects of OBE implementation in Bangladeshi polytechnic institutes. Some potential areas for future research include:

The long-term impact of OBE on graduate employability.

- The effectiveness of different assessment methods in OBE.
- Socio-economic status of graduates after completing OBE.
- Student enrollment status of polytechnic institutes after implementing OBE.

OBE presents a promising approach to enhancing the quality of education in Bangladeshi polytechnic institutes. By addressing the challenges and capitalizing on the successes, OBE

can empower graduates with the skills and knowledge needed to thrive in the 21st-century workforce. By continuing its research and development efforts, Bangladesh can solidify its position as a leader in technical and vocational education.

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APPENDIX A1
Sample Size, types, and location

Sl no.	Name of Institute / Organization	Sample Size					
		Questionnaire				KII	Total
		Teacher		Graduates			
		Male	Female	Male	Female		
1	Ahsanullah Polytechnic Institute			2			2
2	Aptouch Polytechnic Institute			1			1
3	Brahmanbaria Polytechnic Institute			1			1
4	Bangladesh Institute of Glass and Ceramics	4	4	1		1	10
5	Bangladesh Institute of Technology			1			1
6	Bangladesh Survey Institute	1		1			2
7	Bangladesh Sweden Polytech Institute	2		1			3
8	Bangladesh Technical Education Board					4	4
9	BCI Engineering Institute			1			1
10	BCMC Polytechnic Institute			1			1
11	Bhola Polytechnic Institute			2			2
12	BIIT, Bogura	8		1		1	10
13	Bogura Polytechnic Institute	6		8		1	15
14	CCN Polytechnic Institute	21	10				31
15	Chandpur Polytechnic Institute			2			2
16	Chapai Nawabgan Polytech Institute	3	3				6
17	Chittagong Polytechnic Institute			2			2
18	Cumilla Polytechnic Institute	11	2	4			17
19	Daffodil Polytechnic Institute	10	5			1	16
20	Desh Polytechnic Institute			1			1
21	Dhaka Mohila Polytechnic Institute	2	10		5	1	18
22	Dhaka Polytechnic Institute	10	11	62	4		87
23	Dinajpur Polytechnic Institute	6		9			15
24	Eugenic Institute of Science and Engineering	3					3
25	Feni Computer Institute		1				1
26	Feni Polytechnic Institute	2		3			5
27	Foridpur Polytechnic Institute			3	1		4
28	Gopalgonj Polytechnic Institute	1					1
29	Government Graphic Arts Institute			1			1
30	Graphics Arts Institute, Dhaka	8	2	7	2		19
31	HABHIT, Tangail	3					3
32	Habiganj Polytechnic Institute			2			2
33	IBIT			1			1
34	Image Polytechnic Institute			1			1
35	Infra Polytechnic Institute			1			1
36	Institute of Computer Science and Technology			1			1
37	Institute of Information Technology, Bogura					1	1
38	Institute of Polytechnic and Textile Technology			1			1
39	Institute of Polytechnic and Textile Technology			1			1

Sl no.	Name of Institute / Organization	Sample Size					
		Questionnaire				KII	Total
		Teacher		Graduates			
		Male	Female	Male	Female		
40	Jashore Polytechnic Institute	10		2			12
41	Jhenaidah Polytechnic Institute	2		1			3
42	Kapotaksho Polytechnic Institute		1				1
43	Khapupara Polytechnic Institute			1			1
44	Khulna Mohila Polytechnic Institute	3	1			1	5
45	Khulna Polytechnic Institute	16	2	3		1	22
46	Kishoregonj Polytechnic Institute	1		1			2
47	Kurigram Polytechnic Institute	1		3			4
48	Kushtia Polytechnic Institute			1			1
49	Kustia Politechnic Institute	12					12
50	Lakhsmipur Polytechnic Institute			2			2
51	Model Polytechnic Institute	5				1	6
52	Moulvibazar Polytechnic Institute			2			2
53	Munshiganj Polytechnic Institute	10	1	3			14
54	Mymensingh Polytechnic Institute	5		7	1	1	14
55	Naogaon Polytechnic Institute			19	1		20
56	Narshingdi Polytechnic Institute	7	1	1		1	10
57	National Polytechnic Institute	9	5	2		1	17
58	Noakhali Polytechnic Institute			1			1
59	Pabna Polytechnic Institute	7	1	18			26
60	Potuakhali Polytechnic Institute			5			5
61	Puthia Polytechnic Institute			1			1
62	Qumrul Islam Siddique Institute	5				1	6
63	Rajshahi Mohila Polytechnic	3	2				5
64	Rajshahi Polytechnic Institute	10	1	4		1	16
65	Rangpur Polytechnic Institute	10		5	1	1	17
66	Satkhira Polytechnic institute	5		1			6
67	Shariatpur Polytechnic Institute	2					2
68	Sherpur Polytechnic Institute			2			2
69	Shyamoli Ideal Polytechnic Institute	8	4	1		1	14
70	Sirajganj Polytechnic institute	7		3	1		11
71	SRA Polytechnic Institute of Science and Technology			1			1
72	Sylhet Polytechnic Institute			2			2
73	Tangail Polytechnic Institute	4		1			5
74	Thakurgaon Polytechnic Institute			3			3
75	Uttara Polytechnic Institute			1			1
76	Vocational Teachers Training Institute (VTTI)			11			11
	Grand Total =	**243**	**67**	**231**	**16**	**20**	**577**

APPENDIX A2

Government and Non-government Polytechnic Institutes Respondents

Institute Type	Principal		Teacher		Graduates	
	Frequency	Percent	Frequency	Percent	Frequency	Percent
Government	13	65.0	237	72.5	198	89.6
Private	7	35.0	90	27.5	23	10.4
Total	20	100.0	327	100.0	221	100.0

APPENDIX A3

Gender Classification of Respondents

Gender	Principal		Teacher		Graduates	
	Frequency	Percent	Frequency	Percent	Frequency	Percent
Male	19	65.0	254	77.7	8	3.6
Female	1	35.0	73	22.3	13	5.9
Total	20	100.0	327	100.0	200	90.5

APPENDIX A4

Working Organization Types of Respondents Graduates

Organization Types	Frequency	Percent
Public sector	22	10.0
Private sector	173	78.3
Self employed	7	3.2
Semi-government agency	2	.9
Student	15	6.8
Others	2	.9
Total	221	100.0

APPENDIX A5

Working Organization of Respondents Graduates

Name of Organization	Frequency
AKG/Unif Of Shahcement	1
Ali Natural Oil Mills & Agro Industries Ltd's	1
Alpha Net	1
Amber IT Ltd.	1
Amen design development	1
An Noor Academy	1

Name of Organization	Frequency
Ananta Apparel Ltd	1
AR Group	4
Arch Design and consulte	1
Archvista	1
Artistick Designed limit	2
Anwara Knit composite	1
Asset Development and Hodings Ltd.	4

Name of Organization	Frequency
Assure	1
Astha.IT	1
BADC	1
Bangabandhu Rail Setu Project	1
Bangla TV	1
Bangladesh Road Transport Authority (BRTA)	1
Bangladesh Rural Electrification Board	1
Banglalink Digital Communications Ltd	1
Bashundhara group	1
Bashundhara Oil and Gas Company Ltd	1
BCMC	1
BD Design LTD	1
Beximco Industrial park	1
Beximco Texfile Limited	1
bKash Limited	1
BMC Group	1
Brother's computer	1
Center for Structural Associates (CSA)	3
Chattogram WASA	1
Computer Solution Ltd	1
Creative Business Group	1
Creative Construction	1
Creative IT Institute	9
Crown Cement Ltd	1
Cyber Music	1
Dana Engineers International Limited	20
DDS-2, CRDP-2, LGED	1
Dhaka Ahosania Mission	2
Digital one broadband internet service	1
District Fishery office	1
Dots Logics	1
DPHE	2
e-Learning and Earning Ltd.	1
Elevate Solution Limited	1
ENCO QATER	1

Name of Organization	Frequency
Esquire Electronics Ltd	7
Essential Drugs Co. Ltd	4
Euphoria Apparels Ltd	3
Excellence Architecture	3
Fortune It Power Solution	1
Giant Technology Limited	1
Global Construction Ltd	1
Graphic Associates Int.	1
Green multimedia Limited (Green TV)	1
Greenbud Environmental Consultantancy & Inspection Service Ltd.	1
H2O Engineering	1
Hannan Group	1
IBN Sina Hospital	1
Ideal Fastnear Bangladesh	1
IFS Knit composite Ltd	1
INGENITEX	1
Ingenitex bd Ltd	1
IT Bangladesh	1
Jatri Services Limited	1
Kuwait Society for Relief	1
Lagic Group Bd	1
LDDL Group	1
LGED	2
Lintas Bangladesh Co. Ltd	1
Logic Automation, Trainni	1
Mactex Industries Ltd.	1
Magpie Composite Textile	2
Marie Stopes Bangladesh	1
Meen texs	1
Meghna wood works ltd	1
MEPL	2
Micro Fiber Group	1
Mina developer Ltd	1
Mondol Group (Montex Ltd)	3
Naztech Inc	19
Nice Fabrics Process Ltd (Noman Group)	1
NOHOR Initiatives	1

Name of Organization	Frequency
None	1
NS Development Ltd	1
NZ Tex Group	1
OH (Out of Home)	1
Pabna Powerosova	1
Prothom Alo	1
PWD	1
Rangpur City Corporation	1
Red Brick development	1
RFL	1
Roads and Highways Department	1
Ruhama Real Estate	1
Samsung R&D Institute, Bangladesh.	1
Seneha Company	1
Sharaf washing and Dyeing	1
Sharmin Engineer	1
Shin Shin Group of Industries	1
Shondhi Communication	1
Shoporw Showa Abashon	1
SOC Consultant & Developments Ltd	3
Sonargaon University	1
Spark Enterprise	1
Square Pharmaceutical	1

Name of Organization	Frequency
SRD limited	1
SRS Technical	1
Sterling Group of Industries	1
Stodio Media	1
STS Engineering and Constration	1
Suvastu Properties Ltd	1
Target Fine Wear Industries Ltd	1
Technomedia-ltd	1
The Daily Prothom Alo	1
The Daily Star	1
Thermax woven Dyeing	1
Toa Corporation	1
TYT Ceramics	1
Uy Lab	3
VITTI Sthapati Brindo Ltd	1
W Systems Ltd	1
Walton Chemical Industries Limited	1
Walton Hi Tech Industries PLC	4
World University of Bangladesh	1
ZNRF University of Management and Science	1
Total	221

APPENDIX B1

Survey Questionnaire for ***Polytechnic Teacher /Head of the Department***

PART ONE: GENERAL INFORMATION OF THE RESPONDENT

(This study will be used for research purposes only. The personalized data will be kept confidential.)

1. Name :
2. Designation :
3. Name of the Institution / Organization :
4. Organization Type : Government / Private / NGO / Others
5. Address :
6. Phone/Mobile No. :
7. E-mail :
8. Department / Technology :
9. Years of Teaching Experience :
10. Gender : Male / Female / Others

PART TWO: INFORMATION ABOUT THE PRESENT SCENARIO OF OBE PRACTICES IN THE POLYTECHNIC INSTITUTES OF BANGLADESH

(Make opinion on the polytechnic curriculum is based on your personal experience or knowledge)

2.1 Issue: Curriculum

Questions	Answer
2.1.1. Objectives Do you think, the current curriculum has a strong focus on skills, knowledge, and attitudes according to industry standards? 2.1.1.1 If the answer is 2, what are the reasons?	1 = yes 2 = no 99 = not sure 2……
2.1.2. Learning outcomes Does the current curriculum help the students to develop the qualities of adaptability, creativity, innovation, collaboration, communication, critical thinking, problem-solving, empathy, curiosity, global citizenship, technology literacy, and lifelong learning (21st-century skills)?	1= extremely 2 = very 3 = moderately 4 = slightly 99 = not at all
2.1.3. Content Is the curriculum always dynamic according to the needs?	1 = yes 2 = no 99 = not sure
2.1.4. Inclusivity Polytechnic education is easily access to all people in society	1 = strongly agree 2 = agree 3 = disagree strongly 4 = disagree 99 = undecided
2.1.5. Presence of OBE What percentage of OBE is included in the existing curriculum?	1 = below 50% 2 = 51-60% 3 = 61-70% 4 = 71-80% 5 = above 81%
2.1.6. Time Has there ever been time flexibility in the learning and assessment process?	1 = yes 2 = no 99 = not sure

2.2 Issue: Teaching and Learning Process

Questions	Answer
2.2.1. Readiness Do you think, students are getting idea about IR 4.0 and 5.0 related content?	1 = high 2 = moderate 3 = low 99 = none

2.2.2. Learning Materials Have there been sufficient modern tools, equipment, raw materials, machines, furniture, teaching aids, learning materials and other technical and utilities support in polytechnic institutes. 2.2.2.1 If answer is between 2 and 3, what are the reasons?	1 = excellent 2 = somewhat 3 = poor 99 = not sure 2…… 3……
2.2.3. Active engagement / involvement of students Are students interested in innovation and prepare subject related projects? 2.2.3.1 If answer is 2, what are the reasons?	1 = yes 2 = no 99 = not sure 2……
2.2.4. Individual need of the student Do the particular needs of each student are emphasized in the classroom?	1 = frequently 2 = occasionally 3 = rarely 99 = never
2.2.5. Teacher's training Have you got adequate training in related occupational standards? 2.2.3.1 If the answer is 2, what are the reasons?	1 = yes 2 = no 99 = not sure 2……

2.3 Issue: Assessment

Questions	Answer
2.3.1. Accuracy Is the correctness of answers measured through the examination?	1 = always 2 = sometimes 3 = rarely 98= not interested to respond
2.3.2. Context Have the teachers and students' clear ideas about the assessment process?	1 = excellent 2 = somewhat 3 = poor 98= not interested to respond
2.3.3. Evidence Is all evidence of assessment preserved in formal way?	1 = yes 2 = no 99 = not sure
2.3.4. Assessment procedure and tools Is it use adequate assessment procedure and tools to measure the attainment of learning outcomes of students?	1 = always 2 = occasionally 3 = rarely 99 = never
2.3.5. Critical thinking and problem-solving skills Are critical thinking and problem-solving skills assessed during assessment? 2.3.5.1 If answer is 2, what are the reasons?	1 = yes 2 = no 99 = not sure 2……
2.3.6. Assess student knowledge, skills and competencies and values and attitudes Are acquiring knowledge, skills and competencies and values and attitudes of the student assessed during assessment? 2.3.6.1 If answer is 3, what are the reasons?	1 = always 2 = occasionally 3 = rarely 99 = never 3……
2.3.7. Grading system Are skills and knowledge of the students accurately revealed through the grading system? 2.3.7.1 If answer is between 2 and 3, what are the reasons?	1 = to a great extent 2 = somewhat 3 = very little 99 = not at all 2…… 3……
2.3.8. Feedback Do you provide feedback to the students after completion of the assessment? 2.3.8.1 If answer is between 2 and 3, what are the reasons?	1 = always 2 = occasionally 3 = rarely 99 = never

	2…… 3……

2.4 Issue: Continual Quality Improvement (CQI) and monitoring

Questions	Answer
2.4.1. Job placement Does the institute have opportunities to help students get suitable jobs? 2.4.1.1 If the answer is 1, how do you do this?	1 = always 2 = occasionally 3 = rarely 4 = never 98= not interested to respond 1……
2.4.2. Industry linkage Is there a strong collaboration between institute and industry? 2.4.2.1 If answer is 1, how you do this?	1 = excellent 2 = somewhat 3 = poor 98= not interested to respond 1……
2.4.3. Strategies Is the use of new technology in education prioritized?	1 = yes 2 = no 99 = not sure

PART THREE: INFORMATION ABOUT CHALLENGES FACE TO IMPLEMENT OBE IN POLYTECHNIC INSTITUTES

(Make opinion on polytechnic curriculum is based on your personal experience or knowledge)

3.1 Issue: Faculty training and development

Questions	Answer
3.1.1. Use of pedagogical tools Are adequate pedagogical tools used in the teaching process? 3.1.1.1 If answer is 1, what are these?	1 = always 2 = sometimes 3 = rarely 98= not interested to respond 1……
3.1.2. Lesson plan Are lesson plans prepared and followed appropriately? 3.1.2.1 If answer is not 1, what are the reasons?	1 = always 2 = occasionally 3 = rarely 99 = never 2…… 3…… 99……

3.2 Issue: Resource constraints

Questions	Answer
3.2.1. Teaching methods and assessment Is it necessary to prepare appropriate teaching methods and evaluation process for OBE?	1 = yes 2 = no 99 = not sure

3.3 Issue: Resource constraints

Questions	Answer
3.3.1. Class size What should be optimum class size for OBE?	☐ 10 ☐ 11-20 ☐ 21-40 ☐ 41-50

3.4 Issue: Student motivation and engagement

Questions	Answer
3.4.1. Paradigm shift to OBE Are students interested in converting to OBE? 3.3.1.1 If answer is 1, what are the reasons?	1 = definitely 2 = probably 3 = probably not 4 = definitely Not

	99 = not sure 1……
3.3.2. Individualized instruction Are the instructions related to OBE comprehensible to the students?	1 = most of the time 2 = some of the time 3 = seldom 99 = never

APPENDIX B2

Survey Questionnaire for ***Polytechnic Graduates***

PART ONE: GENERAL INFORMATION OF THE RESPONDENT

(This study will be used for research purpose only. The personalized data will be kept as confidential.)

1. Name :
2. Designation :
3. Name of the Institution / Organization :
4. Address :
5. Phone/Mobile No. :
6. E-mail :
7. Department / Technology :
8. Name of the Polytechnic Institute :
9. Polytechnic Institute Type : Government / Private / Others
10. Year of passing diploma :
11. Years of job experience :
12. Time to get first job :

Please indicate your answers by filling in the box like this: ✓ if you make a mistake do this: ×

Your Gender:	**Your Age:**	**Your Marital Status:**	**Your Highest Education Level:**	**Your Type of Residence:**	**Your Occupation:**	**Salary:**
□ Male □ Female □ Others	□ Below 20 Years □ 21-30 Years □ 31-40 Years □ 40+ Years	□ Married □ Unmarried	□ Diploma □ Bachelor □ Master's □ Doctorate □ Others	□ Urban □ Rural	□ Public sector □ Private sector □ Self employed □ Semi-government agency □ Wage earners □ Student □ Others	□ Satisfactory □ Unsatisfactory □ No Comments

PART TWO: INFORMATION ABOUT THE PRESENT SCENARIO OF OBE PRACTICES IN THE POLYTECHNIC INSTITUTES OF BANGLADESH

(Make an opinion on the polytechnic curriculum based on your personal experience or knowledge)

2.5 Issue: Curriculum

Questions	Answer
2.1.1. Objectives Do educational institutions involve students in curriculum design and refinement?	1 = always 2 = sometimes 3 = rarely 98 = never
2.1.2. Student enrollment Do students have more interest in taking polytechnic education? 2.1.2.1 If the answer is except 1, what are the reasons?	1 = always 2 = occasionally 3 = seldom 99 = not at all 2…… 3…… 99……
2.1.3. Learning outcomes Are there adequate academic programs for students to understand the learning outcomes? 2.1.3.1 If the answer is 1, what are the training do you get?	1 = yes 2 = no 99 = not sure 1……
2.1.4. Content Are the existing syllabus contents sufficient, current, and authentic according to market demand?	1 = definitely 2 = probably 3 = definitely not 99 = not sure

2.1.5. Presence of OBE How do students understand the objectives of the subject and the assessment process through the current curriculum?	1 = very poor 2 = below average 3 = average 4 = above average 5 = excellent
2.1.6. Ethical and moral values Do you think, students can get social, cultural and moral values from the existing curriculum?	1 = very good 2 = good 3 = acceptable 4 = poor 5 = very poor
2.1.7. Emphasize the knowledge and content (Cognitive domain), skills and competencies (psycho-motor domain) and values and attitudes (affective domain) Are students able to acquire all the knowledge, skills and values and attitudes mentioned in the curriculum.	1 = most of the time 2 = some of the time 3 = seldom 4 = never

2.6 Issue: Teaching and learning process

Questions	Answer
2.2.1. Teaching Environment Is the education emphasizing on skill development of students?	1 = to a great extent 2 = somewhat 3 = very little 4 = not at all
2.2.2. Learning process Have the students lifelong learning opportunities? 2.2.1.1 If the answer is 1, how is it done?	1 = yes 2 = no 99 = not sure 1……
2.2.3. Co-curricular activities Are the co-curricular activities and social services encouraged and practiced? 2.2.3.1 If the answer is 1 and 2, what activities are done?	1 = frequently 2 = occasionally 3 = rarely 99 = never 1…… 2……

2.7 Issue: Assessment

Questions	Answer
2.3.1. Completeness Are students able to perform all of the questions and tasks during the assessment? 2.3.1.1 If the answer is 3 & 99, what are the reasons?	1 = always 2 = occasionally 3 = rarely 99 = never
2.3.2. Context Have the student's clear ideas about the assessment process?	1 = Excellent 2 = Somewhat 3 = Poor 98= not interested to respond
2.3.3. Feedback Can students have the opportunity to provide feedback about teachers' teaching methodology? 2.3.8.1 If the answer is between 1 and 2, how is it done?	1 = most of the time 2 = some of the time 3 = seldom 99 = never 1…… 2……

2.8 Issue: Continual Quality Improvement (CQI) and monitoring

Questions	Answer
2.4.1. Student satisfaction Are you think, students are satisfied with their performance?	1 = strongly agree 2 = agree 3 = disagree

	4 = strongly disagree 98= undecided
2.4.2. Entrepreneurship Is there financial support provided to the graduates to become entrepreneurs? 2.4.2.1 If the answer is 1 & 2, how do you get this?	1 = often 2 = sometimes 3 = seldom 4 = never 1…… 2……

PART THREE: INFORMATION ABOUT CHALLENGES FACE TO IMPLEMENT OBE IN POLYTECHNIC INSTITUTES

(Make an opinion on the polytechnic curriculum based on your personal experience or knowledge)

3.5 Issue: Assessment methods and validity

Questions	Answer
3.1.1. Credibility and recognition Were there any educational scholarships, loans, and aids for your successful results? 3.1.1.1 If the answer is 1 & 2, what are these?	1 = always 2 = sometimes 3 = rarely 99 = never 1…… 2……

3.6 Issue: Student motivation and engagement

Questions	Answer
3.2.1. Readiness for OBE Do you agree that students are ready for OBE?	1 = strongly agree 2 = agree 3 = disagree 4 = strongly disagree 99 = not sure
3.2.2. Student support services Does the student require support services for OBE? 3.2.2.1 If the answer is 1 & 2, what are these?	1 = always 2 = sometimes 3 = rarely 99 = never 1…… 2……

APPENDIX B3

Key Informant Interviews (KII)

Survey Questionnaire to ***Head of the Institute/Policy-Making Body***

PART ONE: GENERAL INFORMATION OF THE RESPONDENT

(This study will be used for research purposes only. The personalized data will be kept confidential.)

1. Name :
2. Designation :
3. Name of the Institution / Organization :
4. Organization Type : Government / Private / NGO / Others
5. Address :
6. Phone/Mobile No. :
7. E-mail :
8. Years of Experience :
9. Gender : Male / Female / Others

PART TWO: INFORMATION ABOUT PRESENT SCENARIO OF OBE PRACTICES IN THE POLYTECHNIC INSTITUTES OF BANGLADESH

(Make an opinion on the polytechnic curriculum based on your personal experience or knowledge)

2.9 Issue: Curriculum, Indicator: Objectives

How does your institute collaborate with industry partners to ensure the relevance of the curriculum?

Answer:

2.10 Issue: Teaching and learning process, Indicator: Teaching Environment

How many teachers do you have in your institute? What is the number of vacant teacher posts? What is the current teacher and student ratio?

Answer:

2.11 Issue: Teaching and learning process, Indicator: Learning Materials

Does the institute get sufficient financial allocation for arranging educational materials? How many times does it need to be increased?

Answer:

2.12 **Issue: Continual quality improvement (CQI) and monitoring, Indicator: Standardization and Accreditation**

Is the curriculum formulated by standard procedure and accredited by internationally recognized organizations? What would be the accredited authority?

Answer:

2.13 **Issue: Continual quality improvement (CQI) and monitoring, Indicator: Strategies**

How does your institute play a significant role in formulating development policy?

Answer:

PART THREE: INFORMATION ABOUT CHALLENGES FACE TO IMPLEMENT OBE IN POLYTECHNIC INSTITUTES

(Make an opinion on the polytechnic curriculum based on your personal experience or knowledge)

3.1 Issue: Faculty training and development, Indicator: Institutional management

What institutional management needs to implement OBE?

Answer:

3.2 Issue: Faculty training and development, Indicator: Evaluation

What will the internal and external evaluation processes for academic and administrational activities in OBE?

Answer:

3.3 Issue: Resource constraints, Indicator: Learning environment

How to create an OBE-friendly learning environment?
Answer:

PART FOUR: INFORMATION ABOUT THE MOST EFFECTIVE STRATEGIC PLAN FOR THE SUCCESSFUL IMPLEMENTATION OF THE OBE SYSTEM IN THE POLYTECHNIC INSTITUTE OF BANGLADESH

(Make an opinion on the polytechnic curriculum based on your personal experience or knowledge)

4.1 Issue: Strengths, weaknesses, opportunities, and threats (SWOT) Analysis, Indicator: Record keeping and analysis

How record keeping and analysis is done in the institutes?
Answer:

4.2 Issue: Strengths, weaknesses, opportunities, and threats (SWOT) Analysis, Indicator: Identify Strengths (S) - skills, expertise, resources

What are the strengths of the institute in implementing OBE?
Answer:

4.3 Issue: Strengths, weaknesses, opportunities, and threats (SWOT) Analysis, Indicator: Identify Weaknesses (W) - limitations, resource constraints, competition

What are the weaknesses of the institute in implementing OBE?
Answer:

4.4 Issue: Strengths, weaknesses, opportunities, and threats (SWOT) Analysis, Indicator: Identify Opportunities (O) - market trends, workforce, job forecasting

What are the opportunities for the institute to implement OBE?
Answer:

4.5 Issue: Strengths, weaknesses, opportunities, and threats (SWOT) Analysis, Indicator: Identify Threats (T) - changing job market, competition, regulatory changes, economic fluctuations

What are the threats of institutes to implement OBE?
Answer:

4.6 Issue: Action Plans, Indicator: Set goals and objectives

What will be OBE targets and objectives?
Answer:

4.7 Issue: Action Plans, Indicator: Action items

What will be the prioritized tasks and actions required to implement OBE?
Answer:

Sl	Tasks	Implementer	Time frame	Remarks
1				
2				
3				
4				
5				

4.8 Issue: Resource Allocation, Indicator: Teacher and Teaching Staff

How many teachers and teaching staff posts will be required to create for successful OBE in polytechnics?

Answer:
Teacher: Teaching Staff:

4.9 Issue: Improvement and development, Indicator: Continuous Professional Development
What will be a continuous professional development plan?
Answer:
4.10 Issue: Improvement and development, Indicator: Review
How often need to review the education system to determine effectiveness in the global labor market?
Answer:

APPENDIX C1
Student admission status in the first semester of government polytechnic institute in the year 2024.

Institute name	Shift	Technology	Admission	Total seat
Thakurgaon Polytechnic Institute	1	Architecture Technology	46	50
Thakurgaon Polytechnic Institute	2	Architecture Technology	39	50
Thakurgaon Polytechnic Institute	1	Food Technology	88	100
Thakurgaon Polytechnic Institute	2	Food Technology	70	100
Thakurgaon Polytechnic Institute	1	Refrigeration and Air Conditioning Technology	47	50
Thakurgaon Polytechnic Institute	2	Refrigeration and Air Conditioning Technology	42	50
Thakurgaon Polytechnic Institute	1	Computer Science and Technology	100	100
Thakurgaon Polytechnic Institute	2	Computer Science and Technology	97	100
Thakurgaon Polytechnic Institute	1	Mechatronics Technology	48	50
Thakurgaon Polytechnic Institute	2	Mechatronics Technology	45	50
Dinajpur Polytechnic Institute	1	Architecture Technology	50	50
Dinajpur Polytechnic Institute	2	Architecture Technology	48	50
Dinajpur Polytechnic Institute	1	Civil Technology	100	100
Dinajpur Polytechnic Institute	2	Civil Technology	100	100
Dinajpur Polytechnic Institute	1	Electrical Technology	99	100
Dinajpur Polytechnic Institute	2	Electrical Technology	99	100
Dinajpur Polytechnic Institute	1	Mechanical Technology	98	100
Dinajpur Polytechnic Institute	2	Mechanical Technology	97	100
Dinajpur Polytechnic Institute	1	Power Technology	100	100
Dinajpur Polytechnic Institute	2	Power Technology	95	100
Dinajpur Polytechnic Institute	1	Computer Science and Technology	100	100
Dinajpur Polytechnic Institute	2	Computer Science and Technology	100	100
Rangpur Polytechnic Institute	1	Civil Technology	99	100
Rangpur Polytechnic Institute	2	Civil Technology	99	100
Rangpur Polytechnic Institute	1	Electrical Technology	100	100
Rangpur Polytechnic Institute	2	Electrical Technology	100	100
Rangpur Polytechnic Institute	1	Electronics Technology	96	100
Rangpur Polytechnic Institute	2	Electronics Technology	99	100
Rangpur Polytechnic Institute	1	Mechanical Technology	99	100
Rangpur Polytechnic Institute	2	Mechanical Technology	100	100
Rangpur Polytechnic Institute	1	Power Technology	99	100
Rangpur Polytechnic Institute	2	Power Technology	100	100
Rangpur Polytechnic Institute	1	Computer Science and Technology	100	100
Rangpur Polytechnic Institute	2	Computer Science and Technology	100	100
Rangpur Polytechnic Institute	1	Electro Medical Technology	46	50
Rangpur Polytechnic Institute	2	Electro Medical Technology	44	50
Kurigram Polytechnic Institute	1	Architecture Technology	47	50
Kurigram Polytechnic Institute	2	Architecture Technology	47	50
Kurigram Polytechnic Institute	1	Civil Technology	99	100

Institute name	Shift	Technology	Admission	Total seat
Kurigram Polytechnic Institute	2	Civil Technology	99	100
Kurigram Polytechnic Institute	1	Electrical Technology	50	50
Kurigram Polytechnic Institute	2	Electrical Technology	50	50
Kurigram Polytechnic Institute	1	Electronics Technology	48	50
Kurigram Polytechnic Institute	2	Electronics Technology	47	50
Kurigram Polytechnic Institute	1	Mechanical Technology	50	50
Kurigram Polytechnic Institute	2	Mechanical Technology	49	50
Kurigram Polytechnic Institute	1	Computer Science and Technology	98	100
Kurigram Polytechnic Institute	2	Computer Science and Technology	99	100
Kurigram Polytechnic Institute	1	Construction Technology	48	50
Kurigram Polytechnic Institute	2	Construction Technology	49	50
Bogura Polytechnic Institute	1	Civil Technology	100	100
Bogura Polytechnic Institute	2	Civil Technology	100	100
Bogura Polytechnic Institute	1	Electrical Technology	150	150
Bogura Polytechnic Institute	2	Electrical Technology	150	150
Bogura Polytechnic Institute	1	Electronics Technology	50	50
Bogura Polytechnic Institute	2	Electronics Technology	49	50
Bogura Polytechnic Institute	1	Mechanical Technology	149	150
Bogura Polytechnic Institute	2	Mechanical Technology	149	150
Bogura Polytechnic Institute	1	Power Technology	49	50
Bogura Polytechnic Institute	2	Power Technology	49	50
Bogura Polytechnic Institute	1	Refrigeration and Air Conditioning Technology	47	50
Bogura Polytechnic Institute	2	Refrigeration and Air Conditioning Technology	46	50
Bogura Polytechnic Institute	1	Computer Science and Technology	50	50
Bogura Polytechnic Institute	2	Computer Science and Technology	50	50
Naogaon Polytechnic Institute	1	Architecture Technology	45	50
Naogaon Polytechnic Institute	2	Architecture Technology	47	50
Naogaon Polytechnic Institute	1	Civil Technology	50	50
Naogaon Polytechnic Institute	2	Civil Technology	50	50
Naogaon Polytechnic Institute	1	Food Technology	43	50
Naogaon Polytechnic Institute	2	Food Technology	32	50
Naogaon Polytechnic Institute	1	Computer Science and Technology	50	50
Naogaon Polytechnic Institute	2	Computer Science and Technology	48	50
Naogaon Polytechnic Institute	1	Environmental Technology	38	50
Naogaon Polytechnic Institute	2	Environmental Technology	19	50
Chapai Nawabganj Polytechnic Institute	1	Electrical Technology	99	100
Chapai Nawabganj Polytechnic Institute	2	Electrical Technology	100	100
Chapai Nawabganj Polytechnic Institute	1	Electronics Technology	97	100
Chapai Nawabganj Polytechnic Institute	2	Electronics Technology	96	100
Chapai Nawabganj Polytechnic Institute	1	Food Technology	38	100
Chapai Nawabganj Polytechnic Institute	2	Food Technology	12	100
Chapai Nawabganj Polytechnic Institute	1	Refrigeration and Air Conditioning Technology	82	100

Institute name	Shift	Technology	Admission	Total seat
Chapai Nawabganj Polytechnic Institute	2	Refrigeration and Air Conditioning Technology	39	100
Chapai Nawabganj Polytechnic Institute	1	Computer Science and Technology	99	100
Chapai Nawabganj Polytechnic Institute	2	Computer Science and Technology	100	100
Chapai Nawabganj Polytechnic Institute	1	Mechatronics Technology	95	100
Chapai Nawabganj Polytechnic Institute	2	Mechatronics Technology	44	100
Rajshahi Polytechnic Institute	1	Civil Technology	99	100
Rajshahi Polytechnic Institute	2	Civil Technology	97	100
Rajshahi Polytechnic Institute	1	Electrical Technology	99	100
Rajshahi Polytechnic Institute	2	Electrical Technology	100	100
Rajshahi Polytechnic Institute	1	Electronics Technology	50	50
Rajshahi Polytechnic Institute	2	Electronics Technology	49	50
Rajshahi Polytechnic Institute	1	Mechanical Technology	98	100
Rajshahi Polytechnic Institute	2	Mechanical Technology	98	100
Rajshahi Polytechnic Institute	1	Power Technology	49	50
Rajshahi Polytechnic Institute	2	Power Technology	48	50
Rajshahi Polytechnic Institute	1	Computer Science and Technology	49	50
Rajshahi Polytechnic Institute	2	Computer Science and Technology	51	50
Rajshahi Polytechnic Institute	1	Electro Medical Technology	49	50
Rajshahi Polytechnic Institute	2	Electro Medical Technology	46	50
Rajshahi Polytechnic Institute	1	Mechatronics Technology	47	50
Rajshahi Polytechnic Institute	2	Mechatronics Technology	50	50
Engineering and Survey Institute, Rajshahi	1	Surveying Technology	99	100
Rajshahi Mohila Polytechnic Institute	1	Architecture Technology	50	50
Rajshahi Mohila Polytechnic Institute	2	Architecture Technology	27	50
Rajshahi Mohila Polytechnic Institute	1	Electrical Technology	83	100
Rajshahi Mohila Polytechnic Institute	2	Electrical Technology	16	100
Rajshahi Mohila Polytechnic Institute	1	Food Technology	20	50
Rajshahi Mohila Polytechnic Institute	2	Food Technology	4	50
Rajshahi Mohila Polytechnic Institute	1	Computer Science and Technology	50	50
Rajshahi Mohila Polytechnic Institute	2	Computer Science and Technology	50	50
Sirajganj Polytechnic Institute	1	Civil Technology	99	100
Sirajganj Polytechnic Institute	2	Civil Technology	100	100
Sirajganj Polytechnic Institute	1	Electrical Technology	49	50
Sirajganj Polytechnic Institute	2	Electrical Technology	48	50
Sirajganj Polytechnic Institute	1	Electronics Technology	50	50
Sirajganj Polytechnic Institute	2	Electronics Technology	49	50
Sirajganj Polytechnic Institute	1	Refrigeration and Air Conditioning Technology	49	50
Sirajganj Polytechnic Institute	2	Refrigeration and Air Conditioning Technology	48	50
Sirajganj Polytechnic Institute	1	Computer Science and Technology	50	50
Sirajganj Polytechnic Institute	2	Computer Science and Technology	50	50
Pabna Polytechnic Institute	1	Civil Technology	149	150
Pabna Polytechnic Institute	2	Civil Technology	150	150

Institute name	Shift	Technology	Admission	Total seat
Pabna Polytechnic Institute	1	Electrical Technology	99	100
Pabna Polytechnic Institute	2	Electrical Technology	98	100
Pabna Polytechnic Institute	1	Electronics Technology	46	50
Pabna Polytechnic Institute	2	Electronics Technology	49	50
Pabna Polytechnic Institute	1	Mechanical Technology	98	100
Pabna Polytechnic Institute	2	Mechanical Technology	100	100
Pabna Polytechnic Institute	1	Power Technology	98	100
Pabna Polytechnic Institute	2	Power Technology	98	100
Pabna Polytechnic Institute	1	Refrigeration and Air Conditioning Technology	50	50
Pabna Polytechnic Institute	2	Refrigeration and Air Conditioning Technology	47	50
Pabna Polytechnic Institute	1	Computer Science and Technology	98	100
Pabna Polytechnic Institute	2	Computer Science and Technology	99	100
Pabna Polytechnic Institute	1	Construction Technology	100	100
Pabna Polytechnic Institute	2	Construction Technology	99	100
Pabna Polytechnic Institute	1	Environmental Technology	100	100
Pabna Polytechnic Institute	2	Environmental Technology	73	100
Kushtia Polytechnic Institute	1	Civil Technology	99	100
Kushtia Polytechnic Institute	2	Civil Technology	100	100
Kushtia Polytechnic Institute	1	Electrical Technology	99	100
Kushtia Polytechnic Institute	2	Electrical Technology	97	100
Kushtia Polytechnic Institute	1	Electronics Technology	99	100
Kushtia Polytechnic Institute	2	Electronics Technology	98	100
Kushtia Polytechnic Institute	1	Mechanical Technology	100	100
Kushtia Polytechnic Institute	2	Mechanical Technology	99	100
Kushtia Polytechnic Institute	1	Power Technology	99	100
Kushtia Polytechnic Institute	2	Power Technology	95	100
Kushtia Polytechnic Institute	1	Computer Science and Technology	98	100
Kushtia Polytechnic Institute	2	Computer Science and Technology	99	100
Jhenidha Polytechnic Institute	1	Civil Technology	49	50
Jhenidha Polytechnic Institute	2	Civil Technology	50	50
Jhenidha Polytechnic Institute	1	Electrical Technology	50	50
Jhenidha Polytechnic Institute	2	Electrical Technology	50	50
Jhenidha Polytechnic Institute	1	Electronics Technology	48	50
Jhenidha Polytechnic Institute	2	Electronics Technology	49	50
Jhenidha Polytechnic Institute	1	Computer Science and Technology	49	50
Jhenidha Polytechnic Institute	2	Computer Science and Technology	50	50
Jhenidha Polytechnic Institute	1	Environmental Technology	38	50
Jhenidha Polytechnic Institute	2	Environmental Technology	8	50
Magura Polytechnic Institute	1	Electrical Technology	99	100
Magura Polytechnic Institute	2	Electrical Technology	98	100
Magura Polytechnic Institute	1	Electronics Technology	97	100
Magura Polytechnic Institute	2	Electronics Technology	98	100

Institute name	Shift	Technology	Admission	Total seat
Magura Polytechnic Institute	1	Food Technology	42	100
Magura Polytechnic Institute	2	Food Technology	11	100
Magura Polytechnic Institute	1	Refrigeration and Air Conditioning Technology	56	100
Magura Polytechnic Institute	2	Refrigeration and Air Conditioning Technology	22	100
Magura Polytechnic Institute	1	Computer Science and Technology	99	100
Magura Polytechnic Institute	2	Computer Science and Technology	98	100
Magura Polytechnic Institute	1	Mechatronics Technology	72	100
Magura Polytechnic Institute	2	Mechatronics Technology	32	100
Jashore Polytechnic Institute	1	Civil Technology	100	100
Jashore Polytechnic Institute	2	Civil Technology	99	100
Jashore Polytechnic Institute	1	Electrical Technology	99	100
Jashore Polytechnic Institute	2	Electrical Technology	97	100
Jashore Polytechnic Institute	1	Electronics Technology	61	50
Jashore Polytechnic Institute	2	Electronics Technology	48	50
Jashore Polytechnic Institute	1	Mechanical Technology	100	100
Jashore Polytechnic Institute	2	Mechanical Technology	97	100
Jashore Polytechnic Institute	1	Power Technology	98	100
Jashore Polytechnic Institute	2	Power Technology	98	100
Jashore Polytechnic Institute	1	Computer Science and Technology	98	100
Jashore Polytechnic Institute	2	Computer Science and Technology	96	100
Jashore Polytechnic Institute	1	Telecommunication Technology	47	50
Jashore Polytechnic Institute	2	Telecommunication Technology	36	50
Satkhira Polytechnic Institute	1	Civil Technology	100	100
Satkhira Polytechnic Institute	2	Civil Technology	98	100
Satkhira Polytechnic Institute	1	Electronics Technology	50	50
Satkhira Polytechnic Institute	2	Electronics Technology	48	50
Satkhira Polytechnic Institute	1	Refrigeration and Air Conditioning Technology	34	50
Satkhira Polytechnic Institute	2	Refrigeration and Air Conditioning Technology	17	50
Satkhira Polytechnic Institute	1	Computer Science and Technology	100	100
Satkhira Polytechnic Institute	2	Computer Science and Technology	99	100
Khulna Polytechnic Institute	1	Civil Technology	150	150
Khulna Polytechnic Institute	2	Civil Technology	149	150
Khulna Polytechnic Institute	1	Electrical Technology	149	150
Khulna Polytechnic Institute	2	Electrical Technology	150	150
Khulna Polytechnic Institute	1	Electronics Technology	48	50
Khulna Polytechnic Institute	2	Electronics Technology	49	50
Khulna Polytechnic Institute	1	Mechanical Technology	100	100
Khulna Polytechnic Institute	2	Mechanical Technology	98	100
Khulna Polytechnic Institute	1	Power Technology	50	50
Khulna Polytechnic Institute	2	Power Technology	49	50
Khulna Polytechnic Institute	1	Refrigeration and Air Conditioning Technology	45	50

Institute name	Shift	Technology	Admission	Total seat
Khulna Polytechnic Institute	2	Refrigeration and Air Conditioning Technology	39	50
Khulna Polytechnic Institute	1	Computer Science and Technology	49	50
Khulna Polytechnic Institute	2	Computer Science and Technology	50	50
Khulna Mohila Polytechnic Institute	1	Architecture Technology	19	100
Khulna Mohila Polytechnic Institute	2	Architecture Technology	1	100
Khulna Mohila Polytechnic Institute	1	Civil Technology	64	100
Khulna Mohila Polytechnic Institute	2	Civil Technology	6	100
Khulna Mohila Polytechnic Institute	1	Electronics Technology	3	50
Khulna Mohila Polytechnic Institute	1	Computer Science and Technology	100	100
Khulna Mohila Polytechnic Institute	2	Computer Science and Technology	38	100
Barguna Polytechnic Institute	1	Civil Technology	49	50
Barguna Polytechnic Institute	2	Civil Technology	49	50
Barguna Polytechnic Institute	1	Electronics Technology	96	100
Barguna Polytechnic Institute	2	Electronics Technology	65	100
Barguna Polytechnic Institute	1	Refrigeration and Air Conditioning Technology	10	50
Barguna Polytechnic Institute	2	Refrigeration and Air Conditioning Technology	1	50
Barguna Polytechnic Institute	1	Computer Science and Technology	97	100
Barguna Polytechnic Institute	2	Computer Science and Technology	97	100
Barguna Polytechnic Institute	1	Environmental Technology	8	50
Patuakhali Polytechnic Institute	1	Civil Technology	100	100
Patuakhali Polytechnic Institute	2	Civil Technology	95	100
Patuakhali Polytechnic Institute	1	Electrical Technology	99	100
Patuakhali Polytechnic Institute	2	Electrical Technology	95	100
Patuakhali Polytechnic Institute	1	Electronics Technology	48	50
Patuakhali Polytechnic Institute	2	Electronics Technology	43	50
Patuakhali Polytechnic Institute	1	Refrigeration and Air Conditioning Technology	34	50
Patuakhali Polytechnic Institute	2	Refrigeration and Air Conditioning Technology	9	50
Patuakhali Polytechnic Institute	1	Computer Science and Technology	46	50
Patuakhali Polytechnic Institute	2	Computer Science and Technology	43	50
Bhola Polytechnic Institute	1	Civil Technology	98	100
Bhola Polytechnic Institute	2	Civil Technology	98	100
Bhola Polytechnic Institute	1	Electronics Technology	50	50
Bhola Polytechnic Institute	2	Electronics Technology	41	50
Bhola Polytechnic Institute	1	Refrigeration and Air Conditioning Technology	25	50
Bhola Polytechnic Institute	2	Refrigeration and Air Conditioning Technology	3	50
Bhola Polytechnic Institute	1	Computer Science and Technology	46	50
Bhola Polytechnic Institute	2	Computer Science and Technology	47	50
Barishal Polytechnic Institute	1	Civil Technology	150	150
Barishal Polytechnic Institute	2	Civil Technology	150	150
Barishal Polytechnic Institute	1	Electrical Technology	147	150
Barishal Polytechnic Institute	2	Electrical Technology	150	150

Institute name	Shift	Technology	Admission	Total seat
Barishal Polytechnic Institute	1	Electronics Technology	99	100
Barishal Polytechnic Institute	2	Electronics Technology	98	100
Barishal Polytechnic Institute	1	Mechanical Technology	98	100
Barishal Polytechnic Institute	2	Mechanical Technology	98	100
Barishal Polytechnic Institute	1	Power Technology	100	100
Barishal Polytechnic Institute	2	Power Technology	99	100
Barishal Polytechnic Institute	1	Computer Science and Technology	99	100
Barishal Polytechnic Institute	2	Computer Science and Technology	97	100
Barishal Polytechnic Institute	1	Electro Medical Technology	95	100
Barishal Polytechnic Institute	2	Electro Medical Technology	37	100
Shariyatpur Polytechnic Institute	1	Electrical Technology	50	50
Shariyatpur Polytechnic Institute	2	Electrical Technology	50	50
Shariyatpur Polytechnic Institute	1	Electronics Technology	47	50
Shariyatpur Polytechnic Institute	2	Electronics Technology	42	50
Shariyatpur Polytechnic Institute	1	Computer Science and Technology	98	100
Shariyatpur Polytechnic Institute	2	Computer Science and Technology	95	100
Shariyatpur Polytechnic Institute	1	Telecommunication Technology	14	50
Shariyatpur Polytechnic Institute	2	Telecommunication Technology	3	50
Gopalganj Polytechnic Institute	1	Electrical Technology	97	100
Gopalganj Polytechnic Institute	2	Electrical Technology	95	100
Gopalganj Polytechnic Institute	1	Electronics Technology	45	50
Gopalganj Polytechnic Institute	2	Electronics Technology	47	50
Gopalganj Polytechnic Institute	1	Food Technology	19	50
Gopalganj Polytechnic Institute	2	Food Technology	8	50
Gopalganj Polytechnic Institute	1	Refrigeration and Air Conditioning Technology	26	50
Gopalganj Polytechnic Institute	2	Refrigeration and Air Conditioning Technology	13	50
Gopalganj Polytechnic Institute	1	Computer Science and Technology	48	50
Gopalganj Polytechnic Institute	2	Computer Science and Technology	49	50
Faridpur Polytechnic Institute	1	Civil Technology	98	100
Faridpur Polytechnic Institute	2	Civil Technology	100	100
Faridpur Polytechnic Institute	1	Electrical Technology	97	100
Faridpur Polytechnic Institute	2	Electrical Technology	100	100
Faridpur Polytechnic Institute	1	Mechanical Technology	99	100
Faridpur Polytechnic Institute	2	Mechanical Technology	95	100
Faridpur Polytechnic Institute	1	Power Technology	99	100
Faridpur Polytechnic Institute	2	Power Technology	97	100
Faridpur Polytechnic Institute	1	Refrigeration and Air Conditioning Technology	97	100
Faridpur Polytechnic Institute	2	Refrigeration and Air Conditioning Technology	58	100
Faridpur Polytechnic Institute	1	Computer Science and Technology	98	100
Faridpur Polytechnic Institute	2	Computer Science and Technology	97	100
Munshiganj Polytechnic Institute	1	Civil Technology	47	50
Munshiganj Polytechnic Institute	2	Civil Technology	48	50

Institute name	Shift	Technology	Admission	Total seat
Munshiganj Polytechnic Institute	1	Electrical Technology	99	100
Munshiganj Polytechnic Institute	2	Electrical Technology	100	100
Munshiganj Polytechnic Institute	1	Electronics Technology	48	50
Munshiganj Polytechnic Institute	2	Electronics Technology	46	50
Munshiganj Polytechnic Institute	1	Mechanical Technology	49	50
Munshiganj Polytechnic Institute	2	Mechanical Technology	46	50
Munshiganj Polytechnic Institute	1	Refrigeration and Air Conditioning Technology	45	50
Munshiganj Polytechnic Institute	2	Refrigeration and Air Conditioning Technology	24	50
Munshiganj Polytechnic Institute	1	Computer Science and Technology	96	100
Munshiganj Polytechnic Institute	2	Computer Science and Technology	97	100
Munshiganj Polytechnic Institute	1	Electro Medical Technology	40	50
Munshiganj Polytechnic Institute	2	Electro Medical Technology	23	50
Bangladesh Institute of Glass & Ceramics	1	Ceramic Technology	128	150
Bangladesh Institute of Glass & Ceramics	2	Ceramic Technology	67	150
Bangladesh Institute of Glass & Ceramics	1	Glass Technology	41	50
Bangladesh Institute of Glass & Ceramics	2	Glass Technology	23	50
Dhaka Graphic Arts Institute	1	Computer Science and Technology	49	50
Dhaka Graphic Arts Institute	2	Computer Science and Technology	51	50
Dhaka Graphic Arts Institute	1	Printing Technology	46	50
Dhaka Graphic Arts Institute	2	Printing Technology	47	50
Dhaka Graphic Arts Institute	1	Graphic Design Technology	99	100
Dhaka Graphic Arts Institute	2	Graphic Design Technology	96	100
Dhaka Mohila Polytechnic Institute	1	Architecture Technology	99	100
Dhaka Mohila Polytechnic Institute	2	Architecture Technology	86	100
Dhaka Mohila Polytechnic Institute	1	Electrical Technology	50	50
Dhaka Mohila Polytechnic Institute	2	Electrical Technology	37	50
Dhaka Mohila Polytechnic Institute	1	Electronics Technology	45	100
Dhaka Mohila Polytechnic Institute	2	Electronics Technology	4	100
Dhaka Mohila Polytechnic Institute	1	Computer Science and Technology	102	100
Dhaka Mohila Polytechnic Institute	2	Computer Science and Technology	101	100
Dhaka Mohila Polytechnic Institute	1	Electro Medical Technology	45	50
Dhaka Mohila Polytechnic Institute	2	Electro Medical Technology	7	50
Dhaka Polytechnic Institute	1	Architecture Technology	100	100
Dhaka Polytechnic Institute	2	Architecture Technology	96	100
Dhaka Polytechnic Institute	1	Automobile Technology	98	100
Dhaka Polytechnic Institute	2	Automobile Technology	105	100
Dhaka Polytechnic Institute	1	Chemical Technology	99	100
Dhaka Polytechnic Institute	2	Chemical Technology	100	100
Dhaka Polytechnic Institute	1	Civil Technology	198	200
Dhaka Polytechnic Institute	2	Civil Technology	198	200
Dhaka Polytechnic Institute	1	Electrical Technology	148	150

Institute name	Shift	Technology	Admission	Total seat
Dhaka Polytechnic Institute	2	Electrical Technology	150	150
Dhaka Polytechnic Institute	1	Electronics Technology	100	100
Dhaka Polytechnic Institute	2	Electronics Technology	97	100
Dhaka Polytechnic Institute	1	Food Technology	93	100
Dhaka Polytechnic Institute	2	Food Technology	92	100
Dhaka Polytechnic Institute	1	Mechanical Technology	149	150
Dhaka Polytechnic Institute	2	Mechanical Technology	149	150
Dhaka Polytechnic Institute	1	Power Technology	97	100
Dhaka Polytechnic Institute	2	Power Technology	98	100
Dhaka Polytechnic Institute	1	Refrigeration and Air Conditioning Technology	98	100
Dhaka Polytechnic Institute	2	Refrigeration and Air Conditioning Technology	96	100
Dhaka Polytechnic Institute	1	Computer Science and Technology	100	100
Dhaka Polytechnic Institute	2	Computer Science and Technology	96	100
Dhaka Polytechnic Institute	1	Environmental Technology	43	50
Dhaka Polytechnic Institute	2	Environmental Technology	46	50
Narsingdi Polytechnic Institute	1	Civil Technology	101	100
Narsingdi Polytechnic Institute	2	Civil Technology	98	100
Narsingdi Polytechnic Institute	1	Electrical Technology	49	50
Narsingdi Polytechnic Institute	2	Electrical Technology	50	50
Narsingdi Polytechnic Institute	1	Food Technology	48	50
Narsingdi Polytechnic Institute	2	Food Technology	33	50
Narsingdi Polytechnic Institute	1	Refrigeration and Air Conditioning Technology	48	50
Narsingdi Polytechnic Institute	2	Refrigeration and Air Conditioning Technology	44	50
Narsingdi Polytechnic Institute	1	Computer Science and Technology	50	50
Narsingdi Polytechnic Institute	2	Computer Science and Technology	50	50
Tangail Polytechnic Institute	1	Civil Technology	50	50
Tangail Polytechnic Institute	2	Civil Technology	49	50
Tangail Polytechnic Institute	1	Electrical Technology	98	100
Tangail Polytechnic Institute	2	Electrical Technology	98	100
Tangail Polytechnic Institute	1	Electronics Technology	94	100
Tangail Polytechnic Institute	2	Electronics Technology	99	100
Tangail Polytechnic Institute	1	Mechanical Technology	50	50
Tangail Polytechnic Institute	2	Mechanical Technology	49	50
Tangail Polytechnic Institute	1	Computer Science and Technology	99	100
Tangail Polytechnic Institute	2	Computer Science and Technology	97	100
Tangail Polytechnic Institute	1	Construction Technology	46	50
Tangail Polytechnic Institute	2	Construction Technology	50	50
Tangail Polytechnic Institute	1	Telecommunication Technology	98	100
Tangail Polytechnic Institute	2	Telecommunication Technology	87	100
Sherpur Polytechnic Institute	1	Civil Technology	99	100
Sherpur Polytechnic Institute	2	Civil Technology	100	100
Sherpur Polytechnic Institute	1	Electrical Technology	49	50

Institute name	Shift	Technology	Admission	Total seat
Sherpur Polytechnic Institute	2	Electrical Technology	50	50
Sherpur Polytechnic Institute	1	Electronics Technology	47	50
Sherpur Polytechnic Institute	2	Electronics Technology	43	50
Sherpur Polytechnic Institute	1	Computer Science and Technology	49	50
Sherpur Polytechnic Institute	2	Computer Science and Technology	50	50
Mymensingh Polytechnic Institute	1	Civil Technology	148	150
Mymensingh Polytechnic Institute	2	Civil Technology	148	150
Mymensingh Polytechnic Institute	1	Electrical Technology	148	150
Mymensingh Polytechnic Institute	2	Electrical Technology	147	150
Mymensingh Polytechnic Institute	1	Electronics Technology	100	100
Mymensingh Polytechnic Institute	2	Electronics Technology	99	100
Mymensingh Polytechnic Institute	1	Mechanical Technology	98	100
Mymensingh Polytechnic Institute	2	Mechanical Technology	101	100
Mymensingh Polytechnic Institute	1	Power Technology	98	100
Mymensingh Polytechnic Institute	2	Power Technology	96	100
Mymensingh Polytechnic Institute	1	Computer Science and Technology	98	100
Mymensingh Polytechnic Institute	2	Computer Science and Technology	93	100
Mymensingh Polytechnic Institute	1	Electro Medical Technology	93	100
Mymensingh Polytechnic Institute	2	Electro Medical Technology	95	100
Kishoreganj Polytechnic Institute	1	Electronics Technology	94	100
Kishoreganj Polytechnic Institute	2	Electronics Technology	94	100
Kishoreganj Polytechnic Institute	1	Food Technology	72	100
Kishoreganj Polytechnic Institute	2	Food Technology	27	100
Kishoreganj Polytechnic Institute	1	Refrigeration and Air Conditioning Technology	89	100
Kishoreganj Polytechnic Institute	2	Refrigeration and Air Conditioning Technology	57	100
Kishoreganj Polytechnic Institute	1	Computer Science and Technology	98	100
Kishoreganj Polytechnic Institute	2	Computer Science and Technology	97	100
Sylhet Polytechnic Institute	1	Civil Technology	148	150
Sylhet Polytechnic Institute	2	Civil Technology	148	150
Sylhet Polytechnic Institute	1	Electrical Technology	98	100
Sylhet Polytechnic Institute	2	Electrical Technology	99	100
Sylhet Polytechnic Institute	1	Electronics Technology	96	100
Sylhet Polytechnic Institute	2	Electronics Technology	95	100
Sylhet Polytechnic Institute	1	Mechanical Technology	97	100
Sylhet Polytechnic Institute	2	Mechanical Technology	95	100
Sylhet Polytechnic Institute	1	Power Technology	49	50
Sylhet Polytechnic Institute	2	Power Technology	45	50
Sylhet Polytechnic Institute	1	Computer Science and Technology	99	100
Sylhet Polytechnic Institute	2	Computer Science and Technology	95	100
Sylhet Polytechnic Institute	1	Electro Medical Technology	50	50
Sylhet Polytechnic Institute	2	Electro Medical Technology	44	50
Moulvibazar Polytechnic Institute	1	Electronics Technology	95	100

Institute name	Shift	Technology	Admission	Total seat
Moulvibazar Polytechnic Institute	2	Electronics Technology	88	100
Moulvibazar Polytechnic Institute	1	Food Technology	22	100
Moulvibazar Polytechnic Institute	2	Food Technology	3	100
Moulvibazar Polytechnic Institute	1	Refrigeration and Air Conditioning Technology	24	100
Moulvibazar Polytechnic Institute	2	Refrigeration and Air Conditioning Technology	7	100
Moulvibazar Polytechnic Institute	1	Computer Science and Technology	99	100
Moulvibazar Polytechnic Institute	2	Computer Science and Technology	95	100
Habiganj Polytechnic Institute	1	Architecture Technology	50	50
Habiganj Polytechnic Institute	2	Architecture Technology	48	50
Habiganj Polytechnic Institute	1	Civil Technology	49	50
Habiganj Polytechnic Institute	2	Civil Technology	49	50
Habiganj Polytechnic Institute	1	Electronics Technology	49	50
Habiganj Polytechnic Institute	2	Electronics Technology	45	50
Habiganj Polytechnic Institute	1	Computer Science and Technology	98	100
Habiganj Polytechnic Institute	2	Computer Science and Technology	98	100
Brahmanbaria Polytechnic Institute	1	Architecture Technology	47	50
Brahmanbaria Polytechnic Institute	2	Architecture Technology	40	50
Brahmanbaria Polytechnic Institute	1	Refrigeration and Air Conditioning Technology	35	50
Brahmanbaria Polytechnic Institute	2	Refrigeration and Air Conditioning Technology	19	50
Brahmanbaria Polytechnic Institute	1	Computer Science and Technology	95	100
Brahmanbaria Polytechnic Institute	2	Computer Science and Technology	95	100
Brahmanbaria Polytechnic Institute	1	Electro Medical Technology	43	50
Brahmanbaria Polytechnic Institute	2	Electro Medical Technology	9	50
Cumilla Polytechnic Institute	1	Civil Technology	99	100
Cumilla Polytechnic Institute	2	Civil Technology	97	100
Cumilla Polytechnic Institute	1	Electrical Technology	99	100
Cumilla Polytechnic Institute	2	Electrical Technology	99	100
Cumilla Polytechnic Institute	1	Electronics Technology	50	50
Cumilla Polytechnic Institute	2	Electronics Technology	46	50
Cumilla Polytechnic Institute	1	Mechanical Technology	100	100
Cumilla Polytechnic Institute	2	Mechanical Technology	97	100
Cumilla Polytechnic Institute	1	Power Technology	48	50
Cumilla Polytechnic Institute	2	Power Technology	48	50
Cumilla Polytechnic Institute	1	Computer Science and Technology	99	100
Cumilla Polytechnic Institute	2	Computer Science and Technology	99	100
Bangladesh Survey Institute, Cumilla	1	Surveying Technology	96	100
Bangladesh Survey Institute, Cumilla	2	Surveying Technology	99	100
Chandpur Polytechnic Institute	1	Civil Technology	49	50
Chandpur Polytechnic Institute	2	Civil Technology	50	50
Chandpur Polytechnic Institute	1	Electronics Technology	44	50
Chandpur Polytechnic Institute	2	Electronics Technology	47	50

Institute name	Shift	Technology	Admission	Total seat
Chandpur Polytechnic Institute	1	Refrigeration and Air Conditioning Technology	45	50
Chandpur Polytechnic Institute	2	Refrigeration and Air Conditioning Technology	30	50
Chandpur Polytechnic Institute	1	Computer Science and Technology	48	50
Chandpur Polytechnic Institute	2	Computer Science and Technology	50	50
Chandpur Polytechnic Institute	1	Construction Technology	99	100
Chandpur Polytechnic Institute	2	Construction Technology	96	100
Lakshmipur Polytechnic Institute	1	Architecture Technology	47	50
Lakshmipur Polytechnic Institute	2	Architecture Technology	48	50
Lakshmipur Polytechnic Institute	1	Civil Technology	99	100
Lakshmipur Polytechnic Institute	2	Civil Technology	98	100
Lakshmipur Polytechnic Institute	1	Electrical Technology	49	50
Lakshmipur Polytechnic Institute	2	Electrical Technology	49	50
Lakshmipur Polytechnic Institute	1	Electronics Technology	47	50
Lakshmipur Polytechnic Institute	2	Electronics Technology	46	50
Lakshmipur Polytechnic Institute	1	Computer Science and Technology	48	50
Lakshmipur Polytechnic Institute	2	Computer Science and Technology	46	50
Feni Polytechnic Institute	1	Architecture Technology	47	50
Feni Polytechnic Institute	2	Architecture Technology	46	50
Feni Polytechnic Institute	1	Civil Technology	98	100
Feni Polytechnic Institute	2	Civil Technology	97	100
Feni Polytechnic Institute	1	Electrical Technology	100	100
Feni Polytechnic Institute	2	Electrical Technology	97	100
Feni Polytechnic Institute	1	Mechanical Technology	95	100
Feni Polytechnic Institute	2	Mechanical Technology	95	100
Feni Polytechnic Institute	1	Power Technology	43	50
Feni Polytechnic Institute	2	Power Technology	44	50
Feni Polytechnic Institute	1	Computer Science and Technology	94	100
Feni Polytechnic Institute	2	Computer Science and Technology	93	100
Feni Computer Institute	1	Computer Science and Technology	50	50
Feni Computer Institute	2	Computer Science and Technology	50	50
Feni Computer Institute	1	Telecommunication Technology	98	100
Feni Computer Institute	2	Telecommunication Technology	90	100
Chattogram Polytechnic Institute	1	Civil Technology	100	100
Chattogram Polytechnic Institute	2	Civil Technology	98	100
Chattogram Polytechnic Institute	1	Electrical Technology	99	100
Chattogram Polytechnic Institute	2	Electrical Technology	100	100
Chattogram Polytechnic Institute	1	Electronics Technology	97	100
Chattogram Polytechnic Institute	2	Electronics Technology	99	100
Chattogram Polytechnic Institute	1	Mechanical Technology	99	100
Chattogram Polytechnic Institute	2	Mechanical Technology	98	100
Chattogram Polytechnic Institute	1	Power Technology	98	100
Chattogram Polytechnic Institute	2	Power Technology	96	100

Institute name	Shift	Technology	Admission	Total seat
Chattogram Polytechnic Institute	1	Computer Science and Technology	100	100
Chattogram Polytechnic Institute	2	Computer Science and Technology	100	100
Chattogram Polytechnic Institute	1	Environmental Technology	44	50
Chattogram Polytechnic Institute	2	Environmental Technology	47	50
Chattogram Mohila Polytechnic Institute, Chattogram	1	Architecture Technology	49	50
Chattogram Mohila Polytechnic Institute, Chattogram	2	Architecture Technology	48	50
Chattogram Mohila Polytechnic Institute, Chattogram	1	Electronics Technology	49	50
Chattogram Mohila Polytechnic Institute, Chattogram	2	Electronics Technology	28	50
Chattogram Mohila Polytechnic Institute, Chattogram	1	Computer Science and Technology	47	50
Chattogram Mohila Polytechnic Institute, Chattogram	2	Computer Science and Technology	49	50
Bangladesh-Sweden Polytechnic Institute	1	Automobile Technology	49	50
Bangladesh-Sweden Polytechnic Institute	2	Automobile Technology	44	50
Bangladesh-Sweden Polytechnic Institute	1	Civil (Wood) Technology	45	50
Bangladesh-Sweden Polytechnic Institute	2	Civil (Wood) Technology	51	50
Bangladesh-Sweden Polytechnic Institute	1	Electrical Technology	50	50
Bangladesh-Sweden Polytechnic Institute	2	Electrical Technology	48	50
Bangladesh-Sweden Polytechnic Institute	1	Mechanical Technology	48	50
Bangladesh-Sweden Polytechnic Institute	2	Mechanical Technology	51	50
Bangladesh-Sweden Polytechnic Institute	1	Computer Science and Technology	48	50
Bangladesh-Sweden Polytechnic Institute	2	Computer Science and Technology	47	50
Bangladesh-Sweden Polytechnic Institute	1	Construction Technology	47	50
Bangladesh-Sweden Polytechnic Institute	2	Construction Technology	43	50
Coxs Bazar Polytechnic Institute	1	Civil Technology	50	50
Coxs Bazar Polytechnic Institute	2	Civil Technology	50	50
Coxs Bazar Polytechnic Institute	1	Electrical Technology	46	50
Coxs Bazar Polytechnic Institute	2	Electrical Technology	47	50
Coxs Bazar Polytechnic Institute	1	Food Technology	84	100
Coxs Bazar Polytechnic Institute	2	Food Technology	54	100
Coxs Bazar Polytechnic Institute	1	Refrigeration and Air Conditioning Technology	48	50
Coxs Bazar Polytechnic Institute	2	Refrigeration and Air Conditioning Technology	43	50
Coxs Bazar Polytechnic Institute	1	Computer Science and Technology	48	50
Coxs Bazar Polytechnic Institute	2	Computer Science and Technology	50	50
		Total =	**38,397**	**42,600**

APPENDIX C2

Enrollment Status of Non-Government Polytechnic Institutes in 2024.

Institute Name	Shift	Technology	Admission	Total Seat
A K M Hemayet Uddin Institute of Science and Technology	2	Electrical Technology	7	50
A K M Hemayet Uddin Institute of Science and Technology	2	Civil Technology	7	50
A.K. Khan UCEP Private Polytechnic Institute	2	Mechanical Technology	32	50
A.K. Khan UCEP Private Polytechnic Institute	2	Civil Technology	26	50
A.K. Khan UCEP Private Polytechnic Institute	1	Electrical Technology	36	50
A.K. Khan UCEP Private Polytechnic Institute	1		42	50
Advocate Md. Hamidul Islam Technical & Engineering Institute, Birganj	2	Electrical Technology	10	50
Advocate Md. Hamidul Islam Technical & Engineering Institute, Birganj	2	Civil Technology	1	50
Advocate Md. Hamidul Islam Technical & Engineering Institute, Birganj	2		7	50
Aeronautical Institute of Bangladesh (AIB)	2	Aircraft Maintenance (Aerospace)	23	50
Afroza Farid Polytechnic Institute	1	Civil Technology	1	50
Afroza Farid Polytechnic Institute	1	Electrical Technology	6	50
Afroza Farid Polytechnic Institute	1		7	50
Ahsanullah Institute of Technical and Vocational Education and Training	1	Electrical Technology	42	50
Ahsanullah Institute of Technical and Vocational Education and Training	2	Civil Technology	35	150
Ahsanullah Institute of Technical and Vocational Education and Training	2	Chemical Technology	5	50
Ahsanullah Institute of Technical and Vocational Education and Training	2		44	150
Ahsanullah Institute of Technical and Vocational Education and Training	1	Civil Technology	49	50
Ahsanullah Institute of Technical and Vocational Education and Training	1		46	50
Ahsanullah Institute of Technical and Vocational Education and Training	2	Electrical Technology	10	150
Ahsanullah Institute of Technical and Vocational Education and Training	2	Architecture Technology	8	150
Ahsanullah University of Science and Technology	2	Electronics Technology	1	50
Akij Engineering Institute	2		34	50
Akij Engineering Institute	2	Electrical Technology	13	50
Akij Engineering Institute	2	Mechanical Technology	11	50
Akij Engineering Institute	2	Civil Technology	7	50
Alhaj Ayesha Khatun Polytechnic Institute, Chauddagram, Cumilla	1	Computer Science and Technology	50	50
Alhaj Ayesha Khatun Polytechnic Institute, Chauddagram, Cumilla	1	Electrical Technology	15	50
Alhaj Ayesha Khatun Polytechnic Institute, Chauddagram, Cumilla	1	Civil Technology	24	50
Alhaj Ayesha Khatun Polytechnic Institute, Chauddagram, Cumilla	1	Mechanical Technology	19	50
Alhaj Mockbul Hossain Degree College	2	Civil Technology	5	50

Institute Name	Shift	Technology	Admission	Total Seat
Alhaj Mockbul Hossain Degree College	2	Electrical Technology	4	150
Alhaj Mockbul Hossain Degree College	2		7	150
Alpha Institute of Science and Technology	2	Electrical Technology	4	50
Amda Institute of Engineering and Technology	2		16	50
Amda Institute of Engineering and Technology	2	Civil Technology	7	50
Amda Institute of Engineering and Technology	2	Electrical Technology	10	50
Anjuman Mokhlesur Rahman Polytechnic Institute	2	Electrical Technology	18	50
Anjuman Mokhlesur Rahman Polytechnic Institute	2		48	50
Anjuman Mokhlesur Rahman Polytechnic Institute	2	Automobile Technology	7	50
Anjuman Mokhlesur Rahman Polytechnic Institute	2	Civil Technology	9	50
Anowara Polytechnic Institute	2	Electrical Technology	31	50
Anowara Polytechnic Institute	1	Electrical Technology	49	50
Anowara Polytechnic Institute	1	Mechanical Technology	47	50
Anowara Polytechnic Institute	1	Civil Technology	50	50
Anowara Polytechnic Institute	2	Civil Technology	33	50
Anowara Polytechnic Institute	1		44	50
Anowara Polytechnic Institute	2		49	50
Anowara Polytechnic Institute	2	Mechanical Technology	8	50
Apolo Polytechnic Engineering Institute	2	Electrical Technology	7	50
Apolo Polytechnic Engineering Institute	2	Civil Technology	8	50
Aptouch Polytechnic Institute	2	Civil Technology	99	150
Aptouch Polytechnic Institute	2	Mechanical Technology	42	100
Aptouch Polytechnic Institute	2	Electrical Technology	111	150
Aptouch Polytechnic Institute	2		109	150
Arafat Polytechnic Institute	2		41	50
Arafat Polytechnic Institute	2	Electrical Technology	13	50
Arif Rabbi Polytechnic Institute	2		21	50
Arif Rabbi Polytechnic Institute	2	Electrical Technology	11	50
Arif Rabbi Polytechnic Institute	2	Civil Technology	35	50
Asian Institute of Science & Technology (AIST)	1	Computer Science and Technology	6	50
Asian Private Engineering Institute of Technology	2	Civil Technology	1	50
Asian Private Engineering Institute of Technology	2		1	50
Asulia Private Institute of Science & Technology	2		21	50
Asulia Private Institute of Science & Technology	2	Electrical Technology	7	50
Asulia Private Institute of Science & Technology	2	Civil Technology	3	50
Ayub-Hena Polytechnic Institute	2	Surveying Technology	6	50
Ayub-Hena Polytechnic Institute	2	Electrical Technology	28	50
Ayub-Hena Polytechnic Institute	2	Civil Technology	23	50

Institute Name	Shift	Technology	Admission	Total Seat
Azimnagar Technology and Management College	2	Electronics Technology	3	50
Bace Institute of Science and Technology	2		21	50
Bace Institute of Science and Technology	2	Electrical Technology	25	50
Badiul Alam Science and Technology Institute	2	Electrical Technology	10	50
Badiul Alam Science and Technology Institute	2	Civil Technology	6	50
Badiul Alam Science and Technology Institute	2		14	50
Bagmara Polytechnic Institute	2	Civil Technology	1	50
Bagmara Polytechnic Institute	2		4	50
Bahaul Huq NPI Institute of Science and Technology (BNIST)	2	Mechanical Technology	11	50
Bahaul Huq NPI Institute of Science and Technology (BNIST)	2		26	100
Bahaul Huq NPI Institute of Science and Technology (BNIST)	2	Electrical Technology	26	100
Bahaul Huq NPI Institute of Science and Technology (BNIST)	2	Civil Technology	18	50
Bancharampur Polytechnic Institute	2		10	50
Bancharampur Polytechnic Institute	2	Civil Technology	3	50
Bancharampur Polytechnic Institute	2	Electrical Technology	12	50
Bangladesh Institute of Information Technology	2	Electrical Technology	80	150
Bangladesh Institute of Information Technology	2	Civil Technology	117	150
Bangladesh Institute of Information Technology	2		68	150
Bangladesh Institute of Information Technology	2	Mechanical Technology	22	150
Bangladesh Institute of Technology	2		1	150
Bangladesh Polytechnic Institute	2	Civil Technology	127	150
Bangladesh Polytechnic Institute	2	Electrical Technology	94	150
Bangladesh Polytechnic Institute	2		126	150
Bangladesh Polytechnic Institute	2	Automobile Technology	5	50
Bangladesh Polytechnic Institute	2	Surveying Technology	40	50
Bangladesh Polytechnic Institute	2	Mechanical Technology	21	50
Bangladesh Skill Development Institute	2		36	100
Bangladesh Skill Development Institute	2	Civil Technology	13	50
Bangladesh Skill Development Institute	2	Mechanical Technology	7	50
Bangladesh Skill Development Institute	2	Electrical Technology	26	100
Bangladesh Technical College	2		4	50
Bangladesh Technical College	2	Civil Technology	1	50
Bangladesh Technical College	2	Electrical Technology	3	50
Bangladesh Textile Engineering College	2	Electrical Technology	3	50
Bangladesh Textile Engineering College	2	Civil Technology	4	50
Bangladesh Textile Engineering College	2		9	50
Banglamotion Institute of Engineering and Technology	2		3	50
Banglamotion Institute of Engineering and Technology	2	Electrical Technology	4	50
Banglamotion Institute of Engineering and Technology	2	Civil Technology	1	50

Institute Name	Shift	Technology	Admission	Total Seat
Bango Dariti Textile Engineering Institute	2	Computer Science and Technology	15	50
Bango Dariti Textile Engineering Institute	2	Electrical Technology	24	50
Bango Dariti Textile Engineering Institute	2	Civil Technology	4	50
Banskhali Private Polytechnic Institute	2		21	50
Banskhali Private Polytechnic Institute	2	Electrical Technology	11	50
Barajan Polytechnic Institute	2	Electrical Technology	9	50
Barajan Polytechnic Institute	2	Civil Technology	1	50
Barisal Ideal Polytechnic Institute	2	Civil Technology	29	150
Barisal Ideal Polytechnic Institute	2	Electrical Technology	18	150
Barisal Ideal Polytechnic Institute	2		20	50
Barisal Technocrats Polytechnic Institute	2		22	50
Barisal Technocrats Polytechnic Institute	2	Civil Technology	11	50
Barisal Technocrats Polytechnic Institute	2	Electrical Technology	9	50
Bashundhara Technical Institute	1	Computer Science and Technology	17	50
Bashundhara Technical Institute	2	Electrical Technology	22	50
Bashundhara Technical Institute	2	Mechanical Technology	15	50
Bashundhara Technical Institute	2	Civil Technology	19	50
Bci Engineering Institute	2	Electrical Technology	5	100
Bci Engineering Institute	2		45	150
Bci Engineering Institute	2	Civil Technology	8	100
BCMC College of Engineering & Technology	2	Electrical Technology	23	150
BCMC College of Engineering & Technology	2		47	150
BCMC College of Engineering & Technology	2	Mechanical Technology	9	50
BCMC College of Engineering & Technology	2	Civil Technology	28	150
Begum Fazilatunessa Polytechnic Institute	2		14	50
Begum Fazilatunessa Polytechnic Institute	2	Surveying Technology	2	50
Begum Fazilatunessa Polytechnic Institute	2	Civil Technology	9	50
Begum Fazilatunessa Polytechnic Institute	2	Electrical Technology	6	50
Bengal Institute of Technology	2		21	50
Bengal Institute of Technology	2	Electrical Technology	19	50
Bengal Institute of Technology	2	Mechanical Technology	8	50
Bengal Institute of Technology	2	Civil Technology	3	50
BGIFT Institute of Science and Technology (BIST)	2	Civil Technology	60	100
BGIFT Institute of Science and Technology (BIST)	2	Mechanical Technology	53	100
BGIFT Institute of Science and Technology (BIST)	2		83	100
BGIFT Institute of Science and Technology (BIST)	2	Electrical Technology	81	100
Bhawal Polytechnic Institute	2	Civil Technology	11	50
Bhawal Polytechnic Institute	2		9	50
Bhola Sadar Polytechnic Institute	2	Civil Technology	2	50
Bhola Sadar Polytechnic Institute	2	Electrical Technology	2	50

Institute Name	Shift	Technology	Admission	Total Seat
Bir Muktijodda Atiur Rahaman Model Polytechnic Institute	2	Electrical Technology	7	50
Bir Muktijodda Atiur Rahaman Model Polytechnic Institute	2	Civil Technology	11	50
Boalmari Institute of Engineering and Technology	2	Civil Technology	8	50
Boalmari Institute of Engineering and Technology	2	Electrical Technology	6	50
Boalmari Institute of Engineering and Technology	2		17	50
Bogra Institute of Technical Education	2		16	50
Bogra Institute of Technical Education	2	Civil Technology	23	50
Bogra Institute of Technical Education	2	Electrical Technology	11	50
Bogra YMCA Polytechnic Institute	2		3	50
Bogra YMCA Polytechnic Institute	2	Electrical Technology	12	50
Bogra YMCA Polytechnic Institute	2	Civil Technology	17	50
Bolidapara Polytechnic Institute	2	Electrical Technology	5	50
Bolidapara Polytechnic Institute	2	Mechanical Technology	1	50
Bolidapara Polytechnic Institute	2	Civil Technology	2	50
Borak Polytechnic Institute	2		100	100
Borak Polytechnic Institute	2	Electrical Technology	100	100
Borak Polytechnic Institute	2	Mechanical Technology	74	100
Borak Polytechnic Institute	2	Civil Technology	83	100
Brilliant Engineering Institute	2	Civil Technology	5	50
Brilliant Engineering Institute	2		21	50
British American Technology and Management Institute	2	Electrical Technology	4	50
Bromoputro Polytecnic Institute	2	Civil Technology	3	50
Bromoputro Polytecnic Institute	2	Electrical Technology	1	50
Burichang Model Polytechnic Institute	2	Electrical Technology	29	50
Burichang Model Polytechnic Institute	2		22	50
CCER Polytechnic Institute	2	Civil Technology	6	50
CCER Polytechnic Institute	2	Electrical Technology	6	50
CCER Polytechnic Institute	2		21	50
CCN Polytechnic Institute	2	Electrical Technology	59	150
CCN Polytechnic Institute	2		112	150
CCN Polytechnic Institute	2	Mechanical Technology	19	50
CCN Polytechnic Institute	2	Civil Technology	89	150
CCN Polytechnic Institute	2	Automobile Technology	10	50
CCN Polytechnic Institute	2	Surveying Technology	11	50
Centre For Technology Transfer	2		4	50
Centre For Technology Transfer	2	Electrical Technology	16	50
Centre For Technology Transfer	2	Civil Technology	8	50
Centre For Technology Transfer	2	Mechanical Technology	19	50
Chakria Polytechnic Institute	2	Civil Technology	4	50
Chakria Polytechnic Institute	2	Electrical Technology	4	50

Institute Name	Shift	Technology	Admission	Total Seat
Chakria Polytechnic Institute	2		8	50
Chandpur Engineering Institute	2	Electrical Technology	5	50
Chandpur Engineering Institute	2		5	50
Charfassion Polytechnic Institute	2	Civil Technology	6	50
Charfassion Polytechnic Institute	2		9	50
Chatmohar Polytechnic and Textile Engineering Institute	2	Electrical Technology	39	50
Chatmohar Polytechnic and Textile Engineering Institute	2		21	50
Chatmohar Polytechnic and Textile Engineering Institute	2	Civil Technology	35	50
Chittagong Institute of Engineering and Technology	2	Electrical Technology	1	50
Chittagong Institute of Engineering and Technology	2		3	50
Chittagong Science and Technology Institute	2		66	150
Chittagong Science and Technology Institute	2	Electronics Technology	1	50
Chittagong Science and Technology Institute	2	Electrical Technology	71	150
Chittagong Science and Technology Institute	2	Mechanical Technology	37	50
Chittagong Science and Technology Institute	2	Civil Technology	19	150
Chittagong Technical College	2	Civil Technology	11	150
Chittagong Technical College	2	Electrical Technology	26	150
Chittagong Technical College	2	Mechanical Technology	20	50
Chittagong Technical College	2		48	50
Chittagong Technical College	2	Automobile Technology	24	50
Chowgacha Marks Institute and Technology	2		40	50
Chuadanga Polytechnic Institute	2	Civil Technology	1	50
City Institute of Technology	2	Civil Technology	8	50
City Institute of Technology	2	Mechanical Technology	8	50
City Institute of Technology	2		26	50
City Institute of Technology	2	Electrical Technology	11	50
City Polytechnic and Textile Institute	2	Civil Technology	16	50
City Polytechnic and Textile Institute	2	Electrical Technology	35	50
City Polytechnic and Textile Institute	2		15	50
City Polytechnic Institute	2		55	150
City Polytechnic Institute	2	Civil Technology	49	150
City Polytechnic Institute	2	Electrical Technology	55	150
City Polytechnic Institute	2	Marine Technology	13	50
City Polytechnic Institute	2	Mechanical Technology	17	50
Classic Engineering Institute of Technology	2		8	50
Classic Engineering Institute of Technology	2	Mechanical Technology	8	50
Classic Engineering Institute of Technology	2	Electrical Technology	11	50
Classic Engineering Institute of Technology	2	Civil Technology	16	50
Comilla Private Polytechnic Institute	2	Electrical Technology	6	150
Comilla Private Polytechnic Institute	2	Automobile Technology	1	50

Institute Name	Shift	Technology	Admission	Total Seat
Comilla Private Polytechnic Institute	2	Surveying Technology	4	50
Comilla Private Polytechnic Institute	2		16	50
Comilla Private Polytechnic Institute	2	Civil Technology	6	150
Companigonj Engineering Institute	2		10	50
Companigonj Engineering Institute	2	Civil Technology	5	50
Compect Polytechnic Institute	2	Electrical Technology	11	50
Compect Polytechnic Institute	2	Computer Science and Technology	30	50
Compect Polytechnic Institute	2		21	50
Compect Polytechnic Institute	2	Civil Technology	20	50
Computer Science and Business Studies Institute	2		1	150
Computer Science and Business Studies Institute	2	Mechanical Technology	1	50
Confidence Institute of Technology (C I T)	2	Surveying Technology	19	50
Confidence Polytechnic Institute	2	Surveying Technology	14	50
Confidence Polytechnic Institute	2	Mechanical Technology	38	50
Confidence Polytechnic Institute	2	Electrical Technology	82	150
Confidence Polytechnic Institute	2		67	100
Confidence Polytechnic Institute	2	Civil Technology	31	150
Cox's Bazar Model Polytechnic Institute	2	Electrical Technology	19	50
Cox's Bazar Model Polytechnic Institute	2		27	50
Cox's Bazar Model Polytechnic Institute	2	Civil Technology	22	50
CPI Management and Technology	2		74	100
CPI Management and Technology	2	Electrical Technology	58	100
CPI Management and Technology	2	Mechanical Technology	17	50
CPI Management and Technology	2	Mechatronics Technology	12	50
CPI Management and Technology	2	Civil Technology	43	100
CPI Management and Technology	2	Automobile Technology	11	50
Cybertech Polytecnic Institute	2	Civil Technology	2	50
Cybertech Polytecnic Institute	2	Electrical Technology	5	50
Cybertech Polytecnic Institute	2		11	50
Daffodil Institute of Engineering and Technology	2		48	50
Daffodil Institute of Engineering and Technology	2	Civil Technology	12	50
Daffodil Institute of Engineering and Technology	2	Electrical Technology	7	50
Daffodil Institute of Engineering and Technology	2	Automobile Technology	24	50
Daffodil Institute of Engineering and Technology	1		1	50
Daffodil Institute of Engineering and Technology	2	Mechanical Technology	13	50
Daffodil Institute of IT-Chittagong	2	Civil Technology	12	100
Daffodil Institute of IT-Chittagong	2	Automobile Technology	13	50
Daffodil Institute of IT-Chittagong	2		62	150

Institute Name	Shift	Technology	Admission	Total Seat
Daffodil Institute of IT-Chittagong	2	Computer Science and Technology	18	50
Daffodil Institute of IT-Chittagong	2	Electrical Technology	27	100
Daffodil Institute of IT-Chittagong	2	Architecture Technology	1	50
Daffodil Institute of IT-Chittagong	2	Mechanical Technology	14	50
Daffodil Polytechnic Institute	2	Electrical Technology	49	100
Daffodil Polytechnic Institute	2	Electronics Technology	10	50
Daffodil Polytechnic Institute	2	Graphic Design Technology	28	50
Daffodil Polytechnic Institute	2	Telecommunication Technology	5	50
Daffodil Polytechnic Institute	2	Computer Science and Technology	43	50
Daffodil Polytechnic Institute	1	Civil Technology	4	50
Daffodil Polytechnic Institute	2		99	100
Daffodil Polytechnic Institute	1		45	50
Daffodil Polytechnic Institute	2	Civil Technology	49	50
Daffodil Polytechnic Institute	1	Computer Science and Technology	50	50
Daffodil Polytechnic Institute	2	Architecture Technology	21	50
Daffodil Science and Technology Institute	2	Electrical Technology	2	50
Daffodil Science and Technology Institute	2	Civil Technology	5	50
Daffodil Technical Institute	2	Telecommunication Technology	1	50
Daffodil Technical Institute	2	Civil Technology	30	100
Daffodil Technical Institute	2	Mechanical Technology	18	50
Daffodil Technical Institute	2	Computer Science and Technology	45	50
Daffodil Technical Institute	2	Electronics Technology	2	50
Daffodil Technical Institute	2	Electrical Technology	18	100
Daffodil Technical Institute	2	Graphic Design Technology	17	50
Daffodil Technical Institute	2	Architecture Technology	10	50
Daffodil Technical Institute	2		77	150
Dagonbhuiyan Science and Engineering Institute	2	Civil Technology	4	50
Dagonbhuiyan Science and Engineering Institute	2	Electrical Technology	17	50
Dagonbhuiyan Science and Engineering Institute	2	Mechanical Technology	7	50
Dagonbhuiyan Science and Engineering Institute	2		1	50
Dagonbhuiyan Science and Engineering Institute	2	Computer Science and Technology	36	50
Dakkhinbango Polytechnic Institute	2	Marine Technology	2	50
Dakkhinbango Polytechnic Institute	2	Mechanical Technology	18	50
Dakkhinbango Polytechnic Institute	2		18	50
Dakkhinbango Polytechnic Institute	2	Electrical Technology	18	50
Dakkhinbango Polytechnic Institute	2	Civil Technology	31	50
Dakkhinbango Polytechnic Institute	2	Surveying Technology	6	50

Institute Name	Shift	Technology	Admission	Total Seat
Darpon Polytechnic Institute	2	Civil Technology	36	50
Darpon Polytechnic Institute	2		31	50
Darpon Polytechnic Institute	2	Electrical Technology	28	150
Darpon Polytechnic Institute	2	Mechanical Technology	17	50
Desh Polytechnic College	2		27	50
Desh Polytechnic College	2	Mechanical Technology	3	50
Desh Polytechnic College	2	Electrical Technology	15	100
Desh Polytechnic College	2	Civil Technology	21	100
Desh Polytechnic College	2	Surveying Technology	2	50
Dhaka Central Polytechnic Institute	2		23	50
Dhaka Central Polytechnic Institute	2	Civil Technology	15	50
Dhaka Central Polytechnic Institute	2	Electrical Technology	14	50
Dhaka Engineering Institute	2	Electrical Technology	1	50
Dhaka Institute Of Engineering And Technology	2	Electrical Technology	3	150
Dhaka Institute of Engineering and Technology	2	Civil Technology	1	50
Dhaka Institute of Engineering and Technology	2		3	150
Dhaka Institute of Technology	2		47	50
Dhaka Institute of Technology	2	Footwear Technology	5	50
Dhaka Institute of Technology	2	Automobile Technology	10	50
Dhamrai Engineering Institute	2	Electrical Technology	1	50
Dhamrai Engineering Institute	2		5	50
Dhamrai Polytechnic Institute	2		28	50
Dhamrai Polytechnic Institute	2	Civil Technology	7	50
Dhamrai Polytechnic Institute	2	Electrical Technology	32	50
Dhanbandi Polytechnic Institute	2	Electrical Technology	13	50
Dhanbandi Polytechnic Institute	2		10	50
Dhanbandi Polytechnic Institute	2	Civil Technology	5	50
Dhonbari Polytechnic Institute	2	Civil Technology	1	50
Dimla Computer Science and Polytechnic College	2		22	50
Dimla Computer Science and Polytechnic College	2	Mechanical Technology	7	50
Dimla Computer Science and Polytechnic College	2	Civil Technology	15	50
Dimla Computer Science and Polytechnic College	2	Electrical Technology	24	50
Dinajpur Institute of Science and Technology	2	Civil Technology	88	150
Dinajpur Institute of Science and Technology	2	Electronics Technology	2	150
Dinajpur Institute of Science and Technology	2	Computer Science and Technology	75	100
Dinajpur Institute of Science and Technology	2	Electrical Technology	131	150
Dinajpur Institute of Science and Technology	2	Mechanical Technology	37	100
Dishari Institute of Science and Engineering	2		5	50
Dishari Institute of Science and Engineering	2	Civil Technology	4	50
Dishari Institute of Science and Engineering	2	Electrical Technology	1	50

Institute Name	Shift	Technology	Admission	Total Seat
Doctor Abdus Sobhan Golap Polytechnic Institutte	2	Electronics Technology	34	50
Doctor Abdus Sobhan Golap Polytechnic Institutte	2	Mechanical Technology	10	50
Doctor Abdus Sobhan Golap Polytechnic Institutte	2	Civil Technology	9	50
Doctor Abdus Sobhan Golap Polytechnic Institutte	2		47	50
Doctor Abdus Sobhan Golap Polytechnic Institutte	2	Electrical Technology	13	50
Dr Amjad Polytechnic Institute	1	Civil Technology	46	50
Dr Amjad Polytechnic Institute	1		24	50
DR. M. I. Patowary Non-Govt Engineering Institute	2	Civil Technology	1	50
DR. M. I. Patowary Non-Govt Engineering Institute	2	Electrical Technology	5	50
DR. M. I. Patowary Non-Govt Engineering Institute	2		13	50
Dr. Mahbubur Rahman Mollah Institute of Science & Technology, Jatrabari	2	Electrical Technology	31	50
Dr. Mahbubur Rahman Mollah Institute of Science & Technology, Jatrabari	2		59	60
Dr. Mahbubur Rahman Mollah Institute of Science & Technology, Jatrabari	2	Civil Technology	26	50
Dynamic Polytechnic Institute	2	Civil Technology	14	50
Dynamic Polytechnic Institute	2	Electrical Technology	18	50
Dynamic Polytechnic Institute	2	Civil Technology	28	50
Dynamic Polytechnic Institute	2	Electrical Technology	16	50
Ecosurv Polytechnic Institute	2		8	50
Ecosurv Polytechnic Institute	2	Electrical Technology	5	50
Ecosurv Polytechnic Institute	2	Surveying Technology	3	50
Ecosurv Polytechnic Institute	2	Civil Technology	2	50
Emerging Technology and Engineering Institute	2	Civil Technology	3	50
Emerging Technology and Engineering Institute	2		32	50
Emerging Technology and Engineering Institute	2	Electrical Technology	2	50
Empac College of Technology	2		17	50
Empac College of Technology	2	Electrical Technology	17	50
Engineering and Technology Institute	2	Electrical Technology	6	50
Engineering and Technology Institute	2		8	50
Engineers Polytechnic Institute	2	Civil Technology	18	50
Engineers Polytechnic Institute	2	Electrical Technology	17	50
Engineers Polytechnic Institute	2		13	50
Eugenic Institute of Science and Engineering	2	Electrical Technology	6	50
Eugenic Institute of Science and Engineering	2	Civil Technology	2	50
Eugenic Institute of Science and Engineering	2		2	50
Eureka Polytechnic Institute	2		13	50
Eureka Polytechnic Institute	2	Civil Technology	7	50
Eureka Polytechnic Institute	2	Electrical Technology	8	50

Institute Name	Shift	Technology	Admission	Total Seat
Exalt Institute of Technology	2	Electrical Technology	3	150
Exalt Institute of Technology	2		4	50
F A Technical and It Institute	2	Civil Technology	50	50
F A Technical and It Institute	2		37	50
F A Technical and It Institute	2	Electrical Technology	40	50
F. K. Polytechnic Institute	2	Civil Technology	5	50
F. K. Polytechnic Institute	2	Electrical Technology	2	50
F. K. Polytechnic Institute	2		25	50
Feni Engineering Institute	2	Electrical Technology	5	50
Feni Engineering Institute	2	Civil Technology	1	50
Feni Engineering Institute	2		6	50
Feni Ideal Polytechnic Institute	2		8	50
Feni Ideal Polytechnic Institute	2	Electrical Technology	13	50
Gaibandha Institute of Engineering and Technology	2	Civil Technology	24	50
Gaibandha Institute of Engineering and Technology	2		41	50
Gaibandha Institute of Engineering and Technology	2	Mechanical Technology	15	50
Gaibandha Institute of Engineering and Technology	2	Electrical Technology	37	50
Galachipa Polytechnic Institute	2	Electrical Technology	2	50
Galachipa Polytechnic Institute	2	Civil Technology	12	50
Gausul Azam Maizbhandari Polytechnic Institute (GAMPI)	1	Electrical Technology	42	50
Gausul Azam Maizbhandari Polytechnic Institute (GAMPI)	1		50	50
Gazaria Private Institute of Science and Technology (GIST)	2	Civil Technology	16	50
Gazaria Private Institute of Science and Technology (GIST)	2		20	50
Gazaria Private Institute of Science and Technology (GIST)	2	Electrical Technology	38	50
Gazipur Engineering Institute	2	Electrical Technology	3	50
Gazipur Engineering Institute	2		23	50
Gazipur Ideal Polytechnic Institute	2		27	50
Gazipur Ideal Polytechnic Institute	2	Civil Technology	5	50
Gazipur Ideal Polytechnic Institute	2	Mechanical Technology	31	50
Gazipur Ideal Polytechnic Institute	2	Electrical Technology	33	100
Gazipur Institute of Science and Technology	2		11	50
Gazipur Institute of Science and Technology	2	Electrical Technology	4	50
Gazipur Institute of Science and Technology	2	Civil Technology	3	50
Gazipur Polytechnic Institute	2	Civil Technology	2	50
Gazipur Polytechnic Institute	2	Electrical Technology	6	50
Gazipur Private Technical Institute	2	Electrical Technology	23	50
Gazipur Private Technical Institute	2	Civil Technology	9	50
Gazipur Private Technical Institute	2		13	50

Institute Name	Shift	Technology	Admission	Total Seat
Gazipur Textile Engineering and Technology (GTET)	2	Civil Technology	7	50
Gazipur Textile Engineering and Technology (GTET)	2	Electrical Technology	9	50
Genetic Polytechnic Institute	2	Civil Technology	25	50
Genetic Polytechnic Institute	2	Electrical Technology	5	50
Global Institute of Science and Technology	2	Electrical Technology	97	150
Global Institute of Science and Technology	2	Mechanical Technology	32	50
Global Institute of Science and Technology	2		49	50
Global Institute of Science and Technology	2	Civil Technology	105	150
Global Touch Institute	2	Electrical Technology	1	50
Global Touch Institute	2	Civil Technology	1	50
Global Touch Institute	2		10	50
Golden Polytechnic Institute	2		11	50
Golden Polytechnic Institute	2	Electrical Technology	8	50
Gopalganj Biggan & Projukti Mohabiddaloy	2	Electrical Technology	7	50
Gopalganj Biggan & Projukti Mohabiddaloy	2	Civil Technology	16	50
Gopalganj Biggan & Projukti Mohabiddaloy	2		28	50
Gopalganj Model Polytechnic Institute	2	Mechanical Technology	1	50
Gopalganj Model Polytechnic Institute	2		5	50
Gopalganj Model Polytechnic Institute	2	Electrical Technology	11	50
Gopalganj Model Polytechnic Institute	2	Civil Technology	11	50
Gorai Survey Engineering Institute	2		3	50
Gorai Survey Engineering Institute	2	Civil Technology	7	50
Gorai Survey Engineering Institute	2	Surveying Technology	21	50
Gorai Survey Engineering Institute	2	Electrical Technology	15	50
Grassroots College of Technology	2		17	50
Grassroots College of Technology	2	Civil Technology	24	150
Grassroots College of Technology	2	Electrical Technology	19	150
Grassroots College of Technology	2	Mechanical Technology	8	50
Greenland Polytechnic Institute	2		21	50
Greenland Polytechnic Institute	2	Automobile Technology	1	50
Greenland Polytechnic Institute	2	Civil Technology	8	50
Greenland Polytechnic Institute	2	Mechanical Technology	7	50
Greenland Polytechnic Institute	2	Electrical Technology	11	50
GUK Institute of Engineering and Technology	2	Civil Technology	4	50
GUK Institute of Engineering and Technology	2	Electrical Technology	1	50
Haji Abul Hossain Institute of Technology	2	Computer Science and Technology	11	50
Haji Abul Hossain Institute of Technology	2	Civil Technology	47	150
Haji Abul Hossain Institute of Technology	2		43	150
Haji Abul Hossain Institute of Technology	2	Electrical Technology	55	150
Hajigonj Polytechnic Institute	2	Civil Technology	20	50
Hajigonj Polytechnic Institute	2		12	50

Institute Name	Shift	Technology	Admission	Total Seat
Hajigonj Polytechnic Institute	2	Electrical Technology	7	50
Halima Polytechnic Institute	2		12	50
Halima Polytechnic Institute	2	Civil Technology	1	50
Halima Polytechnic Institute	2	Electrical Technology	1	50
Hatibandha Science and Technology Institute	2	Electrical Technology	3	50
Hatibandha Science and Technology Institute	2		10	50
Hazi Afsar Uddin Bhuiyan Science and Technology Institute	2	Civil Technology	25	50
Hazi Afsar Uddin Bhuiyan Science and Technology Institute	2	Electrical Technology	16	50
Hazi Afsar Uddin Bhuiyan Science and Technology Institute	2		28	50
Hazi Md. Fazlul Haque Polytechnic Institute	1		13	50
Hazi Md. Fazlul Haque Polytechnic Institute	1	Electrical Technology	1	50
Hazi Md. Fazlul Haque Polytechnic Institute	1	Civil Technology	9	50
Headway Engineering Institute	2	Civil Technology	6	50
Headway Engineering Institute	2	Electrical Technology	5	50
Headway Engineering Institute	2		15	50
Heed Private Polytechnic Institute	2	Electrical Technology	5	50
Heed Private Polytechnic Institute	2		4	50
Hemayetunnesa Memorial Polytechnic Institute	1		11	50
Hemayetunnesa Memorial Polytechnic Institute	1	Electrical Technology	10	50
Hemayetunnesa Memorial Polytechnic Institute	1	Civil Technology	11	50
Himaloy Polytechnic Institute of Technology	2		9	50
Himaloy Polytechnic Institute of Technology	2	Mechanical Technology	3	50
Himaloy Polytechnic Institute of Technology	2	Electrical Technology	2	50
Hope Polytechnic Institute	2	Electrical Technology	33	50
Hope Polytechnic Institute	2		36	50
Hope Polytechnic Institute	2	Civil Technology	30	50
Hope Polytechnic Institute	2	Mechanical Technology	18	50
Ideal Institute of Science and Technology (IIST)	2	Civil Technology	14	150
Ideal Institute of Science and Technology (IIST)	2	Electrical Technology	17	150
Ideal Institute of Science and Technology (IIST)	2		38	150
Ideal Polytechnic Institute	2	Civil Technology	16	50
Ideal Polytechnic Institute	2		20	50
Ideal Polytechnic Institute	2		8	50
Ideal Polytechnic Institute	2	Electrical Technology	24	50
Ideal Polytechnic Institute	2	Electrical Technology	6	50
Ideal Polytechnic Institute	2	Civil Technology	5	50
Ideal Private Polytechnic Institute, Siddhirganj	2	Electrical Technology	13	50
Ideal Private Polytechnic Institute, Siddhirganj	2	Civil Technology	3	50
Idris Ali Madbor Private Polytechnic Institute	2		22	50
Idris Ali Madbor Private Polytechnic Institute	2	Civil Technology	25	50

Institute Name	Shift	Technology	Admission	Total Seat
Idris Ali Madbor Private Polytechnic Institute	2	Mechanical Technology	7	50
Idris Ali Madbor Private Polytechnic Institute	2	Electrical Technology	21	50
Image Institute of Textile Engineering	2	Civil Technology	50	50
Image Institute of Textile Engineering	2	Electrical Technology	45	50
Image Polytechnic Institute	2		150	150
Image Polytechnic Institute	2	Civil Technology	149	150
Image Polytechnic Institute	2	Mechanical Technology	49	50
Image Polytechnic Institute	2	Electrical Technology	149	150
Imperial Polytechnic Institute	2	Civil Technology	15	50
Imperial Polytechnic Institute	2		8	50
Imperial Polytechnic Institute	2	Electrical Technology	20	50
Infra Polytechnic Institute	2	Civil Technology	119	150
Infra Polytechnic Institute	2	Automobile Technology	4	50
Infra Polytechnic Institute	2	Electrical Technology	59	150
Infra Polytechnic Institute	2		124	150
Infra Polytechnic Institute	2	Surveying Technology	21	50
Infra Polytechnic Institute	2	Marine Technology	24	150
Infra Polytechnic Institute	2	Architecture Technology	7	50
Infra Polytechnic Institute	2	Mechanical Technology	35	150
Infra Polytechnic Institute	2	Electronics Technology	13	50
Innovative Polytechnic Institute	2	Civil Technology	4	50
Innovative Polytechnic Institute	2	Electrical Technology	3	50
Innovative Polytechnic Institute	2		2	50
Institute of Business and Technology (IBT)	2		10	50
Institute of Business and Technology (IBT)	2	Electrical Technology	5	50
Institute of Communication Technology	2	Civil Technology	29	50
Institute of Communication Technology	2		19	50
Institute of Communication Technology	2	Electrical Technology	8	50
Institute of Computer Science and Technology	2	Electrical Technology	117	200
Institute of Computer Science and Technology	2	Architecture Technology	5	150
Institute of Computer Science and Technology	2	Civil Technology	86	200
Institute of Computer Science and Technology	2		197	200
Institute of Computer Science and Technology	2	Computer Science and Technology	45	50
Institute of Engineering and Technology	2	Civil Technology	58	150
Institute of Engineering and Technology	2	Electrical Technology	57	150
Institute of Engineering and Technology	2		71	100
Institute of Engineering and Technology	2	Mechanical Technology	16	50
Institute of Engineering Science and Technology	1	Civil Technology	6	50
Institute of Engineering Science and Technology	1	Electrical Technology	7	50
Institute of Information Technology Bogra	2	Mechanical Technology	34	150
Institute of Information Technology Bogra	2	Electrical Technology	65	150

Institute Name	Shift	Technology	Admission	Total Seat
Institute of Information Technology Bogra	2		61	150
Institute of Information Technology Bogra	2	Civil Technology	79	150
Institute of Information Technology Bogra	2	Architecture Technology	2	50
Institute of Information Technology Bogra	2	Surveying Technology	3	50
Institute of Polytechnic and Textile Technology	2	Electrical Technology	3	50
Institute of Polytechnic and Textile Technology	2	Civil Technology	6	50
Institute of Polytechnic and Textile Technology	2	Electrical Technology	29	150
Institute of Polytechnic and Textile Technology	2		149	150
Institute of Science and Technology	2		23	100
Institute of Science and Technology	2	Electrical Technology	3	50
Institute of Science and Technology	2	Civil Technology	7	50
Institute of Science, Trade and Technology	2	Electrical Technology	14	150
Institute of Science, Trade and Technology	2	Mechanical Technology	12	50
Institute of Science, Trade and Technology	2	Automobile Technology	12	50
Institute of Science, Trade and Technology	2	Civil Technology	28	150
Institute of Science, Trade and Technology	2	Architecture Technology	11	50
Institute of Science, Trade and Technology	2		66	150
Institute of Science, Trade and Technology	2	Ceramic Technology	7	50
Institute of Technology and Textile Engineering	2	Electrical Technology	48	100
Institute of Technology and Textile Engineering	2		53	100
Institute of Technology and Textile Engineering	2	Civil Technology	56	100
Institute of Technology and Textile Engineering	2	Mechanical Technology	18	50
Institute of Textile Engineering and Information Technology (I-Teit)	2	Mechanical Technology	54	100
Institute of Textile Engineering and Information Technology (I-Teit)	2	Civil Technology	22	50
Institute of Textile Engineering and Information Technology (I-Teit)	2	Automobile Technology	1	50
Institute of Textile Engineering and Information Technology (I-Teit)	2		50	50
Institute of Textile Engineering and Information Technology (I-Teit)	2	Electrical Technology	64	100
Institute of Textile Engineering and Technology	2	Electrical Technology	2	50
Institute of Textile Engineering and Technology	2	Mechanical Technology	3	50
International Modern Base Institute of Management Science and Technology	2	Mechanical Technology	12	50
International Modern Base Institute of Management Science and Technology	2	Electrical Technology	27	50
International Modern Base Institute of Management Science and Technology	2	Civil Technology	13	50
International Modern Base Institute of Management Science and Technology	2		42	50
International Polytechnic Institute	2	Civil Technology	5	50
International Polytechnic Institute	2		6	50
Islami Bank Institute of Technology	2	Civil Technology	6	50
Islami Bank Institute of Technology	2	Electrical Technology	5	50
Islami Bank Institute of Technology	2		49	50

Institute Name	Shift	Technology	Admission	Total Seat
Islami Bank Institute of Technology	2	Electrical Technology	6	150
Islami Bank Institute of Technology	2		21	50
Islami Bank Institute of Technology	2		20	50
Islami Bank Institute of Technology	2	Civil Technology	7	50
Islami Bank Institute of Technology	2	Electrical Technology	24	50
Islami Bank Institute of Technology	2		22	150
Islami Bank Institute of Technology	2	Electrical Technology	14	50
Islami Bank Institute of Technology	2	Electrical Technology	14	50
Islami Bank Institute of Technology	2	Civil Technology	17	50
Islami Bank Institute of Technology	2	Civil Technology	10	50
Islami Bank Institute of Technology	2		6	50
Islami Bank Institute of Technology	2	Civil Technology	13	50
Islampur Ideal Polytechnic Institute	2	Electrical Technology	3	50
Islampur Ideal Polytechnic Institute	2	Civil Technology	3	50
Islampur Polytechnic Institute	2	Electrical Technology	5	50
Islampur Polytechnic Institute	2	Civil Technology	9	50
Jahanara Quddus Engineering Institute	2	Electrical Technology	8	50
Jahanara Quddus Engineering Institute	2	Civil Technology	2	50
Jahanara Quddus Engineering Institute	2		4	50
Jahanara Quddus Engineering Institute	2	Marine Technology	2	50
Jamalpur College of Engineering and Technology	2	Electrical Technology	4	50
Jamalpur College of Engineering and Technology	2	Civil Technology	1	50
Jamalpur Institute of Science & Technology	2		11	50
Jamalpur Model Polytechnic Institute	2	Mechanical Technology	9	50
Jamalpur Model Polytechnic Institute	2		15	50
Jamalpur Model Polytechnic Institute	2	Civil Technology	8	50
Jamalpur Model Polytechnic Institute	2	Electrical Technology	8	50
Jamila Foyej Polytechnic Institute	2	Electrical Technology	3	50
Jamila Foyej Polytechnic Institute	2		2	50
Jashimuddin Polytechnic Institute	2	Electrical Technology	45	150
Jashimuddin Polytechnic Institute	2	Civil Technology	52	150
Jashimuddin Polytechnic Institute	2		48	50
Jhalakati Institute of Engineering & Technology	2		3	50
Jhalakati Institute of Engineering & Technology	2	Electrical Technology	2	50
Kaligonj Polytechnic Institute	2	Civil Technology	8	50
Kaligonj Polytechnic Institute	2		14	50
Kaligonj Polytechnic Institute	2	Electrical Technology	11	50
Karatoa Polytechnic Institute	2	Civil Technology	32	50
Kashbon Polytechnic Institute (KPIM)	2	Electrical Technology	8	50
Kashbon Polytechnic Institute (KPIM)	2	Civil Technology	9	50
Kashbon Polytechnic Institute (KPIM)	2		6	50

Institute Name	Shift	Technology	Admission	Total Seat
Khan Jahan Ali Polytechnic Institute	2		5	50
Khan Jahan Ali Polytechnic Institute	2	Civil Technology	2	50
Khan Jahan Ali Polytechnic Institute	2	Electrical Technology	7	50
Khanjahan Ali College of Science and Technology	2		9	50
Khanjahan Ali College of Science and Technology	2	Electrical Technology	6	150
Khawja Polytechnic Institute	1	Electrical Technology	1	50
Khawja Polytechnic Institute	2	Electrical Technology	4	50
Khawja Polytechnic Institute	2		9	50
Khawja Polytechnic Institute	1		2	50
Khawja Polytechnic Institute	2	Civil Technology	8	50
Khawja Polytechnic Institute	2	Electronics Technology	3	50
Khepupara Institute of Information Technology	2	Electrical Technology	15	50
Khepupara Institute of Information Technology	2	Civil Technology	37	50
Khulna Technical and Engineering College	2		11	50
Khulna Technical and Engineering College	2	Civil Technology	14	50
Khulna Technical and Engineering College	2	Electrical Technology	22	50
Kopotakkho Polytechnic College	2	Civil Technology	7	150
Krishi Diploma Institute	2	Electronics Technology	3	50
Krishi Diploma Institute	2		7	50
Kushtia City Polytechnic and Engineering Institute	2	Civil Technology	6	50
Kushtia City Polytechnic and Engineering Institute	2	Electrical Technology	10	50
Kushtia Hazi Abul Hossain Institute of Technology	2	Civil Technology	4	50
Kushtia Hazi Abul Hossain Institute of Technology	2	Electrical Technology	6	50
Kushtia Hazi Abul Hossain Institute of Technology	2		10	50
Kustia Institute of Engineering and Technology	2	Civil Technology	1	50
Kustia Institute of Engineering and Technology	2	Electrical Technology	1	50
Kustia Institute of Science and Technology	1	Electrical Technology	25	50
Kustia Institute of Science and Technology	1	Civil Technology	23	50
Lalmanirhat Ideal Polytechnic Institute	2	Civil Technology	21	50
Lalmanirhat Ideal Polytechnic Institute	2	Electrical Technology	29	50
Lalmanirhat Ideal Polytechnic Institute	2		38	100
Lamna Polytechnic Institute	2		2	50
Lamna Polytechnic Institute	2	Civil Technology	2	50
Life Line Polytechnic Institute	2		63	100
Life Line Polytechnic Institute	2	Civil Technology	26	50
Life Line Polytechnic Institute	2	Mechanical Technology	12	50
Life Line Polytechnic Institute	2	Electrical Technology	47	100
Madan Mohan College	2		15	50
Madhupur Ideal Polytechnic Institute	2	Electrical Technology	2	50

Institute Name	Shift	Technology	Admission	Total Seat
Madhupur Ideal Polytechnic Institute	2		1	50
Magura College of Engineering and Technology	2		28	50
Magura College of Engineering and Technology	2	Electrical Technology	11	100
Magura College of Engineering and Technology	2	Civil Technology	10	100
Magura College of Engineering and Technology	2	Mechanical Technology	6	50
Malefa Polythechnic Institute	2	Civil Technology	2	50
Malefa Polythechnic Institute	2		8	50
Malefa Polythechnic Institute	2	Electrical Technology	6	50
Mangrove Institute of Science and Technology	2		191	250
Mangrove Institute of Science and Technology	2	Electronics Technology	11	50
Mangrove Institute of Science and Technology	2	Civil Technology	116	250
Mangrove Institute of Science and Technology	2	Electrical Technology	130	200
Mangrove Institute of Science and Technology	2	Mechanical Technology	38	150
Mangrove Institute of Science and Technology	2	Architecture Technology	16	50
Mangrove Institute of Science and Technology	2	Automobile Technology	17	50
Mangrove Institute of Science and Technology	2	Marine Technology	25	50
Mangrove Institute of Science and Technology	2	Power Technology	10	50
Mawts Institute of Technology- Bangladesh (MITB)	2	Mechanical Technology	68	100
Mawts Institute of Technology- Bangladesh (MITB)	1		50	50
Mawts Institute of Technology- Bangladesh (MITB)	2	Civil Technology	49	50
Mawts Institute of Technology- Bangladesh (MITB)	2	Electrical Technology	95	100
Mawts Institute of Technology- Bangladesh (MITB)	1	Civil Technology	15	50
Mawts Institute of Technology- Bangladesh (MITB)	2	Automobile Technology	71	100
Md. Abul Kalam Polytechnic Institute	2	Civil Technology	22	50
Md. Abul Kalam Polytechnic Institute	2		27	50
Meherpur College of Engineering and Technology	2	Civil Technology	6	50
Meherpur College of Engineering and Technology	2		11	50
Meherpur College of Engineering and Technology	2	Electrical Technology	1	50
Metropolitan Institute of Science and Technology, Rangpur Sadar	2	Electrical Technology	6	50
Metropolitan Institute of Science and Technology, Rangpur Sadar	2		22	50
Micro Institute of Technology	2	Civil Technology	5	50
Micro Institute of Technology	2		5	50
Micro Institute of Technology	2	Electrical Technology	7	50
Micro Institute of Technology	2	Surveying Technology	48	50
Micro Institute of Technology	2	Mechanical Technology	3	50

Institute Name	Shift	Technology	Admission	Total Seat
MIPS Institute of Management and Technology	2	Mechanical Technology	50	50
MIPS Institute of Management and Technology	2	Electrical Technology	20	50
MIPS Institute of Management and Technology	2	Civil Technology	6	50
MIPS Institute of Management and Technology	2		57	150
Mir Samsul Islam Polytechnic Institute	2	Civil Technology	8	150
Mir Samsul Islam Polytechnic Institute	2	Electrical Technology	41	150
Mir Samsul Islam Polytechnic Institute	2	Mechanical Technology	7	50
Mir Samsul Islam Polytechnic Institute	2		30	50
Mir Samsul Islam Polytechnic Institute	2	Electronics Technology	1	50
Mirpur Institute of Science and Technology	2	Civil Technology	6	50
Mirpur Institute of Science and Technology	2	Automobile Technology	7	50
Mirpur Institute of Science and Technology	2	Electrical Technology	15	50
Mirpur Institute of Science and Technology	2		10	50
Mirpur Institute of Science and Technology	2	Refrigeration and Air Conditioning Technology	1	50
Mirpur Polytechnic Institute	2	Civil Technology	19	50
Mirpur Polytechnic Institute	2	Automobile Technology	11	50
Mirpur Polytechnic Institute	2		31	50
Mirpur Polytechnic Institute	2	Electrical Technology	22	50
Mithapukur Private Polytechnic Institute	2	Electrical Technology	2	50
Mithapukur Private Polytechnic Institute	2		7	50
Model Institute of Engineering and Technology	1	Computer Science and Technology	1	50
Model Institute of Engineering and Technology	1	Electrical Technology	5	50
Model Institute of Science and Technology	2	Civil Technology	73	150
Model Institute of Science and Technology	2	Food Technology	1	50
Model Institute of Science and Technology	2		81	150
Model Institute of Science and Technology	2	Electrical Technology	67	150
Model Institute of Science and Technology	2	Automobile Technology	3	50
Model Institute of Science and Technology	2	Mechanical Technology	40	50
Model Institute of Science and Technology	2	Architecture Technology	1	50
Model Polytechnic Institute	2	Mechanical Technology	13	50
Model Polytechnic Institute	2		33	150
Model Polytechnic Institute	2	Computer Science and Technology	46	50
Model Polytechnic Institute	2	Civil Technology	25	150
Model Polytechnic Institute	2	Civil Technology	46	50
Model Polytechnic Institute	2	Electrical Technology	9	150
Model Polytechnic Institute	2	Electrical Technology	37	50
Modern Institute of Science and Technology	2	Electrical Technology	6	50
Modern Institute of Science and Technology	2		6	50
Modern Institute of Science and Technology	2	Civil Technology	3	50
Modhupur Engineering College	2	Electrical Technology	17	50
Modhupur Engineering College	2	Civil Technology	15	50

Institute Name	Shift	Technology	Admission	Total Seat
Mokarram Hoorun Technical Institute, Rajoir	2		19	50
Momenshahi Technical and Engineering Institute	2	Civil Technology	43	50
Momenshahi Technical and Engineering Institute	2	Mechanical Technology	12	50
Momenshahi Technical and Engineering Institute	2	Power Technology	3	50
Momenshahi Technical and Engineering Institute	2		21	50
Momenshahi Technical and Engineering Institute	2	Electrical Technology	50	50
Montage Polytechnic Institute	2		23	50
Montage Polytechnic Institute	2	Mechanical Technology	6	50
Montage Polytechnic Institute	2	Civil Technology	7	50
Montage Polytechnic Institute	2	Electrical Technology	16	50
Muktijoddha Science and Technology College	2	Electrical Technology	18	50
Muktijoddha Science and Technology College	2		22	50
Mushuddi Engineering and Technology Institute	1	Computer Science and Technology	19	50
Mushuddi Engineering and Technology Institute	1	Civil Technology	11	50
Mushuddi Engineering and Technology Institute	1	Electrical Technology	34	50
Muslim Aid Institute of Technology	2		12	150
Muslim Aid Institute of Technology	2	Electrical Technology	6	50
Muslim Aid Institute of Technology	2	Civil Technology	6	50
Muslim Aid Institute of Technology	2	Civil Technology	2	50
Muslim Aid Institute of Technology	2	Electrical Technology	2	50
Mymensingh Private Polytechnic Institute	2	Civil Technology	25	50
Mymensingh Private Polytechnic Institute	2	Electrical Technology	21	50
N. Islam Institute of Science & Technology	2		41	50
N. Islam Institute of Science & Technology	2	Electrical Technology	30	50
N. Islam Institute of Science & Technology	2	Automobile Technology	13	100
Nandail Ideal Polytechnic Institute, Nandail	2	Civil Technology	2	50
Nandail Ideal Polytechnic Institute, Nandail	2		2	50
Nandail Ideal Polytechnic Institute, Nandail	2	Electrical Technology	2	50
Narayanganj Polytechnic Institute	2	Electrical Technology	21	50
Narayanganj Polytechnic Institute	2		30	50
Narayanganj Polytechnic Institute	2	Civil Technology	16	50
Narayangonj Engineering College	2		2	50
Narayangonj Engineering College	2	Civil Technology	5	50
Naria Polytechnic Institute	2	Civil Technology	4	50
Naria Polytechnic Institute	2	Electrical Technology	1	50
Narshingdi Polytechnic Academy	2	Electrical Technology	65	100
Narshingdi Polytechnic Academy	2	Automobile Technology	1	50
Narshingdi Polytechnic Academy	2	Refrigeration and Air Conditioning Technology	2	50

Institute Name	Shift	Technology	Admission	Total Seat
Narshingdi Polytechnic Academy	2	Computer Science and Technology	30	50
Narshingdi Polytechnic Academy	2	Mechanical Technology	30	100
Narshingdi Polytechnic Academy	2		48	100
Narshingdi Polytechnic Academy	2	Civil Technology	32	100
Narsingdi Institute of Science and Technology	2	Electrical Technology	33	50
Narsingdi Institute of Science and Technology	2	Civil Technology	22	50
Narsingdi Science and Engineering Institute	2	Electrical Technology	4	50
Narsingdi Science and Engineering Institute	2		19	50
Narsingdi Science and Engineering Institute	2	Civil Technology	1	50
Nasir Uddin Biswas Non-Govt. Polytechnic Institute	1	Electrical Technology	38	50
Nasir Uddin Biswas Non-Govt. Polytechnic Institute	1	Civil Technology	23	50
Nasir Uddin Biswas Non-Govt. Polytechnic Institute	1		49	50
Nasir Uddin Biswas Non-Govt. Polytechnic Institute	1	Mechanical Technology	29	50
Nasirabad Model Polytechnic Institute	2	Electrical Technology	15	50
National Institute of Engineering and Technology	2	Surveying Technology	28	50
National Institute of Engineering and Technology	2	Civil Technology	34	150
National Institute of Engineering and Technology	2	Marine Technology	28	150
National Institute of Engineering and Technology	2	Electrical Technology	27	150
National Institute of Engineering and Technology	2	Mechanical Technology	21	150
National Institute of Engineering and Technology	2	Architecture Technology	34	50
National Institute of Engineering and Technology	2	Automobile Technology	19	150
National Institute of Engineering and Technology	2		99	150
National Institute of Engineering and Technology (NIET)	2		67	150
National Institute of Engineering and Technology (NIET)	2	Automobile Technology	62	150
National Institute of Engineering and Technology (NIET)	2	Marine Technology	42	150
National Institute of Engineering and Technology (NIET)	2	Civil Technology	58	150
National Institute of Engineering and Technology (NIET)	2	Mechanical Technology	31	150
National Institute of Engineering and Technology (NIET)	2	Electrical Technology	33	150
National Institute of Science and Technology	2		8	50
National Institute of Science and Technology	2	Civil Technology	3	50
National Institute of Technology	1	Mechanical Technology	17	50
National Institute of Technology	2	Mechanical Technology	79	100
National Institute of Technology	2	Civil Technology	46	100

Institute Name	Shift	Technology	Admission	Total Seat
National Institute of Technology	2	Mechanical Technology	50	50
National Institute of Technology	2	Automobile Technology	98	150
National Institute of Technology	2		48	50
National Institute of Technology	1	Civil Technology	49	50
National Institute of Technology	1	Electrical Technology	46	50
National Institute of Technology	2		135	150
National Institute of Technology	2	Electrical Technology	137	150
National Institute of Technology	2	Electrical Technology	50	50
National Polytechnic College	2	Automobile Technology	50	50
National Polytechnic College	2		100	100
National Polytechnic College	2	Architecture Technology	14	50
National Polytechnic College	2	Electrical Technology	148	150
National Polytechnic College	2	Mechanical Technology	100	100
National Polytechnic College	2	Civil Technology	65	100
National Polytechnic Institute	2	Electrical Technology	53	150
National Polytechnic Institute	2	Mechanical Technology	17	50
National Polytechnic Institute	2	Civil Technology	46	150
National Polytechnic Institute	2	Architecture Technology	8	50
National Polytechnic Institute	2	Automobile Technology	15	50
National Polytechnic Institute	2		83	150
National Polytechnic Institute	2		21	50
National Polytechnic Institute	2	Electrical Technology	15	150
National Polytechnic Institute	2	Civil Technology	51	150
National Polytechnic Institute Manikganj	2	Mechanical Technology	68	100
National Polytechnic Institute Manikganj	2		132	150
National Polytechnic Institute Manikganj	2	Civil Technology	71	150
National Polytechnic Institute Manikganj	2	Automobile Technology	9	50
National Polytechnic Institute Manikganj	2	Food Technology	4	50
National Polytechnic Institute Manikganj	2	Electrical Technology	138	150
National Professional Institute (NPI)	2	Mechanical Technology	2	150
National Professional Institute (NPI)	2	Electrical Technology	79	150
National Professional Institute (NPI)	2		133	150
National Professional Institute (NPI)	2	Civil Technology	57	150
National Professional Institute (NPI)	2	Refrigeration and Air Conditioning Technology	2	150
National Science Research and Technology College	2	Electrical Technology	5	50
National Science Research and Technology College	2	Civil Technology	8	50
National Science Research and Technology College	2		12	50
Natore Engineering and Technology Institute	2	Civil Technology	4	50
Natore Engineering and Technology Institute	2	Electrical Technology	19	50
Netrakona Institute of Science & Technology	2		9	50
Netrakona Institute of Science & Technology	2	Electrical Technology	4	50

Institute Name	Shift	Technology	Admission	Total Seat
Netrakona Polytechnic and Textile Institute	2	Electrical Technology	9	50
New Ideal Polytechnic Institute	2	Electrical Technology	27	50
New Ideal Polytechnic Institute	2	Civil Technology	18	50
New Ideal Polytechnic Institute	2		29	50
New Life Polytechnic Institute	2	Electrical Technology	1	50
New Model Polytechnic Institute	2	Electrical Technology	34	50
New Model Polytechnic Institute	2	Civil Technology	18	50
Nilphamari Institute of Science and Technology (IST)	2	Electrical Technology	73	100
Nilphamari Institute of Science and Technology (IST)	2	Civil Technology	39	50
Nilphamari Institute of Science and Technology (IST)	2		49	50
Noakhali Ideal Polytechnic Institute	2	Mechanical Technology	15	50
Noakhali Ideal Polytechnic Institute	2		46	50
Noakhali Ideal Polytechnic Institute	2	Electrical Technology	35	150
Noakhali Ideal Polytechnic Institute	2	Civil Technology	23	150
Noakhali Private Science and Engineering Institute	2	Electrical Technology	10	50
Noakhali Private Science and Engineering Institute	2	Civil Technology	11	50
Nobarun Polytechnic Institute	2	Electrical Technology	4	50
Nobarun Polytechnic Institute	2	Civil Technology	4	50
Nobarun Survey and Polytechnic Institute	2	Civil Technology	22	100
Nobarun Survey and Polytechnic Institute	2	Surveying Technology	66	100
Nobarun Survey and Polytechnic Institute	2		2	50
Noble Polytechnic Institute	2	Electrical Technology	5	50
Noble Polytechnic Institute	2	Civil Technology	1	50
Nobojibon Polytechnic Institute	2	Civil Technology	12	150
Nobojibon Polytechnic Institute	2	Electrical Technology	23	150
Nobojibon Polytechnic Institute	2		26	100
Nobojibon Polytechnic Institute	2	Mechanical Technology	10	50
Non-Government Southern Polytechnic Institute	2	Electrical Technology	23	50
Non-Government Southern Polytechnic Institute	2		11	50
Non-Government Southern Polytechnic Institute	2	Civil Technology	12	50
North Bengal Islamic Institute of Science & Technology	2	Civil Technology	19	50
North Bengal Islamic Institute of Science & Technology	2	Electronics Technology	5	50
North Bengal Islamic Institute of Science & Technology	2	Electrical Technology	7	50
North Bengal Islamic Institute of Science & Technology	2		20	50
North East Ideal Polytechnic Institute	2	Electrical Technology	9	50
North East Ideal Polytechnic Institute	2		2	50
North East Ideal Polytechnic Institute	2	Civil Technology	5	50

Institute Name	Shift	Technology	Admission	Total Seat
North South Polytechnic Institute	2	Civil Technology	7	50
North South Polytechnic Institute	2	Electrical Technology	15	50
North South Polytechnic Institute	2	Marine Technology	2	50
North South Polytechnic Institute	2		15	50
North-Bengle Institute of Technology	2	Mechanical Technology	10	150
North-Bengle Institute of Technology	2	Electrical Technology	29	150
North-Bengle Institute of Technology	2	Civil Technology	33	150
North-Bengle Institute of Technology	2	Surveying Technology	25	50
North-Bengle Institute of Technology	2		10	150
Northern Institute of Science and Technology	2	Electrical Technology	5	50
Northern Institute of Science and Technology	2		18	50
Northern Institute of Science and Technology	2		5	50
Novel Polytechnic and Textile Institute	2		6	50
Novel Polytechnic and Textile Institute	2	Electrical Technology	5	50
Novel Polytechnic and Textile Institute	2	Civil Technology	7	50
Nydasa Institute of Science and Technolgy	2	Civil Technology	5	50
Nydasa Institute of Science and Technolgy	2		10	50
O.F.P Non.Government Institute Of Science & Technology	2	Civil Technology	5	50
O.F.P Non.Government Institute Of Science & Technology	2		9	50
Orbit Institute of Engineering and Technology	2	Civil Technology	7	50
Orbit Institute of Engineering and Technology	2		15	50
Orbit Institute of Engineering and Technology	2	Electrical Technology	19	150
Orbit Institute of Engineering and Technology	2	Automobile Technology	1	50
Oriental Polytechnic Institute	2	Electrical Technology	20	50
Oriental Polytechnic Institute	2	Civil Technology	1	50
Oxford Polytechnic Institute	2	Civil Technology	3	50
Oxford Polytechnic Institute	2		2	50
Oxford Polytechnic Institute	2	Electrical Technology	3	50
Pabna Institute of Science and Technology	2		11	50
Pabna Institute of Science and Technology	2	Civil Technology	4	50
Pabna Institute of Science and Technology	2	Electrical Technology	5	150
Pabna Textile Engineering Institute	2	Mechanical Technology	19	50
Pabna Textile Engineering Institute	2		43	50
Pabna Textile Engineering Institute	2	Civil Technology	77	150
Pabna Textile Engineering Institute	2	Electrical Technology	49	150
Padma Institute of Technology	2	Electrical Technology	3	50
Padma Institute of Technology	2	Mechanical Technology	1	50
Padma Institute of Technology	2	Civil Technology	8	50
Padma Institute of Technology	2		3	50
Pakundia Institute of Technology	2	Electrical Technology	5	50
Pakundia Institute of Technology	2		12	50
Pangsha Polytechnic Institute	2	Civil Technology	12	50

Institute Name	Shift	Technology	Admission	Total Seat
Pangsha Polytechnic Institute	2	Electrical Technology	6	50
Park Polytechnic Institute	2		30	50
Park Polytechnic Institute	2	Mechanical Technology	32	50
Park Polytechnic Institute	2	Civil Technology	16	50
Park Polytechnic Institute	2	Electrical Technology	38	50
Patuakhali Ideal Polytechnic Institute	2	Civil Technology	3	50
Patuakhali Ideal Polytechnic Institute	2	Electrical Technology	1	50
Patuakhali Institute of Science and Technology (PIST)	2	Civil Technology	3	50
PDO Private Polytechnic Institute	2	Civil Technology	3	50
Pioneer Polytechnic Institute	2		4	50
Pioneer Polytechnic Institute	2	Electrical Technology	3	50
Pioneer Polytechnic Institute	2	Civil Technology	1	50
Pirgonj Polytechnic Institute	2	Mechanical Technology	5	50
Pirgonj Polytechnic Institute	2		16	50
Pirgonj Polytechnic Institute	2	Electrical Technology	14	50
Pirgonj Polytechnic Institute	2	Civil Technology	10	50
Polashbari Polytechnic Institute	2	Electrical Technology	58	150
Polashbari Polytechnic Institute	2		41	50
Polashbari Polytechnic Institute	2	Civil Technology	64	150
Pollimangal Institute of Science and Technology	2	Electrical Technology	2	50
Pollimangal Institute of Science and Technology	2	Civil Technology	3	50
Prime Institute of Science and Technology	2	Civil Technology	3	50
Prime Institute of Science and Technology	2		4	50
Prime Institute of Science and Technology	2	Electrical Technology	5	50
Prince Polytechnic Institute	2	Civil Technology	6	50
Prince Polytechnic Institute	2	Electrical Technology	21	50
Prince Polytechnic Institute	2	Mechanical Technology	13	50
Prince Polytechnic Institute	2		31	100
Principal Kazi Faruky Institute of Science & Technology	2		14	50
Principal Kazi Faruky Institute of Science & Technology	2	Civil Technology	10	50
Principal Kazi Faruky Institute of Science & Technology	2	Electrical Technology	7	50
Progressive Polytechnic Institute	2	Electrical Technology	9	50
Progressive Polytechnic Institute	2	Civil Technology	2	50
Progressive Polytechnic Institute	2		3	50
Pubergaon Polytechnic Institute	2	Mechanical Technology	11	50
Pubergaon Polytechnic Institute	2		35	100
Pubergaon Polytechnic Institute	2	Electrical Technology	29	50
Pubergaon Polytechnic Institute	2	Civil Technology	23	50
Punarvaba Private Institute of Science and Technology	2	Civil Technology	26	50

Institute Name	Shift	Technology	Admission	Total Seat
Punarvaba Private Institute of Science and Technology	2	Electrical Technology	17	50
Purbachal Engineering Institute	2		1	50
Purbachal Engineering Institute	2	Electrical Technology	5	50
Purbo Bogra Polytechnic Institute	2	Civil Technology	5	50
Purbo Bogra Polytechnic Institute	2		3	50
Puthia Polytechnic Institute	2	Electrical Technology	32	50
Puthia Polytechnic Institute	2	Civil Technology	31	50
Puthia Polytechnic Institute	2		32	50
Quamrul Islam Siddique Institute	2	Mechanical Technology	10	100
Quamrul Islam Siddique Institute	2	Civil Technology	24	100
Quamrul Islam Siddique Institute	2	Electrical Technology	28	100
Quamrul Islam Siddique Institute	2		11	100
Rainbow Polytechnic Institute	2	Civil Technology	4	50
Rainbow Polytechnic Institute	2	Electrical Technology	4	50
Rajbari College of Engineering and Technology	2	Civil Technology	10	50
Rajbari College of Engineering and Technology	2	Electrical Technology	8	50
Rajbari College of Engineering and Technology	2		3	50
Rajbari Non-Govt. Polytechnic Institute	2	Electrical Technology	4	50
Rajbari Non-Govt. Polytechnic Institute	2	Civil Technology	2	50
Rajdhani Polytechnic and Textile College	2	Civil Technology	11	150
Rajdhani Polytechnic and Textile College	2		27	50
Rajdhani Polytechnic and Textile College	2	Electrical Technology	10	150
Rajshahi Engineering Institute	2		2	50
Rajshahi Haji Abul Hossen Institute of Technology	2	Civil Technology	42	50
Rajshahi Haji Abul Hossen Institute of Technology	2		18	50
Rajshahi Haji Abul Hossen Institute of Technology	2	Electrical Technology	37	50
Rajshahi Institute of Technology	2	Electrical Technology	12	150
Rajshahi Institute of Technology	2	Civil Technology	23	150
Rajshahi Institute of Technology	2	Surveying Technology	41	50
Rangamati CHT Polytechnic Institute	2	Electrical Technology	19	50
Rangamati CHT Polytechnic Institute	2	Civil Technology	20	50
Rangpur City Institute of Technology	2	Electrical Technology	33	100
Rangpur City Institute of Technology	1	Electrical Technology	31	50
Rangpur City Institute of Technology	2		58	100
Rangpur City Institute of Technology	1		42	50
Rangpur City Institute of Technology	2	Mechanical Technology	20	50
Rangpur City Institute of Technology	2	Civil Technology	39	50
Rangpur City Institute of Technology	1	Civil Technology	44	50
Rangpur Haji Abul Hossain Institute of Technology	2	Electrical Technology	16	100
Rangpur Haji Abul Hossain Institute of Technology	2	Civil Technology	13	50

Institute Name	Shift	Technology	Admission	Total Seat
Rangpur Haji Abul Hossain Institute of Technology	2	Mechanical Technology	7	50
Rangpur Haji Abul Hossain Institute of Technology	2		21	50
Rangpur Ideal Institute of Technology	2	Electrical Technology	224	250
Rangpur Ideal Institute of Technology	2	Mechanical Technology	73	100
Rangpur Ideal Institute of Technology	2		193	200
Rangpur Ideal Institute of Technology	2	Civil Technology	274	300
Rangpur Ideal Institute of Technology	2	Electronics Technology	33	50
Rangpur Institute of Technology	2		17	50
Rangpur Institute Of Technology	2	Civil Technology	21	50
Rangpur Institute of Technology	2	Electrical Technology	12	100
Ranisankail Ideal Non-Govt. Polytechnic Institute	1	Electrical Technology	23	50
Ranisankail Ideal Non-Govt. Polytechnic Institute	1		41	50
Ranisonkoil Polytechnic Institute	2		25	50
Ranisonkoil Polytechnic Institute	2	Electrical Technology	7	50
Raylla Abdul Jabbar Polytechnic Institute	2		37	50
RDO Polytechnic Institute	2		28	50
RDO Polytechnic Institute	2	Civil Technology	5	50
Romdo Institute of Modern Technology	2	Electrical Technology	148	150
Romdo Institute of Modern Technology	2	Civil Technology	150	150
Romdo Institute of Modern Technology	2	Mechanical Technology	52	150
Romdo Institute of Modern Technology	2		134	150
Royal Institute of Technology	2		7	50
Royal Institute of Technology	2	Civil Technology	13	50
Royal Institute of Technology	2	Electrical Technology	11	150
Royal Institute of Technology	2	Mechanical Technology	15	50
Rujal Shikka Polli Polytechnic Institute	2		26	50
Rujal Shikka Polli Polytechnic Institute	2	Civil Technology	28	50
S R A Institute of Science and Technology	2		26	50
S R A Institute of Science and Technology	2	Civil Technology	56	150
S R A Institute of Science and Technology	2	Electrical Technology	35	150
S R A Institute of Science and Technology	2	Mechanical Technology	14	50
S.M Tofazzal Hossain Polytechnic Institute	2	Electrical Technology	4	50
S.M Tofazzal Hossain Polytechnic Institute	2	Civil Technology	14	50
S.M Tofazzal Hossain Polytechnic Institute	2		14	50
S.S.R. Institute of Technology and Management	2	Civil Technology	8	50
S.S.R. Institute of Technology and Management	2	Electrical Technology	19	50
S.S.R. Institute of Technology and Management	2		39	50
SAIC Institute of Management and Technology	2	Telecommunication Technology	1	50
SAIC Institute of Management and Technology	2	Mechanical Technology	33	50
SAIC Institute of Management and Technology	2	Marine Technology	13	50

Institute Name	Shift	Technology	Admission	Total Seat
SAIC Institute of Management and Technology	2	Automobile Technology	26	50
SAIC Institute of Management and Technology	2	Civil Technology	75	150
SAIC Institute of Management and Technology	2	Electrical Technology	59	150
SAIC Institute of Management and Technology	2		150	150
SAIC Institute of Management and Technology	2	Architecture Technology	17	50
SAIC Institute of Management and Technology	2	Electronics Technology	5	150
SAIC Polytechnic Institute	2		49	50
SAIC Polytechnic Institute	2	Civil Technology	41	50
SAIC Polytechnic Institute	2	Electrical Technology	20	50
Saikat Polytechnic Institute	2	Civil Technology	6	50
Saikat Polytechnic Institute	2		5	50
Saj Institute of Business and Technology	2	Electrical Technology	18	50
Saj Institute of Business and Technology	2	Chemical Technology	1	50
Saj Institute of Business and Technology	2		24	50
Sakina Azhar Technical College	2	Electrical Technology	2	50
Sakina Azhar Technical College	2	Civil Technology	1	50
Sakina Azhar Technical College	2		2	50
Sakina Azhar Technical College	2	Automobile Technology	3	50
Samia Azad Private Polytechnic Institute	2	Electrical Technology	8	50
Samia Azad Private Polytechnic Institute	2	Civil Technology	14	50
Samsun Nahar Harun Private Polytechnic Institute	2		22	50
Samsun Nahar Harun Private Polytechnic Institute	2	Electrical Technology	17	50
Samsun Nahar Harun Private Polytechnic Institute	2	Civil Technology	3	50
Samsun Nahar Harun Private Polytechnic Institute	2	Mechanical Technology	8	50
Samsun Nahar Harun Private Polytechnic Institute	2	Automobile Technology	11	50
Sananda Bari Polytechnic Institute	2	Electrical Technology	2	50
Sananda Bari Polytechnic Institute	2		3	50
Sarishabari Science and Technology College	2	Electrical Technology	3	50
Scholar Polytechnic Institute	2		13	50
Scholar Polytechnic Institute	2	Mechanical Technology	3	50
Scholar Polytechnic Institute	2	Electrical Technology	2	50
Scholar Polytechnic Institute	2	Civil Technology	4	50
Sebapolly Science and Polytechnic Institute	2	Civil Technology	3	50
Sebapolly Science and Polytechnic Institute	2	Electrical Technology	2	50
Sebapolly Science and Polytechnic Institute	2		8	50
Shah Mokdum Polytechnic Institute of Engineering Technology	2	Electrical Technology	1	50
Shah Mokdum Polytechnic Institute of Engineering Technology	2	Civil Technology	2	50
Shah Mokdum Polytechnic Institute of Engineering Technology	2		1	50
Shahebpara Polytechnic Institute	2		11	50

Institute Name	Shift	Technology	Admission	Total Seat
Shahebpara Polytechnic Institute	2	Electrical Technology	2	50
Shahid S.A Memorial Polytechnic Institute	2	Civil Technology	13	50
Shahid S.A Memorial Polytechnic Institute	2	Electrical Technology	31	50
Shahid S.A Memorial Polytechnic Institute	2	Mechanical Technology	21	50
Shahid S.A Memorial Polytechnic Institute	2		39	50
Shahjalal Polytechnic Institute	2	Electrical Technology	19	50
Shahjalal Polytechnic Institute	2		4	50
Shahjalal Polytechnic Institute	2	Civil Technology	3	50
Shahzadpur Institute of Engineering & Technology	1		19	50
Shahzadpur Institute of Engineering & Technology	1	Electrical Technology	12	50
Shaymoli Ideal Engineering College	2		47	50
Shaymoli Ideal Engineering College	2	Civil Technology	22	50
Shaymoli Ideal Engineering College	2	Electrical Technology	18	150
Sherpur Institute of Science and Technology	2		24	50
Sherpur Institute of Science and Technology	2	Civil Technology	38	150
Sherpur Institute of Science and Technology	2	Electrical Technology	18	150
Shibpur Private Polytechnic Institute	2	Electrical Technology	22	50
Shibpur Private Polytechnic Institute	2	Civil Technology	15	50
Shibpur Private Polytechnic Institute	2		16	50
Shikalbaha Private Polytechnic Institute	2	Electrical Technology	2	50
Shikalbaha Private Polytechnic Institute	2		3	50
Shyamoli Ideal Engineering College	2	Mechanical Technology	3	50
Shyamoli Ideal Engineering College	2	Civil Technology	9	50
Shyamoli Ideal Engineering College	2		23	50
Shyamoli Ideal Engineering College	2	Electrical Technology	25	50
Shyamoli Ideal Polytechnic Institute	2	Mechanical Technology	27	150
Shyamoli Ideal Polytechnic Institute	2	Automobile Technology	31	150
Shyamoli Ideal Polytechnic Institute	2	Graphic Design Technology	24	100
Shyamoli Ideal Polytechnic Institute	2	Automobile Technology	66	150
Shyamoli Ideal Polytechnic Institute	2	Architecture Technology	6	150
Shyamoli Ideal Polytechnic Institute	2	Refrigeration and Air Conditioning Technology	12	50
Shyamoli Ideal Polytechnic Institute	2	Electrical Technology	150	150
Shyamoli Ideal Polytechnic Institute	2	Mechanical Technology	132	150
Shyamoli Ideal Polytechnic Institute	2		150	150
Shyamoli Ideal Polytechnic Institute	2	Civil Technology	98	150
Shyamoli Ideal Polytechnic Institute	2		120	150
Shyamoli Ideal Polytechnic Institute	2	Electrical Technology	87	150
Shyamoli Ideal Polytechnic Institute	2	Civil Technology	60	150
Shyamoli Ideal Polytechnic Institute	2	Electronics Technology	1	50
Shyamoli Ideal Polytechnic Institute	2	Electronics Technology	10	50
Shyamoli Ideal Polytechnic Institute	2	Marine Technology	14	50

Institute Name	Shift	Technology	Admission	Total Seat
Sirajganj Ideal Textile Engineering Institute	2		46	50
Sirajganj Ideal Textile Engineering Institute	2	Civil Technology	65	100
Sirajganj Ideal Textile Engineering Institute	2	Surveying Technology	15	50
Sirajganj Ideal Textile Engineering Institute	2	Mechanical Technology	17	50
Sirajganj Ideal Textile Engineering Institute	2	Electrical Technology	64	100
Sirajganj Institute of Technology	2		12	50
Sirajganj Institute of Technology	2	Electrical Technology	14	50
Sirajganj Institute of Technology	2	Civil Technology	20	50
Sirajganj Institute of Textile Engineering and Technology	2	Civil Technology	41	50
Sirajganj Institute of Textile Engineering and Technology	2	Electrical Technology	51	150
Sirajganj Institute of Textile Engineering and Technology	2	Mechanical Technology	20	150
Skabo Textile Engineering and Polytechnic Institute	2	Civil Technology	21	50
Skabo Textile Engineering and Polytechnic Institute	2	Electrical Technology	30	50
Social Polytechnic Institute	2		38	50
Social Polytechnic Institute	2	Civil Technology	8	50
Social Polytechnic Institute	2	Electrical Technology	18	50
Sopnochura Polytechnic Institute	2	Architecture Technology	6	50
Sopnochura Polytechnic Institute	2	Electrical Technology	6	50
Sopnochura Polytechnic Institute	2	Civil Technology	7	50
Sopnochura Polytechnic Institute	2		7	50
South Bangla Private Polytechnic Institute	2		16	50
South Bangla Private Polytechnic Institute	2	Civil Technology	2	50
South Bangla Private Polytechnic Institute	2	Electrical Technology	4	50
South West Institute of Technology	2	Civil Technology	12	50
South West Institute of Technology	2	Electrical Technology	3	50
Square Private Engineering Institute	2	Electrical Technology	5	50
Square Private Engineering Institute	2	Civil Technology	10	50
Square Private Engineering Institute	2	Computer Science and Technology	7	50
Sreepur Engineering College	2	Civil Technology	1	50
Sreepur Engineering College	2		9	50
Sreepur Engineering College	2	Electrical Technology	7	50
Srizony Polytechnic Institute	2		38	50
Srizony Polytechnic Institute	2	Electrical Technology	16	50
SSS Non-Govt. Polytechnic Institute	2	Electrical Technology	27	50
SSS Non-Govt. Polytechnic Institute	2	Civil Technology	17	50
ST Institute of Science and Technology	2	Electrical Technology	3	50
ST Institute of Science and Technology	2	Civil Technology	5	50
Standard Polytechnic Institute	2		13	50
Standard Polytechnic Institute	2	Mechanical Technology	6	50
Standard Polytechnic Institute	2	Electrical Technology	10	50

Institute Name	Shift	Technology	Admission	Total Seat
Sundarban College of Technology	2		49	50
Sundarban College of Technology	2	Electrical Technology	17	50
Sundarban College of Technology	2	Civil Technology	11	50
Suranjit Sen Gupta Polytechnic Institute	2	Electrical Technology	5	50
Suranjit Sen Gupta Polytechnic Institute	2	Civil Technology	11	50
Suranjit Sen Gupta Polytechnic Institute	2		17	50
Surhid A.K Polytechnic Institute	2		8	50
Sylhet Professional Technical Institute	2	Civil Technology	14	50
Sylhet Professional Technical Institute	2		22	50
Sylhet Professional Technical Institute	2	Electrical Technology	8	50
T.M. Memorial Polytechnic Institute	2	Civil Technology	1	50
T.M. Memorial Polytechnic Institute	2		11	50
T.M. Memorial Polytechnic Institute	2	Electrical Technology	2	50
Tangail Institute of Science and Technology	2	Civil Technology	2	50
Tangail Institute of Science and Technology	2	Electrical Technology	7	50
Tazuddin Sikder Polytechnic Institute	2		6	50
Technological Institute Joypurhat	2	Electrical Technology	16	50
Technological Institute Joypurhat	2		18	50
Technological Institute Joypurhat	2	Civil Technology	7	50
Thakurgaon Polytechnic and Textile Institute	2		1	50
Thakurgaon Polytechnic and Textile Institute	2	Electrical Technology	1	50
TMSS Non-Govt. Institute of Science and ICT(TISI)	2	Ceramic Technology	6	50
TMSS Non-Govt. Institute of Science and ICT(TISI)	2	Graphic Design Technology	18	50
TMSS Non-Govt. Institute of Science and ICT(TISI)	2	Civil Technology	39	50
TMSS Non-Govt. Institute of Science and ICT(TISI)	2	Electrical Technology	39	50
TMSS Non-Govt. Institute of Science and ICT(TISI)	2	Computer Science and Technology	50	100
TMSS Non-Govt. Institute of Science and ICT(TISI)	2	Mechanical Technology	22	50
TMSS Non-govt. Polytechnic Institute (TPI)	2	Mechanical Technology	26	50
TMSS Non-govt. Polytechnic Institute (TPI)	2	Civil Technology	63	100
TMSS Non-govt. Polytechnic Institute (TPI)	2		57	100
TMSS Non-govt. Polytechnic Institute (TPI)	2	Graphic Design Technology	12	50
TMSS Non-govt. Polytechnic Institute (TPI)	2	Electrical Technology	49	100
TMSS Polytechnic Institute	2	Mechanical Technology	14	50
TMSS Polytechnic Institute	2	Civil Technology	62	100
TMSS Polytechnic Institute	2	Electrical Technology	100	100
TMSS Polytechnic Institute	2	Electrical Technology	49	100
TMSS Polytechnic Institute	2	Civil Technology	62	100
TMSS Polytechnic Institute	2		71	100
TMSS Polytechnic Institute	2	Mechanical Technology	41	50
TMSS Polytechnic Institute	2		95	100

Institute Name	Shift	Technology	Admission	Total Seat
Tmss Technical Institute	2	Electrical Technology	105	150
Tmss Technical Institute	2	Refrigeration and Air Conditioning Technology	15	50
Tmss Technical Institute	2		131	150
Tmss Technical Institute	2	Electronics Technology	28	50
Tmss Technical Institute	2	Mechanical Technology	35	50
Tmss Technical Institute	2	Electro Medical Technology	31	50
Tmss Technical Institute	2	Civil Technology	130	150
TMSS Textile Engineering Institute	2		85	100
TMSS Textile Engineering Institute	2	Mechanical Technology	14	50
TMSS Textile Engineering Institute	2	Electrical Technology	43	100
TMSS Textile Engineering Institute	2	Civil Technology	49	50
Tokyo Bangla Polytechnic Institute	2	Civil Technology	1	50
UCEP Institute of Science and Technology	2		50	50
UCEP Institute of Science and Technology	2	Automobile Technology	50	50
UCEP Institute of Science and Technology	2	Electrical Technology	100	100
UCEP Institute of Science and Technology	2	Mechanical Technology	98	100
UCEP Institute of Science and Technology	2	Civil Technology	100	100
Ulipur Science and Technology Institute	2		3	50
Ulipur Science and Technology Institute	2	Electrical Technology	3	50
Ulipur Science and Technology Institute	2	Civil Technology	1	50
Ullahpara Polytechnic and Textile Engineering Institute	2	Civil Technology	24	50
Ullahpara Polytechnic and Textile Engineering Institute	2	Electrical Technology	31	50
United College of Aviation Science & Technology, Uttara	2	Aircraft Maintenance (Aerospace)	17	50
United Polytechnic Institute	2	Electrical Technology	5	50
United Polytechnic Institute	2	Civil Technology	6	50
Universal Institute of Business and Technology	2	Automobile Technology	1	50
Universal Institute of Business and Technology	2		2	50
Upa Shaher Textile Engineering Institute	1	Electrical Technology	14	50
Upa Shaher Textile Engineering Institute	1		22	50
Upa Shaher Textile Engineering Institute	1	Civil Technology	19	50
UST Non-Govt. Polytechnic Institute	1	Civil Technology	8	50
UST Non-Govt. Polytechnic Institute	1		23	50
Uttar Bango Engineering Institute	2	Civil Technology	19	50
Uttar Bango Engineering Institute	2		43	50
Uttar Bango Engineering Institute	2	Electrical Technology	19	50
Uttara Engineering College	2	Electrical Technology	41	150
Uttara Engineering College	2		34	50
Uttara Engineering College	2	Civil Technology	11	50
Uttara Engineering College	2	Mechanical Technology	20	50
Uttara Polytechnic Institute	2		2	50
Uttara Polytechnic Institute	2		35	50

Institute Name	Shift	Technology	Admission	Total Seat
Uttara Polytechnic Institute	2	Civil Technology	25	150
Uttara Polytechnic Institute	2	Architecture Technology	3	50
Uttara Polytechnic Institute	2	Electrical Technology	3	50
Uttara Polytechnic Institute	2	Electrical Technology	20	150
Uttaron Polytechnic Institute	2	Electrical Technology	33	50
Uttaron Polytechnic Institute	2		30	50
Uttaron Polytechnic Institute	2	Civil Technology	14	50
Valuka Engineering Institute	2	Electrical Technology	9	50
Valuka Engineering Institute	2	Surveying Technology	3	50
Valuka Engineering Institute	2	Mechanical Technology	16	50
Valuka Engineering Institute	2		5	50
Valuka Institute of Modern Technology	2	Electrical Technology	2	50
Valuka Textile Engineering Institute	2	Civil Technology	1	50
Valuka Textile Engineering Institute	2	Electrical Technology	8	50
Vesspar Institute of Engineering and Technology	2	Civil Technology	28	50
Vesspar Institute of Engineering and Technology	2	Electrical Technology	7	50
Vision Polytechnic Institute	2	Electrical Technology	27	50
Vision Polytechnic Institute	2		27	50
Vision Polytechnic Institute	2	Civil Technology	41	50
Vqueen's Institute of Technology	2	Electrical Technology	2	50
Vqueen's Institute of Technology	2	Civil Technology	1	50
Western Ideal Institute	2	Civil Technology	30	150
Western Ideal Institute	2	Marine Technology	20	150
Western Ideal Institute	2		82	150
Western Ideal Institute	2	Electrical Technology	105	150
Western Ideal Institute	2	Mechanical Technology	58	150
Western Ideal Institute (WII)	2	Surveying Technology	44	50
Western Ideal Institute (WII)	2	Marine Technology	4	150
Western Ideal Institute (WII)	2		49	150
Western Ideal Institute (WII)	2	Civil Technology	18	150
Western Ideal Institute (WII)	2	Mechanical Technology	23	150
Western Ideal Institute (WII)	2	Electrical Technology	18	150
Western Institute of Science and Technology	2	Electrical Technology	8	50
Western Institute of Science and Technology	2	Surveying Technology	21	50
Western Institute of Science and Technology	2	Civil Technology	21	50
Xylia Institute of Engineering Science and Technology	2	Electrical Technology	4	50
Xylia Institute of Engineering Science and Technology	2	Civil Technology	5	50
Xylia Institute of Engineering Science and Technology	2		8	50
		Total =	**31,079**	**88,710**

APPENDIX D1
The survey questionnaire's mean responses and standard deviation for polytechnic teachers.

	Objectives_2.1.1	LO_2.1.2	Content_2.1.3	Inclusivity_2.1.4	Presence_2.1.5	Time_2.1.6	Readiness_2.2.1	LM_2.2.2	AE_2.2.3	Indiv_2.2.4	TT_2.2.5	Accuracy_2.3.1	Context_2.3.2	Evidence_2.3.3	Assessment_2.3.4	Critical_2.3.5	Assess_2.3.6	Grading_2.3.7	Feedback_2.3.8	Job_2.4.1	Industry_2.4.2	Strategies_2.4.3	Use_3.1.1	Lesson_3.1.2	Teaching_3.2.1	Class_3.2.2	Paradigm_3.3.1	IndivIndiv_3.3.2
Mean	1.40	2.77	1.18	1.98	2.18	1.27	2.31	1.82	1.15	1.67	1.46	1.38	1.56	1.08	1.59	1.17	1.70	1.56	1.28	1.81	2.02	1.13	1.83	1.41	1.00	2.39	1.52	1.85
Std. Deviation	.538	.903	.418	.925	1.107	.537	.766	.832	.369	.740	.557	.634	.662	.439	.648	.546	.716	.792	.615	.814	.800	.481	.628	.614	.254	.677	.738	.687

APPENDIX D2
The survey questionnaire's mean responses and standard deviation for polytechnic graduates.

	Objectives_2.1.1	enroll_2.1.2	outcom_2.1.3	Content_2.1.4	Presence_2.1.5	Ethical_2.1.6	Emph_2.1.7	Teach_2.2.1	Learn_2.2.2	Co_2.2.3	Complet_2.3.1	Context_2.3.2	Feedback_2.3.3	satisf_2.4.1	Entrep_2.4.2	Cred_3.1.1	Readi_3.2.1	Student_3.2.2
Mean	1.53	1.51	1.46	2.29	2.89	3.05	2.04	2.57	.92	1.97	1.97	1.90	1.55	2.12	3.52	1.29	1.49	1.20
Std. Deviation	.917	.778	.697	.862	1.073	.918	.716	.895	.805	.850	.865	.719	.955	.998	.877	.742	.971	.553