

## **Introduction**

### **1.1 Background**

ABET accredits academic programs at universities and colleges preparing graduates for entry into professional disciplines of applied science, computing, engineering, and technology.

Educational institutions have to respond and to act in such a way that insure a better and ever-improving quality for the programs they are offering. Improvement of quality in front of rapid changes requires an effective system of management and oversight.

The key elements of such a system is comprise of clear understanding of programs goals and objectives, coupled with assessment procedures to indicate whether established targets are being met. Continuous evaluation and updating for the programs is another challenge has to be met in order to keep a good moving position and strengthen the credibility in the institution.

ABET has provided quality assurance in higher education over decades. It introduced the Engineering Criteria (EC2011-2012), which addressed the effectiveness of engineering education programs by focusing on assessment and evaluation process that assures the achievement of educational objectives and outcomes.

### **1.2 The Importance of ABET Accreditation**

The process of accreditation serves the programs to:

1. **Maintain** high standards of quality in their fields of study and compete with similar private and governmental institute in the area.
2. **Establish** national and international recognition of expected graduate qualifications.
3. **Provide** cost effective means of impartial feedback on program assessment and development.
4. **Provide** appropriate preparation for entry-level employment in the profession.
5. **Motivate** regular comprehensive review of programs by institutions creating an expectation of continuous improvement.
6. **Provide** potential students a quality education which will lead to a wide range of job opportunity and mobility.

### **1.3 The Benefits of ABET Accreditation**

The accreditation helps concerned people make important decisions about education including:

1. **Student** choosing an educational program.
2. **Parents** seeking assurance of a quality education.
3. **Institutions** through faculty, deans and administrator of their program's strengths and weaknesses and of ways to improve the education provided by their programs.
4. **Employers** recruiting well-prepared graduates to begin the real working life.

### **1.4 Industrial Engineering Department**

The Department was founded in 1996, and the first group graduated in 2000.

#### **1.4.1 Department Vision**

The department makes all efforts to provide the Palestinian and regional markets with high qualified human resources, who have proper scientific and technical background in the different fields of industrial Engineering.

#### **1.4.2 Department Objectives.**

Recruiting the best and appropriate human resources in the department who are specialized in different industrial engineering fields, and continuously build and strengthen the capacity of the existing staff. Continuously upgrade the department infrastructure including labs, equipments...etc.

Continuously work on developing modern teaching means and facilities that comply with market needs and international standers. Graduate well-educated and trained human resources that will work in and develop the local ( and regional) industrial market.

The program has two study plans 2006,2008 , but now the program work on the new study plan of 2008 , for improving the education quality and maintain the working on the continuous improvement the department working to meet the ABET requirement in order to get the ABET accreditation.

## **1.5 Problem Description**

The industrial engineering program in An-Najah University is oriented towards getting the ABET accreditation; they are aware of the great influence of this Accreditation towards the IE program. In order to start achieving the criteria of ABET, A gap analysis project must be done to evaluate the time and the effort needs for getting the accreditation, and to develop the program to be appropriate to the ABET criteria.

**1.5.1 ABET accreditation proposal** has designed as a guideline reference to introduce the process of accreditation to all faculty members and to lead the departments all the way through accreditation. It will high-light ABET policies and procedure as general knowledge, specify the different tasks for the departmental committees and subcommittees, suggest a time-framed action plan for assessment and improvement, and display a comprehensive examples for documentation templates needed in the process.

## **1.6 Objectives Of The Project**

In this project we aim to prepare the Industrial Engineering Department toward getting the ABET accreditation by doing the following activities:

1. The project aims to make gap analysis for the Industrial Engineering Department in An-Najah national university to meet the ABET standards in order to prepare the department to get this accreditation in the soon future.
2. Establish assessment system for IE Outcomes connected to ABET Outcomes.
3. Evaluate the IE program according to ABET Outcomes and subject Recommendations for further developments.

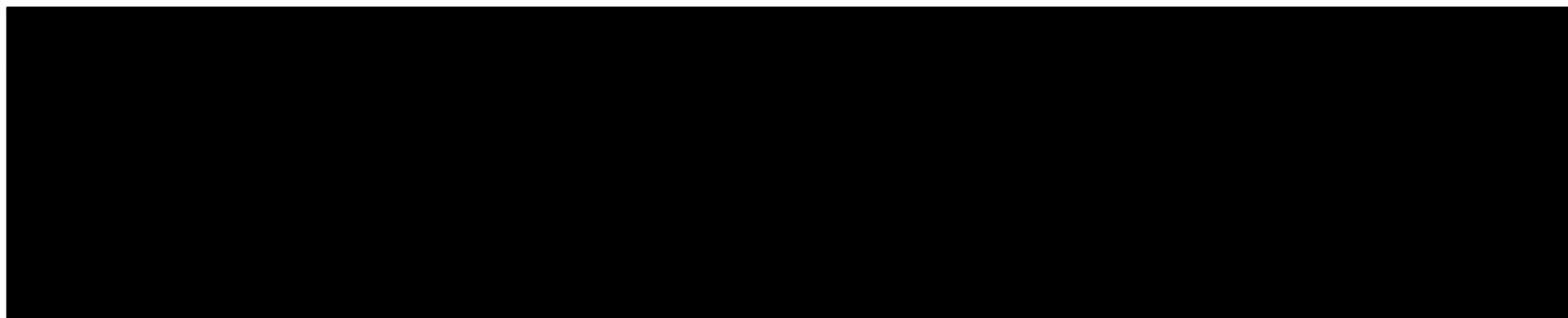
The Self-Study Proposal (Chapter 4) will be distributed to each department to lead the way through the extensive work required for accreditation and each faculty member should be familiar with the contents of this file. Joint efforts are a crucial demand to make accreditation happened and time is another critical factor that needs to be controlled with organized plans and high commitment. It is not an easy job to accomplish but once it done, it will make the difference.

## **1.7 ABET Implementation Methodology**

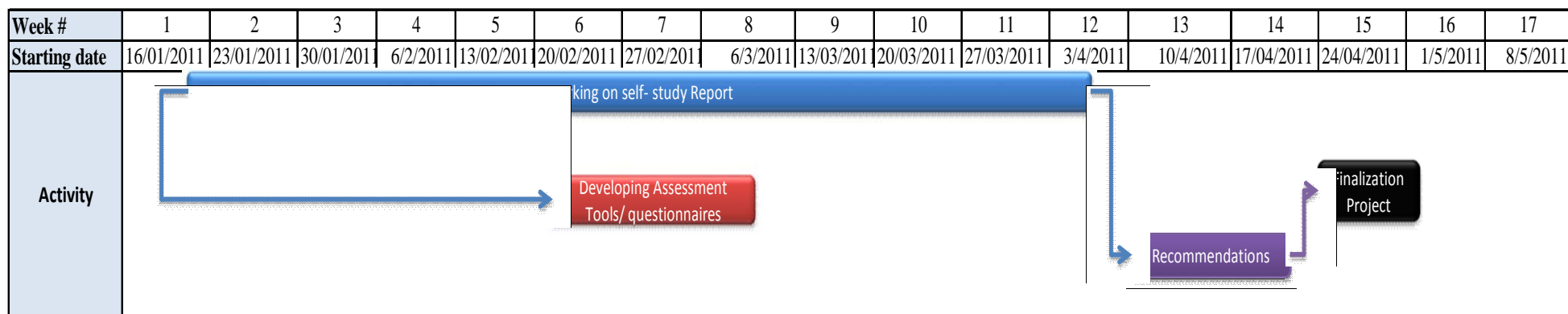
1. The project was started by reading the available resources at ABET website: <http://www.abet.org>.
2. Secondary searching was started over the entire websites for previous ABET experiences for other universities such as, Pennsylvania, Qatar and Fahd universities, .
3. All of the available sources were studied in depth on how An-Najah National University can pursue in this accreditation.
4. During every procedure have been made, it was all as a result of the frequent brainstorming sessions that the group has many times.
5. After every brainstorming session that has been used to dividing the tasks among the group members with a deadline given in order to be on the schedule.
6. And after every meeting was held with the project supervisor, the group was met at the evenings to discuss what the next step is.
7. Every Wednesdays there was a meeting with the project supervisor to discuss the latest tasks and steps that we have done.

## 1.8 Project Time Line :

### First Semester 2010-2011



### Second Semester 2010-2011



## 1.9 ABET Implementation Activities Description

Working plan and activities description of the project:

<b>First Semester Activities</b>	<b>Activity Description</b>
Secondary Research	Gathering information from the internet such as ABET Criteria and Self-Study Report, information papers related to ABET, previous experience data and information from several universities that implemented ABET accreditation such as Fahed and Pennsylvania Universities.
Primary Research	Interviews with ABET experts and conduct a deep internet research.
Data analysis	Brain storming sessions, explode alternatives, prioritizing tasks and activities, and documentation.
Reviews and Refinements	Reviewing and refining data, research, and documentation.
Gap Analysis	Studying the current case of the IE program in NNU and determining activities and processes that are needed to meet the requirements of ABET Criteria.
<b>Second Semester Activates</b>	<b>Activity Description</b>
Working on the Self-Study Proposal	Working on each of the ABET nine criteria and prepare the Self-Study report that is proposed from ABET Organization.
Developing Tools for the Assessment process	Creating developed Excel Sheets, and questionnaires for the ABET assessment process.
Project Recommendations	Propose recommendations that include the IE program and faculty, and the IE department to improve the program to meet ABET requirements.
Finalizing the project	Make the final revision, and refine the data, and document the soft copy according to ISO-9001 documentation system, and prepare the final Report.

## **1.10 The Project Structure**

The project consisted of seven chapters classified as the following:

1. **Chapter One: Introduction.**  
Brief explanation about the project, its objectives, work plan, problem description.....etc.
2. **Chapter Two: Abet Criteria EC2011-2012.**  
Definition of ABET accreditation, its requirements, how to prepare the self-study proposal, its criteria.....etc.
3. **Chapter Three: Gap Analysis.**  
Make Gap Analysis for the IE dep. According to the ABET requirements.
4. **Chapter Four: Self-Study Proposal for IE Dep.**  
Contain all the ABET criteria from Criteria 1-9.
5. **Chapter Five: Assessment Tools to implement ABET.**  
Contain Developed forms to assess the educational process in the IE Dep. And contain a developed Computer Software to facilitate the students Assessment process.
6. **Chapter Six: Summery and Recommendations.**  
  
Contain Summery for the project and Recommendations to improve the Educational Process and fulfill the gaps in it.
7. **Chapter Seven: External application procedures.**  
Contain some forms used when the Educational institute ready for asking the ABET committee.

### **Note:**

**All of the Chapters were documented as a Soft Copy According to**

**The**



**Documentation System.**