

Area A. Narrative Profile

Instruction

Contents

1	Introduction	1
2	Well-defined Objectives	3
2.1	Institutional Objectives	3
2.2	Program Objectives	4
2.2.1	Program Outcomes	4
2.2.2	Program Educational Objectives	5
3	Adequate and Relevant Projects	6
3.1	Activities to Achieve the Objectives	6
4	Systematic and Effective Procedures	7
4.1	Teaching Methods	7
4.2	Curriculum Development	7
4.3	Testing	7
5	Reasonable Budget	8
6	Provision of Material and Other Resources	9
7	Participation Project Activities	10
8	Distinctions, Achievements and Grants	11
9	Best Practices	12

Chapter 1

Introduction

The field of computing is dynamic and has developed into mature and independent disciplines as Computer Science, Computer Engineering, Software Engineering, Information Technology, and Information Systems, among others. The timely and rapid developments in computing technology such as artificial intelligence, data mining, data communications, and security anchored on the theories and principles of computing continue to enrich these disciplines.

The Department of Computer Science, in order to rectify perceived deficiencies in the old program and to maintain its relevance and currency, advanced this revision. The impact of the K to 12 Basic Education program will require the new program to adjust its curriculum for the new attributes and competencies of the input – the graduates of the Senior High School.

Moreover, because of the need for more specialized skills in computing as required by the industry and the academe, it was previously proposed that the B.S. Computer Science curriculum be divided into two tracks, namely, Foundations and Software Engineering. This was in line with the recommendations of the Association for Computing Machinery (ACM) embodied in Computing Curricula 2001 Computer Science Volume and Curriculum Guidelines for Undergraduate Degree Programs in Software Engineering SE 2004. The curriculum also satisfied the recommendations of the Technical Panel for IT Education as embodied in previous Policies, Standards, Guidelines for IT Education of the Commission on Higher Education (CHED).

In view of the latest guidelines of the CHED prescribing the criteria and standards of BSCS program, the proposed revised program is a combination of the existing tracks: Foundations and Software Engineering. The revised program is deemed to provide the balance of theory and practice.

The undergraduate Computer Science curriculum is based on local, national, and international criteria and standards. This means that the graduates of the

program will be adequately prepared for advanced academic pursuits, and they will be equipped with the knowledge and skills required for the Industry 4.0 implementation. The outcomes-based quality assurance is expected to address these goals through the compliance of standards set by CHED Memo 46, series 2012. This curricular revision can further enhance the attainment of peace and development in Mindanao – computing with its inevitable roles as a tool in shaping or aiding the socio-cultural, socio-political, and socio-economic aspects of society, its pervasiveness in government, business, industry, education, and all sectors of society in general. The ubiquity of the computing technology enabled people to communicate, collaborate, interact, and share ideas, thereby providing opportunities for unity and borderless communities and better understanding among people

The Bachelor of Science in Computer Science (BSCS) is a four-year undergraduate program that provides students with a strong theoretical and practical foundation in computing, software development, and information and communication technologies. The program is designed to equip students with the necessary knowledge, skills, and competencies to analyze, design, and implement computer-based solutions to address scientific, industrial, and societal needs.

The curriculum covers the core areas of computer science including algorithms and complexity, programming languages, software engineering, data structures, operating systems, computer networks, database systems, artificial intelligence, and emerging technologies. It emphasizes both the theoretical underpinnings of computing and their practical applications through hands-on laboratory work, research, and industry-based projects.

The BSCS program was formally established in 1984 to provide students with rigorous training in the principles and applications of computing. Since its inception, the program has continuously evolved to keep pace with rapid technological advancements and the changing needs of industry and society.

As part of this commitment to quality and relevance, the curriculum was reviewed and revised in accordance with the Commission on Higher Education (CHED) policies, standards, and guidelines. The revised curriculum was approved by the MSU Board of Regents (BOR) through Resolution No. 357, Series of 2017, on December 20, 2017.

Chapter 2

Well-defined Objectives

2.1 Institutional Objectives

As a campus, the MSU - Iligan Institute of Technology has its own goals and objectives for the achievement of its vision and mission.

Vision

A research university committed to the holistic development of the individual and society.

Mission

To provide quality education for the sustainable development of the nation and the global community.

Information about the vision and mission are found in the IIT website: <https://iit.edu.ph/about/facts/core-values.php>

As on the constituent universities of the Mindanao State University System, the institution is committed to the following:

1. Provide a relevant and integrated system of quality general education that will promote national identity, cultural consciousness, moral integrity, and spiritual vigor
2. Produce a supply of quality manpower required for regional as well as for national development
3. Engage in research and extension activities that will lead to economic upliftment of the surrounding communities
4. Help humanity live a superior life.

In support for the achievement of the thrusts of the MSU System, the campus lays down six pillars as provided in the 5-Year Development Plan:

Pillar 1. Education: Holistic, integrated, and balanced academic programs aligned with Education 4.0 and the evolving 21st century skills with life-long learning as a guiding principle

Pillar 2. Research and Innovation: Interdisciplinary and integrative research for sustainable development

Pillar 3. Student Support: A learning environment that supports students in their university life and beyond

Pillar 4. Public Service: Public service and community engagement for social transformation

Pillar 5. Governance: Mission-driven and technology-enabled governance for operational excellence

Pillar 6. Infrastructure: Smart, green, and resilient campus

The details of the roadmap for these pillars are provided as strategic objectives in the 5-Year Strategic Roadmap of MSU-IIT in Annex A.

2.2 Program Objectives

The BSCS program is housed under the Department of Computer Science, under College of Computer Studies of MSU-Iligan Institute of Technology. The program's objectives are stated in terms of quality standards of the students (program outcomes) and alumni of the program (program educational objectives). These objectives are part of the latest revised curriculum manuscript found in Annex B.

2.2.1 Program Outcomes

The Bachelor of Science in Computer Science (BSCS) program of MSU-IIT is carefully designed to align with the national mandate of the Commission on Higher Education (CHED), the institutional vision, mission, and goals of MSU-IIT, and the College of Computer Studies (CCS) objectives.

As per CHED Memorandum No. 25, series of 2015, the Bachelor of Science in Computer Science aims to develop graduates who are expected to become globally competent, innovative, and socially and ethically responsible computing professionals engaged in life-long learning endeavors. They are capable of contributing to the country's national development goals. This mandate sets the benchmark for the program outcomes of MSU-IIT's BSCS program.

Guided by the mandates of the institution, the BSCS program aims to produce students with the following set of abilities by the time of graduation:

1. Ability to apply knowledge of computing, basic science, and mathematics appropriate to the discipline and the program educational objectives;

2. Ability to analyze a problem, identify and define the computing requirements appropriate to the problem's solution
3. Ability to apply mathematical foundations, algorithmic principles, and computer science theory in the modeling and design of computer-based systems in a way that demonstrates comprehension of the trade-offs involved in the design choices
4. Ability to apply design principles in the construction of software systems of varying complexity, in accordance with applicable standards
5. Ability to design, implement, and evaluate the capability of a computer-based system, process, component, or program to meet desired needs
6. Ability to use technique, skills, and tools necessary to current computing practice
7. Ability to function effectively on teams to accomplish a common goal
8. Ability to communicate effectively with a range of audiences
9. Ability to analyze the local and global impact of computing on individuals, organizations, society, and environment
10. Ability to understand professional, ethical, legal, security, and social issues and responsibilities
11. Ability to recognize the need for and ability to engage in continuing professional development

2.2.2 Program Educational Objectives

The program educational objectives (PEO) of the BSCS is to achieve the set of attributes for the alumni achievable within three to five years after graduation are given below:

1. Engage in the productive practice as computer science professional to solve significant problems across broad-range of application areas
2. Adapt to technology advances through continued professional growth and by embracing life-long learning
3. Make well-rounded decisions when faced with social, ethical, legal, and environmental issues inherent to computing practice Communicate effectively with their peers, customers, supervisors through both written and oral means

Chapter 3

Adequate and Relevant Projects

3.1 Activities to Achieve the Objectives

Chapter 4

Systematic and Effective Procedures

4.1 Teaching Methods

4.2 Curriculum Development

4.3 Testing

Chapter 5

Reasonable Budget

Chapter 6

Provision of Material and Other Resources

Chapter 7

Participation Project Activities

Chapter 8

Distinctions, Achievements and Grants

Chapter 9

Best Practices