



NOTRE DAME OF MARBEL UNIVERSITY COLLEGE OF ENGINEERING, ARCHITECTURE, AND TECHNOLOGY

Notre Dame of Marbel University
City of Koronadal, South Cotabato



Vision

Inspired by the charism of St. Marcellin Champagnat, Notre Dame of Marbel University envisions to be a Catholic Marist institution of learning dedicated to the spiritual, moral and academic formation of men and women who exemplify competence and social responsibility in the service of God and humanity.

Mission

As a Catholic institution founded on Marist traditions, Notre Dame of Marbel University commits itself to:

- 1. Build Character** – by providing quality Christian education to the youth making them capable of being leaven for responsible Christian living;
- 2. Develop Competence** – by promoting the principles of quality education and by generating new knowledge that fosters human development and advancement of the society; and
- 3. Respect Culture** – by inculcating the principles of cultural solidarity, by instilling appreciation and preservation of the Filipino cultural heritage, and by promoting the Marist tradition where students are progressively initiated into their life-long challenge of harmonizing faith, culture and life.

MOTTO

“Character, Competence, and Culture in Harmony”

Core Values

Inspired by the charism of Saint Marcellin Champagnat, Notre Dame of Marbel University anchors its faith and life on the following core values as foundational qualities with which the Marist Brothers, Mission Partners, and students approach the entire educational process and academic atmosphere of the University: Family Spirit, Marian, Love of Work, Preference for the Least Favored, Quality Education, Integrity of Creation, and Culture-sensitivity.

Program Educational Objectives	Mission		
	1	2	3
Within 3-5 years after graduation, the program expect that the Information Technology graduates will:			
1. Take on positions as I.T. leaders and contribute to the achievement of the business goals and objectives by recommending and applying information technology methods and practices and communicate it effectively as an IT professional with users, peers, and higher management.	√	√	
2. Manage resources within the organization's IT infrastructure and evaluate emergent technologies and methods for use within the company.	√		√
3. Advance professionally through organized training or self-learning to new technologies, tools and methodologies to remain at the leading edge of information technology developments and practice in the profession and in the academic field.	√	√	√

Course Syllabus in Information Technology
1st Semester, SY 2025-2026

- I. Course Title** : Introduction to Computing
Course Code : ITCC 111
Credit Units : Three (3) credit units- Five (5) contact hours
Prerequisites : 1st Year Standing
Co-requisites : None
Faculty : Michael Paul O. Sebando
Contact no. or Email : 083 552 4389 / mposeband0@ndmu.edu.ph
Consultation Time : Every Friday 10:30 AM – 4:00 PM

II. Course Description:

This course provides an overview of the Computing Industry and Computing profession, including Research and Applications in different fields; an Appreciation of Computing in different fields such as Biology, Sociology, Environment and Gaming; an Understanding of the Association for Computing Machinery (ACM)

Requirements; an Appreciation of the History of Computing; and Knowledge of the Key Components of Computer Systems (Organization and Architecture), Malware, Computer Security, Internet and Internet Protocols, HTML4/5, and CSS.

III. Teaching and Learning Framework

NDMU as a higher institution of learning adheres to the teaching-learning philosophy that is student-centered, transformative, outcome-based, relevant and responsive, and Marist Pedagogy-Oriented.

IV. Course Policies / Guidelines

This course will use the lecture and hands-on approach as methods of instruction. Laboratory exercises are given both in hardware and software. Students should be responsible for carefully reading of the text materials. Class members contribute to each other's learning through discussion, presentation, and sharing. The role of the professor will be that of a resource person and as such may once in a while include extended elaboration of issues and topics and assists in the computer program development. Dialogue with class participants, individual and group activities, research presentations, and problem-solving exercises will also be used as instructional strategies.

Academic Integrity

Academic integrity is expected of all students. The attempt by any student to present as his/her own work which he/she has not produced is regarded by the faculty and administration of NDMU as a serious offense. Students are considered to have cheated if they turn in an assignment written in whole or in part by someone else. Students are guilty of plagiarism, intentional or not, if they copy from books, magazines, Internet, or other sources without identifying and acknowledging those sources or if they paraphrase ideas from such sources without acknowledging them. Students enrolled in this course who cheat on exams or quizzes or commit plagiarism, or copy another student's work in any way, violate the Academic Integrity policy of the University and will receive an F (0 points) on the test or assignment in question. In addition, they will be reported to the College Dean for appropriate sanction

Attendance

Students are required to come on time and be present in class sessions. Each session is very important to your learning so you should avoid being absent. Unexcused and/or chronic lateness and early exits will be counted as an "absence." Missing a class does not excuse you from the work assigned. You will be expected to complete and submit any assignments before or at the beginning of the next class session. No make-up lectures or tests will be given, except under exceptional circumstances, at the discretion of the instructor. Consultation outside office hours will be by appointment only.

Class Management

All students are expected to come to class on time. Use of cell phones is prohibited. Put cell phones in silent mode. Wear your complete uniform.

V. Course Requirements:

***Class standing requirements** (quizzes, seatwork, assignments and class participation, group discussion) – Problem solving exercises are scheduled. Seatworks are unannounced and are usually given at the start or near the end of the lecture period. Problem set assignments are to solved through team effort to maximize peer tutoring and cooperative learning. Outputs are collected at the beginning of the next class session. Students will be required to do oral presentation of assignment solutions or any special topics. Individual contribution to group work will be rated by the instructor and by the co-group members.*

Grading System for All IT Lecture-Laboratory Subjects

Grading will be as follows:

A. Midterm Grade

Quizzes, Seat works, Laboratory Activities, Research Works, Project, Class Participation	60%
Midterm Examination	<u>40%</u>
TOTAL	100%

B. Final Grade

Quizzes, Seat works, Laboratory Activities, Research Works, Project, Class Participation	60%
Final Examination	<u>40%</u>
TOTAL	100%

VI. Program Outcomes and Relationships to Programs Educational Objectives

Program Outcomes	Program Educational Objectives		
A graduate of the Bachelor of Science in Information Technology program must be able to:	1	2	3
a) Apply knowledge of computing, science, and mathematics appropriate to the discipline.		√	√
b) Apply best practices and standards and their applications.	√	√	√
c) Analyze complex problems, and identify and define the computing requirements appropriate to its solution.		√	√
d) Identify and analyze user needs and take them into account in the selection, creation, evaluation and administration of computer-based systems.	√	√	
e) Design, implement, and evaluate computer-based systems, processes, components, or programs to meet desired needs and requirements under various constraints.	√		
f) Integrate IT – based solutions into the user environment effectively		√	
g) Apply knowledge through the use of current techniques, skills, tools and practices necessary for the IT profession.	√	√	
h) Function effectively as a member or leader of a development team recognizing the different roles within a team to accomplish a common goal.	√	√	
i) Assist in the creation of an effective IT project plan.		√	
j) Communicate effectively with the computing community and with society at large about complex computing activities through logical writing, presentations, and clear instructions.	√	√	√
k) Analyze the local and global impact of computing information technology on individuals, organizations, and society.	√	√	
l) Apply professional, ethical, legal, security and social issues and responsibilities in the utilization of information technology.	√	√	
m) Recognize the need for and engage in planning self-learning and improving performance as a foundation for continuing professional development.		√	√

n) Live with the spirit of volunteerism especially when information technology is needed to uplift the lives of cultural minorities and underprivileged.		√	
o) Practice the teachings and beliefs of St. Marcellin Champagnat by not participating in any anomalous transactions and/or any activity that in effect results to moral degradation.	√	√	

VII. Relationship of Course Learning Outcomes (CLOs) to Program Outcomes (PO)

Course Learning Outcomes		Program Outcome													
At the end of the course, the student should be able to:	a	b	c	d	e	f	g	h	i	j	k	l	m	n	o
CLO 1: Explain fundamental principles, concepts, and evolution of computing systems as they relate to different fields.			√	√				√			√		√	√	
CLO 2: Expound on the recent developments in the different computing knowledge areas.			√	√				√			√		√	√	
CLO 3: Analyze solutions employed by organizations to address different computing issues.			√	√		√		√			√		√	√	

VIII. Course Coverage

Lesson	Topic	CLO Code Link			Intended Learning Outcomes (ILO)	References	Teaching & Learning Activities		Assessment Methods / Tools	Values Integration	Target
		1	2	3			Teaching	Learning			
0	0.0 Getting to Know 0.1 Introduction 0.2 University Policies and Guidelines 0.3 Classroom Protocols and Laboratory Rules 0.4 Course Outline 0.5 Grading System 0.6 Course Expectations				<ul style="list-style-type: none"> 		<ul style="list-style-type: none"> Self-Introduction Leveling of expectations Question and Answer 	<ul style="list-style-type: none"> Overview of NDMU Policies and Guidelines Outline the Course Expectation 		<ul style="list-style-type: none"> Family Spirit Respect Culture sensitivity Marian 	
1	1.0 Appreciation of Computing in Different Fields 1.1. Technology Uses 1.1. Digital School 1.2. Government 1.3. Finance 1.4. Retail 1.5. Entertainment 1.6. Healthcare 1.7. Science 1.8. Travel 1.9. Publishing 1.10. Manufacturing	√	√	√	<ul style="list-style-type: none"> The students can discuss how society uses technology in education, government, finance, retail, entertainment, health care, science, travel, publishing, and manufacturing; They can recognize the importance of technology used by different kinds of industries. They can recognize the 	[1] [2] [8] [9]	<ul style="list-style-type: none"> Lecture Discussion 	<ul style="list-style-type: none"> Recitation 	<ul style="list-style-type: none"> Assignment Demonstration / Presentation Reading Assignment 	<ul style="list-style-type: none"> Integrity of Creation Culture-sensitivity Marian Love of Work 	100% of the students shall have a rating of at least 70%

					role of Infromation technology in the different industries.						
2	2.0 Different Specializations 2.1 IT vs Computer Science 2.2 Comparing Computer Science and IT Jobs 2.3 Information Technology Specializations 2.4 Computer Science Specializations	√	√	√	<ul style="list-style-type: none"> • The students can differentiate the different specializations of information technology and computer science; and • They can identify emerging IT fields, such as Cloud Computing, DevOps, System Administration , and IT Project Management. 	[1] [2] [13] [14] [15]	<ul style="list-style-type: none"> • Lecture • Discussion 	<ul style="list-style-type: none"> • Researching • Creating of Infographic about computer science 	<ul style="list-style-type: none"> • Infographic • Reading Assignments 	<ul style="list-style-type: none"> • Integrity of Creation • Respect • Family Spirit • Love of Work 	100% of the student s shall have a rating of at least 70%
3	3.0 Evolution of Computing 3.1 History of Computing Technology 3.1.1 Earliest Computer 3.1.2 1 st Generation 3.1.3 2 nd Generation 3.1.4 3 rd Generation 3.1.5 4 th Generation 3.1.6 5 th Generation		√	√	<ul style="list-style-type: none"> • They can recognize the contributions of pioneering individuals in computing history. • Compare and contrast the five generations of computers, analyzing key technological 	[4] [11] [16] [17]	<ul style="list-style-type: none"> • Lecture • Discussion 	<ul style="list-style-type: none"> • Recitation • Group Works 	<ul style="list-style-type: none"> • Assignment • Recitation • Quiz 	<ul style="list-style-type: none"> • Integrity of Creation • Respect • Culture-sensitivity • Love of Work 	100% of the student s shall have a rating of at least 70%

					advancements. ; and • Relate how the evolution of computing made an improvement in computing.						
4	4.0 Computer Basics 4.1 Understanding Information Systems 4.2 Identifying Computer Types 4.3 Understanding Software Types 4.4 Computer System Components 4.5 How Computers Communicate		√	√	• The students can explain the purpose and elements of information systems; • They can recognize the different types of computers; • They can distinguish the main software types; • They can identify the key components of a computer system and explain their interactions. • Describe the fundamentals of computer communication and networking protocols.	[4] [6] [7]	• Lecture • Discussion	• Recitation • Creative Visualization	• Quiz • Recitation • Seatwork	• Integrity of Creation • Family Spirit • Respect	100% of the students shall have a rating of at least 60%

5	5.0 Computer Number System 5.1 Common Number System 5.1.1 Decimal 5.1.2 Binary 5.1.3 Octal 5.1.4 Hexadecimal 5.2 Conversion between Number Bases			√	<ul style="list-style-type: none"> • The students can explain and identify the different number systems; • Perform number system conversions between decimal, binary, octal, and hexadecimal. 	[10] [12]	<ul style="list-style-type: none"> • Lecture • Discussion • Board Examples 	<ul style="list-style-type: none"> • Recitation • Computer Number Conversion on the board 	<ul style="list-style-type: none"> • Recitation • Computer Number Conversion Activity • Quiz 	<ul style="list-style-type: none"> • Integrity of Creation • Family Spirit • Respect 	100% of the students shall have a rating of at least 60%
6	6.0 The System Unit 6.1 Understanding CPUs 6.2 Understanding Memory 6.3 Understanding Motherboards 6.4 Understanding Power Supplies		√	√	<ul style="list-style-type: none"> • The students can analyze how data is represented, processed, and stored in computer systems. • They can explain the role of processors, memory types, buses, and ports in computing performance. 	[3] [4] [6] [7]	<ul style="list-style-type: none"> • Lecture • Discussion 	<ul style="list-style-type: none"> • Recitation • Researching on the parts and of the system unit and its roles. 	<ul style="list-style-type: none"> • Quiz • Recitation • Reading Assignments 	<ul style="list-style-type: none"> • Integrity of Creation • Family Spirit • Respect 	100% of the students shall have a rating of at least 60%
	MIDTERM EXAMINATION										At least 85% of the students shall have a rating

											of at least 60%
7	7.0 Input, Output, and Storage 7.1 Selecting and Using Input Devices 7.2 Selecting and Using Output Devices 7.3 Choosing Appropriate Storage Devices		√	√	<ul style="list-style-type: none">• The students can define input and describe the available types of keyboards and pointing devices;• They can describe scanning and image-capturing device types and features;• They can define various output devices and explain the functionalities of various output devices, including display technologies and printers.• They can classify storage devices based on technology, capacity, and performance.• They can explain the evolution of network	[3] [4] [6] [7]	<ul style="list-style-type: none">• Lecture• Discussion	<ul style="list-style-type: none">• Recitation• Drawing input, output, and storage devices	<ul style="list-style-type: none">• Recitation• Drawing activity• Quiz	<ul style="list-style-type: none">• Integrity of Creation• Family Spirit• Respect	100% of the student s shall have a rating of at least 60%

					storage solutions and cloud computing.						
8	8.0 Operating Systems 8.1 Understanding System Software 8.2 Comparing the Major Operating Systems 8.3 Understanding Digital Storage		√	√	<ul style="list-style-type: none"> • The students can identify the types of operating systems available; • They can differentiate among the major desktop operating systems; and • They can explain computer file storage concepts • 	[3] [4] [6] [7]	<ul style="list-style-type: none"> • Lecture • Discussion 	<ul style="list-style-type: none"> • Recitation • Researching and creating an infographic about the different operating system 	<ul style="list-style-type: none"> • Recitation • Infographic • Quiz 	<ul style="list-style-type: none"> • Integrity of Creation • Family Spirit • Respect 	100% of the students shall have a rating of at least 60%
9	9.0 Network and Internet Basics 9.1 Communication Systems 9.2 Ways of Classifying Networks 9.3 Network Hardware 9.4 Understanding and Connecting to the Internet		√	√	<ul style="list-style-type: none"> • The students can identify communications networks in daily life; • They can distinguish among types of networks; • They can identify common types of network hardware; and • They can explain the Internet and choose a 	[3] [4] [6] [7]	<ul style="list-style-type: none"> • Lecture • Discussion 	<ul style="list-style-type: none"> • Recitation • Researching and essay writing about network and internet basic 	<ul style="list-style-type: none"> • Recitation • Group Work • Essay Activity 	<ul style="list-style-type: none"> • Integrity of Creation • Family Spirit • Respect 	100% of the students shall have a rating of at least 60%

					connection method						
10	10.0 Network and Internet Privacy Security 10.1 Network and Internet Security Concerns 10.2 Network and Internet Privacy Concerns 10.3 Strategies for Improving Security		√	√	<ul style="list-style-type: none"> • The students can understand the basic concepts of computer security; • They can identify common threats when using a computer on a network; • They can identify various malware programs; • They can recognize the importance of securing personal data; and • They can develop basic strategies for securing personal and enterprise data. 	[3] [4] [6] [7]	<ul style="list-style-type: none"> • Lecture • Discussion 	<ul style="list-style-type: none"> • Recitation • Researching and essay writing about network and internet privacy security 	<ul style="list-style-type: none"> • Quiz • Group Work • Essay Activity • Reading Assignments 	<ul style="list-style-type: none"> • Integrity of Creation • Family Spirit • Respect 	100% of the students shall have a rating of at least 60%

11	11.0 Legal, Ethical, Health, and Environmental Issues in Computing 11.1 Legal Issues in Computing 11.1.1 Intellectual Property 11.1.2 Copyright Laws 11.1.3 Software Use 11.2 Ethical Issues in Computing 11.2.1 Plagiarism 11.2.2 Censorship & Filtering 11.2.3 Speech 11.2.4 Mail 11.3 Health Issues in Computing 11.3.1 Eyestrain 11.3.2 Posture 11.3.3 Ergonomic Devices 11.4 Environmental Issues in Computing 11.4.1 Computer Disposal 11.4.2 Older Computers and Components		√	√	<ul style="list-style-type: none"> • The students can be aware of the legal issues that arise from using computers and the Internet; • They can understand how to use the Internet in an ethical manner; • They can understand the potential impact on health when using a computer; and • They can be aware of what to consider when disposing of a computer 	[3] [4] [6] [7]	<ul style="list-style-type: none"> • Lecture • Discussion 	<ul style="list-style-type: none"> • Recitation 	<ul style="list-style-type: none"> • Quiz • Recitation 	<ul style="list-style-type: none"> • Integrity of Creation • Family Spirit • Respect 	100% of the students shall have a rating of at least 60%
12	12.0 HTML and CSS 12.1 The HTML Structure 12.2 Marking Up Text 12.3 Adding Links 12.4 Adding Images		√	√	<ul style="list-style-type: none"> • The students can identify the structure of the HTML. • They can perform and apply HTML tags into a sample website. 	[5]	<ul style="list-style-type: none"> • Lecture • Discussion • Hands-on Demonstration 	<ul style="list-style-type: none"> • Laboratory Exercises 	<ul style="list-style-type: none"> • Hands-on laboratory Activity • Quiz 	<ul style="list-style-type: none"> • Integrity of Creation • Love of Work • Respect 	100% of the students shall have a rating of at least 60%

	FINAL EXAMINATION									At least 85% of the students shall have a rating of at least 60%
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Legend: 1 – CO has minor contribution to PO
2 – CO has moderate contribution to PO
3 – CO has major contribution to PO

IX. Learning Resources

Books

[1] ACM Curriculum Guidelines for Undergraduate Degree Programs in Information Technology (2008)
[2] ACM Curriculum Guidelines for Baccalaureate Degree Programs in Information Technology (2017)
[3] Wempen, F. (2015). Computing Fundamentals Introduction to Computers. Hoboken, N.J. John Wiley & Sons
[4] Reyes, F. (2005). Introduction to Information Technology. Rex Book Store
[5] Robbins, J. (2018). Learning Web Design, Fifth Edition. O’Reilly Media, Inc.
[6] Vermaat, M., Sebok, S., Freund, S., Campbell, J., and Frydenberg, M. (2017). Discovering Computers 2018: Digital Technology, Data, and Devices (1st. ed.). Course Technology Press, Boston, MA, USA
[7] White, K. (2023). Computer fundamentals. Oryson Press.

Online Reference and Journals

[8] Applications of Information Technology. (2022, June 14). GeeksforGeeks. <https://www.geeksforgeeks.org/applications-of-information-technology/>
[9] Appreciation of Computing in Different Fields - Appreciation of Computing in Different Fields - Studocu. (2022). Studocu. <https://www.studocu.com/ph/document/central-philippine-adventist-college/intro-to-computing/appreciation-of-computing-in-different-fields/50447713>

- [10] Basics of Computers - Number System - Tutorialspoint. (n.d.). [Www.tutorialspoint.com](http://www.tutorialspoint.com).
https://www.tutorialspoint.com/basics_of_computers/basics_of_computers_number_system.htm
- [11] FTMS College. (n.d.). Evolution of Computing. Retrieved from https://ftms.edu.my/v2/wp-content/uploads/2019/02/csca0101_ch01.pdf
- [12] Number System and Base Conversions. (2017, March 8). GeeksforGeeks. <https://www.geeksforgeeks.org/number-system-and-base-conversions/>
- [13] Slyter, K. (2019, September 2). T vs. Computer Science: Which Degree Is Right for You? [Infographic]. Retrieved from
<https://www.rasmussen.edu/degrees/technology/blog/it-vs-computer-science-degree-infographic/>
- [14] Malvik, K. (2020, February 24). What Can You Do With an IT Management Degree? 6 Career Options to Consider. Retrieved from
<https://www.rasmussen.edu/degrees/technology/blog/careers-with-information-systems-management-degree/>
- [15] Malvik, K. (2019, December 30). What Can You Do With a Computer Science Degree?. Retrieved from
<https://www.rasmussen.edu/degrees/technology/blog/what-can-you-do-with-computer-science-degree/>
- [16] Williamson, T. (2021, December 1). History of computers: A brief timeline. Live Science. <https://www.livescience.com/20718-computer-history.html>
- [17] Yumpu.com. (2025). *Chapter 1: History of computers - FTMS*. Yumpu.com. <https://www.yumpu.com/en/document/view/11329881/chapter-1-history-of-computers-ftms>

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