ATENEO DE MANILA UNIVERSITY

ASEAN University Network

PROGRAMME SPECIFICATION

Bachelor of Science in Management Engineering

JOHN GOKONGWEI SCHOOL OF MANAGEMENT

Bachelor of Science in Management Engineering

Programme Specification

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Programme Specification Overview	
Awarding Body	Ateneo de Manila University
Teaching Institution	Ateneo de Manila University
Academic Unit	Loyola Schools
Name of School	John Gokongwei School of Management
Department	John Gokongwei School of Management
Programme Title	Bachelor of Science in Management Engineering
Programme Level	Undergraduate
Name of Final Awards	Bachelor of Science in Management Engineering
Mode of Study	Full-Time
Required Credit Units	175 credit units excluding Physical Education and National Service Training Program (189 including PE and NSTP)
Medium of Instruction	English
Length of Programme	4 years (8 semesters, 3 intersessions)
Statutory Body Accreditation	PAASCU Level III CHED Center of Excellence CHED Autonomous University

Bachelor of Science in Management Engineering

The Management Engineering, or M.E., program of the John Gokongwei School of Management is one of the most prestigious undergraduate degree programs of the Ateneo de Manila.

This honor's program combines the Ateneo's traditional strength in the liberal arts with a strong foundation in business management and the decision science to create a curriculum that prepares students to meet the challenges of leading modern information and technology intensive organizations. The business course covers all the functional areas of business and management, with special focus on technology, decision science and analytics, systems thinking and the scientific approach to problem solving and decision making.

This combination of a liberal arts course and a business management course aims to produce graduates who have a holistic and global view, are cable of data-driven and analytical decision making and are prepared to assume leadership roles in the workplace.

Admission Requirements

The Bachelor of Science in Management Engineering is an honors program. To be accepted into the program, the freshman applicant must meet the following requirements:

ACET Exam

Applicants must be in the top 15 percentile of those taking the Ateneo College Entrance Test (ACET).

High School Performance

They should have good to excellent grades in high school

Senior High School Track

It is highly recommended that they come from the STEAM Track because of the level of mathematics they will encounter. Student from other SHS tracks will also be considered if the meet the ACET Entrance requirement.

Retention Requirements

Freshmen	**A.** 2.0 QPI for all the major subjects of JGSOM and the M.E. program at the end of the Freshman Year
Sophomore	**B.** A cumulative QPI of 2.5 for all the major subjects in the Freshman and Sophomore year at the end of the Sophomore year.
Junior	**C.** A cumulative QPI of 2.5 for all the major subjects from Freshman year until the 1st semester of Junior Year
Other Guidelines	**D.** A cumulative QPI of 2.5 at the end of each year up until the 1st semester of their junior year. **E.** Except for LOA cases, a student who **withdraws from any major course, or underloads in any semester** during any of the screening

	periods from freshmen to the 1st semester of junior year will automatically be dropped from the program
	F. A student is allowed **only one (1) grade of "D"** in any subject, whether major or non-major. A student may be dropped from the ME roster upon receipt of a second D.
	G. Any student who receives **an "F" in any course**, whether major subject or core curriculum, will be dropped from the program. No appeals for students with an "F" will be accepted.
	H. Appeals for students who do not meet the retention requirements stated in points A, B, D or F can only be done up until the end of 1st semester, 2nd year to consider adjustment of the students. **Strictly no appeals will be accepted at the end of 2nd semester of 2nd year.**
	I. A student who has low grades in any of the Mathematics related courses (Math and QMIT) are strongly advised to leave the program.
	J. Should an ME student fail to meet the retention requirement, he is allowed to shift to any other program in JGSOM upon consideration by that program's Program Director. It is highly recommended that they shift into the B.S. Management Program so that they can still graduate on time, provided that they shift no later than the 1st Semester of their 2nd year.

Shifting Requirements

Students from other programs will be allowed to shift to Management Engineering only at the end of freshman year and before the start of Intercession classes for the incoming school year. Any student shifting into the Management Program, should be prepared to be delayed by at least a semester.

The following guidelines shall be applied in the screening of students for shifting into the Management Engineering program:

- At least a minimum of C+ in all Calculus courses or B+ in the Math in the Modern World course.
- At least a cumulative QPI of 3.00 and without a grade lower than a C+ at the time of shifting into the Management Engineering Program in the following courses: Purposive Communication – English, Purpose Communication – Filipino, Math in the Modern World and any other major courses relevant to a management program.
- An interview with the Program Director

Students should submit the following requirements when they apply to shift into the Management Engineering program:

- A Letter of Intent addressed to the Program Director
- A Printed copy of the student's grades from AISIS

It should be noted that the number of slots for shifting into the Management Engineering Program is available on a competitive basis.

Program Learning Outcomes

Core Curriculum Learning Outcomes (CCLO)

CCLO1. Demonstrates effective communication skills (listening and speaking, reading, and writing) in English and Filipino

CCLO2. Evaluates information and issues in various spheres of life using mathematical reasoning and statistical tools to process and manage data

CCLO3. Proposes ways to address pressing social and ecological problems using appropriate critical approaches and scientific methodologies

CCLO4. Develops a creative and moral imagination that is responsive to contemporary global realities and challenges, but also deeply rooted in local histories, conditions, norms, and institutions

CCLO5. Internalizes the significance and value of her/his own unique existence and purpose in life in light of Christian faith

CCLO6. Discerns life choices with a keen awareness of ethical dilemmas and considerations

CCLO7. Exemplifies a commitment to enhancing human life and dignity, especially of those who are excluded and in greatest need

CCLO8. Practices a vision of leadership and committed citizenship rooted in Christian humanism

Major Curriculum Learning Outcomes (MCLO)

MCLO1. Develop a global perspective for use in nation building

MCLO2. Use interdisciplinary, analytical, and sustainable approaches to solving business problems

MCLO3. Use interdisciplinary, analytical, and sustainable approaches in creating innovative business models

MCLO4. Develop technical proficiency in their areas of business concentration or major

4.1: Assess management functions of an organization in an actual or simulated environment

4.2: Make use of a systems thinking approach in analyzing and understanding business problem.

4.3: Formulate solutions to business problems using various quantitative techniques

4.4: Adopt a data driven approach with the help of information technology for effective managerial decision making

4.5: Apply soft skills related to working effectively in groups to achieve desired goals

MCLO5. Show an understanding of how to exercise personal moral and ethical standards

MCLO6. Demonstrate an understanding of transformative service leadership principles

Bachelor of Science in Management Engineering
Curriculum (2018 version)

FIRST YEAR

First Semester		Units	Second Semester		Units
ENLIT 12	Literature: Global Voices and Encounters	3	ENGL 11	Purposive Communication	3
FILI 11	Malayuning Komunikasyon	3	FILI 12	Panitikan ng Pilipinas	3
MATH 10	Mathematics in the Modern World	3	MATH 31.1	Mathematical Analysis I A	3
SocSc 11	Understanding the Self	3	MATH 31.2	Mathematical Analysis 1b	3
HISTO 11	Rizal and the Emergence of the Philippine Nation	3	NatSc 10.02	Natural Science, Laboratory	1
LAS 21	Principles of Management	3	DECSC 22/23	Introduction to Management Science/Introduction to Decision Science	3
INTACT 11	Introduction to Ateneo Culture and Traditions 11	(0)	NatSc 10.01	Natural Science, Lecture	3
PE 1 (2018)	Physical Education 1	(2)	THEO 11	Faith, Spirituality, and the Church	3
	TOTAL	18(2)	INTACT 12	Introduction to Ateneo Culture and Traditions 12	(0)
			PE 2 (2018)	Physical Education 2	(2)
				TOTAL	22(2)

SECOND YEAR

Intersession		Units
FLC 11	Foreign Language and Culture 11	3
ITMGT 25	Information Technology Application Programming	3
	TOTAL	6(0)

First Semester		Units	Second Semester		Units
MATH 31.3	Mathematical Analysis II	3	MATH 70.1	Numerical Methods for Science and Engineering	3
HISTO 12	Readings in Philippine History	3	PHILO 11	Philosophy: The Human Condition	3
SocSc 12	The Contemporary World	3	ECON 110	Principles of Economics	3
LLAW 113	Obligations and Contracts	3	ArtAp 10	Art Appreciation	3
ACCT 115	Financial Accounting	3	IE 1	Interdisciplinary Elective 1 - English	3
THEO 12	Theology of the Catholic Social Vision	3	ACCT 125	Managerial Accounting	3
STS 10	Science, Technology, and Society	3	LLAW 115	Law on Taxation	3
PE 3 (2018)	Physical Education 3	(2)	PE 4 (2018)	Physical Education 4	(2)
	TOTAL	21(2)		TOTAL	21(2)

THIRD YEAR

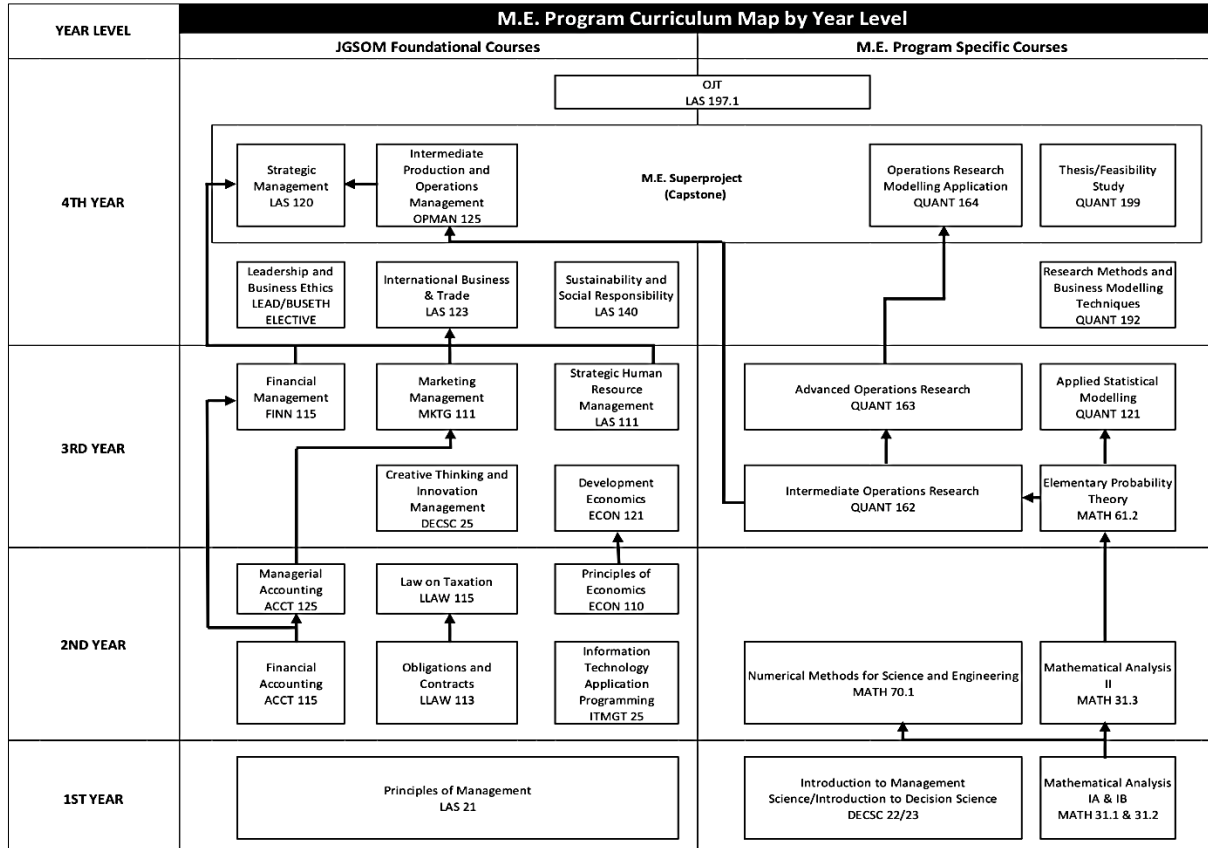| Intersession		Units
MATH 61.2	Elementary Probability Theory	3
IE 2	Interdisciplinary Elective 2	3
DECSC 25	Introduction to Creative Thinking and Innovation Management	3
	TOTAL	9(0)

First Semester		Units	Second Semester		Units
ECON 121	Development Economics	3	PHILO 12	Philosophy of Religion	3
PHILO 13	Ethics	3	ANALYTICS ELECTIVE	~	3
QUANT 162	Intermediate Operations Research	3	SocSc 13	The Economy, Society, and Sustainable Development	3
FINN 115	Financial Management	3	MKTG 111	Marketing Management	3
QUANT 121	Applied Statistical Modelling	3	LAS 111	Strategic Human Resource Management	3
THEO 13	A Theology of Marriage, Family, and Vocation	3	QUANT 163	Advanced Operations Research	3
NSTP 11	National Service Training Program 11	(3)	NSTP 12	National Service Training Program 12	(3)
	TOTAL	18(3)		TOTAL	18(3)

FOURTH YEAR

Intersession		Units
IE 3	Interdisciplinary Elective 3	3
LAS 123	International Business and Trade	3
QUANT 192	Research Methods and Business Modelling Techniques	3
	TOTAL	9(0)

First Semester		Units	Second Semester		Units
DLQ 10	Discerning Life Questions: Towards Leadership and Commitment	3	LAS 197.1	Work Practicum	6
SocSc 14	Politics, Governance, and Citizenship	3	LEAD/BUSETH ELECTIVE	~	3
QUANT 164	Operations Research Modelling Application	3	IE 4	Interdisciplinary Elective 4	3
LAS 140	Sustainability and Social Responsibility	3		TOTAL	12(0)
LAS 120	Strategic Management	3			
OPMAN 125	Intermediate Production and Operations Management	3			
QUANT 199	Thesis/Feasibility Study	3			
	TOTAL	21(0)			

Curriculum Map

YEAR LEVEL	M.E. Program Curriculum Map by Year Level	
	JGSOM Foundational Courses	**M.E. Program Specific Courses**
4TH YEAR	OJT LAS 197.1 — Strategic Management LAS 120 ← Intermediate Production and Operations Management OPMAN 125 — M.E. Superproject (Capstone)	Operations Research Modelling Application QUANT 164 — Thesis/Feasibility Study QUANT 199 — Research Methods and Business Modelling Techniques QUANT 192
	Leadership and Business Ethics LEAD/BUSETH ELECTIVE — International Business & Trade LAS 123 — Sustainability and Social Responsibility LAS 140	
3RD YEAR	Financial Management FINN 115 — Marketing Management MKTG 111 — Strategic Human Resource Management LAS 111 — Creative Thinking and Innovation Management DECSC 25 — Development Economics ECON 121	Advanced Operations Research QUANT 163 — Applied Statistical Modelling QUANT 121 — Intermediate Operations Research QUANT 162 — Elementary Probability Theory MATH 61.2
2ND YEAR	Managerial Accounting ACCT 125 — Law on Taxation LLAW 115 — Principles of Economics ECON 110 — Financial Accounting ACCT 115 — Obligations and Contracts LLAW 113 — Information Technology Application Programming ITMGT 25	Numerical Methods for Science and Engineering MATH 70.1 — Mathematical Analysis II MATH 31.3
1ST YEAR	Principles of Management LAS 21	Introduction to Management Science/Introduction to Decision Science DECSC 22/23 — Mathematical Analysis IA & IB MATH 31.1 & 31.2

Core Curriculum Programme Learning Outcomes (CCPLOs) to Ideal Ateneo Graduate

IDEAL ADMU GRADUATE	CCPLO$_1$	CCPLO$_2$	CCPLO$_3$	CCPLO$_4$	CCPLO$_5$	CCPLO$_6$	CCPLO$_7$	CCPLO$_8$
Develops the self and deepens self-awareness continuously (life-long learning) in the context of a community **(Conscience)**								
1. Exemplifies resourcefulness, creativity, respect and appreciation for rigor, scholarship, and love of learning		✔	✔	✔				
2. Manages the self in diverse contexts -- private and public, while being aware of strengths, limitations, and role in society					✔	✔		
3. Demonstrates the capacity to discern the rightness and goodness of one's thoughts and actions, guided by an inner sense of purpose and a deep awareness of one's gifts and weaknesses	✔				✔	✔	✔	✔
Engages the world while critically rooted in local sensibilities, local and global cultures, and social realities (cultural rootedness, global perspective) **(Compassion)**								
4. Critically evaluates how local history and conditions, contemporary events, and the Filipino heritage, in all its dimensions, shape the Filipino identity	✔	✔	✔	✔			✔	✔
5. Participates proactively and productively in national and global discourses, while remaining rooted in local culture and local social conditions	✔		✔	✔			✔	✔
6. Participates in a global exchange of experiences to contribute to national and global development	✔		✔	✔			✔	✔
7. Engages in productive dialogues with people from different cultures and different faiths	✔	✔	✔	✔			✔	✔

IDEAL ADMU GRADUATE	CCPLO$_1$	CCPLO$_2$	CCPLO$_3$	CCPLO$_4$	CCPLO$_5$	CCPLO$_6$	CCPLO$_7$	CCPLO$_8$
Uses the scientific spirit, the creative imagination, a continuing sustainable development perspective, and Christian values in becoming a leader and agent of change (academic excellence, sustainable development perspective) **(Competence)**								
8. Uses technical competencies, understanding of complexity, appreciation of local conditions, and global and sustainable development perspectives in analyzing contexts, solving problems, and making decisions	✓	✓	✓	✓		✓	✓	✓
9. Reflects and acts with sensitivity, reason, and faith; consistent with Christian values that respect and recognize diverse creeds and spiritualities	✓			✓	✓	✓	✓	✓
10. Leads with passion, a sense of purpose, and critical intelligence, innovates in one's area of expertise, and in the process, facilitates dialogue and resolution of conflicts, and engages others	✓		✓	✓	✓	✓	✓	✓
Develops a vision of personal and structural transformation, grounded in social awareness and in Ignatian spirituality that is strongly oriented to faith and justice (spiritual grounding, social involvement) **(Commitment)**								
11. Works with others to create a just and hopeful vision of the future, proceeding with integrity and conviction towards personal, structural, and institutional transformation grounded in Ignatian spirituality	✓		✓	✓	✓	✓	✓	✓
12. Translates one's sense of service to involvement in the renewal of the Church and of society, especially work with the marginalized, at the frontiers or the peripheries	✓		✓	✓	✓	✓	✓	✓
13. Reaches out with compassion to others as a result of a discerning spirit that comes from an awareness of one's own woundedness and the joy and hope that comes from a personal encounter with a merciful God	✓				✓	✓	✓	✓

Major Programme Learning Outcomes (MPLOs) and the Ideal Ateneo Graduate

IDEAL ADMU GRADUATE	MPLO$_1$	MPLO$_2$	MPLO$_3$	MPLO$_{4.1}$	MPLO$_{4.2}$	MPLO$_{4.3}$	MPLO$_{4.4}$	MPLO$_{4.5}$	MPLO$_5$	MPLO$_6$
Develops the self and deepens self-awareness continuously as a life-long learner in the context of a community (Conscience)										
1. Exemplifies resourcefulness, creativity, respect and appreciation for rigor, scholarship, and love of learning		✓	✓							
2. Manages the self in diverse contexts -- private and public, while being aware of strengths, limitations, and role in society								✓		
3. Demonstrates the capacity to discern the rightness and goodness of one's thoughts and actions, guided by an inner sense of purpose and a deep awareness of one's gifts and weaknesses									✓	✓
Engages the world while critically rooted in local sensibilities, local and global cultures, and social realities (Compassion)										
4. Critically evaluates how local history and conditions, contemporary events, and the Filipino heritage, in all its dimensions, shape the Filipino identity										
5. Participates proactively and productively in national and global discourses, while remaining rooted in local culture and local social conditions	✓									
6. Participates in a global exchange of experiences to contribute to national and global development	✓									
7. Engages in productive dialogues with people from different cultures and different faiths	✓									

IDEAL ADMU GRADUATE	$MPLO_1$	$MPLO_2$	$MPLO_3$	$MPLO_{4.1}$	$MPLO_{4.2}$	$MPLO_{4.3}$	$MPLO_{4.4}$	$MPLO_{4.5}$	$MPLO_5$	$MPLO_6$
Uses a scientific spirit, creative imagination, an integral and sustainable development perspective, and Christian values in becoming a leader and agent of change (Competence)										
8. Uses technical competencies, understanding of complexity, appreciation of local conditions, and global and sustainable development perspectives in analyzing contexts, solving problems, and making decisions		✓	✓	✓	✓	✓	✓			
9. Reflects and acts with sensitivity, reason, and faith; consistent with Christian values that respect and recognize diverse creeds and spiritualities									✓	
10. Leads with passion, a sense of purpose, and critical intelligence, innovates in one's area of expertise, and in the process, facilitates dialogue and resolution of conflicts, and engages others										✓
Develops a vision of personal and structural transformation, grounded in an awareness of the "signs of the times" and in Ignatian spirituality that is strongly oriented to faith and justice (Commitment)										
11. Works with others to create a just and hopeful vision of the future, proceeding with integrity and conviction towards personal, structural, and institutional transformation grounded in Ignatian spirituality									✓	
12. Translates one's sense of service to involvement in the renewal of the Church and of society, especially work with the marginalized, at the frontiers or the peripheries										
13. Reaches out with compassion to others as a result of a discerning spirit that comes from an awareness of one's own woundedness and the joy and hope that comes from a personal encounter with a merciful God										

Core Curriculum Programme Learning Outcomes (CCPLOs) to Major Programme Learning Outcomes (MPLOs)

	MPLO$_1$	MPLO$_2$	MPLO$_3$	MPLO$_{4.1}$	MPLO$_{4.2}$	MPLO$_{4.3}$	MPLO$_{4.4}$	MPLO$_{4.5}$	MPLO$_5$	MPLO6
CCPLO$_1$:								✓		
CCPLO$_2$:					✓	✓	✓			
CCPLO$_3$:		✓	✓	✓						
CCPLO$_4$:	✓	✓	✓						✓	
CCPLO$_5$:									✓	✓
CCPLO$_6$:									✓	
CCPLO$_7$:									✓	
CCPLO$_8$:									✓	✓

Course Learning Outcomes (CLOs) to Major Programme Learning Outcomes (MPLOs)

Course	Program-level Learning Outcomes									
	1	2	3	4.1	4.2	4.3	4.4	4.5	5	6
Freshman Year										
First Semester										
LAS 21 Principles of Management	✓			✓						✓
Second Semester										
DECSC 22/23 Introduction to Management Science				✓	✓	✓	✓			
MATH 31.1 Mathematical Analysis IA						✓				
MATH 31.2 Mathematical Analysis IB						✓				
Sophomore Year										
Intersession										
ITMGT 25 Information Technology Application Programming							✓			
First Semester										
ACCT 115 Financial Accounting				✓						
LLAW 113 Obligations and Contracts				✓					✓	
MATH 31.3 Mathematical Analysis II				✓						
Second Semester										
ACCT 125 Managerial Accounting				✓						
ECON 110 Principles of Economics	✓									
LLAW 115 Law on Taxation				✓					✓	
MATH 70.1 Numerical Methods for Science and Engineering										
Third Year										
Intersession										
DECSC 25 Creative Thinking and Innovation Management		✓	✓							✓
MATH 61.2 Elementary Probability Theory				✓						

Course	Program-level Learning Outcomes									
	1	2	3	4.1	4.2	4.3	4.4	4.5	5	6
Second Semester										
ECON 121 Development Economics		✓								
FINN 115 Financial Management		✓		✓						
QUANT 121 Applied Statistical Modeling				✓		✓	✓			
QUANT 162 Intermediate Operations Research					✓	✓	✓			
Analytics Elective					✓	✓	✓			
LAS 111 Strategic Human Resource Management		✓		✓				✓	✓	✓
MKTG 111 Marketing Management		✓		✓	✓	✓		✓		
QUANT 163 Advanced Operations Research					✓	✓	✓			
Fourth Year										
Intersession										
LAS 123 International Business and Trade	✓	✓	✓		✓					✓
QUANT 192 Research Methods and Business Modelling Techniques					✓	✓	✓			
First Semester										
LAS 120 Strategic Management	✓	✓	✓	✓	✓			✓	✓	✓
LAS 140 Sustainability and Social Responsibility	✓	✓	✓	✓	✓			✓	✓	✓
OPMAN 125 Intermediate Production Operations Management		✓	✓	✓	✓	✓		✓	✓	
QUANT 164 Operations Research Modelling Application		✓	✓	✓	✓	✓	✓	✓		
QUANT 199 Thesis/Feasiblity Study		✓	✓	✓	✓	✓	✓	✓		
Second Semester										
LAS 197.1 Work Practicum				✓	✓	✓	✓	✓		
Leadership Business Ethics Elective	✓								✓	✓

Course Offerings

ACCT 115
FINANCIAL ACCOUNTING
3 units

The course focuses on the basic concepts of Accounting, primarily on the accounting cycle using the double entry system which includes: (1) identification of accounting transactions including the use of T-Accounts; (2) preparation of financial statements; and (3) discussion on the revenue cycle, the expense cycle, the financing cycle and the investment cycle as they relate to the accounting system. Emphasis will be on the use of accounting information for making business decisions. Whenever possible, quantitative approaches to illustrating accounting concepts will be used.

ACCT 125
MANAGERIAL ACCOUNTING
3 units
Pre-requisite: ACCT 115

The course is designed as an introduction to managerial and cost accounting, with special emphasis on its application to managerial decision making for strategic purpose. At the end of the course, the students should have a clear understanding and appreciation of the concepts, tools, and techniques necessary to address financial and strategic control problems typically faced by analysts, controllers, and manager. Areas covered would include cost behavior, strategy in the context of managing financial decisions, and the nature of the interaction between strategic planning and managerial control.

DECSC 22
INTRODUCTION TO DECISION MAKING AND MANAGEMENT SCIENCE
3 units

The course introduces the student to rational decision making and the application of mathematical modeling to decision-making in various management contexts using a systems thinking approach. Students learn case analysis, simple model construction, spreadsheet modelling and visualization. The second half of the course focuses on quantitative decision making tools such as decision trees, multicriteria decision making, and simple financial models to name a few.

DECSC 23
INTRODUCTION TO DECISION MAKING AND DECISION SCIENCE
3 units

The course introduces the student to rational decision making using either a programmed strategy or a non-programmed in various management contexts through the lens of systems thinking. students learn case analysis, spreadsheet modelling and visualization. The second half of the course focuses on the various qualitative frameworks and tools used in decision making such as Root cause analysis, lshikawa Diagram, and Activity Mapping to name a few.

DECSC 25
INTRODUCTION TO CREATIVE THINKING AND INNOVATION MANAGEMENT
3 units

This course provides students with an understanding of how creativity and innovation can be facilitated and managed in a work setting. Students learn theoretical conceptualizations of creativity and innovation as well as practical applications involved in fostering creativity and innovation in the workplace. This course equips students with an understanding of the main issues in the management of innovation in general and an appreciation of the relevant skills needed to manage innovation at both strategic and operational levels.

ECON 110
PRINCIPLES OF ECONOMICS
3 units

A study of the behavior and performance of the economy, the roles and functions of the market, State, households and firms, and their interaction. Basic macro- and micro-economic concepts and methodology are discussed.

ECON 121
DEVELOPMENT ECONOMICS
3 units
Pre-requisite: ECON 110
The course focuses on the major issues and problems of economic growth and development faced by developing countries. The course begins with issues concerning the concept and measurement of development, the different theories of economic growth and development under various schools of thought. Then the course deals with various development issues and problems, such as agriculture and rural development; urbanization and industrialization, population and development, human capital, poverty and income distribution, capital and finance, trade, etc. Students write a major research paper describing and analyzing a specific development issue in the Philippines.

FINN 115
FINANCIAL MANAGEMENT
3 units
Pre-requisite: ACCT 125
The course emphasizes the understanding of finance theory and working knowledge of the financial environment in which the firm operates in order to develop appropriate financial strategies. Hence, it covers the whole range of basic finance concepts, economics and financial environment, financial statement analysis, risk analysis, the valuation process, capital budgeting, and capital structure. It will also cover financial analytical tools, cash flow management techniques & working capital management.

ITMGT 25
INFORMATION TECHNOLOGY APPLICATION PROGRAMMING
3 units
The course is designed as an introduction to programming, data manipulation, analysis and visualization using Python and the available modules and libraries.

LAS 21
PRINCIPLES OF MANAGEMENT
3 units
This course discusses a) the fundamental concepts and principles necessary for effective management and b) the knowledge and skills required of a manager using, as a basic framework, the nature and role of the management process and the task of planning, organizing, directing and controlling. Essentially, the course uses the concept that the process of management requires leading and directing an organization to effectively manage an organization's human, financial, material, and intangible resources.

LAS 111
STTRATEGIC HUMAN RESOURCE MANAGEMENT
3 units
This course introduces the strategic perspective to be taken in harnessing the human resources of an organization. It highlights the strategic roles which the Human Resource function and professionals play in creating value and delivering results to the organization. It also studies various individual and group behaviors and organizational practices to enhance the students' awareness of the managerial and leadership skills needed for the effective performance of the organization.

LAS 120
STRATEGIC MANAGEMENT
3 units
Pre-requisites: FINN 115, LAS 111, MKTG 111, and OPMAN 125
This course gives the big picture, integrating all other business courses—accounting, finance, marketing, production, operations, human resource, and information systems—as well as other non-business courses, taken in the course of your study program. Strategic management is used to chart the future directions of different types of organizations. The center of attention is the firm—the industry and the competitive environment in which it operates, its long-term direction and strategy, its resources and competitive capabilities, and its prospects for success.

LAS 123
INTERNATIONAL BUSINESS AND TRADE
3 units
Pre-requisite: MKTG 111
A study of the strategic aspects of businesses that operate across national borders, focusing on the international

while anchored on the local environment. Topics include realities of global competition, multinational firms in the ASEAN region and in the other developing countries, identification and assessment of the forces that shape the international economic environment, and the impact of information technology, electronic communication, and ecology.

LAS 140
SUSTAINABILITY AND
SOCIAL RESPONSIBILITY
3 units
A study of the challenges of integrating successful business practices with a concern for social, environmental, and ethical issues, providing opportunities for practicing ethical reasoning and thinking in real-life business situations.

LLAW 113
OBLIGATIONS AND CONTRACTS
3 units
This is an in-depth study of the nature, kinds, and effects of obligations and their extinguishments; contracts, their requisite, form, and interpretation; and defective contracts, quasi-contracts, natural obligations, and estoppel.

LLAW 115
LAW ON TAXATION
3 units
This course introduces the basic principles of taxation, specifically the common provisions on income tax, value added tax, excise tax, estate tax, documentary tax, capital gains tax, and donor's tax; rudimentary strategies in tax sheltering and minimization of tax assessments; and rudimentary tax calculations.

MATH 31.1
MATHEMATICAL ANALYSIS 1A
3 units
Pre-requisite: MATH 21, if required in the program
The course is the first of two on the calculus of functions of a single variable. The course starts with a discussion of functions and its graphs. Then it proceeds to a discussion of limits and continuity for functions of one variable, the derivative of a function of one variable, rules of differentiation, and its applications in solving optimization problems, in

sketching the graph of a function, and in simple root-finding algorithms. The course also places emphasis on the formal mathematical statements, proofs, and the applications of the definitions and theorems tackled.

MATH 31.2
MATHEMATICAL ANALYSIS 1B
3 units
Pre-requisite: MATH 31.1
The course is the second of two on the calculus of functions of a single variable. Its main focus the Riemann integral of functions, its connection with the derivative via the Fundamental Theorem of Calculus, and the applications of integrals to lengths, areas, volumes. Various applications to economics, physics, and biology and other areas of science will also be discussed. The course also places emphasis on the formal mathematical statements, proofs, and the applications of the definitions and theorems tackled.

MATH 31.3
MATHEMATICAL ANALYSIS II
3 units
Pre-requisites: MATH 31.2
This course is the third of a series of calculus courses. The major topics covered in this course are indeterminate forms and L'Hopital's Rule, improper integrals, sequences and series of numbers, power series and calculus of functions of two or more variables.

MATH 61.2
ELEMENTARY PROBABILITY
THEORY
3 units
This course is an introduction to the science and mathematics of chance with emphasis on theoretical probability and its diverse applications. Topics include basic probability theory, the random variable and its probability distribution function, mathematical expectation, special types of probability distributions, and moment-generating functions.

MATH 70. 1
NUMERICAL METHODS FOR
SCIENCE AND ENGINEERING
3 units
Pre-requisites: MATH 31.1, MATH 31.2
This is a course on numerical methods for science and engineering students. Topics include matrix operations, determinants of matrices, solutions of linear systems using matrices, and root-finding methods for nonlinear equations.

MKTG 111
MARKETING MANAGEMENT
3 units
Pre-requisite: ACCT 125
This course builds on the evolution of modern management toward a marketing-oriented view of business; stressing the underlying principle of the "marketing concept"; and integrating concepts in relation to consumer needs, marketing information, pricing, product development, distribution, selling, advertising, and promotions.

OPMAN 125
INTERMEDIATE PRODUCTION
OPERATIONS MANAGEMENT
3 units
Pre-requisites: QUANT 162
This course introduces the functional area of production management. The course begins with an introduction to the nature of production systems and then expounds on the various components of the production process, focusing on the use and application of quantitative techniques learned from previous courses.

QUANT 121
APPLIED STATISTICAL MODELING
3 units
Pre-requisite: MATH 61.2
This course discusses business research tools and approaches in capturing the behavior of observed phenomena or variables using statistical modeling techniques. Topics include formulation of the research problem, data analysis using inferential statistics, and multivariate modeling techniques with emphasis on model building and validation.

QUANT 162
INTERMEDIATE OPERATIONS
RESEARCH
3 units
Pre-requisites: MATH 61.2
This course is a quantitative approach to management that introduces the general quantitative approach, and the requisites of problems and situations where OR can be applied; presentations of pertinent models that can be used, starting with basic problems of linear programming.

QUANT 163
ADVANCED OPERATIONS
RESEARCH
3 units
Pre-requisite: QUANT 162
This course is a further study of operations research. Topics include other models that serve as examples of a different discipline and different solution approaches; certain theoretical derivations, with a focus on the reality, problems, controls, and other considerations for implementation of the determined solutions.

QUANT 164
OPERATIONS RESEARCH
MODELING APPLICATION
3 units
Pre-requisite: QUANT 163
This is a capstone course for the OR or quantitative management series. This course exposes students to more varied types of problems, to motivate them to be creative and extrapolative in deriving new models for consideration, and to strengthen their skills in controls and implementation.

QUANT 192
RESEARCH METHODS AND
BUSINESS MODELING TECHNIQUES
3 units
This course discusses the various approaches to undertaking business research and capturing the behavior of observed phenomena using statistical modeling techniques. Topics include formulation of the research problem, data collection, multivariate modeling techniques for data analysis, and interpretation. Emphasis is on model building and validation.

QUANT 199
THESIS/FEASIBILITY STUDY
3 units
This course is the thesis development
course of the M.E. students.