BIT



Bachelor of Science Program in

BUSINESS INFORMATION TECHNOLOGY

International Program



Bachelor of Science
in Business Information Technology
(International Program)

Faculty of Information Technology
King Mongkut's Institute of Technology Ladkrabang

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Bachelor of Science in Business Information Technology (International Program) Academic year 2015

Name of University	King Mongkut's Institute of Technology Ladkrabang
Faculty/College	Information Technology
Branch	Business Information Technology (International Program)

Section 1 General Information

1. Name of curriculum

Name in Thai	หลักสูตรวิทยาศาสตรบัณฑิต สาขาวิชาเทคโนโลยีสารสนเทศทางธุรกิจ (หลักสูตรนานาชาติ)
Name in English	Bachelor of Science in Business Information Technology (International Program)

2. Name of bachelor and branch

Full name in Thai	วิทยาศาสตรบัณฑิต (เทคโนโลยีสารสนเทศทางธุรกิจ)
Full name in English	Bachelor of Science (Business Information Technology)
Initials name in Thai	วท.บ. (เทคโนโลยีสารสนเทศทางธุรกิจ)
Initials name in English	B.Sc. (Business Information Technology)

3. Number of credits

126 Credits

4. Status of curriculum and approval

The new curriculum has been approved by education committee in September 2015 and will commence in August 2017

5. Future career

Graduates will have both IT knowledge and business skills, which can help them to be successful in their career. Graduates with these skill sets fulfil the needs of employers in both private and public sectors. Some career examples are:

1) Business IT analyst and designer
2) Information system developer
3) Business analyst
4) Entrepreneur
5) IT project manager
6) Professions in information system management
7) Professions in applied IT
8) IT project integrator
9) IT researcher

Section 2 Specifics of curriculum

1. Philosophy and objectives of curriculum

1.1 Curriculum

The bachelor of science program of business information technology (international program) is oriented toward undergraduate students who possess knowledge and skill in the field of business information technology in an international context.

1.2 Importance

The curriculum is an international program oriented toward the production of personnel who possess the knowledge and skill to implement business information technology in industry. The Business Information Technology (BIT) degree gives you foundation knowledge and skills relevant to IT as well as the skills you need for the practical application of IT to areas typically found in industry. The program also promotes skills in a foreign language for the development of digital economy in our country.

2. Requirements

The applicant must be a graduate from a high school/secondary school in Thailand or abroad and must have obtained (prior to the start of academic year) a qualification equivalent to Matthayom 6.

3. Expected learning outcomes

Students graduated from this course are expected to:

1) Have a sound knowledge and systematic understanding on key principles of IT and business
2) Be able to meet the needs of those contemplating a career involving a significant element of computing and those motivated by intellectual interests in applied computing and business administration

3) Possess and develop general critical, analytical and problem-solving skills that can be applied in a wide range of different business, computing and other settings
4) Be able to communicate efficiently in English
5) Be open-minded and understand cultural diversity
6) Be able to work creatively and systematically at the frontiers of knowledge with disciplined and morality

4. Name - surname of curriculum committee members

Name-surname	Degree /University / Year of graduation
1. Asst.Prof. Dr.Boonprasert Surakratanaskul	- B.Sc. (Computer Science) Silpakorn University, Bangkok, Thailand, 1998 - M.Sc. (Computer Science) Thammasat University, Bangkok, Thailand, 2003 - Ph.D. (Science and Technology) Tokai University, Japan, 2014
2. Dr.Nol Premasathian	- B.Eng (Computer Engineering) Chulalongkorn University,Bangkok, Thailand, 1995 - M.S. (Computer Engineering) University of Southern California, USA, 1998 - Ph.D (Computer Engineering) University of Louisiana at Lafayette, USA, 2002
3. Dr.Lapas Pradittasnee	- B.Eng. (Electrical Engineering) Thammasat University, 1998 - M.Eng. (Computer and Telecommunication Engineering) University of Wollongong, Australia, 2002 - Ph.D. (Information Technology) Queensland University of Technology, Australia, 2014

4. Dr.Supawan Annanab	- B.Eng. (Electrical Engineering) Kasetsart University, 2000 - M.Eng.(Information Engineering)King Mongkut's Instituteof Technology Ladkrabang, 2004 - Ph.D. (Electrical Engineering) University of Electro-Communication, Japan, 2008
5. Dr.Bundit Thanasopon	- B.Eng. (Computer Engineering) Chulalongkorn University, 2007 - M.Sc. (Knowledge and Information Systems Management) University of Southampton, UK, 2011 - Ph.D. (Management) University of Hull, UK, 2015

5. Name-surname of teachers in the Faculty of Information Technology

Name-surname	Degree /University / Year of graduation
1. Assoc.Prof. Dr.Chanboon Sathitwiriyawong	- B.Eng. (Electrical Engineering) Prince of Songkla University, 1986 - M.Sc. (Data Telecommunications and Networks) University of Salford, UK, 1993 - Ph.D. (Electrical and Electronic Engineering) Imperial College, University of London , London, UK, 1996
2. Assoc.Prof. Dr.Nopporn Chotikakamthorn	- B.Eng. (Electronic Engineering) King Mongkut's Instituteof Technology Ladkrabang, 1990 - Ph.D. (Electrical and Electronic Engineering) Imperial College, UK, 1996

Name-surname	Degree /University / Year of graduation
3. Asst.Prof. Dr.Akharin Khunkitti	- B.Eng. (Electronic Engineering) King Mongkut's Instituteof Technology Ladkrabang, 1990 - Ph.D. (Electrical and Electronic Engineering) Imperial College, UK, 1996
4. Assoc.Prof. Dr.Arit Thammano	- M.S. E.E. (Electrical Engineering) University of Missouri, Columbia, USA, 1992 - Ph.D. (Engineering Management) University of Missouri, Rolla, USA, 1995
5. Assoc.Prof. Dr.Worapoj Kreesuradej	- B.Eng. (Electrical Engineering) King Mongkut's Instituteof Technology Ladkraban, 1989 - M.S.E.E. (Electrical Engineering) Texas Tech University, USA, 1993 - Ph.D. (Electrical Engineering) Texas Tech University, USA, 1996
6. Assoc.Prof. Dr.Chotipat Pornavalai	- B.Eng. (Electronics Engineering) King Mongkut's Institute of Technology Ladkrabang (KMITL), Bangkok Thailand, 1992 - M.Sc. (Information Sciences) Tohoku University, Sendai, Japan, 1995 - Ph.D. (Information Sciences) Tohoku University, Sendai Japan, 1998
7. Asst.Prof. Dr.Pattarachai Lalitrojwong	- B.S. (Computer science) Thammasat University, 1991 - M.Sc. (Computer Science) Illinois Institute of Technology, USA, 1994 - Ph.D. (Computer Science) Illinois Institute of Technology, USA, 1999

Name-surname	Degree /University / Year of graduation
8. Assoc.Prof. Dr.Ponrudee Netisopakul	- M.Sc. (Computer Science) University of Southern California, USA 1993 - M.Sc. (Computer Information) University of Delaware, USA, 1998 - Ph.D. (Computer Information Science) Case Western Reserve University, USA, 2002
9. Miss.Srinual Nalintiphyvong	- M.Sc. (Information System Management) The National Institute of Development Administration (NIDA), Bangkok, Thailand, 2000
10. Asst.Prof. Dr.Olarn Wongwirat	- M.S. (Electrical Engineering) New Mexico State University, USA , 1995 - D.Eng. (Electronics) Tokai University, Japan, 2007
11. Mrs.Warune Buavirat	- B.Sc. (Statistics) Silpakorn University, 1996 - M.S. (Technology Management) Mercer University Atlanta, GA, USA, 1999 - M.S. (Bussiness Information Technology) Chulalongkorn University , 2007
12. Mr.Pattanapong Chantamit-O-Pas	- M.Sc. (Information Science) King Mongkot's Institute of Technology Ladkrabang (KMITL), Bangkok, Thailand
13. Asst.Prof. Dr.Sumet Prabhavat	- B.Eng. (Electrical Engineering) Chiang Mai University, 1993 - M.Eng. (Electrical Engineering) King Mongkut's Institute of Technology Ladkrabang, 2003 - Ph.D. (Information Sciences) Tohoku University, Japan, 2554

Name-surname	Degree /University / Year of graduation
14. Dr.Anuntapat Anuntachai	- B.S.Tech.Ed. (Electronics and Telecommunication Engineering) King Mongkut's Institute of Technology Ladkrabang, 1999 - M.S. (Science Education) King Mongkut's Institute of Technology Ladkrabang, 2003 - Ph.D. (Information Technology) King Mongkut's Institute of Technology Ladkrabang, 2016
15. Asst.Prof. Dr.Boonprasert Surakratanaskul	- B.Sc. (Computer Science) Silpakorn University, Bangkok, Thailand, 1998 - M.Sc. (Computer Science) Thammasat University, Bangkok, Thailand, 2003 - Ph.D. (Science and Technology) Tokai University, Japan, 2014
16. Dr.Lapas Pradittasnee	- Ph.D. (Information Technology) Queensland University of Technology, Australia, 1998 - M.Eng. (Computer and Telecommunication Engineering) Wollongong University, Australia, 2002 - B.Eng. (Electrical Engineering) Thammasart University, Bangkok, Thailand, 2014
17. Miss.Supannada Chotipant	- B.Eng. (Computer Engineering) King Mongkut's Institute of Technology Ladkrabang , 2001 - M.Eng. (Computer Engineering) King Mongkut's Institute of Technology Ladkrabang , 2005
18. Asst.Prof. Dr.Thanisa Numnonda	- B.Eng. (Control Engineering) King Mongkut's Institute of Technology Ladkrabang, 1993 - M.S. (Computer Engineering) University of Southern California, USA, 1997

Name-surname	Degree /University / Year of graduation
	- Ph.D. (Computer Science) (International Program), National Institute of Development Administration (NIDA), Bangkok Thailand, 2012
19. Asst.Prof. Dr.Natapon Pantuwong	- B.Eng. (Information Engineering) King Mongkut's Instituteof Technology Ladkrabang, 2000 - M.S. (Information Technology) King Mongkut's Instituteof Technology Ladkrabang, 2006 - Ph.D. (Computing and Communication Systems) The University of Tokyo, Japan, 2012
20. Asst.Prof. Dr.Somkiat Wangsiripitak	- B.Eng. (Electronics, Information, and Communication Engineering) Waseda University, Japan, 1996 - M.Eng. (Electronics, Information, and Communication Engineering Waseda University, Japan, 1998 - Ph.D. (Engineering Science) University of Oxford, UK, 2011
21. Dr.Nol Premasathian	- B.Eng (Computer Engineering) Chulalongkorn University, Bangkok, Thailand, 1995 - M.S. (Computer Engineering) University of Southern California, USA, 1998 - Ph.D (Computer Engineering) University of Louisiana at Lafayette, USA, 2002
22. Assoc.Prof. Dr.Sooksan Panichpapiboon	- B.S. (Electrical and Computer Engineering) Carnegie Mellon University, USA, 2000 - M.S. (Electrical and Computer Engineering) Carnegie Mellon University, USA, 2002 - Ph.D. (Electrical and Computer Engineering) Carnegie Mellon University, USA, 2006

Name-surname	Degree /University / Year of graduation
23. Asst.Prof. Dr.Panwit Tuwanut	- B.Eng. (Telecommunication Engineering) King Mongkut's Institute of Technology Ladkrabang, 1998 - M.S. (Electronic Engineering) Carnegie Mellon University, USA, 2002 - Ph.D.Eng. (Electrical Engineering) King Mongkut's Institute of Technology Ladkrabang, 2003
24. Dr.Supawan Annanab	- B.Eng. (Electronic Engineering) Kasetsart University, 2000 - M.Eng. (Information Engineering) King Mongkut's Institute of Technology Ladkrabang, 2004 - Ph.D. (Electrical Engineering) University of Electro-Communication, Japan, 2008
25. Asst.Prof. Dr.Kitsuchart Pasupa	- B.Eng. (Electrical Engineering) Sirindhorn International Institute of Technology, Thammasat University, 2003 - M.Sc. (Control Systems) University of Sheffield, UK, 2004 - Ph.D. (Automatic Control & Systems Engineering) University of Sheffield, UK, 2008
26. Asst.Prof. Dr.Kuntpong Woraratpanya	- B.Ind .Tech. (Computer Technology) King Mongkut's Institute of Technology Ladkrabang, 1992 - M.Eng.(Electrical Engineering) King Mongkut's Institute of Technology Ladkrabang, 1996 - Ph.D.(Electrical Engineering) King Mongkut's Institute of Technology Ladkrabang, 2004

Name-surname	Degree /University / Year of graduation
27. Asst.Prof. Dr.Supakit Nootyasakool	- B.S.Tech.Ed. (Electronic and Computer) King Mongkut's Institute of Technology Ladkrabang, 1999 - M.Eng.(Computer Engineering) King Mongkut's Institute of Technology Ladkrabang, 2003 - Ph.D.Eng (Electrical Engineering) King Mongkut's Institute of Technology Ladkrabang, 2011
28. Asst.Prof. Dr.Manop Phankokkruad	- B.Sc. (Chemistry) Khon Kaen University,1994 - M.S.Tech.Ed. (Computer Technology) King Mongkut's University of Technology North Bangkok, 2004 - Ph.D.(Computer Education) King Mongkut's University of Technology North , 2011
29. Asst.Prof. Dr.Teerapong Leelanupab	- B.Eng.(Computer Engineering) King Mongkut's Institute of Technology Ladkrabang, 2003 - M.Sc. (Software System Engineering) University of Glasgow, UK, 2007 - Ph.D. (Computing Science) University of Glasgow, UK, 2012
30. Dr.Kanokwan Atchariyachanvanich	- B.Sc. (Second-class Honours) Assumption University, 1999 - M.Sc. (Information Management), Asian Institute of Technology, 2001 - M.P.A (International Development), Tsinghua University, China, 2011 - Ph.D. (Informatics), The Graduate University for Advanced Studies, Japan, 2007

Name-surname	Degree /University / Year of graduation
31. Mr.Phitchaya-phong Tantikul	- B.Eng.(Computer Engineering) King Mongkut's University of Technology Thonburi, 2006 - M.Sc. (Computer Science) University of California Irvine, USA, 2011
32. Dr. Bundit Thanasopon	- B.Eng.(Computer Engineering) Chulalongkorn University, 2007 - M.Sc. (Knowledge and Information Systems Management) University of Southampton, UK, 2011 - Ph.D. (Management) University of Hull, UK, 2015
33. Dr.Sirion Witayakorn	- B.S. (Business Computer) Chiang Mai University, 2008 - M.Sc. (Computer Science) Brown University, Bloomington USA, 2011 - Ph.D. (Computer Science) University of North Carolina at Chapel Hill, USA, 2016
34. Dr.Pornsuree Jamsri	- B.Sc. (Information Technology) Assumption University , 1998 - M.A. (International Human Rights and Social Development) Mahidol University, 2006 - M.Sc. (Human Computer Interaction Design) Indiana University, Bloomington USA, 2008 - Ph.D. (Information Science & Learning Technologies) University of Missouri, Columbia USA, 2015
35. Dr. Samart Moodleah	- B.Eng. (Electronic Engineering) Rajamangala University of Technology, 2003 - M. Eng. (Information Engineering) King Mongkut's Institute of Technology Ladkrabang, 2007 - Ph.D. Technology (International Program) Thammasat University, 2016

Section 3 Education management system

1. Education system

Classroom education system

1.1 The semester system is used. One academic year is divided into two regular semesters, each with a duration of not less than 15 weeks, and may be open for summer.

1.2 Credit System

- Theoretical courses: lecture or discussion at least 15 hours per semester. 1 credit.
- Practical courses: at least 30 hours of practice or laboratory per semester. 1 credit.
- Research Projects or Ph.D. : not less than 45 hours per semester. 1 credit.
- Internship or field practice: not less than 45 hours per regular semester. 1 credit.

2. Course format

☑ 4-year bachelor's degree

3. Course duration

☑ Up to 8 academic years

4. Enrollment

Students must enroll in not less than 9 credits and not more than 22 credits in each regular semester for full-time courses. For non-full time courses, enrollment is not less than 6 credits and no more than 18 credits in each regular semester. Up to 10 credits may be taken in the summer semester. In cases other than those mentioned above, permission from the dean or the academic advisor is required.

5. Grades and graduation

Students wishing to graduate must meet the following requirements :

5.1 Students must complete the required number of 126 credits and earn a cumulative GPA of at least 2.00 out of 4.00.

5.2 Students must pass the criteria set by the Faculty Board with the approval of the Faculty of Information Technology.

* Students may choose to enroll in the Cooperative Education Program for 6 credits. The duration of the vocational training is 1 semester, which replaces the subjects in the Core Curriculum, i.e., Project 1, and Project 2. Faculty approval is required. In cooperative education, students may choose to study or do co-op work in a foreign country.

Elective courses 6 credits

Students must complete not less than 6 credits from the courses offered at King Mongkut's Institute of Technology Ladkrabang.

Cooperative education 6 credits

Students may enroll in the following co-op program. The length of the training period is 1 semester, replacing Project 1 and Project 2 with the approval of the faculty.

Note: Students must take preparation sessions before starting cooperative education for at least 30 hours.

06036046 Cooperative Education 6 (0-35-0)

06036047 Oversea Cooperative Education 6 (0-35-0)

Section 4 Study courses

1. Structure of syllabus

General education	**30**	**Credits**
English language group	12	Credits
Science and mathematics group	6	Credits
Humanities group	6	Credits
Social science group	6	Credits
Core subjects	**90**	**Credits**
Main subjects	9	Credits
Mathmatics and statistics of information technology	6	Credits
Basic information technology	3	Credits
Specializations	75	Credits
Organization and information system	21	Credits
Applied technology subjects	30	Credits
Technology and software	18	Credits
Computer system	6	Credits
Business information technology elective course	6	Credits
Cooperative education	6	Credits*
Cooparative education		
Oversea cooparative education		
Free elective course	**6**	**Credits**

2. Subjects

2.1 General education — 30 Credits

2.1.1 English language group — 12 Credits

06036081	Foundation English 1	3(3-0-6)
06036082	Foundation English 2	3(3-0-6)
06036083	Development of reading and writing skill in English	3(3-0-6)
06036084	English for professional presentation	3(3-0-6)

2.1.2 Science and mathematics group — 12 Credits

06036085	Introduction to mathmatical economics	3(3-0-6)
06036086	Philosophy of science	3(3-0-6)

2.1.3 Humanities group — 6 Credits

06036087	Report writing	3(3-0-6)
06036088	Creative thinking	3(3-0-6)

2.1.4 Social science group — 6 Credits

06036089	Entrepreneurship	3(3-0-6)
06036090	General business	3(3-0-6)

2.2 Core subjects — 90 Credits

2.2.1 Main subjects — 9 Credits

06036001	Information technology fundamentals	3(2-2-5)
06036002	Mathmatics for Information technology	3(3-0-6)
06036003	Probability and statistics	3(3-0-6)

2.2.2 Specializations		**75 Credits**
2.2.2.1 Organization and Information system		**21 Credits**
06036004	Management and organizations	3(3-0-6)
06036005	Financial accounting	3(3-0-6)
06036006	Management Information systems	3(3-0-6)
06036007	Information technology project management	3(3-0-6)
06036008	Digital business technology	3(3-0-6)
06036009	Economics of Information technology	3(3-0-6)
06036010	Business processes and enterprise resource planning	3(2-2-5)
2.2.2.2 Applied technology subjects		**30 Credits**
06036011	Database system concepts	3(2-2-5)
06036012	Human Interface design	3(3-0-6)
06036013	Web abd mutimedia technology	3(2-2-5)
06036014	Information system security and Information technology laws	3(3-0-6)
06036015	Digital marketing	3(2-2-5)
06036016	Business Intelligence and big data	3(3-0-6)
06036017	Enterprise systems	3(3-0-6)
06036018	Social media and social network	3(3-0-6)
06036019	Project 1	3(0-9-0)
06036020	Project 2	3(0-9-0)

2.2.2.3 Technology and software **18 Credits**

06036021	Problem solving in Information technology	3(2-2-5)
06036022	Computer programming	3(2-2-5)
06036023	Basic data structures and algorithms	3(3-0-6)
06036024	Business Information system analysis and design	3(3-0-6)
06036025	Object oriented technology	3(3-0-6)
06036026	Mobile application development	3(2-2-5)

2.2.2.4 Computer system **6 Credits**

06036027	Computer systems organization and operating system	3(3-0-6)
06036028	Introduction computer networks	3(3-0-6)

2.2.3 Business information technology elective course **6 Credits**

Please select from the following list

06036029	Requirement engineering	3(3-0-6)
06036030	Advanced database systems	3(3-0-6)
06036031	Database system maintenance and administration	3(2-2-5)
06036032	Computer graphics and animation	3(2-2-5)
06036033	Supply chain management and logistics	3(3-0-6)
06036034	Knowledge management	3(3-0-6)
06036035	Introduction to cloud technology	3(3-0-6)

06036036	Operations mangement	3(3-0-6)
06036037	Decision support systems	3(3-0-6)
06036038	Business performance management	3(3-0-6)
06036039	Machine learning	3(3-0-6)
06036040	Information technology governance	3(3-0-6)
06036041	Innovation and change managemant	3(3-0-6)
06036042	Special topics in Information technology 1	3(3-0-6)
06036043	Special topics in Information technology 2	3(3-0-6)
06036044	Special workshop in Information technology 1	3(2-2-5)
06036045	Special workshop in Information technology 2	3(2-2-5)

2.2.4 Cooperative education **6 Credits***

Students may choose to enroll in the following cooperative. The duration of the training is 1 semester, replacing Project 1 and Project 2 with the approval of the committee.

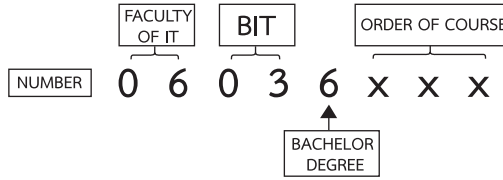
06036046	Cooperative Education	6(0-35-0)
06036037	Oversea Cooperative Education	6(0-35-0)

NOTIFICATION : Students much take preparation sessions before starting cooperative education for at least 30 hours.

2.3 Free elective course 6 Credits

Select from subjects offer by King Mongkut's Institute of Technology Ladkrabang not less than 6 credits.

3. The meaning of subject code



Rank	Number	Meaning
1 , 2	06	FACULTY OF INFORMATION TECHNOLOGY
3 , 4	03	INFORMATION TECHNILOGY FOR BUSINESS
5	6	BACHELOR OF SCIENCE DEGREE
6 - 8	-	ORDER OF COURSE

4. Education plan

Year 1st Semester 1

Code	Subject name	Credits (Lecture - Practice - Self Study)
06036001	INFORMATION TECHNOLOGY FUNDAMENTALS	3(2-2-5)
06036021	PROBLEM SOLVING IN INFORMATION TECHNOLOGY	3(2-2-5)
06036027	COMPUTER SYSTEMS ORGANIZATION AND OPERATING SYSTEM	3(3-0-6)
06036081	FOUNDATION ENGLISH 1	3(3-0-6)
06036083	DEVELOPMENT OF READING AND WRITING SKILL IN ENGLISH	3(3-0-6)
06036085	INTRODUCTION TO MATHEMATICAL ECONOMICS	3(3-0-6)
Total		**18**

Year 1st Semester 2

Code	Subject name	Credits (Lecture - Practice - Self Study)
06036002	MATHEMATICS FOR INFORMATION TECHNOLOGY	3(3-0-6)
06036004	MANAGEMENT AND ORGANIZATIONS	3(3-0-6)
06036022	COMPUTER PROGRAMMING	3(2-2-5)
06036082	FOUNDATION ENGLISH 2	3(3-0-6)
06036084	ENGLISH FOR PROFESSIONAL PRESENTATION	3(3-0-6)
06036090	GENERAL BUSINESS	3(3-0-6)
Total		**18**

Year 2nd Semester 1

Code	Subject name	Credits (Lecture - Practice - Self Study)
06036003	PROBABILITY AND STATISTICS	3(3-0-6)
06036005	FINANCIAL ACCOUNTING	3(3-0-6)
06036023	BASIC DATA STRUCTURES AND ALGORITHMS	3(3-0-6)

06036028	INTRODUCTION TO COMPUTER NETWORKS	3(3-0-6)
06036087	REPORT WRITING	3(3-0-6)
06036089	ENTREPRENEURSHIP	3(3-0-6)
Total		**18**

Year 2nd Semester 2

Code	Subject name	Credits (Lecture - Practice - Self Study)
06036006	MANAGEMENT INFORMATION SYSTEMS	3(3-0-6)
06036008	DIGITAL BUSINESS TECHNOLOGY	3(3-0-6)
06036011	DATABASE SYSTEM CONCEPTS	3(2-2-5)
06036012	HUMAN INTERFACE DESIGN	3(3-0-6)
06036013	WEB AND MULTIMEDIA TECHNOLOGY	3(2-2-5)
06036024	BUSINESS INFORMATION SYSTEM ANALYSIS AND DESIGN	3(3-0-6)
Total		**18**

Year 3rd Semester 1

Code	Subject name	Credits (Lecture - Practice - Self Study)
06036007	INFORMATION TECHNOLOGY PROJECT MANAGEMENT	3(3-0-6)
06036009	ECONOMICS OF INFORMATION TECHNOLOGY	3(3-0-6)
06036010	BUSINESS PROCESSES AND ENTERPRISE RESOURCE PLANNING	3(2-2-5)
06036014	INFORMATION SYSTEM SECURITY AND IT LAWS	3(3-0-6)
06036025	OBJECT ORIENTED TECHNOLOGY	3(3-0-6)
060360xx	ELECTIVE COURSE IN INFORMATION TECHNOLOGY 1	3(3-0-6) or 3(2-2-5)
Total		**18**

Year 3rd Semester 2

Code	Subject name	Credits (Lecture - Practice - Self Study)
06036015	DIGITAL MARKETING	3(2-2-5)
06036016	BUSINESS INTELLIGENCE AND BIG DATA	3(3-0-6)
06036017	ENTERPRISE SYSTEMS	3(3-0-6)

06036018	SOCIAL MEDIA AND SOCIAL NETWORK	3(3-0-6)
06036026	MOBILE APPLICATION DEVELOPMENT	3(2-2-5)
060360xx	ELECTIVE COURSE IN INFORMATION TECHNOLOGY 2	3(3-0-6) or 3(2-2-5)
Total		**18**

Year 4th Semester 1

Code	Subject name	Credits (Lecture - Practice - Self Study)
06036046 OR 06036047	COOPERATIVE EDUCATION OR OVERSEA COOPERATIVE EDUCATION	6(0-35-0) 6(0-35-0)
Total		**6**

Year 4th Semester 2

Code	Subject name	Credits (Lecture - Practice - Self Study)
06036086	PHILOSOPHY OF SCIENCE	3(3-0-6)
06036088	CREATIVE THINKING	3(3-0-6)
xxxxxxxx	FREE ELECTIVE COURSE 1	3(3-0-6)
xxxxxxxx	FREE ELECTIVE COURSE 2	3(3-0-6)
Total		**12**

Year 4th Semester 1

(Without cooperative education)

Code	Subject name	CreditsS (Lecture - Practice - Self Study)
06036019	PROJECT 1	3(0-9-0)
06036086	PHILOSOPHY OF SCIENCE	3(3-0-6)
xxxxxxxx	FREE ELECTIVE COURSE 1	3(3-0-6)
Total		9

Year 4th Semester 2

(Without cooperative education)

Code	Subject name	Credits (Lecture - Practice - Self Study)
06036020	PROJECT 2	3(0-9-0)
06036088	CREATIVE THINKING	3(3-0-6)
xxxxxxxx	FREE ELECTIVE COURSE 2	3(3-0-6)
Total		9

Total all in education plan	126	Credits

5. Subject description

06036001 INFORMATION TECHNOLOGY FUNDAMENTALS 3(2-2-5)

PREREQUISITE : NONE

Evolution of information technology; components of computer systems; data processing systems; hardware and software; overview of operating system; data and data representation; data management; basic concepts for programming; database technology; data communication; computer network systems and the Internet; ethical and social issues in information technology.

06036002 MATHEMATICS FOR INFORMATION TECHNOLOGY 3(3-0-6)

PREREQUISITE : NONE

Limit and continuity; derivative of functions; higher derivatives; applications of derivative; maxima and minima of functions; integration and techniques of integration; applications of integration; functions of two variables; partial derivatives; linear algebra; matrices and determinants; system of linear equations and its solutions; vector spaces; linear transformations; matrix transformation; orthogonal matrix

06036003 PROBABILITY AND STATISTICS 3(3-0-6)

PREREQUISITE : NONE

Probability and random variables; some discrete and continuous probability distributions; functions of random variables; sampling distribution; estimation and test of hypotheses; simple and multiple linear regression and correlation analyses.

06036004 MANAGEMENT AND ORGANIZATIONS 3(3-0-6)

PREREQUISITE : NONE

Theory and practice of organizational management; Leadership; business strategy development; organizational behavior; organizational structure; human resource management; organizational change; organization in digital age.

06036005 FINANCIAL ACCOUNTING 3(3-0-6)

PREREQUISITE : NONE

Theory and practice of accounting; procedures in the accounting cycle; use of journals and ledgers; adjusting and closing entries; creating financial statements.

06036006 MANAGEMENT INFORMATION SYSTEMS 3(3-0-6)

PREREQUISITE : 06036090 GENERAL BUSINESS

Roles of information technology in business; information system concepts and management; IT strategy; strategic information technology planning; aligning IT with business strategy; information system acquisition; functional information systems; enterprise systems; trends in applications of information technology; ethical and social issues.

06036007 INFORMATION TECHNOLOGY PROJECT MANAGEMENT 3(3-0-6)

PREREQUISITE : NONE

Nature and life cycle of information technology (IT) projects; project feasibility; project selection techniques; project management body of knowledge; team management; project scope management; project estimation; project scheduling; quality management; change management; project controlling; project evaluation.

06036008 DIGITAL BUSINESS TECHNOLOGY **3(3-0-6)**

PREREQUISITE : NONE

Cloud computing; mobile; big data; web services and social network; underlying technology and approaches; current practices and future trends; business impact.

06036009 ECONOMICS OF INFORMATION TECHNOLOGY **3(3-0-6)**

PREREQUISITE : NONE

Fundamental economic principles; economic theories and concepts relating to innovation process and technical change; information technology market; evaluation of information technology investment; implications of information technology on economic and industrial development; employment; business growth; productivity; technology transfer; research and development; social transformation of information age.

06036010 BUSINESS PROCESSES AND ENTERPRISE RESOURCE PLANNING **3(2-2-5)**

PREREQUISITE : 06036006 MANAGEMENT INFORMATION SYSTEMS

Key business processes in organization; accounting process, procurement process, inventory and warehouse management process, production process, and order fulfilment process; Integrate business processes with enterprise resource planning (ERP); concepts of ERP; learning practical skills on how to make business processes run on standard application of ERP.

06036011 DATABASE SYSTEM CONCEPTS **3(2-2-5)**

PREREQUISITE : NONE

Introduction to the database and DBMS; file systems; database systems and environment; types of databases; data models; relational database model; tables; keys; integrity rules; relational algebra; data dictionary; entity relationship model; normalization; SQL; Introduction to transaction management and database administration; data modeling and database language laboratory.

06036012 HUMAN INTERFACE DESIGNS **3(3-0-6)**

PREREQUISITE : NONE

Human factors and roles in user interface design; human-machine interface technology (e.g. text entry devices; positioning and pointing devices; speech technology and VR devices); interaction models; interaction styles (e.g. command line-driven interface, menu-driven interface, natural language interface); hypertext and hypermedia; design process and tools; design principles and guidelines; design evaluation techniques; design issues for modern operating systems and mobile computing devices.

06036013 WEB AND MULTIMEDIA TECHNOLOGY **3(2-2-5)**

PREREQUISITE : NONE

Multimedia systems; types for multimedia data; creation of multimedia; multimedia data processing; multimedia data transmission; multimedia file format; multimedia data storage devices; multimedia data presentation; web-based multimedia technology; applications of multimedia; multimedia and web authoring tools.

06036014 INFORMATION SYSTEM SECURITY AND INFORMATION TECHNOLOGY LAWS **3(3-0-6)**

PREREQUISITE : NONE

Information system security; threats; vulnerabilities; risk assessment and analysis; information system security policies; information system security management; cryptography; authentication; access control; computer crime; computer forensic and defense; network security; Intellectual properties; ownership of information; copyright; patent; and trademark laws; trade secret; organizational culture; professionalism; codes of professional conduct; ethical problems associated with Information Technology; privacy and confidentiality; software piracy.

06036015 DIGITAL MARKETING **3(2-2-5)**

PREREQUISITE : NONE

Contemporary business and marketing; online and offline advertising in digital world, e.g., television, display, search, video, and mobile advertising, etc.; digital advertising and media management; marketing communications campaign and evaluation planning; ethical marketing practice; concepts of social responsibility and sustainability; brand strategy; design principles of web and mobile application for digital marketing; design thinking in marketing; social media for brand management and advertising.

06036016 BUSINESS INTELLIGENCE AND BIG DATA **3(3-0-6)**

PREREQUISITE : NONE

Business intelligence (BI) and its components; Big data and big data Analytics, focusing on technologies, which allow business users to gather, store, access and analyze big data to improve the business decision making capabilities; characteristics of big data: volume, variety,

velocity, veracity and value; Data Warehousing; data mining (big data analytics); analytical reporting; data visualization.

06036017 ENTERPRISE SYSTEMS **3(3-0-6)**

PREREQUISITE : NONE

A foundation understanding of enterprise systems and how these systems fit into today's business operations; Enterprise Resource Planning (ERP) systems; Supply Chain Management (SCM) systems; Customer Relationship Management (CRM) systems; Business Analytics; Focus on both business management practice and technology.

06036018 SOCIAL MEDIA AND SOCIAL NETWORK **3(3-0-6)**

PREREQUISITE : NONE

Theoretical and applied approaches of social media in organizations; Understand how people and organizations adapt social interaction to the capabilities provided by social media; the advantages and disadvantages associated with social media; social media and business; introduction to main social media networks; basic network concepts; psychological foundations of social networks; social network analysis.

06036019 PROJECT 1 **3(0-9-0)**

PREREQUISITE : NONE

Study or research of interesting current topics in information technology undertaking a work project based by applying the theoretical aspects of the information technology studies under the supervision of a faculty member to be able to present a project proposal and elementary result from practical solving or academic analysis.

06036020 PROJECT 2 **3(0-9-0)**

PREREQUISITE : 06036019 PROJECT 1

Study or research of interesting current topics in information technology undertaking a work project based by applying the theoretical aspects of the information technology studies under the supervision of a faculty member to be able to present a complete result of the proposed topic and study as continued from project 1

06036021 PROBLEM SOLVING IN INFORMATION TECHNOLOGY **3(2-2-5)**

PREREQUISITE : NONE

Problem solving strategies and concepts; algorithmic thinking; flowchart; concepts and introduction to computer programming.

06036022 COMPUTER PROGRAMMING **3(2-2-5)**

PREREQUISITE : NONE

Problem analysis and solving process; flowchart; introduction to programming languages; concepts of C programming language; problem solving using C; data and data types in C; assignment statement and basic functions; conditional and loop structures; modular programming; general structure of a C function; working with functions; arrays and pointers; user-defined types; file I/O.

06036023 BASIC DATA STRUCTURES AND ALGORITHMS **3(3-0-6)**

PREREQUISITE : NONE

Data types; data structures and abstract data types; basic data structures; (e.g. list, stack and queue) dynamic data structures; terminology of trees; binary trees; binary search trees; AVL trees; graph; time and space analysis of programs; sorting and searching algorithms; greedy

algorithm; divide-and-conquer algorithms; graph algorithms; and dynamic programming.

06036024 BUSINESS INFORMATION SYSTEM ANALYSIS AND DESIGN **3(3-0-6)**

PREREQUISITE : NONE

Tools and methodologies for business information systems development; current concepts of business information system analysis and design; system analysis model; system design models; the importance of control process during the planning, analysis, design, implementation, and testing phases of business information systems to solve business management problems; case studies.

06036025 OBJECT-ORIENTED TECHNOLOGY **3(3-0-6)**

PREREQUISITE : NONE

Object-oriented program design and development; encapsulation; classes and objects; methods and message passing; inheritance and polymorphism; graphical user interface development and event handling; data structures: arrays and collections; exception handling; input/output classes; threads.

06036026 MOBILE APPLICATION DEVELOPMENT **3(2-2-5)**

PREREQUISITE : NONE

Introduction to technology and the programming of applications for mobile computing including devices such as smart phones; pads and tablets; developing mobile applications and using device emulators for coding and testing.

06036027 COMPUTER SYSTEMS ORGANIZATION AND OPERATING SYSTEM **3(3-0-6)**

PREREQUISITE : NONE

Computer evolution; computer components, CPU, memory, I/O; operating system; process; process synchronization; process scheduling; memory management; virtual memory; file and input/output management.

06036028 INTRODUCTION COMPUTER NETWORKS **3(3-0-6)**

PREREQUISITE : NONE

Basic concepts of computer network; fundamentals of data communications, such as transmission media, encoding, modulation, and multiplexing; circuit and packet switching; computer networking devices; OSI reference model and TCP/IP protocol stack; application layer protocols such as HTTP, FTP, SMTP, POP3, and DNS; Transmission layer protocols such as TCP and UDP; IPv4 addressing; VLSM; CIDR; ICMP; DHCP and static routing; Local Area Network (LAN); Ethernet; ARP; Spanning Tree protocol; medium access control; and introduction to Wide Area Network (WAN).

06036029 REQUIREMENT ENGINEERING **3(3-0-6)**

PREREQUISITE : NONE

Apply requirements management techniques; analyze the problem; understand stakeholder needs; capture and document requirements with use-case modeling; describe a documentation hierarchy and standards for defining levels of requirements; define the system; manage scope; Refine the system definition; use requirement attributes and traceability; manage changing requirements; use requirements to drive ongoing design; test; and user documentation activities.

06036030 ADVANCED DATABASE SYSTEMS 3(3-0-6)

PREREQUISITE : 06036011 DATABASE SYSTEM CONCEPTS

Advanced database design and data protection; conceptual schema models; conceptual schemas/logical data structures mapping; crash recovery using various log-based techniques and shadow paging; buffer management; various concurrency control techniques; transaction failure recovery; deadlock handling; semi-structured data and XML; query processing; query optimization; distributed database; object-oriented databases.

06036031 DATABASE SYSTEM MAINTENANCE AND ADMINISTRATION 3(2-2-5)

PREREQUISITE : 06036011 DATABASE SYSTEM CONCEPTS

Creating views and sequence; set operators; creating PL/SQL; declaring variables; executable statements; control structures; composite data types; explicit cursors; handling exceptions; procedures and functions; managing subprograms; packages; manipulating large objects; triggers; Database server architecture; client database management; creating databases; data dictionary and dynamic performance views; control files; redo log files; maintaining tablespaces and data files; storage structures; undo data; maintaining tables; maintaining indexes; data integrity; managing users; privileges and roles; loading data into a database; database backup and recovery; import and export utility.

06036032 COMPUTER GRAPHICS AND ANIMATION 3(2-2-5)

PREREQUISITE : NONE

Raster and vector graphics; 2D and 3D object representations; 3D rendering pipeline; 3D projection and transformation techniques; 3D lighting and shading techniques; 3D texture mapping techniques; 3D rendering techniques; basic 2D and 3D computer animation concepts;

post production techniques; graphic processor units; standard computer graphic application programming interfaces; programming and scripting languages for interactive 3D computer graphics; 3D computer graphic modeling and rendering software; creating basic interactive 3D computer graphic applications; using 3D computer graphics software.

06036033 SUPPLY CHAIN MANAGEMENT AND LOGISTICS 3(3-0-6)

PREREQUISITE : NONE

The need for supply chain integration and the challenges of managing complex interfaces; the systems approach to the planning, analysis, design, development, and evaluation of SCM; activities that lead to integration of information and material flows across multiple organizations in the supply chain including global supply chains, roles of suppliers, internal process, and distribution channels.

06036033 SUPPLY CHAIN MANAGEMENT AND LOGISTICS 3(3-0-6)

PREREQUISITE : NONE

The need for supply chain integration and the challenges of managing complex interfaces; the systems approach to the planning, analysis, design, development, and evaluation of SCM; activities that lead to integration of information and material flows across multiple organizations in the supply chain including global supply chains, roles of suppliers, internal process, and distribution channels.

06036034 KNOWLEDGE MANAGEMENT 3(3-0-6)

PREREQUISITE : NONE

Hierarchy of data, information, and knowledge; knowledge representation, e.g., predicate logic, fuzzy logic, semantic network, frames and objects, ontologies and semantic web; expert systems; forward and backward chaining rules; unification and conflict resolution; case-based reasoning; constraint-based reasoning; artificial neural network; machine learning; statistical learning techniques; research topics in data and knowledge engineering.

06036035 INTRODUCTION TO CLOUD TECHNOLOGY 3(3-0-6)

PREREQUISITE : NONE

Introduction to cloud architecture; cloud delivery models; cloud deployment models; Cloud-Enabling technology; cloud management; cloud security; and business cost metrics and pricing models for cloud services

06036036 OPERATIONS MANAGEMENT 3(3-0-6)

PREREQUISIT : 06036090 GENERAL BUSINESS

Overview of operations management; linear programming; integer programming; location planning; facility layout; inventory management; quality management; project management; forecasting.

06036037 DECISION SUPPORT SYSTEMS **3(3-0-6)**

PREREQUISIT : 06036006 MANAGEMENT INFORMATION SYSTEMS

Introduction to decision support systems; decision making process; characteristics and components of decision support systems; modeling and analysis; business intelligence; business analytics; group decision support systems; artificial intelligence and expert systems; intelligent systems; decision support system development; integration and trend of decision support systems.

06036038 BUSINESS PERFORMANCE MANAGEMENT **3(3-0-6)**

PREREQUISITE : NONE

Strategic Planning; defining business performance and choosing a measurement approach; performance management process; performance planning, performance execution, performance assessment, performance review; introduction of performance management system; performance management best practices.

06036039 MACHINE LEARNING **3(3-0-6)**

PREREQUISITE : NONE

Basic of machine learning; supervised learning; linear regression; least squares; logistic regression; neural network; k-nearest neighbor; support vector machine; unsupervised learning; k-mean clustering; expectation-maximization algorithm; dimensionality reduction; principal component analysis; cross-validation; evaluating estimator performance; machine learning applications.

06036040 INFORMATION TECHNOLOGY GOVERNANCE 3(3-0-6)

PREREQUISITE : NONE

The importance of effective IT organization management; IT organization and chief information officer (CIO); frameworks to support effective IT governance; IT governance standards; IT/business alignment; IT governance measurement and evaluation; IT operations and infrastructure management; IT problem management; application management; IT human resources; vendor selection and management; IT budgeting and cost management; effective decision making and risk management; demand management and project prioritization.

06036041 INNOVATION AND CHANGE MANAGEMENT 3(3-0-6)

PREREQUISITE : NONE

Organization environment; responding to change; creativity and opportunity; organizational change; process innovation; product innovation; quality and performance excellence; change management process; development for change in organizational level and individual.

06036042 INNOVATION AND CHANGE MANAGEMENT 3(3-0-6)

PREREQUISITE : NONE

This course will cover recent advances and other topics of interest selected by the instructors in the field of Information Technology.

06036043 SPECIAL TOPICS IN INFORMATION TECHNOLOGY 2 3(3-0-6)

PREREQUISITE : NONE

This course will cover recent advances and other topics of interest selected by the instructors in the field of Information Technology.

06036044 SPECIAL WORKSHOP IN INFORMATION TECHNOLOGY 1 **3(2-2-5)**

PREREQUISITE : NONE

This course focuses on selected topics and practical workshop in Information Technology, which selected by a lecturer.

06036045 SPECIAL WORKSHOP IN INFORMATION TECHNOLOGY 2 **3(2-2-5)**

PREREQUISITE : NONE

This course focuses on selected topics and practical workshop in Information Technology, which selected by a lecturer.

06036046 COOPERATIVE EDUCATION **6(0-35-0)**

PREREQUISITE: NONE

Cooperative Education is a collaborated education program between educational institutes and enterprises that allows students to apply their knowledge in the classroom with practical work experience. The student's project work must be approved by the faculty and the enterprises. After completion, students need to present their works to the examination committee.

06036047 OVERSEA COOPERATIVE EDUCATION **6(0-35-0)**

PREREQUISITE : NONE

Cooperative education is a collaborated education program between educational institutes and enterprises that allows students to apply their knowledge in the classroom with practical work experience. The student's project work must be approved by the faculty and the enterprises. After completion, students need to present their works to the examination committee.

06036081 FOUNDATION ENGLISH 1 **3(3-0-6)**

PREREQUISITE : NONE

A practice in four language skills related to daily life activities, including the use of dictionary as well as the study of vocabulary, language and expressions in reading passages selected from printed materials such as journals, newspapers, etc as well as a revision of grammatical structures and social functions of language in various situations.

06036082 FOUNDATION ENGLISH 2 **3(3-0-6)**

PREREQUISITE : NONE

A practice in four language skills for academic purposes, for example, using references, reading non-verbal texts, including summary writing, listening and discussion, grammar revision and further practice in social language.

06036083 DEVELOPMENT OF READING AND WRITING SKILLS IN ENGLISH **3(3-0-6)**

PREREQUISITE : NONE

A study of effective reading techniques in English relevant to reading for the main idea, newspaper reading, reading for translation, writing skills development in English focusing on accuracy in both language forms and grammar beneficial to careers and academic purposes such as writing application letters, filling application forms, writing reports, etc.

06036084 ENGLISH FOR PROFESSIONAL PRESENTATION 3(3-0-6)

PREREQUISITE : NONE

A study and practice of communication and presentation skills with an emphasis on practical preparation and training of all theoretically gained knowledge such as the ability to present self-confidently and professionally, the ability to manage verbal and nonverbal parts of the speech, including the ability to deal with stage-fright and work with the audience.

06036085 INTRODUCTION TO MATHEMATICAL ECONOMICS 3(3-0-6)

PREREQUISITE : NONE

A Study of Mathematics tools; Matrix, Solution of system of equations, Cramer's rule, Derivative of function, Quadratics functions, Maximum and Minimum value, Partial derivative, and integration. Application of Mathematics to solve basic Economics and Commerce problems in daily life such as, finding equilibrium point of price and quantity of product on the markets, Input Output Analysis, Transition matrix, Demand and Supply function, Cost and Revenue function, Elasticity function.

06036086 PHILOSOPHY OF SCIENCE 3(3-0-6)

PREREQUISITE : NONE

The course provides a study of the thing we call "science", together with its nature and methodology. The topics cover the meaning of science, reality, the nature of scientific observations, scientific theories and their discovery and formation, scientific explanations and predictions, the problem of induction, scientific rationality, the nature of scientific knowledge, concepts of truth, hypothesis testing, hypothesis confirmation, hypothesis falsification, logic of scientific method, and scientific progress.

06036087 REPORT WRITING **3(3-0-6)**

PREREQUISITE : NONE

A study of formats and procedures of report writing as well as a practice of various report writing such as news reports, minutes, academic papers etc.

06036088 CREATIVE THINKING **3(3-0-6)**

PREREQUISITE : NONE

This course explores approaches to "How might we proceed when confronted by problems, situations too ambiguous, complex, or messy or impossible to be addressed directly through logical strategies?" It seeks to increase the participants' understanding of creativity, to improve their creative problem-solving skills and to enhance their ability to promote these skills in others, in a variety of educational settings.

Students participate in activities designed to help develop their own creativity, and discuss the creative process from various theoretical perspectives. Readings are on such topics as creative individuals, environments that tend to enhance creative functioning, and related educational issues. Discussions with artists, scientists and others particularly involved in the creative process focus on their techniques, and on ways in which creativity can be nurtured.

06036089 ENTREPRENEURSHIP **3(3-0-6)**

PREREQUISITE : NONE

A study of successful business entrepreneurs, characters of successful entrepreneur, categories of entrepreneurs, business set-up, business plan writing, operating strategies, modern techniques in business management and case studies of successful entrepreneurship.

06036090 GENERAL BUSINESS **3(3-0-6)**

PREREQUISITE : NONE

A study of the meaning of administration processes focusing on business, business resources and allocation, types of business organization, organizing, human relations, leadership, motivation and the implementation of basic principles and general knowledge of marketing, personnel management, finance and accounting in the business.









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