Thai-Nichi International College

Bachelor of Science in Data Science and Artificial Intelligence
(Improved International Program) (Academic Year 2023)

Name of Program (Curriculum)

English   **Bachelor of Science in Data Science and Artificial Intelligence**

Name of Degree

English   Full name   Bachelor of Science (Data Science and Artificial Intelligence)

Abbreviated name   B.Sc. (Data Science and Artificial Intelligence)

Program Objectives

Data Science and Artificial Intelligence program is a multidisciplinary field of study, combining the science of statistics and computing with the art of visualization to make well-informed and strategic decisions in business domains. Artificial Intelligence helps provide a more comprehensive data analytics strategy by automating machines to perform tasks that typically require human intelligence.

Our DSA program aims to produce graduates of the next generation who has knowledge foundation and skill sets that can successfully transform vital industries ranging from manufacturing to transportation, finance to digital investment, pharmacy to health care or even agriculture to food and beverage. Students of the program will learn the best practices that can transform data to insight, predict the future trends, and automate the process optimization to drive the business performance and growth.

Strengths of the Program

1. 1st of its kind at undergraduate level
2.   Multi-disciplinary fields of study, combining mathematics, statistics, computer science and business
3.   Focus on industries that will be main engines of digital economy under Thailand 4.0 policy
4.   Study both Japanese and English languages
5.   Opportunities in scholarship

Teaching Methodology

- Monozukuri with problem-based learning projects
- Integrated approach with practical hands-on lessons.
- Teach with up-to-date theories and technologies.
- Learn with real industrial platforms and software.
- Apply knowledge to solve business problems for startup and data-driven companies.

Opportunities after Graduation

1. Data Scientist
2. Data Analyst and Modeler
3. Data Architect
4. Machine Learning Engineer
5. Big Data Engineer
6. AI Developer and Engineer
7. Business Intelligence (BI) Developer and Analyst
8. Business Intelligence Solutions Architect
9. Database Developer and Administrator
10. Business Analytics Specialist
11. Data Analytics Consultant
12. Data-driven Product Officer
13. AI Solution Officer
14. Startup/Entrepreneur/Business Owner

Curriculum Structure

☐ General Education	no less than	33	Credits
Humanities and Social Sciences		3	Credits
Science and mathematics		6	Credits
Languages		24	Credits
☐ Specialized Courses		92	Credits
☐ Core courses		35	Credits
☐ Major courses		35	Credits
☐ Minor courses			Credits

Practice Courses

- Cooperative study	7	Credits
- Project and practices	4	Credits

Major Elective Courses

- Cooperative study	15	Credits
- Project and practices	18	Credits

☐ Free Elective Courses	no less than	6	Credits
Total	no less than	131	Credits

1. Study Plan

Study Plan for Cooperative Students (Recommended)

Year 1 / Semester 1

Course Number	Course Title	Credits
ENE-101	Listening and Speaking for Specific Purpose	3(3-0-6)
JPE-101	Communicative Japanese 1	3(3-0-6)
DSA-101	Business Mathematics	3(3-0-6)
DSA-103	Object-Oriented Programming	3(3-0-6)
DSA-104	Object-Oriented Programming Laboratory	1(0-3-2)
DSA-105	Introduction to Data Science	3(3-0-6)
DSA-106	Introduction to Business Data Analytics	3(3-0-6)
	Total	19(18-3-38)

Year 1 / Semester 2

Course Number	Course Title	Credits
ENE-102	Critical Reading	3(3-0-6)
JPE-102	Communicative Japanese 2	3(3-0-6)
DSA-107	Data Structure and Algorithm	3(3-0-6)
DSA-208	Web Design and Development	3(3-0-6)
DSA-209	Web Design and Development Laboratory	1(0-3-2)
DSA-302	Content Marketing on Social Media	3(3-0-6)
MSE-112	Science and Technology	3(3-0-6)
	Total	19(18-3-38)

Year 2 / Semester 1

Course Number	Course Title	Credits
ENE-201	Professional Project Based Presentation	3(3-0-6)
JPE-201	Communicative Japanese 3	3(3-0-6)
DSA-102	Discrete Mathematics	3(3-0-6)
DSA-301	Business Data Mining	3(3-0-6)
DSA-305	Database Systems	3(3-0-6)
DSA-306	Database Systems Laboratory	1(0-3-2)
DSA-410	Data Analysis and Modelling	3(3-0-6)
	Total	19(18-3-38)

Year 2 / Semester 2

Course Number	Course Title	Credits
ENE-202	Business Writing	3(3-0-6)
JPE-202	Communicative Japanese 4	3(3-0-6)
DSA-203	Business Decision Models	3(3-0-6)
DSA-205	A Practical Approach to Data Science	3(3-0-6)
DSA-307	Computer Network and Communication System 1	3(3-0-6)
DSA-309	Information System Analysis and Design	3(3-0-6)
MSE-202	Statistics and Probability	3(3-0-6)
	Total	21(21-0-42)

Year 3 / Semester 1

Course Number	Course Title	Credits
DSA-210	Data Wrangling and Transformation	3(3-0-6)
DSA-202	Business Strategic and Performance Management	3(3-0-6)
DSA-303	Introduction to Quantitative Methods	3(3-0-6)
DSA-401	Business Database Systems Development	3(3-0-6)
xxx-xxx	Major Elective Course (1) (DSA-430 Business Intelligence)	3(3-0-6)
xxx-xxx	Major Elective Course (2) (DSA-449 Artificial Intelligence)	3(3-0-6)
	Total	18(18-0-36)

Year 3 / Semester 2

Course Number	Course Title	Credits
DSA-204	Data Analytic for E-Commerce	3(3-0-6)
DSA-206	Programming for Data Analysis	3(3-0-6)
DSA-207	Programming for Data Analysis Laboratory	1(0-3-2)
DSA-304	Big Data Analytics	3(3-0-6)
xxx-xxx	Major Elective Course (3) (DSA-447 Machine Learning)	3(3-0-6)
DSA-491	Pre-cooperative Education	1(1-0-2)
	Total	14(13-3-28)

Year 4 / Semester 1

Course Number	Course Title	Credits
DSA-492	Cooperative Education	6(0-40-10)
	Total	6(0-40-10)

Year 4 / Semester 2

Course Number	Course Title	Credits
xxx-xxx	Humanities and Social Sciences (SOE-105 Elements of Success Startup)	3(3-0-6)
xxx-xxx	Major Elective Course (4) (DSA-441 Cloud Computing or DSA-450 Blockchain Development)	3(3-0-6)
xxx-xxx	Major Elective Course (5) (DSA-444 Mobile Device Application Development or DSA-445 Applied Web Design and Development)	3(3-0-6)
xxx-xxx	Free Elective Course (1) (IBI-104 Operations Management)	3(3-0-6)
xxx-xxx	Free Elective Course (2)	3(3-0-6)
	Total	15(15-0-30)

Study Plan for Project and Intern Students (N/A for the moment)

Year 1 / Semester 1

Course Number	Course Title	Credits
ENE-101	Listening and Speaking for Specific Purpose	3(3-0-6)
JPE-101	Communicative Japanese 1	3(3-0-6)
DSA-101	Business Mathematics	3(3-0-6)
DSA-103	Object-Oriented Programming	3(3-0-6)
DSA-104	Object-Oriented Programming Laboratory	1(0-3-2)
DSA-105	Introduction to Data Science	3(3-0-6)
DSA-106	Introduction to Business Data Analytics	3(3-0-6)
	Total	19(18-3-38)

Year 1 / Semester 2

Course Number	Course Title	Credits
ENE-102	Critical Reading	3(3-0-6)
JPE-102	Communicative Japanese 2	3(3-0-6)
DSA-107	Data Structure and Algorithm	3(3-0-6)
DSA-208	Web Design and Development	3(3-0-6)
DSA-209	Web Design and Development Laboratory	1(0-3-2)
DSA-302	Content Marketing on Social Media	3(3-0-6)
MSE-112	Science and Technology	3(3-0-6)
	Total	19(18-3-38)

Year 2 / Semester 1

Course Number	Course Title	Credits
ENE-201	Professional Project Based Presentation	3(3-0-6)
JPE-201	Communicative Japanese 3	3(3-0-6)
DSA-102	Discrete Mathematics	3(3-0-6)
DSA-301	Business Data Mining	3(3-0-6)
DSA-305	Database Systems	3(3-0-6)
DSA-306	Database Systems Laboratory	1(0-3-2)
DSA-410	Data Analysis and Modelling	3(3-0-6)
	Total	19(18-3-38)

Year 2 / Semester 2

Course Number	Course Title	Credits
ENE-202	Business Writing	3(3-0-6)
JPE-202	Communicative Japanese 4	3(3-0-6)
DSA-203	Business Decision Models	3(3-0-6)
DSA-205	A Practical Approach to Data Science	3(3-0-6)
DSA-307	Computer Network and Communication System 1	3(3-0-6)
DSA-309	Information System Analysis and Design	3(3-0-6)
MSE-202	Statistics and Probability	3(3-0-6)
	Total	21(21-0-42)

Year 3 / Semester 1

Course Number	Course Title	Credits
DSA-210	Data Wrangling and Transformation	3(3-0-6)
DSA-202	Business Strategic and Performance Management	3(3-0-6)
DSA-303	Introduction to Quantitative Methods	3(3-0-6)
DSA-401	Business Database Systems Development	3(3-0-6)
xxx-xxx	Major Elective Course (1) (DSA-430 Business Intelligence)	3(3-0-6)
xxx-xxx	Major Elective Course (2) (DSA-449 Artificial Intelligence)	3(3-0-6)
	Total	18(18-0-36)

Year 3 / Semester 2

Course Number	Course Title	Credits
DSA-204	Data Analytic for E-Commerce	3(3-0-6)
DSA-206	Programming for Data Analysis	3(3-0-6)
DSA-207	Programming for Data Analysis Laboratory	1(0-3-2)
DSA-304	Big Data Analytics	3(3-0-6)
xxx-xxx	Major Elective Course (3) (DSA-447 Machine Learning)	3(3-0-6)
	Total	13(12-3-26)

Year 3 / Semester Summer

Course Number	Course Title	Credits
DSA-493	Practice on Data Science and Artificial Intelligence	1(0-40-10)
	Total	1(0-40-10)

Year 4 / Semester 1

Course Number	Course Title	Credits
DSA-494	Data Science and Artificial Intelligence Project 1	1(0-3-2)
xxx-xxx	Major Elective Course (4)	3(3-0-6)
xxx-xxx	Major Elective Course (5)	3(3-0-6)
xxx-xxx	Major Elective Course (6)	3(3-0-6)
	Total	10(9-3-20)

Year 4 / Semester 2

Course Number	Course Title	Credits
DSA-495	Data Science and Artificial Intelligence Project 2	2(0-6-3)
xxx-xxx	Humanities and Social Sciences (SOE-105 Elements of Success Startup)	3(3-0-6)
xxx-xxx	Free Elective Course (1)	3(3-0-6)
xxx-xxx	Free Elective Course (2)	3(3-0-6)
	Total	11(9-6-21)

Thai-Nichi Institute of Technology

Estimated Fees for International Program

Bachelor of Science Program in Data Science and Artificial Intelligence

Total Credit Requirement   131 Credits

List	First Year		Second Year		Third Year		Fourth Year	
	Semester I	Semester II	Semester I	Semester II	Semester I	Semester II	Semester I	Semester II
1) Matriculation Fee / ค่าขึ้นทะเบียนนักศึกษา	10,000	-	-	-	-	-	-	-
2) Eduction Fee / ค่าบำรุงการศึกษา	7,000	7,000	7,000	7,000	7,000	7,000	7,000	7,000
3) Tuition Fees / ค่าหน่วยกิตลงทะเบียน								
- Lecture / รายวิชาทฤษฎี	50,400	50,400	50,400	58,800	50,400	44,800	-	33,600
- Lab / Co-operative Education / Internship	5,000	5,000	5,000	-	-	5,000	30,000	-
Estimates / Semester	72,400	62,400	62,400	65,800	57,400	56,800	37,000	40,600
Estimates / Year	134,800		128,200		114,200		77,600	
Estimate / Total Fee	454,800							

Remarks   1. These are estimated fees which can be changed without advance notice. / ข้อมูลดังกล่าว เป็นเพียงการประมาณค่าใช้จ่ายเท่านั้น

ทั้งนี้ขอสงวนสิทธิ์ในการเปลี่ยนแปลงข้อมูลตามประกาศและนโยบายของสถาบัน โดยไม่แจ้งให้ทราบล่วงหน้า

2. Further details can be found in the student handbook. / รายละเอียดวิชาการลงทะเบียน แผนการศึกษา ค่าใช้จ่ายต่างๆ

สามารถตรวจสอบจากคู่มือนักศึกษา ของปีการศึกษาที่เข้าศึกษา

3. The estimated fee is in Thai Baht. / ค่าใช้จ่ายนี้จะต้องชำระเป็นสกุลเงินบาท

อ้างอิงจากแผนการศึกษา (สหกิจ)

งานทะเบียนและประมวลผล

Udated 10/9/2565