มหาวิทยาลัยอัสสัมชัญ (เอแบค)
ASSUMPTION UNIVERSITY
*Educating Intelligences and Active Minds to Change the World*

VINCENT MARY SCHOOL OF SCIENCE AND TECHNOLOGY

# M.S. CS
## MASTER OF SCIENCE IN COMPUTER SCIENCE

2-YEAR PROGRAM, THESIS AND NON - THESIS OPTIONS

*The Master of Science Program in Computer Science aspires to produce graduates who are capable of working efficiently in technology oriented environment. In order to meet this philosophy, the curriculum emphasizes:*

- *True understanding of the principles of major topics in Computer Science.*
- *Analytical approaches in solving problems and decision making based on technology and research methodology.*
- *Innovative skills to create research work that is worthy in both academic and computer applications.*

Study at Hua Mak Campus

ADMISSION SCHEDULE 2018 / 2019

| Admission Schedule | Semester 2/2018 (January - May 2019) | Semester 1/2019 (August - December 2019) | Semester 2/2019 (January - May 2019) |
|---|---|---|---|
| Application Filling Period | December 15, 2018 | July 21, 2019 | December 14, 2019 |
| AU English Proficiency Test | December 16, 2018 | July 22, 2019 | December 15, 2019 |
| Examination Interview | December 18, 2018 | July 24, 2019 | December 16, 2019 |
| AU Entrance Results | December 20, 2018 | July 26, 2019 | December 18, 2019 |
| Registration Period | January 7-14, 2019 | July 29 - August 9, 2020 | December 23 - January 6, 2021 |
| Instruction Begins | January 7, 2019 | August 5, 2019 | January 6, 2020 |

### ADMISSION REQUIREMENTS
### QUALIFICATION FOR ADMISSION

The following admission requirements (recommended) for any prospective students to enter the program.

1. Bachelor's degree from an accredited institution. The applicants must graduate from the following academic fields: Computer Science, Information Technology, Telecommunications Science, Engineering or related tield.
2. Three recommendation letters from lecturers or employers
3. Required GPA of at least 2.5

### ENTRANCE REQUIREMENTS

1. A completed application form
2. Official transcript from the previous university attended (2 copies)
3. Bachelor's degree certificate (2 copies)
4. Citizen Identification Card and Residence Registration - For Thai Applicants (2 copies)
5. Passport - For Non-Thai Applicants (2 copies)
6. Photographs formal attire, not in graduation gown (Six, 1x1-inch size)
7. Letter of recommendation from former instructors or employers at the time of the application (3 letters)

*Note: All documents must be endorsed with signature and submitted in person within the last day application period. Otherwise, the application will not be considered and the applicant will not be allowed for the Admission interview.*

### ADMISSION FEE

| | |
|---|---|
| AU English Proficiency Test and Interview | Baht 500 |
| Admission Fee | Baht 500 |

### EXEMPTION

The AU English Proficiency Test can be exempted depending on which of the following conditions you satisfy.

- a TOEFL score of (iBT) 90 or an IELTS (Academic) score of at least 6.5 (Validation: Two years)
- a Bachelor's degree or a higher degree from native English speaking countries (e.g. USA, Canada, UK, and New Zealand)

### STUDY SYSTEM

| | |
|---|---|
| 1st semester | August - December |
| 2nd semester | January - May |

### VENUE & CLASS HOURS

» Hua Mak Campus, Ramkhamhaeng 24 Road

| | |
|---|---|
| Mon. - Fri. | 6.30 P.M. - 9.30 P.M. |
| Sat. - Sun. | 9.00 A.M. - 5.00 P.M. |

### DURATION: 2 years

### GRADUATION REQUIREMENTS

**Plan A : Coursework and Thesis**

- Have completed all the courses of the curriculum.
- Have obtained a cumulative grade point average of at least 3.00.
- Have passed the thesis defense.
- Have a publication or obtain an acceptance of a publication related to the content of the thesis in a journal or an international conference proceeding and which is approved by the Academic Committee of the department.
- Have obtained library and financial clearance from the University.
- Have demonstrated good behavior and discipline.
- Have passed Research Planning and Management Seminar

**Plan B: Coursework and Independent Study**

- Have completed all the courses of the curriculum.
- Have obtained a cumulative grade point average of at least 3.00.
- Have passed the comprehensive examination.
- Have passed the project presentation.
- Have obtained library and financial clearance from the University.
- Have demonstrated good behavior and discipline.
- Have passed Research Planning and Management Seminar.

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## MASTER OF SCIENCE IN COMPUTER SCIENCE

## STUDY PLAN

| Thesis Option (Plan A) | 12 credits |
|---|---|
| Preparatory Courses | Non-credit |
| Required Courses | 9 credits |
| Elective Courses | 15 credits |
| Thesis | 12 credits |
| **Total** | **36 credits** |

| Coursework and Independent Study (Plan B) | |
|---|---|
| Preparatory Courses | Non-credit |
| Required Courses | 9 credits |
| Elective Courses | 24 credits |
| Project | 3 credits |
| **Total** | **36 credits** |

### YEAR 1

**Semester 1**

SC 6201 Advanced Computing Systems
SC 6202 Computability, Complexity and Algorithms
SC 6212 Programming Languages and Compiler

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**Semester 2**

Plan A Three Elective Courses

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### YEAR 2

**Semester 1**

Plan A Two Elective Courses + SC 7000 Thesis
Plan B Three Elective Courses

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**Semester 2**

Plan A SC 7000 Thesis
Plan B Two Elective Courses + SC6900 Master Project + Comprehensive Examination

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## CURRICULUM

### Preparatory Courses

ES 5001 English for Graduate Study
SC 5211 Computer Programming & Data Structure
SC5212 Computing Systems

### Required Courses

SC 6201 Advanced Computing Systems
SC 6202 Computability, Complexity and Algorithms
SC 6212 Programming Languages and Compiler

### ELECTIVE COURSES

SC 6319 Computer Network and Internet Security
SC 6324 Principles of Software Engineering
SC 6360 Artificial Intelligence
SC 6362 Data Mining
SC 6365 Natural Language Understanding and Processing
SC 6399 Graduate Seminar in Computer Science
SC 6601 Cloud Computing and Big Data
SC 6602 Data Analysis and Visualization
SC 6603 Data Warehousing and Business Intelligences
SC 6604 Database Management Systems
SC 6610 Pattern Recognition and Machine Learning
SC 6611 Neural Networks and Deep Learning
SC 6612 Blockchain Technology and Cryptocurrency
SC 6613 Recommender Systems
SC 6620 Computer Graphics
SC 6621 Computer Vision
SC 6622 Augmented and Virtual Environments
SC 6630 User Interface and User Experience (UI/UX)
SC 6631 Web Technology, Applications and Security
SC 6632 Mobile Computing
SC 6640 Principles of the Theory of Computation
SC 6633 Ubiquitous Computing and Internet of Things (IoT)
SC 6400-99 Selected Topics in Computer Science
SC 6500-99 Directed Individual Study in Computer Science
SC 8311 Parallel Algorithms
SC 8322 Image Processing
SC 8323 Computational Models of Decision Making
SC 8324 Natural Language Processing
SC 8350 Computer and Data Security
SC 8354 Advanced Computer Communications
SC 8380-599 Advanced Topics in Computer Science

### Independent study

SC6900 Master Project

### Thesis

SC7000 Thesis

### Fee Description

| Total fee | THB | US$ |
|---|---|---|
| **Approximate total for Thai students** | **337,400** | **10,224** |
| **Approximate total for non - Thai students** | **359,900** | **10,900** |
| Academic Writing | 15,000 | 455 |
| Proposal Defense | - | - |
| Thesis Defense | 6,000 | 182 |
| Thesis Binding | 500 | 15 |
| Comprehensive exam | 5,000 | 152 |

Note:
1. The total fee above doesn't cover the followings:
   - Admission fee
   - Tuition fee for non-credit courses
   - Text books
   - Thesis Final Defense/Comprehensive Examination
   - AU Academic Writing Course (15,000 THB)
2. The fees are subject to change at the university's discretion without prior notice.
3. Currency exchange rate: US $1 = THB 33

**IMPORTANT**

The provisional information statements set forth in this catalog should not be construed as the basis of any contract between a student and this institution. As such Assumption University reserves the right to change any provision listed in this catalog, including, but not limited to academic requirements for graduation. Every effort through the Office of Graduate Studies, will be made to keep students advised of any such changes.

*The University Registrar*

Last updated: February 2019


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