AUTONOMOUS UNIVERSITY OF AGUASCALIENTES

MASTER IN INFORMATICS AND COMPUTATIONAL TECHNOLOGIES

PROGRAM[1]

I. PROGRAM IDENTIFICATION

Responsible academic center:	Basic Sciences Center
Responsible academic department:	Information Systems Department
Modality:	Schooled
Level:	Master´s Degree
Program orientation:	To professional training
Program engagement:	Exclusive time for students with a Conacyt scholarship / Partial dedication for students who do not have a Conacyt scholarship
Duration:	2 years (four semesters)
Academic credits:	160
Type of academic program:	Institutional program
Approval date by the HUC[2]:	April 2019
Actualization date:	June 2021

II. QUALITY CERTIFICATIONS

National:	National Postgraduate System (SNP)
Level:	In Development
International:	Ibero-American Postgraduate University Association (AUIP)

III. OBJECTIVE OF THE PROGRAM

Train professionals with a Master's degree, through the transfer of cutting-edge strategic, management and engineering knowledge in the area of Information Technology and Computing, which is demanded by the different regional, national and international business and government organizations to contribute to the competitive and innovative development of the organization, society and the country.

Date of actualization: December 2022

[1] (Web version)
[2] Honorable University Council

IV. RESEARCH LINES

1. Management of Systems and Information Technologies to Improve Competitiveness, Innovation and Organizational Change.
2. Decisional Systems Engineering to Improve Organizational Processes.

V. APPLICANT AND GRADUATE PROFILES

APPLICANT	GRADUATE
Knowledges: 1. Structural in the areas of computer networks, software engineering, databases and programming.	*Knowledges:* 1. Strategic, IT Governance, Sustainability, and Innovation in the area of Information and Computing Technologies. 2. In Management and Engineering for a modern administration of the Computer Science area, as well as Information Technology projects. 3. Fundamental and emerging for the development of Support Systems for the Decision-Making Process. 4. Methodologies for the development of efficient and effective IT solutions, appropriate to the organization.
Skills 1. Oral and written communication. 2. Reading and comprehension of the English language. 3. Time management and organization. 4. Logical-mathematical analysis and reasoning. 5. Teamwork.	*Skills* 1. Govern in a strategic, innovative, and sustainable way the area of Information Technology and Computing of the organization. 2. Manage in an Engineering way the modern administration of the computer area, as well as IT projects. 3. Develop Support Systems for the Decision-Making Process. 4. Analyze quantitative data and Methodologies for the development of computer solutions.
Attitudes 1. Availability and dedication of time required for postgraduate studies. 2. Willingness to work in cooperative teams. 3. Interest in deepening the use of information technologies for application purposes for their development. 4. Willingness towards self-study, intellectual activity and intense academic work.	*Attitudes* 1. Permanently update and enrich the field of computing and information technology by integrating knowledge and technological skills. 2. Publish and disseminate the professional practice of the area within the ethical and service guidelines promoted by the corresponding colleges and associations. 3. High sense of responsibility, ethics and personal commitment towards the organization, the environment and specialized scientific communities in general. 4. 4. Criticism, observation, reflection and willingness to be an innovative agent and contribute to the development and application of world-class information technologies in the local, state, regional, national and global environment.

5. Initiative, creativity, self-motivation and ability to face professional challenges and provide solutions. 6. Critical-positive thinking and attitude.	
Values 1. Responsibility. 2. Respect. 3. Honesty. 4. Reliability.	*Values* 1. Professional and social responsibility. 2. Respect. 3. Honesty. 4. Reliability.

VI. ADMISSION AND SELECTION REQUIREMENTS

ADMISSION

National applicants

1. Preferably having graduated from a degree or engineering in computer science, information technology, computer systems, software engineering, industrial engineering or related; and preferably have a minimum work experience of one year in the area of information technology.
2. Accredit the EXANI III exam with a minimum score of 1000 points.
3. Have a minimum average of 8.0 in the studies of the previous level.
4. Submit all the administrative documentation requested by the School Control Department.
5. Deliver the academic information requested by the Academic Council of the master's degree.
6. Accreditation of English with a score of 450 points, however, you can enter with a minimum of 400 TOEFL points and you will have one year to reach 450.
7. Present the institutional diagnosis of postgraduate skills, prior to the personal interview.
8. Present the interview with the Academic Council of the master's degree.
9. Accredit the master's or propaedeutic knowledge exam with a minimum grade of 8.0.
10. All applicants must fully comply with the process indicated by the university authorities at the time.

International applicants

The admission process is in accordance with those established by the Autonomous University of Aguascalientes in the General Teaching Regulations in force in article 40, clause VI, and must also consider the following:

1. Present and accredit the knowledge exam necessary for the master. The design, application and modality is carried out by the Academic Council.

2. Meet with the Academic Admission Council to evaluate qualitative aspects of the admission profile. The modality in which the interview is carried out is determined by the Academic Council.
3. Deliver full-time commitment letter.
4. Submit a letter of intent and academic, personal, work and professional reasons for wanting to enter the master's degree.
5. Deliver the Curriculum Vitae, according to the requirements established by the Academic Council.
6. Accreditation of English with a score of 450 TOEFL, however, you can enter with a minimum of 400 points and you will have one year to reach 450. In the case of English-speaking foreigners, you must take the DELE level B-2 exam; however, standardized certificates with international validity equivalent to the language may be accepted.
7. Have a bachelor's degree related to the master's degree. This must be accredited by presenting an apostilled and certified professional title, validated by the Department of School Control.
8. Have a minimum average of 8.0 in a bachelor's degree or its equivalent.

Selection process

The selection of the students who will be part of a new generation of the MITC consists of the following steps:

1. That the candidate has complied with the general admission process of the Autonomous University of Aguascalientes:
   a. Online pre-registration.
   b. Delivery of administrative documents and registration for the EXANI-III.
   c. Take the EXANI-III exam.
2. Deliver the following Academic Documents to the Academic Council of the MITC in PDF labeled with a maximum of 20 characters to the email address of the postgraduate
   a. Short CV with photo (2-3 pages).
   b. CONACyT CVU (both applicants for CONACyT Scholarships and non-applicants).
   c. Copy of Bachelor's Certificate with qualifications.
   d. Letter of Professional or Academic Recommendation.
   e. Letter of Reasons to enter this Postgraduate course reporting your area of interest among the 2 official LGAC of the Postgraduate Course.
3. Accreditation of English with a score of 450 points, being able to enter with a minimum of 400 TOEFL points and will have one year to reach 450.
4. The Academic Council reviews that this documentation is complete and correct. Based on the documentation delivered, it is reviewed that the applicants meet the standards required by the MITC and those who do not comply are rejected.
5. Apply to the applicants a general examination of knowledge, on the areas of Database, Programming, Networks, and Analysis and Design of Systems; which are the basic knowledge that every MITC student must have when entering the master's degree. In case of not passing this exam and having complied with all the other admission and selection points, the candidate will have to register for the propaedeutic, which will be taught in the semester from August to December of the year of the call, which You must pass in order to enroll in the first semester of the MITC.

6. MITC Academic Council will interview each applicant to determine if they are suitable for this master's degree.
7. The MITC Academic Council concentrates and analyzes the results of the EXANI-III, the general knowledge exam, the interview and the analysis of the documentation delivered to the MITC Academic Council, of each applicant; and selects those who can enroll in the MITC, according to the established criteria.

VII. CURRICULAR STRUCTURE AND ORGANIZATION OF THE PROGRAM

Organization of the program

FORMATION AX	DESCRIPTION OF FORMATION AX
Basic	It provides the general knowledge, that is, the contextual, methodological, and instrumental bases necessary to develop professionally from the master's degree
Disciplinary or professional	They are compulsory subjects that delve into postgraduate topics or content since their objective is to be a space where each student develops and/or masters their professional learning.
Terminal	The set of subjects that are in the training axis allow each student to develop their thesis.
Optative	They can be covered both inside or outside the Autonomous University of Aguascalientes (UAA), nationally or internationally, endorsed at all times by their thesis tutor and the Academic Council of the MITC with the approval of the Dean or the Dean. In case of being subjects within the UAA, it should be considered that they must have a minimum of ten students to be implemented. The elective credits can be covered between the first and fourth semester.
Complementary activities	They may be carried out between the second and fourth semester of the master's degree and may be covered with participation in Academic Congress, participation in Business Congress, Certification, Computer Product, National or International Stay, among others determined by the academic council. The complementary activities are selected based on the needs and requirements of the students, which will depend on their thesis work or practical work and on the Lines of Generation and Application of Knowledge (LGAC) of the master's degree.

Curricular Map

Formation axes	1°Semestre	2° Semestre	3° Semestre	4° Semestre
Basic 16 credits	**Fundamentals of Decisional Systems** HT: 2, HP: 4 Credits: 8			
	Governance Management and IT StrategyHT: 2, HP: 4 Credits: 8			
Disciplinary 56 Credits	**Tools for Obtaining and Validating Computer Data** HT: 2, HP: 4 Credits: 8	**Management of Business Information Systems** HT: 2, HP: 4 Credits: 8	**Management of Information Technology Services** HT: 2, HP: 4 Credits: 8	
		Security and Risk Management in Information Technology HT: 2, HP: 4 Credits: 8	**Intelligent Optimization Decisional Systems** HT: 2, HP: 4 Credits: 8	
		Decisional Business Intelligence Systems HT: 2, HP: 4 Creditss: 8	**Decisional Data Mining Systems** HT: 2, HP: 4 Credits: 8	
Terminal 44 Credits	**Intervention Methodology for IT Projects** HT: 2, HP: 4 Credits: 8	**Intervention Seminar I** HT: 0, HP: 10 Credits: 10	**Intervention Seminar II** HT: 0, HP: 10 Credits: 10	**Intervention Seminar III** HT: 0, HP: 16 Credits: 16
Optative 12 Credits	The subjects can be inside or outside the UAA.			
Complementary Activities 12 Credits		They may cover them with participation in Academic Congress, participation in Business Congress, Certification, Computer Product, National or International Stay, among others determined by the academic council.		
Professional Stay 10 Credits				Business IT short project
HT: Teorical hours per week, HP: Practical hours per week				

VIII. PERMANENCE REQUIREMENTS

The requirements that the applicant must meet to maintain their permanence and continue their studies in the program will be in accordance with the requirements of this study plan and respecting the provisions of the current General Teaching Regulations of the Autonomous University of Aguascalientes.

In addition, of those considered by the General Teaching Regulations, each student must comply with the following points:

- Maintain a minimum general average of 8.0 (eight), in addition to accrediting all subjects.
- Delivery and presentation of significant advances in your thesis or practical work, according to what is indicated in each Intervention Seminar I, II and III. It should be remembered that the intervention seminars may not be failed, since if they are failed they will cause a definitive withdrawal due to the infeasibility of presenting an extraordinary exam or proficiency title.
- The students deliver to the Academic Council a written report of the activities and progress, endorsed by the tutor. The report reflects the progress of the thesis or practical work, as well as progress in completing credits: electives, complementary activities and professional stay. The dates of delivery of the report by each student will be indicated by the Academic Council and the assigned tutor.
- Have the accreditation of English with the required score.
- Attend classes to have the right to present the subjects in the regular exam. The number of absences with which the right to the ordinary or extraordinary exam is lost is considering the hours scheduled per week for each subject. Absences are not justifiable for any reason.

IX. REQUIREMENTS FOR OBTAINING THE DEGREE

To obtain the Master's degree in Informatics and Computer Technologies, the following requirements must be met:

- Comply with the provisions of the current General Teaching Regulations, which specify among the most important:
    - Accredit all the subjects, seminars and activities indicated in the study plan.
    - Obtain a minimum overall grade point average of 8.0.
    - Present and defend the degree work in a public degree exam and pass it in a timely manner as established in the Postgraduate Guidelines and Procedures Manual for the preparation of Thesis or Practical Work and in accordance with the General Teaching Regulations.

- Comply with the Professional Stay with the presentation of a report of the practical work developed in the professional stay, which must contain the elements indicated by the regulations, background, definition of the problem (diagnosis), objectives, justification, theoretical framework, methodology, development of the proposal, recommendations, conclusions, bibliography and annexes. In addition, it is extremely important to have the satisfaction letter from the user for those jobs related to the productive sector.

X. NÚCLEO ACADÉMICO BÁSICO

Grado	Nombre	Institución del último grado	PTC /PTP	Cuerpo académico	S.N.I.	LGAC	Cuentan con experiencia profesional
D	Arévalo Mercado, Carlos Argelio	UAA	PTC	Teorías de diseño de sistemas en la ingeniería de software (En consolidación)	--	Gestión de sistemas y tecnologías de información para mejorar competitividad, innovación y cambio organizacional	No
D	Muñoz López, Juan	UAA	PTP		--		Sí
M	Palos García, José de Jesús	UASLP	PTP		--		Sí
D	Solano Romo, Lizeth Itziguery	UAA	PTC	Gestión e ingeniería de sistemas y tecnologías de información (Consolidado)	--		Sí
D	Velázquez Amador, César Eduardo	UAA	PTC	Objetos de aprendizaje e ingeniería de software	C		Sí
				(Consolidado)			
D	Bautista Villalpando, Luis Eduardo	ETS Universidad de Quebec, Canadá	PTC	Teorías de diseño de sistemas en la ingeniería de software (En consolidación)	--		Sí
D	Mora Tavarez, José Manuel	UNAM	PTC	Gestión e ingeniería de sistemas y tecnologías de información (Consolidado)	II	Ingeniería de sistemas decisionales para mejorar procesos organizacionales	Sí
D	Román Loera, Alejandro	New Mexico State University	PTC	Sistemas Digitales y Robótica	C		Sí
D	Torres Soto, Ma. Dolores	UAA	PTC	Sistemas inteligentes (Consolidado)	--		No

XI. FLEXIBILITY PROGRAM

In coherence with the Educational Model of the Autonomous University of Aguascalientes (UAA) and with national and international trends in the design of educational programs, the MITC offers flexibility in several important aspects.

The MITC has optional credits, which can be covered both inside or outside the UAA, nationally or internationally, always endorsed by your thesis tutor and the MITC Academic Council with the approval of the Dean. In case of being subjects within the UAA, it should be considered that they must have a minimum of 10 students to be implemented. The elective credits can be covered between the first and fourth semester.

MITC students may carry out their complementary activities between the second and fourth semester of the master's degree and may cover them with participation in Academic Congress, participation in Business Congress, Certification, Computer Product, National or International Stay, among others determined by the academic council. The complementary activities are selected based on the needs and requirements of the students, which will depend on their thesis work or practical work and on the Lines of Generation and Application of Knowledge (LGAC) of the master's degree.

Exchange, mobility and learning activities "at home"

Face-to-face modality. It is intended to have the participation of students in at least one academic event at the national level, as well as a local, transnational, or multinational stay, through information technology and participation in a research project of a professor or a professor, either of the basic or visiting academic core.

Virtual mode.

Each student of the master's degree must participate in at least one conference by virtual technological means, with internationally recognized speakers. As well as demonstrating communication with their tutor or tutor by virtual means.

Long distance education.

Because it is a program in the area of Information Technology and Computing, there is an infrastructure to support face-to-face education with distance technology. These facilities are offered to each student enrolled or enrolled in the program who needs to take classes in remote locations, in the same way, there is an infrastructure to promote virtual mobility. At a future time, it is intended to even open the educational offer by means of promoting internationalization.

Exchange and Mobility “Outwards”.

Students who have a CONACyT scholarship must carry out at least one professional stay and participate in at least one national or international event as speakers.

UNIVERSIDAD AUTONOMA DE AGUASCALIENTES

Dr. Francisco Javier Avelar González
Rector

M.C. José de Jesús Ruíz Gallegos
Dean of the Center for Basic Sciences

Dra. María del Carmen Martínez Serna
General Director of Research and Postgraduate

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Coordinator of the redesign committee of the Master in
Informatics and Computational Technologies.

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Member of the redesign committee of the Master in
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