CENTER OF BASICS SCIENCE
COMPUTER SYSTEMS ENGINEER (Curriculum 2016)

OBJECTIVE

To form engineers on Computer Systems that designs, develop, implements and automates technology systems in the areas of: Software, Networking and Hardware adapting the new technologies to the needs demanded by the public or private organizations applying an enterprising approach, ethical, humanist and social responsibility.

APPLICANT PROFILE:

Based on the current institutional regulation, the applicant profile must apply an entrance test. The following list shows the skills or desirable features of the candidate for Computer Systems Engineering, for successful academic performance in undergraduate; also these elements can guide their career decision:

- Ability to analyze and solve real problems
- Capacity of mind mapping
- Willingness to permanent self-learning
- Desirable skill for mathematical calculations and analytical
- Time Manageability
- Desire for personal and social improvement
- Teamwork
- Proactivity

GRADUATE PROFILE:

Graduates of the Computer Systems Engineering must have a graduate profile that provide a professional identity, skills, knowledge, attitudes and values that are expected to student development in the fields of software, networks and hardware in environments from micro to large enterprises, the government sector, in addition to the personal environment, are outlined below:

KNOWLEDGE

- Knowledge of mathematics for engineering.
- Basis of physics and statistics.
- Basis of basic financial tools and development of entrepreneurs.
- Professional Ethics.
- English.
- Methodologies and software development for process analysis, design, development and implementation of a computer systems.
- National and international quality standards of development systems.
- Basis of algorithm analysis to select the most suitable option in solving problems.
- Data models to represent information of an organizations.
- Base Software.
- Architectures computers, programmable logic devices and mobile.
- Methodologies for the development embedded software and interfaces.
- Principles of electricity and electronics.
- Basis of networks, network protocols and security frameworks to ensure exchange information reliably.
- Systems and distributed computing application development, Web applications and systems computer.

ABILITIES

- To create solutions to computational problems to meet the needs that society demands in all sectors.
- To develop computer systems for optimal interaction between man and computer.
- To designing databases and use Handlers Database Systems (DBMS), which allow proper management and use of information.

 To apply different computer architectures to implement solutions in systems computer.
 To develop and maintain user requirements distributed networks and technologies according allow proper interconnectivity between devices and / or applications.

ATTITUDES
 Respect
 Spirit of service
 Proactivity and innovation
 Teamwork
 Leadership
 Commitment
 Senior Trial
 Initiatively and creativity

VALUES
 Humanism
 Autonomy and Social Responsibility
 Ethics
 Quality
 Equity and equality
 Pluralism

WORK FIELD:
 Systems directors, applications development manager, project leader, systems analyst, internal or external auditor of systems, system maintenance manager, director of ICT, among many other activities.
 Officer in the Federal, State and Municipal in the design, development and maintenance of computer systems and computer networks.
 Owner of his own software development company, consulting or sales of computer systems, among the most important options.
 Possibility to develop as academic or postgraduate studies for research.

OUTCOMES

a) Ability to apply knowledge of mathematics, science and engineering.
b) Ability to design and conduct experiments, as well as to analyze and interpret data.
c) Ability do design systems component or process to meet desired needs within realistic constrains such as economic, environmental, social, political, ethical, health and sustainability.
d) Ability to function on multidisciplinary teams.
e) Ability to identify, formulate and solve engineering problems.
f) Understanding of professional and ethical responsibility.
g) Ability to communicate effectively.
h) The broad education necessary to understand the impact of engineering solutions in a global, economic, environmental and social context.
i) Recognition of the need for, and an ability to engage in life-long learning.
j) Knowledge of contemporary issues.
k) Ability to use the techniques, skills and modern engineering tools necessary for engineering practice.

PROGRAM EDUCATIONAL OBJECTIVES

The following educational objectives of the program of Computer Systems Engineer refer to knowledge, abilities, attitudes, and values that the graduates have reached in a period of 2 to 3 years after their graduation from the program.

1. The graduate develops efficiently in the areas of Software, Networking and Hardware
2. The graduate optimizes the computer resources available in organizations to solve various problems.
3. The graduate understands, use and adapt new technologies to develop systems that support functional areas of organizations.
4. The graduate is a proactive and innovative professional who designs, implements and manages systems using computer technology.
5. The graduate is able to automate various methods, techniques and procedures; manages, designs and configuring computer networks and teleprocessing, generating new technologies.
6. The graduate develops his profession with ethical and social awareness.
7. The graduate has a solid technical preparation, which contributes to regional development, national and international.
8. The graduate develops continuing education activities or graduate.

DURATION

Nine semesters.

CENTER OF BASICS SCIENCE
COMPUTER SYSTEMS ENGINEER (Curriculum 2016)

CURRICULUM

PLAN 2016
MAJOR 61

	T	P	C	CENTER	DEPARMENT
FIRST SEMESTER					
BASIC ACCOUNTING	2	3	7	CCEA	ACCOUNTANCY
ALGEBRA	3	2	8	CCB	MATH. & PHYS.
DIFFERENTIAL CALCULUS	3	2	8	CCB	MATH. & PHYS.
CHEMISTRY OF MATERIALS	3	2	8	CCB	CHEMISTRY
INTRO TO ENGINEERING	2	3	7	CCB	ELECT. SYST.
PROGRAMMING LOGIC	3	2	8	CCB	ELECT. SYST.
Humanist Institutional Training Program					
Institutional Foreign Language Program					

	T	C	P	CENTER	DEPARMENT
SECOND SEMESTER					
FINANCIAL TOOLS	3	1	7	CCEA	FINANCES
BASIC DRAFTING	2	3	7	CCAyC	LETTERS
LINEAR ALGEBRA	3	2	8	CCB	MATH. & PHYS.
INTEGRAL CALCULUS	3	2	8	CCB	MATH. & PHYS.
LOGIC CIRCUITS	2	3	7	CCB	ELECT. SYST.
PROGRAMMING I	3	2	8	CCB	ELECT. SYST.
Humanist Institutional Training Program					
Institutional Foreign Language Program					

	T	P	C	CENTER	DEPARMENT
THIRD SEMESTER					
NUMERICAL METHODS	3	2	8	CCB	MATH. & PHYS.
VECTOR CALCULUS	3	2	8	CCB	MATH. & PHYS.
COMPUTER ORGANIZATION	3	2	8	CCB	ELECT. SYST.
UNIX	2	3	7	CCB	ELECT. SYST.
DATA STRUCTURES	3	2	8	CCB	ELECT. SYST.
PROGRAMMING II	3	2	8	CCB	ELECT. SYST.
Humanist Institutional Training Program					
Institutional Foreign Language Program					

	T	P	C	CENTER	DEPARMENT
FOURTH SEMESTER					
ASSEMBLY LANGUAGE	2	2	6	CCB	ELECT. SYST.
DISCRETE MATHEMATICS	3	2	8	CCB	MATH. & PHYS.
OPERATING SYSTEMS	3	2	8	CCB	ELECT. SYST.
PHYSICS	3	4	10	CCB	MATH. & PHYS.
PROGRAMMING III	3	2	8	CCB	ELECT. SYST.
Humanist Institutional Training Program					
Institutional Foreign Language Program					

CENTER OF BASICS SCIENCE
COMPUTER SYSTEMS ENGINEER (Curriculum 2016)

	T	P	C	CENTER	DEPARMENT
FIFTH SEMESTER					
PROFESSIONAL ETHICS	2	2	6	CCSyH	PHILOSOPHY
DIFFERENTIAL EQUATIONS	3	2	8	CCB	MATH. & PHYS.
ELECTRIC CIRCUITS	2	5	9	CCB	ELECT. SYST.
COMPUTER NETWORKS I	3	2	8	CCB	ELECT. SYST.
WEB PROGRAMMING SYSTEMS	3	2	8	CCB	ELECT. SYST.
DATABASE	2	3	7	CCB	INFORM. SYST.
Institutional Internship Program (Induction Course)					

	T	P	C	CENTER	DEPARMENT
SIXTH SEMESTER					
DESCRIPTIVE STATISTICS AND PROBABILITY	3	2	8	CCB	STATISTICS
ELECTRONICS I	2	5	9	CCB	ELECT. SYST.
COMPUTER NETWORKS II	3	2	8	CCB	ELECT. SYST.
WEB TECHNOLOGIES	3	2	8	CCB	ELECT. SYST.
ANALYSIS AND SYSTEMS DESIGN	3	2	8	CCB	INFORM. SYST.
Institutional Social Service Program (Induction course)					
Institutional Internship Program					

	T	P	C	CENTER	DEPARMENT
SEVENTH SEMESTER					
STATISTICAL INFERENCE	3	2	8	CCB	STATISTICS
ELECTRONICS II	2	5	9	CCB	ELECT. SYST.
COMPUTER NETWORKS III	2	3	7	CCB	ELECT. SYST.
MOBILE DEVICES PROGRAMMING	3	2	8	CCB	ELECT. SYST.
DATABASE LANGUAGES	2	3	7	CCB	ELECT. SYST.
Institutional Social Service Program					
Institutional Internship Program					

	T	P	C	CENTER	DEPARMENT
EIGTH SEMESTER					
COMPILERS I	3	2	8	CCB	ELECT. SYST.
DISTRIBUTED DATABASES	2	3	7	CCB	ELECT. SYST.
ELECTRONIC INSTRUMENTATION	2	3	7	CCB	ELECT. SYST.
SEMINAR OF COMPUTER SYSTEMS I	2	3	7	CCB	ELECT. SYST.
OPERATIONS RESEARCH	3	2	8	CCB	MATH. & PHYS.
ELECTIVE PROFESSIONALIZING I	-	-	-		-
Institutional Social Service Program					
Institutional Internship Program					

	T	P	C	CENTER	DEPARMENT
NINTH SEMESTER					
DEVELOPMENT OF ENTREPRENEURS	2	3	7	CCEyA	MANAGEMENT
COMPUTER LAW	2	2	6	CCSyH	LAW
COMPILERS II	3	2	8	CCB	ELECT. SYST.
SYSTEM DEVELOPMENT METHODOLOGIES	3	2	8	CCB	INFORM. SYST.
SEMINAR OF COMPUTER SYSTEMS II	2	3	7	CCB	ELECT. SYST.
ELECTIVE PROFESSIONALIZING II	-	-	-		-
Institutional Social Service Program					
Institutional Internship Program					

PROFESSIONALIZING ELECTIVE SUBJECTS

Elective professionalizing, I and II

INSTITUTIONAL PROGRAMS

- Humanist Formation Program
- Foreign languages promotion
- Social service
- Internships
- Tutorials
- Mobility and academic exchange

QUALIFICATION REQUIREMENTS

The graduate shall adhere to the provisions of Chapter XIV of the degree in technical superior technical level and degree Article 156 of the General Regulations of Teaching (NI-20300-19) which states:

"Once accredited all subjects and requirements in curriculum racing technical superior technical level and degree, the graduate may request the issue of his title at the Department of School Control, after complying with the following elements:

I. Having met the requirements of Social Service, Humanist Training, Internships and Foreign Language defined in institutional programs;
II.- Do not have any debt with the Autonomous University of Aguascalientes;
III.- Having covered the quota established in the plan means to obtain the title; Y
IV.- Have submitted the exit exam[1]

[1]Approved by the Honorable University Council at its regular meeting on December 15, 2011.