

Oaxaca State University System

Facts 2020

Oaxaca  
June 2020

**ML. Alejandro Murat Hinojosa**  
Governor of the State of Oaxaca

**Dr. Modesto Seara Vázquez**  
Rector of the Oaxaca State University System



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*Partial view. University of Sierra Juárez. Ixtlán de Juárez*



*University of Chalcatongo. Partial views.*



2014-2019 Generation. Technological University of the Mixteca. Huajuapan de León, 2019.



Inauguration of the Photovoltaic Solar Park of the Technological University of the Mixteca, Huajuapan de León, 2019.



*The governor of Oaxaca laid the first Stone to mark the beginning of the construction of the NOVAUNIVERSITAS, Santos Reyes Nopala, 2019*



*Aerial view of the Photovoltaic Solar Park of the Universidad Tecnológica de la Mixteca. Huajuapan de León.*



*Dental Center. University of Sierra Sur. Miahuatlán de Porfirio Díaz*



We are in the midst of a crisis that is seriously affecting our universities. But it is not just a health crisis, neither for Oaxaca nor for Mexico. It is a crisis that affects all of humanity, as few have done in history. There will be time to analyze the causes of a crisis that, although it was difficult to avoid, could have been essentially reduced if, when it began in China, the other countries had understood that this was not only China's problem, and if then the proper consequences had been drawn, with a solidary and effective action at a universal level, we would not have reached the situation we are in. But that is the past and what matters now is to look to the present to try to secure the future.

In a little more than thirty years, we have been able to build, together, a set of universities that have opened up paths of hope for the young people in the most disadvantaged socioeconomic situation in Oaxaca, that is, in Mexico. During that period we have overcome other crises, from hurricanes and earthquakes to political and social catastrophes, and we are sure that we will overcome this one too, even though we are aware that it is a very serious universal crisis that will leave its mark on humanity for years to come.

We could be tempted to throw in the towel and give up and take refuge in resignation in the face of the inevitable; but that is not our style. I have always insisted that the serious thing is not to fall, but to not know how to bounce back; with even more force than how we have fallen. And that is where we stand.

Following the instructions received from the competent authorities, we have organized the closure of the universities to avoid contagion, but we have established a work system in which university authorities, professors and students ensure the continuity of studies, with a control of programmatic advances; while the operational personnel, on a rotating basis and with their usual high sense of responsibility, ensure the maintenance of the facilities, which constitute an important heritage for Oaxaca and for Mexico.

It is human, in these conditions, to feel discouraged, but we are not made of the wood of those who give up in the face of difficulties. In these years, we have proven that we know how to work with discipline, with a sense of purpose, which is what one should feel when working for the destiny of a people.

In our universities we have forged and continue to forge the most effective instruments to ensure social mobility and the advancement of those who were born in social sectors that did not previously have great opportunities to prosper. Also, through the training of high-level cadres, the development of scientific research centers, the intense revival of traditional cultural values and the reception of universal values, we have laid the foundations, with the support of the state and federal authorities, for an unprecedented transformation and development of the state. And we must not let that be lost in a crisis which, however deep it may be, we cannot allow to become a progressive decline. We have the will to do so, and that is what matters.

We know that the crisis is multidimensional and that it is accompanied by a serious economic dimension. Our students are among those who are particularly affected, because the precarious economy in which their families find themselves requires the support of all its members. There have been job losses and the closure of economic activities that were already precarious. This has translated, for the first time in the history of our universities, into a drop in the number of pre-registrations. Many of these are due to immediate circumstances, due to isolation, but others may be of longer duration.

We understand that the priority must be to ensure subsistence, because without the present there is no future, but neither should we forget that without a future, the present is not worth much. For this reason, we appeal to the sense of responsibility, to the intelligence constantly demonstrated by our professors and students and all university workers; to grit our teeth in the face of adversity, to strengthen solidarity among all of us, to contribute what we have to contribute to a collective salvation operation, and recognizing the urgency, in many cases, of attending to the most immediate needs, let us not forget the broader objective, of ensuring the march towards a better future for Oaxaca and Mexico.

**Modesto Seara Vazquez**  
Rector

2 Junio 2020



# Basic information about OSUS

## 10 Universities with 18 Campuses

Technological University of the Mixteca (UTM)  
Huajuapan de León.

University of the Sea (UMAR)  
Puerto Escondido Cámpus, Puerto Angel Campus,  
Huatulco Campus and Oaxaca Campus.

University of the Isthmus (UNISTMO)  
Tehuantepec Campus, Ixtepec  
Campus and Juchitán Campus.

University of Papaloapan (UNPA)  
Loma Bonita Campus and Tuxtepec Campus.

University of Sierra Sur (UNYSIS)  
Miahuatlán de Porfirio Díaz.

University of Sierra Juárez (UNSIJ)  
Ixtlán de Juárez.

University of La Cañada (UNCA)  
Teotitlán de Flores Magón.

NovaUniversitas (NU)  
Central Campus I Ocotlán, San Jacinto Peripheral  
Campus and Juxtlahuaca Peripheral Campus.

University of the Coast (UNCOS)  
Pinotepa Nacional.

University of Chalcatongo (UNICHA)  
Chalcatongo de Hidalgo.

## University Size

UTM: 104 Ha	UMAR: 74.43 Ha
UNISTMO: 121.02 Ha	UNPA: 54.66 Ha
UNYSIS: 20 Ha	UNSIJ: 43.67 Ha
UNCA: 15.75 Ha	NU: 50.5 Ha
UNCOS: 12.26 Ha	UNICHA: 20 Ha

**Total: 516 Ha**

## Buildings per university

UTM: 113	UMAR: 150
UNISTMO: 111	UNPA: 77
UNYSIS: 60	UNSIJ: 39
UNCA: 43	NU: 30
UNCOS: 22	UNICHA: 21

**Total: 666 Buildings\***

## Research

**30** Research Institutes

**183** Laboratories

**29** Workshops

## Educational offer

**88** Bachelor's degree, most of them are engineering.

**41** Postgraduate programs: 10 Doctorates and 31 Masters.

## University-community

- More than **11,000** students
- Around **1,150** full-time professors

## Patents

**24** in process of registration (UTM, UMAR, UNISTMO, UNPA, UNSIS, UNSIJ, UNCA) and **7 have been registered** (UTM and UMAR).

## OSUS, an example of strictly ecological universities:

- More than 5 km<sup>2</sup> of forest, tropical or High-Altitude, where the endemic flora and fauna are preserved.
- Wasterwater treatment.
- Energy saving measures such as passive and isothermal systems, photovoltaic solar parks at UTM and UNISTMO. The UTM is now self-sufficient in electrical energy.
- Roads lit with photovoltaic systems.
- Houses with solar thermal systems.
- Permanent measures to prevent forest fires, etc.

\*There are more buildings under construction that are being put into service throughout the year.



*Graduation ceremony. UNISTMO, Campus Tehuantepec. July 2019*

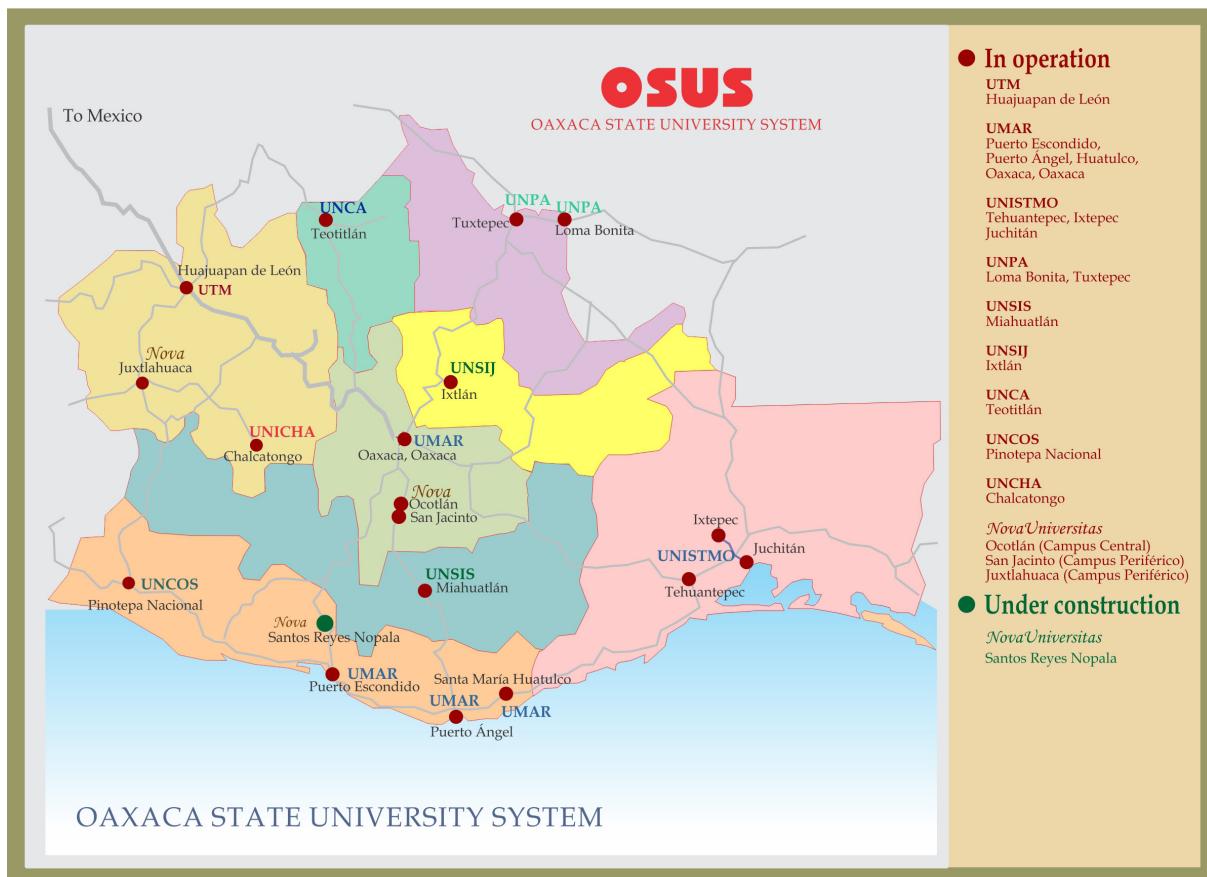


*Graduation ceremony. UNPA, Campus Tuxtepec. July 2019*



*Graduation ceremony. UNICHA, Chalcatongo de Hidalgo. July 2019*

# What is OSUS?



## Distribution of universities in the State

The university model of the System of State Universities of Oaxaca (SUNEO) was created to serve as a cultural instrument for the transformation of the social environment. This can be achieved through high – performance universities, which create a comparative advantage for the State of Oaxaca and make it attractive for productive investments.

It is aimed at contributing to the decentralization of high quality higher education services in the following substantive functions:

- Teaching
- Research
- Cultural Diffusion and
- Promoting Development

The entire university community has a full- time schedule, working a total of **1854 hours per year**. The academic-administrative organization is of a matrix type: the professor-resear-

chers belong to a research institute and they teach as well.

At the beginning of 1990, activities began with the Technological University of the Mixteca. In 1992, UMAR was created and the project was extended to a new socio- cultural and environmental reference point in Oaxaca: the Oaxacan coast, with the aim of promoting the culture of the sea.

During the first decade of the 21st century, the project was extended throughout the state, expanding the educational offerings in the field of science and technology and developing scientific and technological research and creating many services for the people of Oaxaca.

OSUS is made up of ten universities on eighteen campuses distributed throughout all regions of Oaxaca. The campuses are scalable to meet demand: UTM (Huajuapan), UMAR (Puerto Escondido, Puerto Ángel, Huatulco and Oaxaca), UNIST-

MO (Tehuantepec, Ixtepec, Juchitán), UNPA (Tuxtepec and Loma Bonita), UNSIJ (Ixtlán), UN-SIS (Miahuatlán), UNCA (Teotitlán de Flores Magón), NovaUniversitas (Ocotlán, San Jacinto and Juxtlahuaca), UNCOS (Pinotepa Nacional) and UNICHA (Chalcatongo de Hidalgo). Additionally other campuses are under construction.

## **Educational offers and research: 88 Bachelor's degree; 41 Postgraduate programs (10 Doctorates and 31 Masters); 30 Research Institutes.**

Other services include: 13 bookstores, one public library, one university clinic, two botanical gardens, three experimental farms, two seismological stations, twenty-two meteorological stations, one Technology Park, two Solar Parks, one Software Development Company, State Historical Mining Archive, Tourism Training Center, Wind Training Center and an Agavetum.

### **High Quality Education**

### **Research in Science and Advanced Technology**

## **Work Philosophy**

### **Results require Work**

**At OSUS we work  
1,854 hours a year with discipline and perseverance**

### **PROFESSORS**

**2,132,100 Hours/professor a year  
1,108 professors**

- All of them full-time.
- Tutorials to guide students in the problems they have.
- Mentoring system, with which students have access to any of the teachers for consultations on their respective subjects.
- Internal events, providing a space for teachers, students and the population in general in order to promote their cultural and professional training process and the updating of knowledge.
- Distribution of their time in Teaching, Research, Cultural Diffusion and Promoting Development.
- For teaching purposes, professors are assigned to a career headquarter.
- For research they are assigned to an Institute.
- Co-operation agreements with other Higher Education Institutions, public and private, national and international.

### **STUDENTS**

**15,759,000 Hours/students a year  
More than 11,000 students**

- Admission exams before and after the propaedeutic courses.
- Propaedeutic courses during the year, to choose: short, with duration of 2 months and long, of 7 months.
- Responsibility and constant work.
- Reading one novel a month and writing a four-page summary
- Full-time students, with access to computer labs, libraries, workshops and laboratories.
- Scholarships to students to facilitate their stay at the university.
- Internships at the end of the sixth and eighth semesters. Two months every summer.
- Travel practices, combined with classes.
- Languages: English (mandatory), Mandarin Chinese, French and German as options.
- Academic title, with thesis or General Examination of knowledge of CENEVAL.
- Sports and artistic activities.



## **Exclusive Dedication with Service Readiness**

**8 hours of formal activities, classes and research**

Libraries are open on some campuses until midnight and on Saturdays.

Computer labs are available to students 24 hours a day.

Some of the professors live on campus (houses and apartments).

The Rector lives on campus.

The Vice-Rectors also live on the campuses, in houses or apartments.

From 7 p.m. there are cultural, sports and recreational activities for students.

Saturday, computer classes on all campuses are offered, for primary or secondary school children from nearby towns (four Saturdays, two or three hours each; two groups of twenty- five children).



# Infrastructure and Equipment

## Technological University of the Mixteca



*Institute of Industrial and Automotive Engineering. UTM. Huajuapan de León.*



*NMR - Nuclear Magnetic Resonance Spectroscopy. UTM. Huajuapan de León.*



# Technological University of the Mixteca

## Campus Map



## University Campus

- 1.- Security booth
- 2.- Emergency Plant
- 3.- Drivers booth
- 4.- Indoor Parking Lot
- 5.- Internal audit
- 6.- School Services
- 7.- Monument to Don Benito Juarez
- 8.- Office of the Academic Vice-Rector
- 9.- Network Department
- 10.- Pump house and elevated tank
- 11.- Office of the Vice-Rector of Administration
- 12.- Rector's Office
- 13.- Flag Pole
- 14.- Bathrooms
- 15.- Indoor Parking Lot
- 16.- Computer Labs 1-2
- 17.- Computer Labs 1-2
- 18.- Assembly Hall
- 19.- Institute of Industrial and Automotive Engineering
- 20.- Outdoor Parking Lot
- 21.- Basketball courts
- 22.- Soccer Field
- 23.- Football stands
- 24.- Infirmary
- 25.- Food Science Laboratory
- 26.- Institute of Science and Humanities
- 27.- Temporary exhibition hall
- 28.- Advanced electronic laboratories
- 29.- Center for Strategic Business Studies
- 30.- Cafeteria
- 31.- Language Center
- 32.- Enlargement of the language center
- 33.- Language Laboratory
- 34.- Self-access room
- 35.- Screen printing workshop
- 36.- Chemistry Laboratory
- 37.- Computer Lab 7
- 38.- Bathrooms
- 39.- Computer Lab 8
- 40.- Applied Mathematics Laboratory
- 41.- Applied Physics Laboratory
- 42.- Electronics workshop
- 43.- Systems Laboratory
- 44.- Audiovisual room
- 45.- Classroom module I of 1-5
- 46.- Classroom module II of the 6-10
- 47.- Classroom module III of 11-14
- 48.- Classroom module IV with classrooms 15-19
- 49.- Emergency Plant
- 50.- Surveillance
- 51.- Classroom module V with classrooms 20 to 24
- 52.- Classroom module VI with classrooms 25 to 29
- 53.- Classroom module VII with classrooms 30 to 34
- 54.- Classroom module VIII with classrooms 35 to 39
- 55.- Classroom module IX with classrooms 40 to 44
- 56.- Bathrooms
- 57.- Classrooms modules X from 45 to 50
- 58.- Module of Bathrooms
- 59.- Wastewater treatment plant
- 60.- Vehicle access and surveillance
- 61.- Procurement and Material Resources Department
- 62.- Bathrooms
- 63.- Food Processing Plant
- 64.- Mining historical archive
- 65.- Flood Control Pump
- 66.- Institute of Mining
- 67.- University Cultural Center
- 68.- Institute of Agribusiness
- 69.- Institute of Hydrology
- 70.- Chemical-Biological Laboratory
- 71.- Emergency plant
- 72.- Reagent room
- 73.- Advanced Manufacturing Technology Laboratory
- 74.- Postgraduate laboratories
- 75.- Natural Products and Food Laboratory
- 76.- Institute of Mechatronics and Electronics
- 77.- Plastic and textile workshop
- 78.- Compressor Shed
- 79.- New materials research laboratory
- 80.- Bathrooms
- 81.- Digital Media Lab
- 82.- Institute of Design
- 83.- Ceramic Workshop
- 84.- Mechanical metal workshop
- 85.- Wood workshop
- 86.- Emergency plant
- 87.- Computing Institute
- 88.- Usability Lab USALAB
- 89.- Institute of Physics and Mathematics
- 90.- Postgraduate Studies Division
- 91.- Auditorium
- 92.- Security booth
- 93.- Residential Parking Lot
- 94.- Professors' Residences 1-15
- 95.- Library
- 96.- Extension of the library, reading room
- 97.- Expansion of the library, the collection
- 98.- Apartments of Professors I
- 99.- Apartments of Professors II
- 100.- Area of washing for apartments
- 101.- General Services
- 102.- Warehouse
- 103.- Heliport
- 104.- Seismological unit
- 105.- Nursery
- 106.- Greenhouse
- 107.- Agavetum
- 108.- Photovoltaic Solar Park
- 109.- Automotiv Mechanics Laboratory
- TECHNOLOGICAL PARK
- 110.- Entry and surveillance
- 111.- KADASOFTWARE Building I
- 112.- KADASOFTWARE Building II
- 113.- Emergency plant

Institutes  
Laboratories  
Services  
Workshops  
Centers  
Administration  
Classrooms



Represented area



Total campus area

**Total area of the university**  
**104 hectares**

**Built area**  
**30,495 m<sup>2</sup>.**

# University of the Sea



*Institute of International Studies Isidro Fabela. UMAR. Huatulco Campus.*



*Toco-Surgery area. Robotic Clinic. UMAR. Puerto Escondido Campus.*



# University of the Sea

## Puerto Escondido Campus – Campus Map



Buildings  
 Walkways  
 Total area

31

## University Campus

- 1.- Institute of Genetics
- 2.- Laboratory of Genetics
- 3.- Laboratory of Biology
- 4.- Laboratory of Chemistry
- 5.- Laboratory of Electronics
- 6.- Livestock Products Laboratory
- 7.- Laboratory of Geographic Information System -GIS.
- 8.- Laboratory of Biological Collections
- 9.- Workshop for Wood and Seed Technologies
- 10.- Rector's Office
- 11.- Office of the Vice-Rector of Administration
- 12.- Office of the Academic Vice-Rector and Campus Service Center
- 13.- Professors' offices
- 14.- Rector's House
- 15.- Parking Lot (Housing Unit)
- 16.- Apartments for professors
- 17.- Laundry Room
- 18.- Library
- 19.- Language Center
- 20.- Self - Access Room
- 21.- Computer Labs
- 22.- Classrooms
- 23.- Audio-Visual Rooms
- 24.- Warehouse and Maintenance
- 25.- Gate Access and Security Booth 1
- 26.- Gate Access and Security Booth 2
- 27.- Auditorium
- 28.- Cafeteria
- 29.- Indoor Parking Lot
- 30.- Outdoor Parking Lot
- 31.- Multi-Purpose Hall
- 32.- Drinking Water Reservoir
- 33.- Electrical Substation and Emergency Power System
- 34.- Monument to Benito Juárez
- 35.- Cistern
- 36.- UMAR Meteorological Station
- 37.- Robotic Clinic
- 38.- CONAGUA Meteorological Station
- 39.- Postgraduate Studies Division
- 40.- Wastewater Treatment Plant

Total area represented 100%

**TOTAL AREA OF THE UNIVERSITY  
13.3 HECTARES**



# University of the Sea

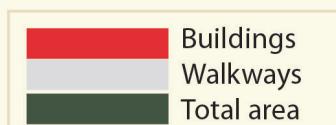
## Puerto Ángel Campus – Campus Map



1.- Institute of Ecology and Industry  
2.- Institute of Resources  
3.- Institute of Social Sciences and Humanities  
4.- Program Directors Department  
5.- Laboratories (Coastal Population Dynamics, Histology, Oceanography, Geology, Mass Calculation)  
6.- Food Laboratory  
7.- Aquaculture Laboratory  
8.- Research Laboratory (Microbiology, Chemistry, Biology and Genetics)  
9.- Chemical Oceanography and Biogeochemistry Laboratories.  
10: Laboratory (Oceanography, Biology and Ecology of Benthos).  
11.- Marine Invertebrate Systematics Laboratory  
12.- Laboratories (Ichthyology and Fisheries Biology, Coastal Dynamics).  
13.- Physical Oceanography and Fish Collection Laboratories.  
14.- Language Laboratory  
15.- Construction and Maintenance Systems Laboratory  
16.- Environmental Engineering Laboratory (Biotechnology, Electrochemistry, Chemical Analysis, Organic Chemistry Simulation and Instrumentation)  
17.- Pilot plant (Microbiology, Processes and Water Laboratory)

18.- Saltwater Cistern, Developmental Ecology and Larvotron Laboratory  
19: General Maintenance Workshop  
20.- Carpentry Workshop  
21.- Mechanical Workshop  
22.- Postgraduate Studies Division  
23.- Rector's Office  
24.- Campus Service Center  
25.- Promotion and Image Department - UMAR  
26.- Infirmary  
27.- Electrical Substation and Emergency Plant 1  
28.- Electrical Substation and Emergency Plant 2  
29.- Wastewater Treatment Plant  
30.- Cistern  
31.- Elevated tank  
32.- Rector's house  
33.- Houses for professors  
34.- Apartments for professors  
35.- General Warehouse 1  
36.- General Warehouse 2  
37.- Access Gate and Guard House 1  
38.- Access gate and Guard House 2

Total area represented 100%



**TOTAL AREA OF THE UNIVERSITY  
7.4 HECTARES**



# University of the Sea

## Huatulco Campus – Campus Map



## University Campus

- 1.- Institute of Economic Studies
- 2.- Tourism Institute
- 3.- Institute of Communication
- 4.- Institute for International Studies
- 5.- Communication Sciences Laboratory
- 6.- Tourism Laboratory
- 7.- Multimedia Lab
- 8.- Rector's Office
- 9.- Office of the Vice-Rector of Administration
- 10.- Office of the Academic Vice-Rector and Campus Service Center
- 11.- Network Department and Maintenance
- 12.- Language Center
- 13.- Self-Access Room
- 14.- Computer Labs
- 15.- Classrooms
- 16.- Cefeteria
- 17.- Library

- 18.- Auditorium
- 19.- Rector's house
- 20.- Apartments for Professors
- 21.- Access Gate and Guard House 1
- 22.- Access Gate and Guard House 2
- 23.- Civic Square
- 24.- Warehouse
- 25.- Parking Lot 1 (Housing Unit)
- 26.- Parking Lot 2
- 27.- Electrical Substation 1 and Emergency Plant 1
- 28.- Electrical Substation 2 and Emergency Plant 2
- 29.- Elevated Tank
- 30.- Heliport
- 31.- Wastewater Treatment Plant
- 32.- Laundry Room
- 33.- Meteorological Station
- 34.- Multi-Purpose Hall

Total area represented 100%

**TOTAL AREA OF THE UNIVERSITY  
20 HECTARES**



# University of the Sea

Botanical Garden. Puerto Escondido Campus – Campus Map



- Buildings
- Walkways
- Total area

## Services

- 1.- Security Booth
- 2.- Orchidarium
- 3.- Cistern
- 4.- Septic Tank

Total area represented 100%

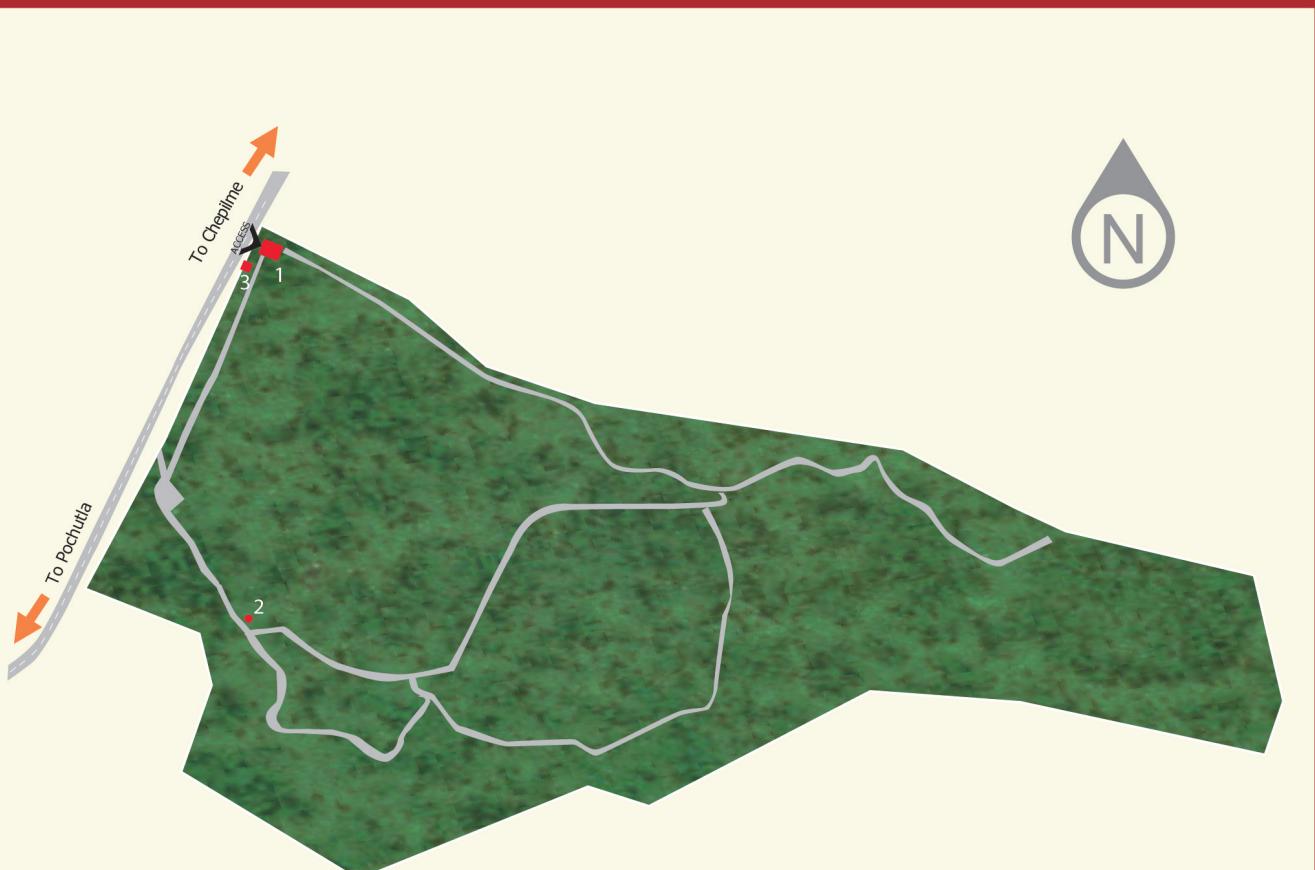
**TOTAL AREA OF THE UNIVERSITY  
16.7 HECTARES**





# University of the Sea

Chepilme Botanical Garden, Puerto Ángel Campus – Campus Map

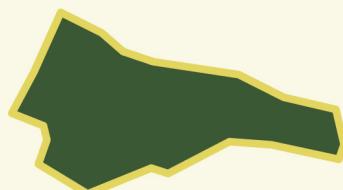


- Buildings
- Walkways
- Total area

31

## Services

- 1.- Security Booth
- 2.- Water Well
- 3.- Septic Tank



Total area represented 100%

**TOTAL AREA OF THE UNIVERSITY  
8.6 HECTARES**



# University of the Sea

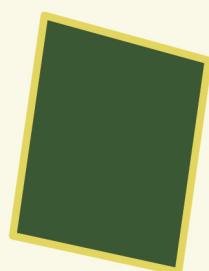
Experimental Field – Puerto Escondido Campus – Campus Map.



## Buildings

- 1.- Multipurpose Laboratory for Animal Science (Reproduction, Surgery, Anatomy, Pathology, Microbiology, Nutrition and Biochemistry)
- 2.- Main Access
- 3.- Warehouse
- 4.- Cage for iguanas
- 5.- Cage for baby iguanas
- 6.- Incubation Building
- 7.- Water Well
- 8.- Plantation of timber trees
- 9.- Nursery
- 10.-Cage for turkeys

- 11.- Cage for sheeps
- 12.- Ostrich Area
- 13.-Area for cows
- 14.-Planting Area
- 15.-Cage for rabbits
- 16.- Greenhouse
- 17.-Area for bulls
- 18.-Area for calves
- 19.-Area for Silo
- 20.-Grazing area
- 21.-Area of forage trees
- 22.-Septic Tank
- 23.- Water Pump for Greenhouse



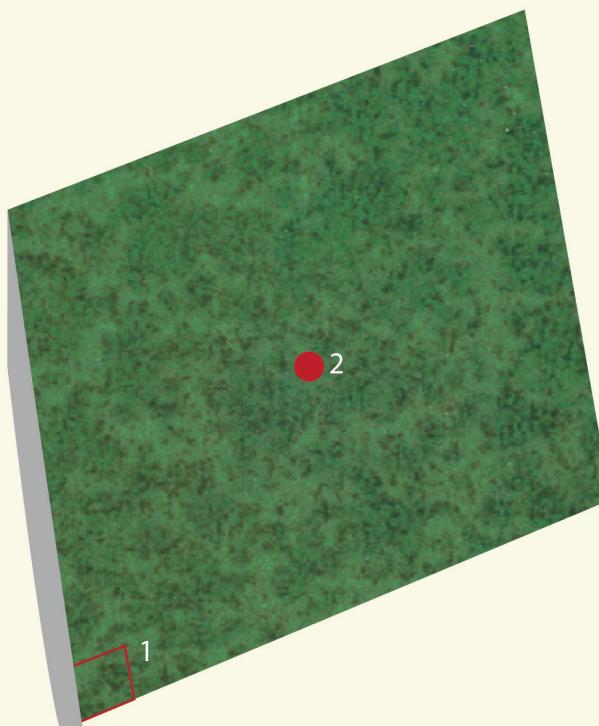
Total area represented 100%

TOTAL AREA OF THE UNIVERSITY  
8 HECTARES



# University of the Sea

Palotada – Campus Map



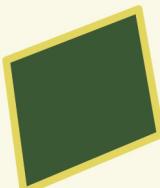
Buildings  
Walkways  
Total area

## Facilities

- 1.- Security Booth Area
- 2.- Internet Link Tower

Total area represented 100%

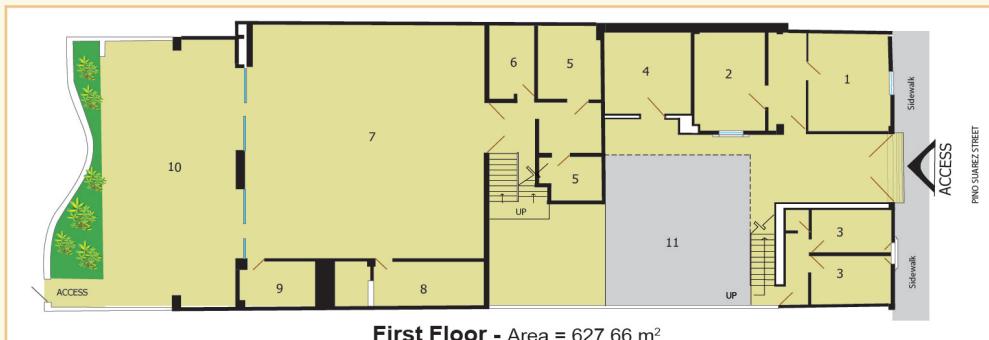
**TOTAL AREA OF THE UNIVERSITY  
0.16 HECTARES**



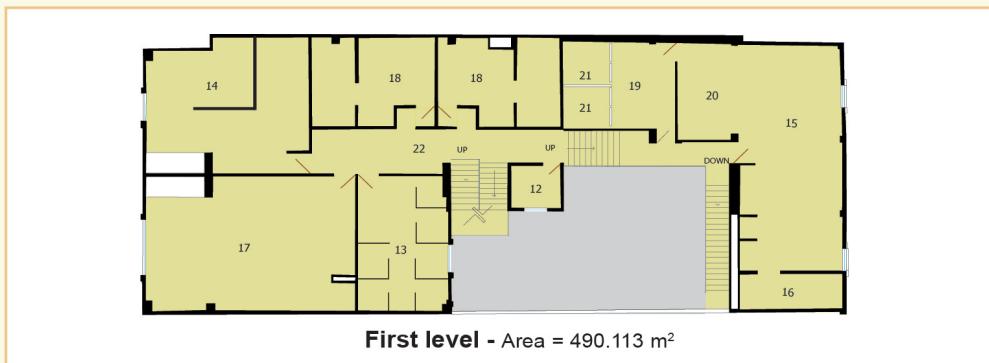


# University of the Sea

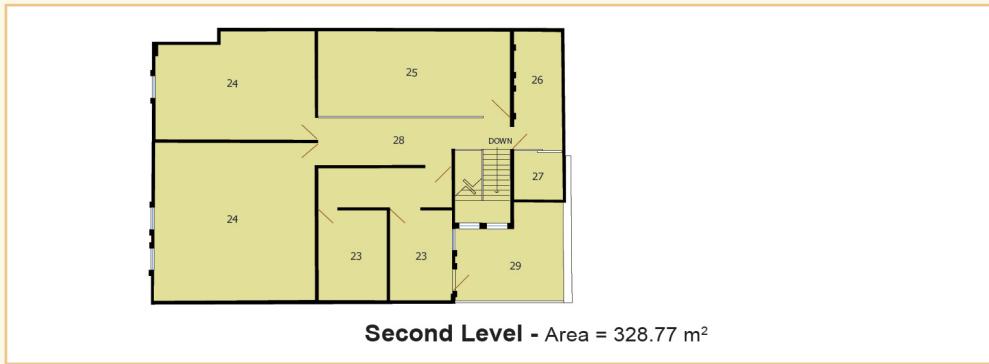
## Oaxaca Campus CECAT- Architectural plant -University campus



First Floor - Area = 627.66 m<sup>2</sup>



First level - Area = 490.113 m<sup>2</sup>



Second Level - Area = 328.77 m<sup>2</sup>

## University Campus

### First Floor

- 1.- SUNEO Reception
  - 2.- Office of the Vice-Rector of Relations and Resources
  - 3.- Guests Room
  - 4.- SUNEO Warehouse
  - 5.- Maintenance Warehouse 1 and 2
  - 6.- Input Warehouse
  - 7.- Multi-Purpose Hall
  - 8.- Equipment Warehouse
  - 9.- Supply Warehouse
  - 10.- Lobby
  - 11.- Parking Lot
- 
- ### First level
- 12.- School Services
  - 13.- Professor's Offices
  - 14.- Simulation room

### 15.- Kitchen

- 16.- Bakery
- 17.- Computer Lab
- 18.- Men's and women's bathrooms
- 19.- Shelving
- 20.- Kitchen Warehouse
- 21.- Cooling and freezing chamber
- 22.- Lobby

### Second Level

- 23.- Administrative Offices
- 24.- Classroom
- 25.- Library
- 26.- Machine Room
- 27.- Telecommunication Room
- 28.- Lobby
- 29.- Terrace

Built up area

Green area

Parking lot,  
Sidewalk or  
empty area

# University of the Isthmus



*Nutrition Research Center. UNISTMO, Juchitán Campus.*



*Chemistry Laboratory. UNISTMO, Tehuantepec Campus.*



# University of the Isthmus

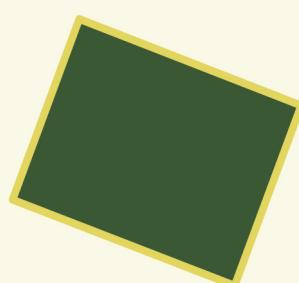
## Tehuantepec Campus- Campus Map



### University Campus

- 1. Gate Access and Security Booth
- 2. Rector's office
- 3. Office of the Vice-Rector of Administration
- 4. Basketball court
- 5. Material Resources
- 6. Cafeteria
- 7. Parking Lot
- 8. Rector's House
- 9. Housing Unit Parking Lot
- 10. Apartments for professors
- 11. Library
- 12. Classrooms 25-29, Computer Labs, Posgraduate Studies Lab, Audiovisual Room, Multi-Purpose Hall
- 13. Electronics Laboratory
- 14. Institute for Energy Studies
- 15. Energy Studies Laboratory
- 16. Solar panels
- 17. Wind Turbine
- 18. Language Center
- 19. Self - Access Room
- 20. Design Workshops
- 21. Engineering Laboratory
- 22. Chemistry Laboratory
- 23. Organic Chemistry Laboratory
- 24. Computer Lab
- 25. Professor's offices
- 26. Bathrooms
- 27. Classrooms 1-4
- 28. Classrooms 5-8
- 29. Classrooms 9-12
- 30. Classrooms 13-16
- 31. Office of the Academic Vice-Rector
- 32. Classrooms 17-20
- 33. Classrooms 21-24
- 34. Elevated Tank
- 35. Deep Water Well
- 36. Design Classrooms and Applied Mathematics Computer Lab
- 37. Auditorium
- 38. Emergency Plant
- 39. Emergency Plant 2
- 40. Solar Inverter House
- 41. Solar Park
- 42. Wastewater Treatment Plant

Buildings  
Walkways  
Total area



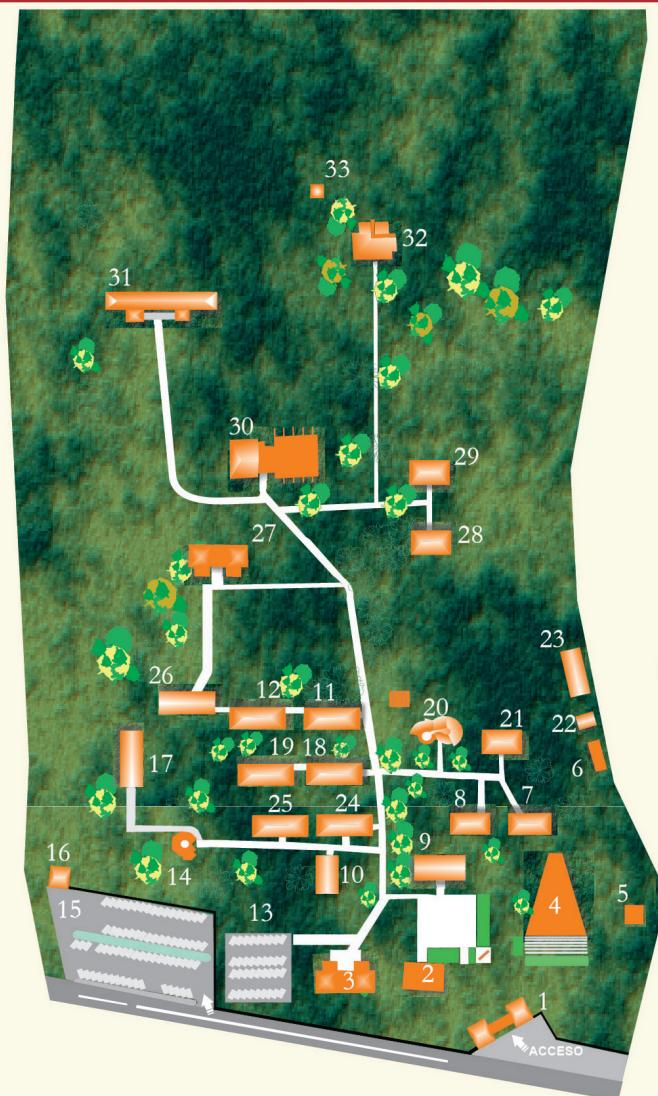
Total represented area 100%

**TOTAL AREA OF THE UNIVERSITY  
12.5 HECTARES**



# University of the Isthmus

## Ixtépec Campus- Campus Map



### University Campus

1. Gate Access and Security Booth
2. Rector's office
3. Professor's offices
4. Auditorium
5. Elevated Tank and Cistern
6. Electrical Substation
7. Computer Lab 1
8. Computer Lab 2
9. Office of the Vice-Rector of Administration
10. Bathrooms
11. Classrooms 1-4
12. Classrooms 5-8
13. Indoor Parking
14. Cafeteria
15. Outdoor Parking Lot
16. Gate Access and Security Booth
17. Material Resources
18. Classrooms 9-12
19. Classrooms 13-16

20. Language Center
21. Self-Access Room
22. Emergency Plant
23. Wood workshop
24. Classrooms 17-20
25. Classrooms 21-24
26. Classrooms 25-29, Audiovisual Room, Teamwork Room
27. Institute for Constitutional and Administrative Studies
28. Software Development Room, Networking Room, Computer Lab 3
29. Electronics Laboratory
30. Library
31. Apartments for professors
32. Rector's House
33. Deep Water Well

Buildings  
Walkways  
Total area



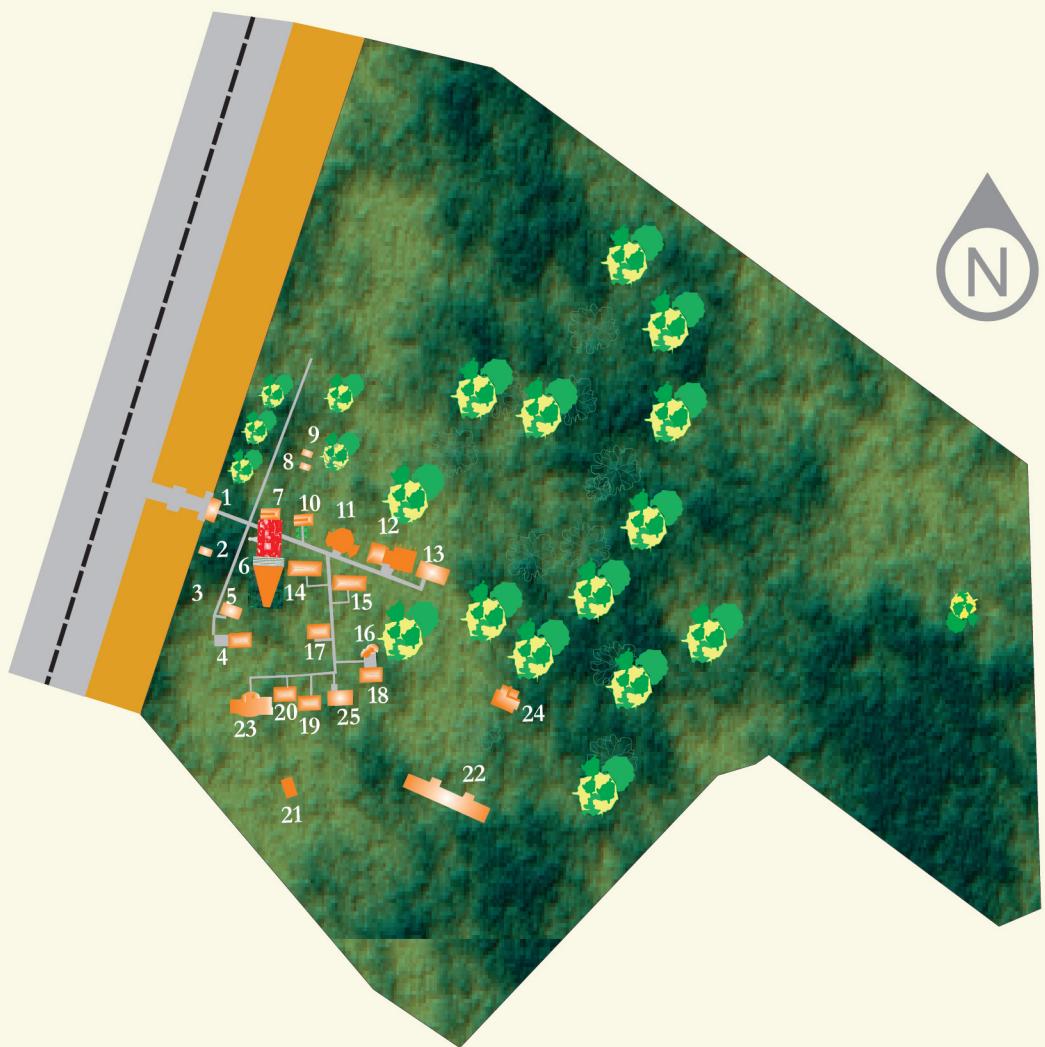
Total represented area 100%

**TOTAL AREA OF THE UNIVERSITY  
12.5 HECTARES**



# University of the Isthmus

Juchitán Campus- Campus Map



## University Campus

1. Gate Access and Security Booth
2. Emergency Plant
3. Parking Lot
4. Material Resources
5. Office of the Vice-Rector of Administration
6. Auditorium
7. Rector's office
8. Deep Water Well
9. Elevated Tank
10. Office of the Academic Vice-Rector
11. Cafeteria
12. Library
13. Professors' offices
14. Classrooms 1-5
15. Classrooms 6-10
16. Classrooms 11-15
17. Language Center
18. Computer Lab
19. Self-Access Room
20. Chemistry Laboratory
21. Biology Laboratory
22. Septic tank
23. Apartments for professors
24. Nutrition Laboratory
25. Wind Energy Training Center
26. Robotic Clinic

  
Buildings  
Walkways  
Total area



Total represented area 100%

**TOTAL AREA OF THE UNIVERSITY  
94.4 HECTARES**

# University of Papaloapan



*Institute of Biotechnology. UNPA. Tuxtepec Campus.*



*Single Cristal X-ray Diffractometer and Powder X-ray Diffractometer.  
UNPA. Tuxtepec Campus.*



# University of Papaloapan

## Loma Bonita Campus- Campus Map



### University Campus

1. Zootechnical Post
2. Emergency Plant
3. Security Booth
4. Gate Access
5. Warehouse
6. Infirmary
7. Office of the Academic Vice-Rector
8. Campus Service Center
9. Office of the Vice-Rector of Administration
10. Cafeteria
11. Design Workshops (Screen Printing, Ceramics, Metals and Wood)
12. Aquaculture Ponds
13. Lagoon
14. Rector's office
15. Bathrooms
16. Classrooms (14-15)
17. Multimedia Lab
18. Computer Labs 1&2
19. Classrooms (1-4)
20. Classrooms (5-8)
21. Classrooms (9-12)
22. Department
23. Language Center
24. Bathrooms located on the second floor of classroom
25. Two Story Classroom Building
26. Institute of Agro-Engineering
27. Professors' Offices
28. Elevated Tank
29. Biological Chemical Laboratory
30. Library
31. Electrical Circuits Laboratory
32. Mechatronics Laboratory
33. Physics Laboratory
34. Auditorium
35. Apartments for Professors
36. Rector's House
37. Heliport
38. Laboratory of Experiments and Physical Tests
39. Maintenance and Gardening

Buildings  
Andadores  
Total area



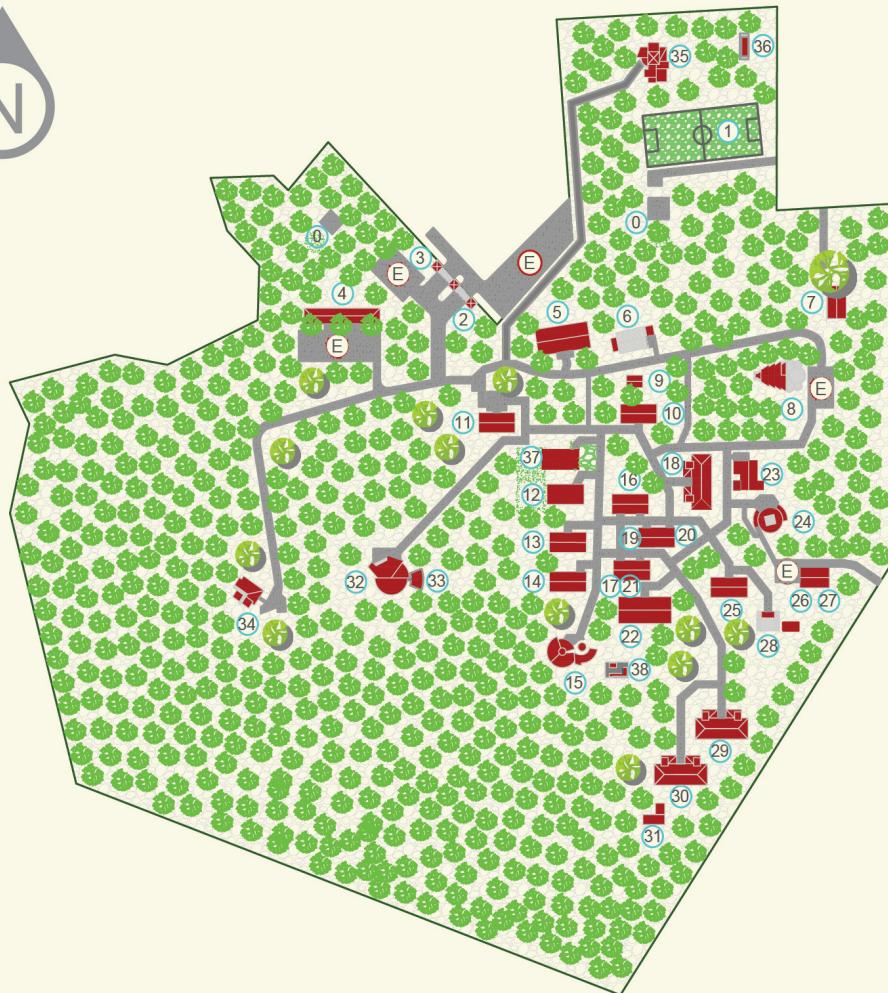
Total represented area 100%

**TOTAL AREA OF THE UNIVERSITY  
25.07 HECTARES**



# University of Papaloapan

Tuxtepec Campus- Campus Map



## Campus Universitario

- 1. Soccer Field
- 2. Gate Access
- 3. Security Booth
- 4. Apartments for professors
- 5. Two Story Classroom Building
- 6. Food Workshop
- 7. Maintenance
- 8. Auditorium
- 9. Emergency Plant
- 10. Office of the Academic Vice-Rector
- 11. Rector's office
- 12. Two Story Classroom Building
- 13. Computer Lab 1
- 14. Computer Lab 2
- 15. Language Center
- 16. Classrooms (1-5)
- 17. Network Department
- 18. Institute of Applied Chemistry
- 19. Classrooms (6-9)
- 20. Bathrooms
- 21. Classrooms (10-14)
- 22. Two Story Classroom Building
- 23. Office of the Vice-Rector of Administration
- 24. Cafeteria
- 25. Microbiology and Bioreactor Laboratory
- 26. Warehouse
- 27. Infirmary
- 28. Chemistry Laboratory
- 29. Institute of Biotechnology
- 30. Professors' offices
- 31. Bioterium Laboratory
- 32. Library
- 33. Reading Room
- 34. Rector's House
- 35. Robotic Hospital
- 36. Substation
- 37. Two Story Computer Lab
- 38. Emergency Plant- Substation 2

Buildings  
Walkways  
Total area



Total represented area 100%

**TOTAL AREA OF THE UNIVERSITY  
31.17 HECTARES**

# University of Sierra Sur



*Cultural and Recreational Center. UNSIS. Miahuatlán de Porfirio Díaz.*



*Dental Laboratory. UNSIS. Miahuatlán de Porfirio Díaz.*



# University of Sierra Sur

## Miahuatlán-Campus Map



### University Campus

1. Rector's office
2. Office of the Academic Vice-Rector
3. Office of the Vice-Rector of Administration
4. Postgraduate Studies Division
5. Institute of Municipal Studies
6. Institute for Public Health Studies
7. Institute of Nutrition
8. Institute of Computer Science
9. Language Center
10. Self-Access Room
11. Computer and Electronics Laboratory
12. Chemistry Laboratory
13. Laboratory of Biology
14. Food and Nutrition Research Center
15. Robotic Clinic
16. Nursing Practice Room
17. Information Technology Center
18. Dentistry Center
19. Center for Anatomy and Dissection
20. Auditorium
21. Assembly Hall
22. Library 1
23. Library 2
24. Center for Multidisciplinary Development
25. Computer Lab 1
26. Computer Lab 2
27. Computer Labs 3&4
28. Computer Labs 5&6
29. Computer Labs 8&9
30. Classrooms A
31. Classrooms B
32. Classrooms C
33. Classrooms D
34. Classrooms E
35. Classrooms F
36. Classrooms G
37. Classrooms H
38. Classrooms I
39. University Clinic
40. Cafeteria
41. Bathrooms
42. Warehouse
43. General Services Warehouse
44. Liaison Unit
45. Rector's House
46. Apartments for professors
47. Laundry Center
48. Cultural and Recreational Center
49. Soccer Field 7
50. Electrical Substation with Emergency Plant 1
51. Electrical Substation with Emergency Plant 2
52. Wastewater Treatment Plant 1
53. Wastewater Treatment Plant 2
54. Heliport
55. Gate Access
56. Parking Lot
57. Deep Water Well
58. Meteorological Station
59. Elevated Drinking Water Tank
60. Elevated Treated Water Tank 1 and 2

**Buildings**  
**Walkways**  
**Total area**



Total represented area 100%

**TOTAL AREA OF THE UNIVERSITY  
20 HECTARES**

# University of Sierra Juárez



*Wood Technology Workshop and Wood Technology Laboratory. UNSIJ. Ixtlán de Juárez.*

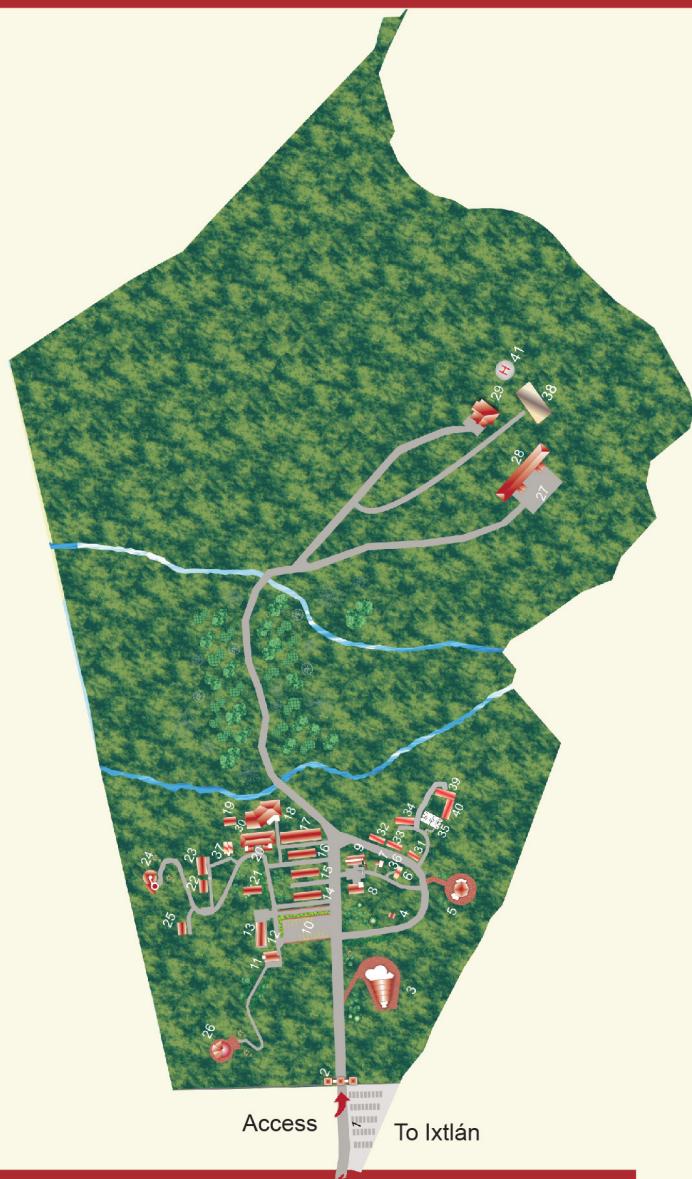


*Partial view of the Molecular Biochemistry Laboratory. UNSIJ. Ixtlán de Juárez.*



# University of Sierra Juárez

## Ixtlán de Juárez Campus Map



Buildings  
Walkways  
Total area

### University Campus

1. Outdoor Parking Lot
2. Gate Access
3. Auditorium
4. Electrical Substation
5. Cafeteria
6. Microbiology Laboratory
7. Network Department
8. Rector's Office
9. Office of the Academic Vice-Rector
10. Indoor Parking Lot
11. Office of the Vice-Rector of Administration
12. Infirmary
13. Warehouse
14. Classroom module A
15. Classroom module B
16. Classroom module C
17. Two-Story Building, classrooms D
18. Environmental Analysis Laboratory
19. Polluting Waste Hut
20. Institute of Environmental Studies
21. Electronics and Networking Laboratory
22. Computer Lab 1
23. Computer lab 2 and 3
25. Language Center
26. Library
27. Parking Lot for the Apartments
28. Professor's apartment
29. Rector's house
30. Gas Hut
31. Chemical-Biological Laboratory
32. Two Story Building for Computer Labs Building E
33. Two Story Building for Classrooms Building F
34. Maintenance Workshops
35. Multi-Purpose Hall
36. Herbarium and plant knowledge and conservation unit
37. Postgraduate Building
38. Plant Propagation area
39. Wood Technology Workshop
40. Wood Technology Laboratory
41. Heliport



Total represented area 100%

**TOTAL AREA OF THE UNIVERSITY  
43.67 HECTARES**

# University of La Cañada



*Institute of Food Technology. UNCA. Teotitlán de Flores Magón.*

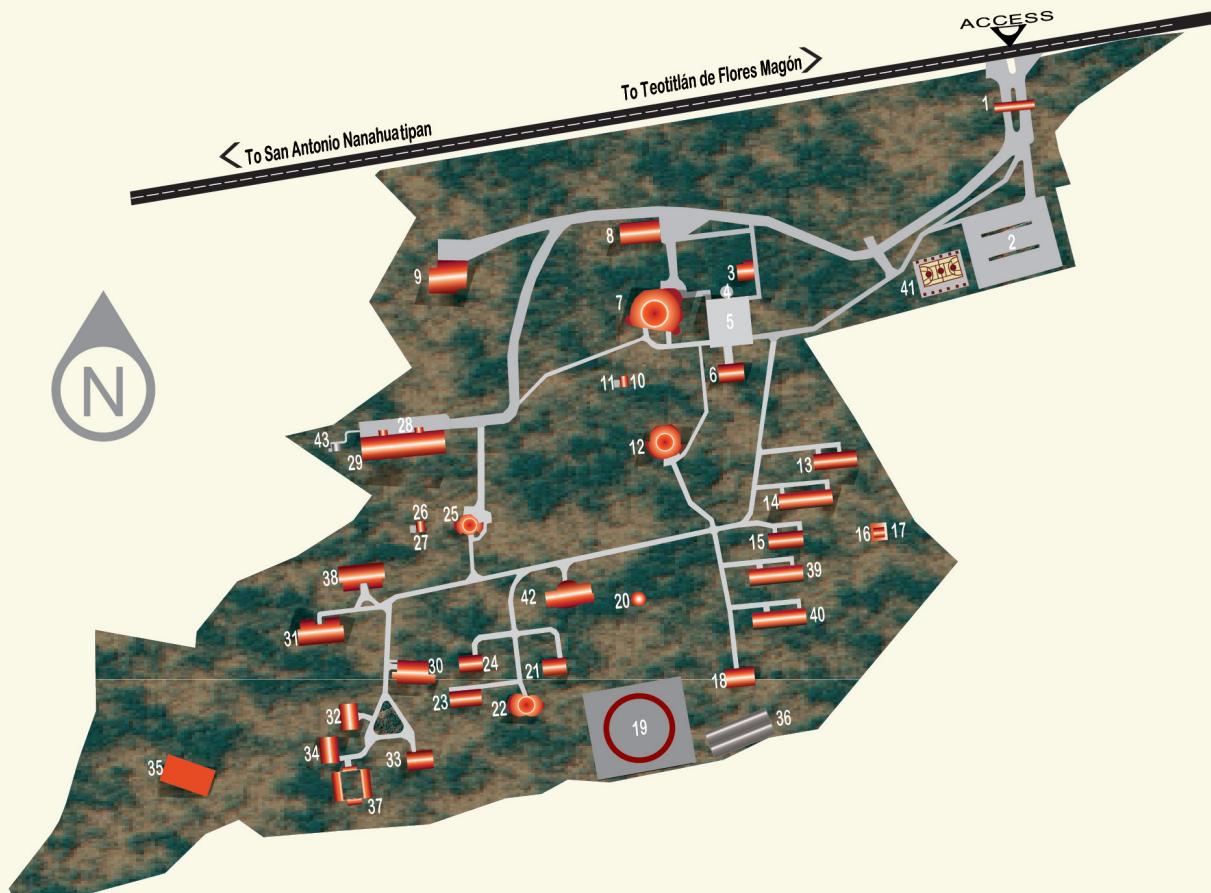


*Partial view of the interior of the Food Workshop. UNCA. Teotitlán de Flores Magón*



# University of La Cañada

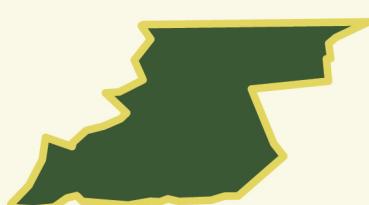
## Teotitlán de Flores Magón- Campus Map



### University Campus

1. Security Booth
2. General Parking Lot
3. Office of the Vice-Rector of Administration
4. Flagpole
5. Civic Square
6. Rector's Office
7. Auditorium
8. General Warehouse
9. Rector's House
10. Emergency Plant
11. Electrical Substation
12. Library
13. Classrooms 1-4
14. Classrooms 5 to 8
15. Classrooms 9 to 11
16. Pumping Station
17. Elevated Tank
18. Office of the Academic Vice-Rector
19. Heliport
20. Deep Water Well
21. Self-Access Room
22. Language Center
23. Computer lab
24. Computer Center
25. Cafeteria
26. Emergency Plant
27. Electrical substation
28. Parking Lot for Apartments
29. Apartments for Professors
30. Food Workshop
31. Institute of Pharmacobiology
32. Pharmacobiology Laboratory
33. Chemistry Laboratory
34. Biology Laboratory
35. Sewage Treatment Plant
36. Greenhouse
37. Research laboratory
38. Institute of Food Technology
39. Classrooms 12-20
40. Classrooms 21 -30
41. Basketball court
42. C.I.N.A.
43. Laundry Room

Buildings  
Walkways  
Total area



Total area represented 100%

**TOTAL AREA OF THE UNIVERSITY  
15.753 HECTÁREAS**

# NovaUniversitas



*Library. NOVAUNIVERSITAS Central Campus, Ocotlán de Morelos.*

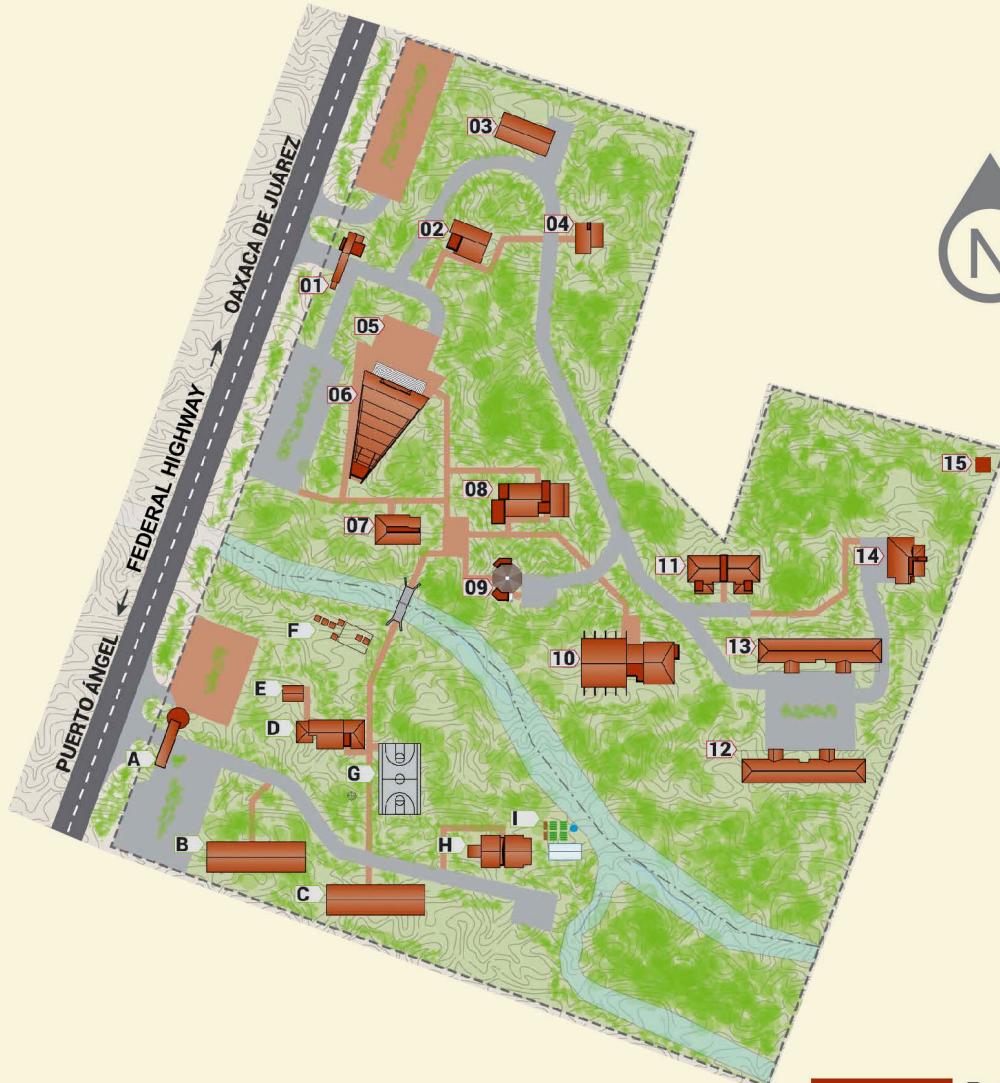


*Classroom. NOVAUNIVERSITAS, Juxtlahuaca Peripheral Campus.*



# NovaUniversitas

Campus and San Jacinto Peripheral Campus, Campus Map



## Ocotlán Central Campus

1. Gate Access
2. Rector's Office
3. Warehouse
4. Office of the Vice-Rector of Administration
5. Civic Square
6. Auditorium
7. Office of the Academic Vice-Rector
8. Recording and Transmission Rooms and Multimedia Department
9. Cafeteria
10. Library
11. Professor's Office
12. Professors' Apartments Module 1
13. Professors' Apartments Module 2
14. Rector's House
15. Elevated Tank

## San Jacinto Campus

- A. Gate
- B. Classrooms Module B
- C. Classrooms Module A
- D. Director's Office
- E. Electrical Substation
- F. Wastewater Treatment Plant
- G. Sports area
- H. Technical Staff Offices
- I. Nursery Area

Buildings  
Walkways  
Total area



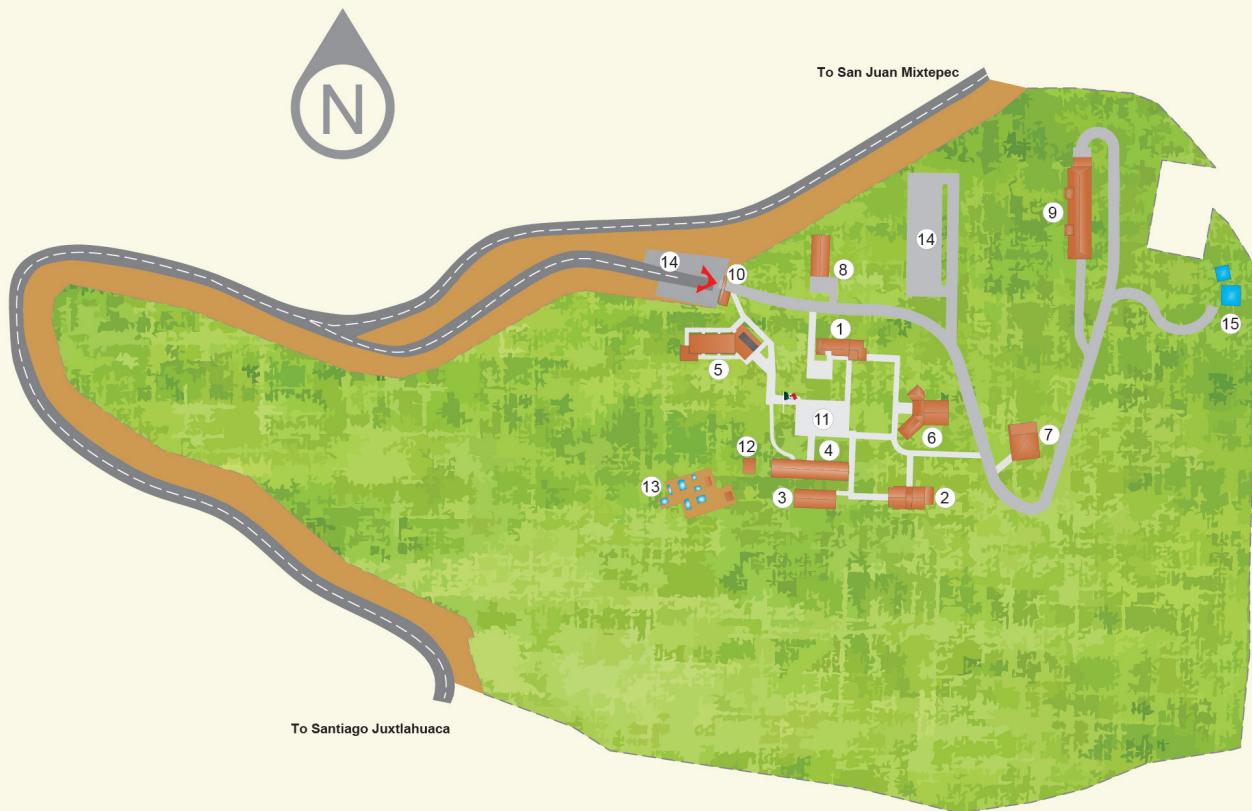
Total area represented 100%

**TOTAL AREA OF THE UNIVERSITY  
9.6 HECTARES**



# NovaUniversitas

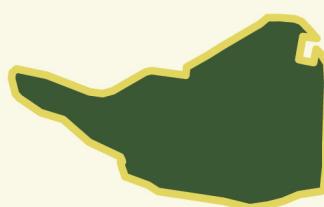
## Juxtlahuaca Peripheral Campus -Campus Map



### Juxtlahuaca Peripheral Campus

1. Director's Office and Campus Services Center
2. Technical Staff Offices
3. Biological Chemical Laboratory
4. Classrooms A01-A07
5. Auditorium
6. Library
7. Cafeteria
8. Warehouse
9. Residence for professors
10. Access and Security Booth
11. Civic Square
12. Electrical Substation
13. Wastewater Treatment Plant
14. Parking Lot
15. Elevated Tank

Buildings  
Walkways  
Total area



Total area represented 100%

**TOTAL AREA OF THE UNIVERSITY  
16 HECTARES**

# University of the Coast



*Robotic Clinic. UNCOS. Pinotepa Nacional.*

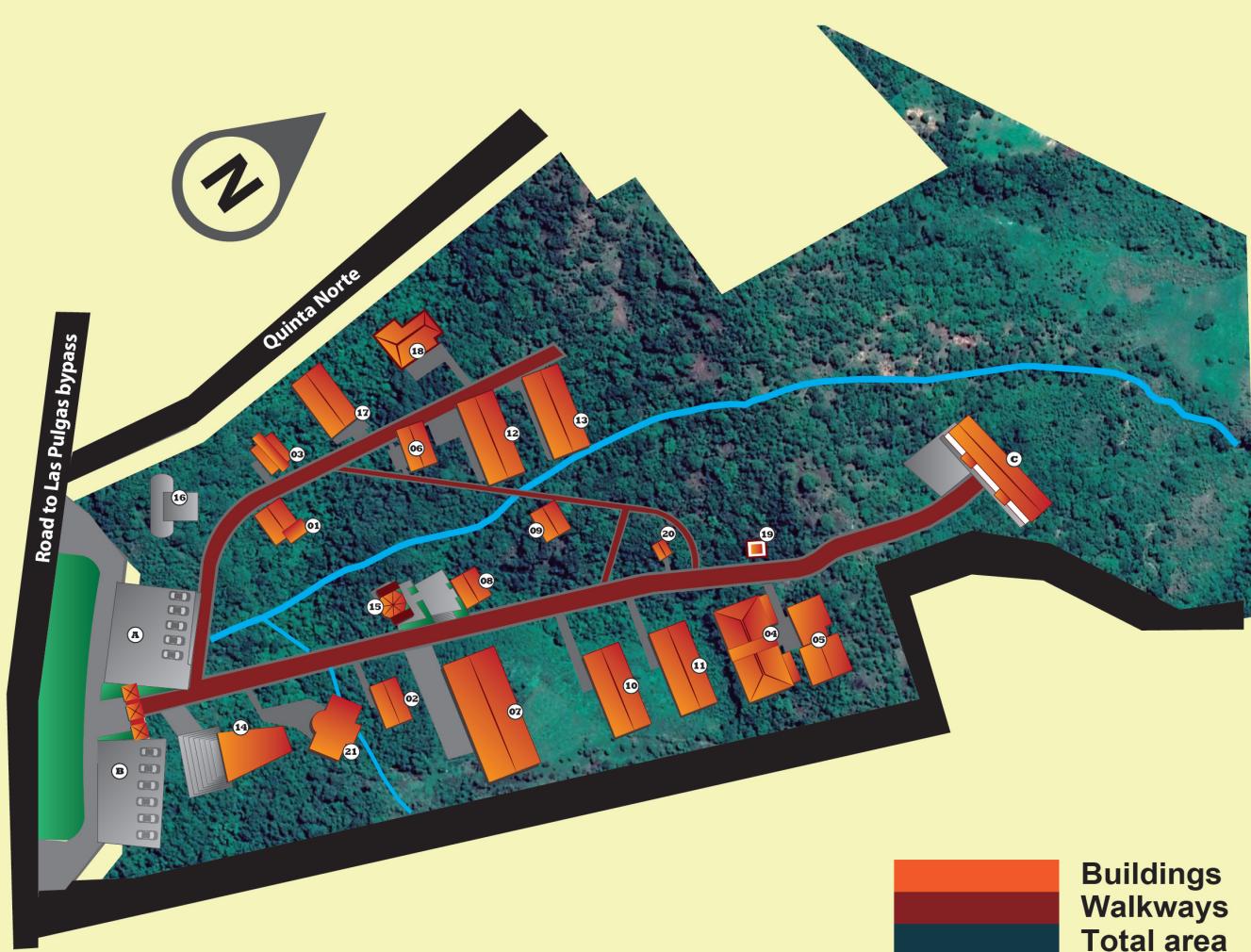


*Mother and Child Unit Laboratory. UNCOS. Pinotepa Nacional.*



# University of the Coast

## Pinotepa Nacional - Campus Map



Buildings  
Walkways  
Total area

## University Campus

- 1. Rector's Office
  - 2. Office of the Vice-Rector of Administration
  - 3. Office of the Academic Vice-Rector
  - 4. Professors' Offices
  - 5. Library
  - 6. Computer Labs
  - 7. Workshops
  - 8. Self-Access Room
  - 9. Chemistry Laboratory
  - 10. Classrooms A1-A4
  - 11. Classrooms A1-A9
  - 12. Classrooms A10-A19
  - 13. Classrooms A20-A29
  - 14. Auditorium
  - 15. Cafeteria
  - 16. Treatment Plant
  - 17. Warehouse
  - 18. Rector's House
  - 19. Elevated Tank
  - 20. Machine Room
  - 21. Robotic Clinic
- A. Indoor Parking Lot
  - B. Outdoor Parking Lot
  - C. Apartments for professors

Total area represented 100%

**TOTAL AREA OF THE UNIVERSITY  
12.23 HECTARES**



# University of Chalcatongo



*Robotic Clinic. UNICHA. Chalcatongo de Hidalgo.*



*Toco-Surgery area. Robotic Clinic. UNICHA. Chalcatongo de Hidalgo.*



# University of Chalcatongo

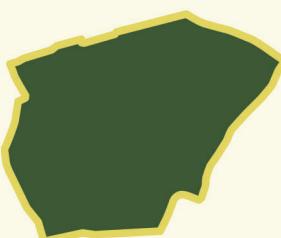
## Chalcatongo-Campus Map



### University Campus

- 1. Main Access
- 2. Office of the Vice-Rector of Administration
- 3. Material Resources Office
- 4. Indoor Parking Lot
- 5. Auditorium
- 6. Rector's Office
- 7. Office of the Academic Vice-Rector
- 8. Chemistry Laboratory
- 9. Emergency Plant
- 10. Cafeteria
- 11. Computer Lab 1
- 12. Classrooms A1-A9
- 13. Classrooms A10-A19
- 14. Library
- 15. Computer Lab 2
- 16. Language Center
- 17. Professors' Offices
- 18. Apartments for professors. Building A
- 19. Apartments for professors. Building B
- 20. Parking Lot for Residential Area
- 21. Health Science Laboratories
- 22. Heliport
- 23. Rector's House
- 24. Robotic Clinic
- 25. Food and Nutrition Research Center
- 26. Classrooms s A20-A28
- 27. Module of 4 Rooms

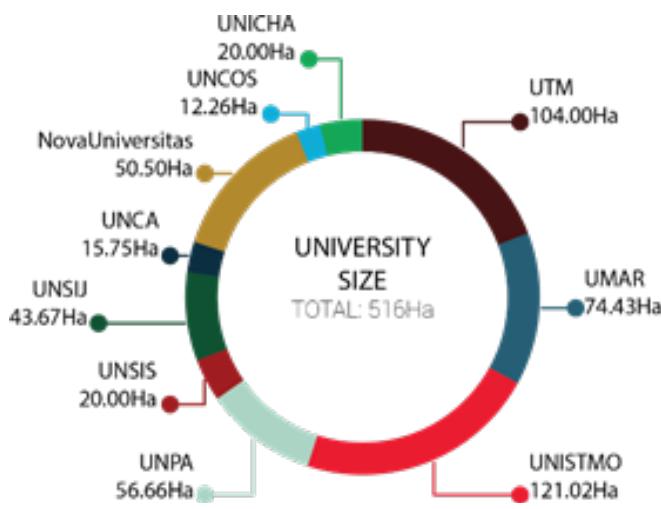
  
Buildings  
Walkways  
Total area



Total area represented 100%

**TOTAL AREA OF THE UNIVERSITY  
20 HECTARES**

The infrastructure and equipment that OSUS has are a very valuable asset for Oaxaca, allowing OSUS to offer high quality educational opportunities in first class facilities.



**516 Ha.  
Total Area**

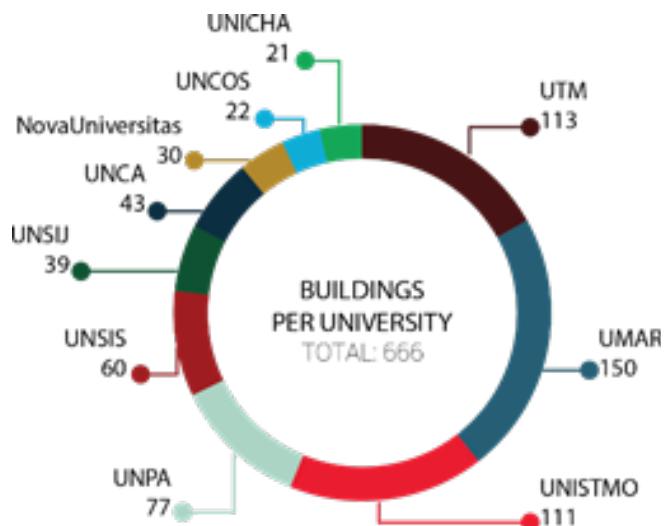


Food and Nutrition Research Center. UN-SIS. Miahuatlán de Porfirio Díaz

Even more valuable, is the opportunity for quality higher education for low-income youth who can not travel elsewhere.



Gas Chromatography. UNSIJ. Ixtlán de Juárez



**666 Buildings  
In Total**

# Most representative equipment per university

**OSUS has 30 Research Institutes supported by  
183 Laboratories and 29 Workshops**

## TECHNOLOGICAL UNIVERSITY OF THE MIXTECA

### Advanced Manufacturing Technology Laboratory

Plastic injection moulding machine.  
3D Printer.  
2 CNC machining centers.  
CNC Plasma Cutter.  
5 degrees of freedom robot.  
Electro-Erosion machine.  
Injection moulding machine for plastic, Dream series. Professionally manufactured, precise, stable in its operation, with servo- drive, and with considerable savings of 30% to 80% of electrical energy in its operation, also obtaining very short molding cycles.

### Biotechnology Laboratory

Ultra high performance liquid chromatography coupled to a mass spectrometer with a Waters quadruple time of flight detector (UPLC- QTOF).  
PerkinElmer Gas Chromatography.  
Refrigerated centrifuge with rotor of 50 mL tubes Eppendorf brand.  
Control shaking Incubator, IKA Brand.  
CPXH ultrasonic bath. 20.8 L, 40 kHz.  
Branson brand.  
Incubator, Shel Lab.  
Rotary Evaporators, IKA.

### Laboratory of Bioactive Principles.

400 MHz Nuclear Magnetic Resonance Spectroscopy, Brucker brand.  
FT-IR Platinum ATR Spectrophotometer.  
Bruker brand.  
VARIAN CP-3800 Gas Chromatograph coupled to mass spectrometer 1200L. Synergy HTX 96 well microplate spectrophotometer. Biotek.  
HPLC equipped with UV-vis, refractive index and fluorescence detectors, GBC brand.  
Atomic absorption spectrophotometer 932 AA. GBC.

### Food Science and Technology Laboratory

4Distiller with fully automatic operation system. LabTech brand.

Climatic chamber with capacity of 260 L.  
Double beam UV-Vis spectrophotometer, accuracy +/- 5 nm.  
Supercritical extraction equipment, created at UTM.  
Ultrasound bath.  
Chroma meter, Konica Minolta.  
Cereal extruder.



*Scanning electron microscope. Electron Microscopy Laboratory. UTM. Huajuapan de León*

### Bioprocess Laboratory

4 Liter Freeze-dryer.  
Bioreactor with automatic control of 3 L.  
Spray dryer of 1.5 L/h.  
Digester and distiller for Kjeldahl protein analysis.  
Tangential flow membrane microfiltration equipment.  
Nanofiltration equipment by normal and tangential flow membranes.  
UV-Vis spectrophotometer.  
Nanodrop type micro volume spectrophotometer.  
Centrifuge with rotor for 50 ml. and 15 ml. tubes.  
Endpoint thermocycler.  
Photo-documentation system for gels.  
Orbital Shaking - Incubator.  
Horizontal electrophoresis chamber.

### Microbiology Laboratory

Type A2 Biosafety cabinet, Labconco.  
Orbital Incubator SEV-PRENDO.  
Horizontal autoclave 30 L SEV-PRENDO  
Incubator SEV PRENDO.

Optical microscope.  
Stereo microscope.

### **Physicochemical Laboratory**

Eppendorf 5804R Refrigerated Centrifuge with Rotor.  
Digital homogenizer model T18, IKA.



*Advanced Manufacturing Technology Laboratory.  
UTM. Huajuapan de León*

### **Instrumentation Laboratory**

Gas scrubber.  
Kjeldahl Digestion System.  
Kjeldahl micro-distiller.  
Ultra-freezer.  
3L. Ultrasonic Bath.

### **Bromatology Laboratory**

Tray dryer, created at UTM.  
Solar dryer, created at UTM.  
Microplate Spectrophotometer.  
1.5 L. Freeze-dryer.

### **Chemistry Laboratory**

Fume extraction hood with cabinet  
Micro - Kjeldahl Digester.  
Kjeldahl Distillation Apparatus.  
Thermobalance to measure humidity, capacity 45 grams.  
UV-VIS Spectrophotometer.  
Analytical Balance.  
18 L Recirculating Bath.  
Rotary evaporator.

### **Digital Media Lab**

Camera for recording projects.  
Video switcher for data and signal transfer.

28" high resolution monitor for 3D animation finishing.  
TV set with professional lighting.  
Professional audio recording booth.  
Digi 002 audio console.

### **Photography Laboratory**

Professional digital reflex camera, model: 60D EOS.  
Semi-professional camera type Reflex- digital, model: T3i EOS.  
Tripod, brand Manufoto, semiprofessional 1.20 m.  
Cyclorama (bottom holder) 4m X 3m high, black paper background.  
Two-unit flash illumination set (tripod, diffuser and umbrella).  
7 in 1 reflective screen.  
Diorama for product photography.

### **Electron Microscopy Laboratory**

Scanning Electron Microscope TESCAN VEGA 3.

### **Solid State Laboratory**

Vacuum measuring chamber. LESKER.

### **Electroceramics Laboratory**

Carbolite Furnace CTF 17/300 (maximum operating temperature is 1700 C, Ar, air, O2).  
Keithley 6517B electrometer with software conductivity measurements against temperature up to 1000C.  
Keithley 2410 multimeter and voltage/current source with software.  
Kurt Lesker vacuum measuring chamber (4 probe doors).  
Lindberg/Blue M furnace, (maximum temperature 1500 C).  
Quadtech 7600 LCR meter (frequency range 10 Hz-2MHz).  
Planetary Mill, brand: Retsch Model: PM 100.  
2 electric furnaces, brand: Barnstead/Thermo-line Model: F47925-80 description: 1200 oC.

### **Intelligent Robotics Laboratory**

Autonomous vehicle AutoNOMOS v2.0.  
POWERBOT and POWERCUBE platform and manipulator arm.

### **Automatic Learning and Human Robot Interaction Laboratory**

4 Premium BIOLOID humanoid robots.  
2 NAO V4 and V5 humanoid robots.  
BLUETECHNIX Argos 3D cameras.  
Autonomous air vehicle.



*Ultra high pressure liquid chromatography coupled to a mass spectrometer. Biotechnology Lab. UTM. Huajuapan de León*

### **Image Processing and Computer vision Laboratory**

DELL computer, XPS 8700.  
dSPACE CP1104 card.  
HUMOSOFT data acquisition card.  
BK PRECISION Function Generator, model 4086ANG, 80MHz.  
Digital Oscilloscope of logical states, Tektronix, model MSO 3032 of 300MHz.  
Power supply GW Instek, model GPS-3303, 0-30V, 3A.

### **Electromechanical Systems Control Laboratory**

dSpace AutomativeDesk platform access. FPGA platform.  
Digital phosphorous oscilloscope, Tektronix, model DPO 3034, 300MHz.  
2 Tektronix Differential Voltage Providers, model TMD00200, 200MHz.  
Tektronix programmable power supply PWS4305, 0-30V, 5A.  
2 FUTEK torque sensors, model FSH02054 Data acquisition card National Instruments, M series, model USB-6225.  
1 Power supply GW Instek, model GPS- 3303, 0-30V, 3A.  
2 AC brushless motors, BALDOR, model BSM80N-275AA and BSM80N-275AF, 3.2 NM.  
3 LEESON CD engines, models: C4D17NK6C, C4D17NK7E and C4D17NK10C, features: 1/3HP, 1/2HP and 1/2HP.

### **Industrial Systems Correction and Fault Detection Laboratory**

DELL Computer, XPS 8700.

BK PRECISION Function Generator, model 4086ANG, 80MHz.

GW Instek power supply, model GPS-3303, 0-30V, 3A.

Tektronix Digital Oscilloscope, model TPS 20125, 2 channels, 100MHz.

BENQ projector, model MS517, 2800 lumens.

BK PRECISION power supply, model 1672, 0-32V, 3A.

### **Mining - Metallurgical Laboratory**

Automatic Compression Testers for Cubes and Cylinders PILOT brand of 1500kN.

Crusher for rigid polymers.

Glass Crusher.

Brinell hardness tester.

Shore C hardness tester.

Nucleating machine Explorer Junior.

Rock cutter machine, thick cut.

Rock cutter machine, fine cut.

Seismograph of 8 channels, Kinematics.

2 Petrographic microscopes with image acquisition program.



*Digital Media Lab. UTM. Huajuapan de León*

### **Physics Laboratory**

Opto-electronic equipment with stabilized laser.  
PASCO SCIENTIFIC didactic equipment for experimentation in modern physics and electromagnetism.  
PASCO SCIENTIFIC training equipment for experiments in classical mechanics, thermodynamics and optics.

Celestron AstroMaster 76 reflecting telescope. For astronomical observation.

### **Chemical Vapor Deposition Laboratory**

Chemical vapour deposition reactor; 4 modes: Metal-organic, aerosol assisted, atmospheric pressure and low-pressure sources.

## **Usability Labs**

2 GoPro Hero4Usalab cameras.

2 Digitizing tablets.

MacBook Pro. Its use in various activities such as usability testing to reporting.

ViewSonic Projector.

2 SAMSUNG 32" and 40" TV's. Equipment used for usability testing inside and outside the UsaLab, with it and the video camera equipment we can carry out the usability tests, focus group, et.

## **Computer Applications Laboratory**

Alien Computer Intel i-7 processor with 8 cores @3.7GHz GTX 660 video card.

## **Laboratory of Artificial Intelligence and Intelligent Systems.**

High performance computer cluster consisting of 3 servers. It consists of 48 cores with 96 threads of execution, 48 GB of RAM, including 3 NVIDIA Tesla K40C cards.

## **Systems Laboratory**

10 Raspberry Pi 2 cards.

2 Raspberry Pi 2 card touch screens.

Electronic Smart Board.

Dell 2100 mp. video projector.

Dell Inspiron One 2020 computer.

4 Dell Dimension 8300 DHM computers.

Dell Optiplex 780 Computers.

4 Optiplex Dell GX 520 Computers.

2 Dell Optiplex GX 260 Computers

Dell Dimension XPS Computer.

## **Bacteriology Laboratory**

LABCONCO laminar flow chamber for bacteriological analysis of water and soil.

Continental Scientific Refrigerator for culture media conservation.

## **Physical-Chemical Water Analysis Laboratory**

LABCONCO fume hood. Byepass system. Water quality measurement equipment (Hydrolab - DataSonde5X).

CONDUCTRONIC pH and temperature meter.

DR 5000 Spectrophotometer for various colorimetric analysis.

## **Soil Science Laboratory**

IKA plant sample mill, for chemical analysis of plant tissue.

Incubator to perform bacteriological cultures.

Incubator with CO<sub>2</sub> supply for bacteriological cultures that require a controlled environment.

Drying oven.

Total station. Survey instrument geodetic device.

## **Advanced Programming Practice Laboratory**

High performance computer with 4 RTX 2080TI video graphic cards.

Laptop computer with 1 TRX 2080 video graphic card.

25 Computers

Electronic blackboard.

Projector.

COI, NOI and SAE software.

## **Centre for Strategic Business Studies**

25 computers.

Electronic blackboard.

Projector.

COI, NOI and SAE software.

## **Analogue Electronics Laboratory**

8 Power supplies, brand: GW model: GPL- 3030D Two 0-30 volt, 2 Amp outputs with operating capacity, serial, parallel, one 5VDC output.

8 Oscilloscopes brand: HEWLETT PACKAED model: 54603B.

2 Monitors (20vis, vga/dvi). 2 CPU (dual core 13-212, 3.30 ghz, 4gb; hard disk: 500gb sata, 7200rpm) 2 keyboard; 2 mouse dell.

## **Advanced Electronics Laboratories**

11 Data acquisition cards (dat) brand: measurement computing, serial: USB- 1208FS

2 Universal Programmers, XELTEK. Model: SUPERPRO 610P

Function generator brand: Agilent; Model: 33120A; Waveforms: Sine, Cudrate, Triangle, Pulse, Ramp.

7 Digital Multimeters brand: steren model: mul-600.

2 Steren hot air stations.

9 Digital multimeters brand: fluke model: 107

Digital Oscilloscope 100 MHz Bank Brand: Tektronix model: TDS2012C, 2 channels, sampling rate: 2 GS/s, Record Length: 2.5 Kp; USB.

2 Bank Digital Oscilloscopes brand: Tektronix model: TDS220.

Tektronix TDS210 Digital Storage Oscilloscope. 5X magnifiers with led lamp Steren, model HER-740BL.

10 Digital Multimeters UNI-T, model: UT89XD.

Makeblock 10 in 1 Ultimate 2.0 Robot Kit.

B&K Precision 886 LCR/ESR meter.

GW Instek LCR-916.

AMPROBE SOLAR-100 Solar Power Meter.

3 Base Drills Dremel, model: 220.

2 Base Drills Pro's Kit model: 1PK500.

### **Analogue Electronics Laboratory I**

6 Power supplies GW, model: GPL-3030D two outputs 0-30 volts, 2 amps with operation capacity, serial, parallel, one output of 5VDC.

6 Oscilloscopes Hewlett-Packard, model: 54603B.

Oscilloscope AGILENT model: 54621A.

7 Function Generators Hewlett-Packard; Model 33120A; Waveforms: Sine, Cudrate, Triangle, Pulse, Ramp.

2 Monitors (20vis, vga/dvi).2 CPU (dual core 13-212, 3.30 ghz, 4gb; sata hard disk 500gb, 7200rpm) 2 keyboards; 2 mice dell.

### **Analogue Electronics Laboratory II**

8 Hewlett-Packard E3611A power supplies 0-15 Volt DC 3A

8 GW Instek model GFG-8216A 3 MHz Analog Function Generators.

Hewlett-Packard Oscilloscope Model: 54610B.

4 Hewlett-Packard Oscilloscopes model: 54603B .

5 Oscilloscopes AGILENT model: 54621A

Hewlett-Packard brand logic analyzer Model: 54620A.

Tektronix TDS420A Oscilloscope 4 channels.

Function generator HEWLETT PACKAED Model: 8647A.

2 Monitors (20vis, vga/dvi). 2 CPU (dual core 13-212, 3.30 ghz, 4gb; hard disk: sata of 500gb, 7200rpm) 2 keyboard; 2 mouse dell.

### **Robotics Laboratory**

7 Function Generators BK PRECISION; model: 4017 A; Waveforms: Sine, Cudrage, Triangle, Pulse, Ramp; range 0.2HZ to 50 MHZ in 8 ranges; resolution: 5 digits; Impedance: 50 OHMS.

8 Monitors (20VIS, VGA/DVI) 8 CPU (DUAL CORE 13-212, 3.30 GHZ, 4GB; Hard Drive: 500GB SATA, 7200RPM) 8 keyboards; 8 mice DELL.

8 Power Supplies BK PRECISION Model: 1760A.

XELTEK Universal Programmer Model: 280U.



*Natural Products and Food Laboratory.  
UTM. Huajuapan de León*

### **Digital Communications Laboratory**

9 Function Generators Tektronix; model: AFG1022; Waveforms: Sine, Cudrate, Triangle, Pulse, Ramp.

9 Oscilloscopes brand: Tektronix, model: TBS 1052B-EDU.

10 Agilent DC power supplies, model: E3646A.

10 Digital Multimeters brand: Agilent, model: 34401 A.

Oscilloscope Agilent; Model: 54621A.

Agilent Model 33120A Function Generator; Waveforms: Sine, Cudrate, Triangle, Pulse, Ramp.

### **Digital Communications Laboratory II**

10 DELL computers, model Optiplex 3040

3 Tektronix Model AFG1022 function generators; Waveforms: Sine, Cudrate, Triangle, Pulse, Ramp.

7 Function generators Agilent brand Model: 33120A; Waveforms: Sinusoidal, curved, triangular, pulse, ramp.

6 Tektronix Oscilloscopes model TDS 1002.

3 Tektronix Oscilloscopes model TDS 210.  
Tektronix Oscilloscope model TDS 220.  
7 GW Model 3030D DC power supplies.  
3 Matrix Model MPS-3005L-3 DC Power Supplies  
Spectrum analyzer model E4403 B ESA-L Series.  
HEWLETT PACKARD E-4411A/ESA-L1500A Spectrum Analyzer.

### **Automation and Mechatronic Systems Laboratory**

Experimental Platform: Machinery Fault Simulator-Rotor Dynamics Simulator by Spectraquest. This platform is for the control and absorption of mechanical vibrations in rotating machinery.

Advanced education control kit 250MHZ Controller board with 32MB RAM, CLP1104 DSPACE. Training system LAB-VOLT 8045-00. Power electronics system LAB-VOLT 8032- 20. Leeson amps 27 DUTY: CONT, FRAME: US56C, TORQUE: 11.7 ENCL: TENV, SER. FACT: 1.0, TYPE: DN C4D17NK6C.

Leeson engine 1/3 HP. 12 Volts C4D17NK6C. Leeson Engine 1/2 HP. 12 Volts C4D17NK7E. Leeson Engine 1/3 HP. 12 Volts C4D17NK9C. Leeson Engine 1/3 HP. 160 Volts C42D17FK5D. Leeson Engine 1/3 HP. 115/230 Volts A4C17D-H3G P. Screen Samsung 50". 2 three-phase motors of 5 HP with 2 poles Siemens RGZ. 10 HP three-phase motor with 4 poles Siemens RGZ. FESTO 152888 automation training kit with training panel and compressor.

### **Power and Electromechanical Systems Laboratory**

12 Dell INSPIRON 570 Computers. 3 Dell INSPIRON 660S Computers. 6 Matrix MPS-3005L-3 Power Supplies. 4 BK PRECISION 2831E Multimeters. 4 Function generators BK PRECISION 4084. 4 Tektronix TDS2012C Oscilloscopes.

### **Electronic Design Laboratory**

2 Hewlett Packard HPE3631A triple output regulated power supplies. Triple output power supply BK Precision 1672A. 6 Matrix MPS-3005L-3 power supplies Instek GPC-3030D power supply. 2 Astron RS-20A Power Supplies.

Tektronix TM502A current measurement system. Tektronix TDS 220 Oscilloscope. Tektronix TDS 2002B Oscilloscope. 4 Tektronix TDS2012C Oscilloscopes. Tektronix CFG253 function generator. Hewlett Packard function generator HP33120A. 4 Function generators BK PRECISION 4084 Multimeter FLUKE 117 TRUE RMS. 5 Multimeter BK PRECISION 2707B. Tektronix TX1 Multimeter. Hewlett Packard HP34401A Multimeter. 4 BK PRECISION 2831E Multimeters. 2 Dremel workstations. DYNASERV DMG3-1004C-115B control kit Xeltek Superpro 280U universal programmer. 13 Nexys 2 FPGA boards. 10 Discovery Kit STM32f429 cards. 10 Texas Instruments TMDSDOCK28335 cards. 3 TWR-KV31F120M cards. 11 USB-1208FS cards. Makerbot Replicator + 3D Printer. 4 LEGO MINDSTORMS NTX 2.0 Kits. 7 LEGO MINDSTORMS EV3 Kits.

### **Control Laboratory**

AMIRA/ELWE three-tank system, model DTS 200, Series 023898; Source code in C++/Pasca I Version 1.3 Windows; A/D-D/A Board Drivers version 1.1 for C++ and DLL.

Variable Load Speed Control AMIRA/ELWE, model DR 300, Series 023999; Source code in C++/Pascal Version 1.0 Windows; A/D- D/A Board drivers version 1.1 for C++ and DLL.

Magnetic suspension system brand: AMIRA/ELWE, model: MA 401, Series 023899; C source code in MS-DOS Version 3.0; A/D-D/A Board drivers version 1.1 for C, C++ and DLL.

Beam and ball system brand: AMIRA/ELWE, model BW 500, Series 023998; Source code in C++/Pascal Version 1.0 Windows; A/D-D- D/A Board drivers version 1.1 for C, C++ and DLL.

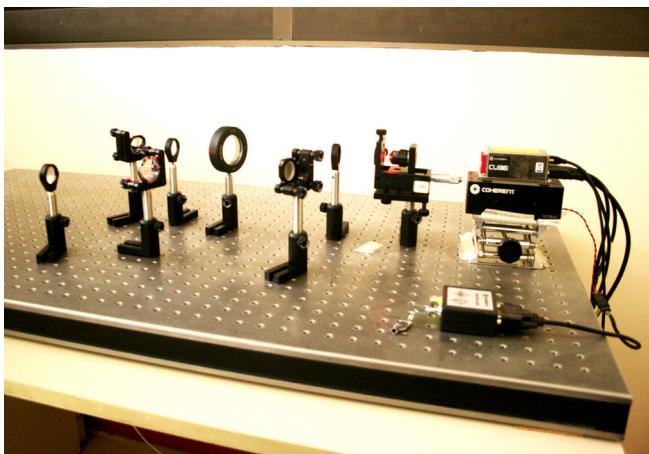
A Plant to control the temperature AMIRA/ELWE, model: LTR 701, Series 023998; Program MCON NO. Series: P369.42 Version 1.4; A/D-D/A Board Controllers version 1.1 for C, C++ and DLL.

### **Fiber Optic Laboratory**

Transmission and reception of optical fiber EDIBON brand, model EDICOM6.FIBER- OPTIC. KIT "Projects in fiber optics" brand NEWPORT, model 54603B.

2 Hewlett Packard power supplies, model E3611A.

A Source GW / model PGC-3030D.  
A Source Matrix /model MPS-3005L-3.



*Optical interferometer.  
Applied Optics Laboratory.*

2 Tektronix Oscilloscopes model TDS2012C.  
Synthesizer LCR/W METRO ESR BK PRECISION.  
HIOKI analyzer model 2010 (3197).  
2 ELECTRON transmission line trainers; model B45.  
ELECTRON Antenna Trainer KIT model: B45.  
2 Steren Hot Air Stations.

#### **Mathematics Laboratory**

3 Dell branded computers, Intel Core Processor i7-6700cpu@3.40 GHz. RAM 8.00 GB, 64 Bits operating system.

#### **Seismological Station**

Broadband seismic station, high dynamic range digital recorder (130 Db) with high resolution, multiformat, and telemetry in different formats and samples. Totally IP. Double internal memory.

#### **Industrial Automation Laboratory**

Industrial automation kit.  
Siemens PLC.  
Cabinet.  
Set of connection cables.  
Single and double acting pneumatic pistons.  
Proximity sensors.

## **UNIVERSITY OF THE SEA Puerto Ángel Campus**

#### **Benthic Ecology Laboratory**

6 stereoscopic microscopes.  
2 Binocular microscopes.  
Inverted microscope.  
2 Video cameras.  
Photographic camera.  
Equipment to measure environmental variables.  
Digital analytical balance.  
Turbidimeter.  
Underwater sports camera.  
2 Underwater camera and photo cases.

#### **Genetic Research Laboratory**

High-speed centrifuge.  
Bioanalyzer.  
Microspectrophotometer.  
Analytical balance.  
3 Thermocyclers  
3 Electrophoresis chambers  
2 UV Transilluminators  
Microcentrifuge.  
Thermo block. Ice machine.  
Potentiometer.  
3 Vortex Agitators

#### **Laboratory of Ichthyology and Fisheries Biology**

Portable electronic digital scale.  
Dissection stereomicroscope.  
Shrimp monkey net.



*Environmental Engineering Pilot Plant. Environmental Engineering Laboratories. UMAR. Puerto Ángel Campus*

### **Microbiology Research Laboratory**

Ultrafreezer.  
Laminar flow hood.  
Refrigerated orbital incubator.  
2 Incubators.  
Analytical balance.  
Potentiometer.  
Vertical autoclave.  
Horizontal autoclave.  
Freezer.  
Quany-Tray sealing machine.  
UV lamp.

2 Kjeldahl equipment.  
Commercial scale of 10 kg.  
2 Analytical balances.  
Stove.

### **Coastal Dynamics Laboratory**

Acoustic current and wave profiler (600 kHz).  
Acoustic current and wave profiler (250 kHz).  
Acoustic current profiler (1200 kHz).  
2 Current meters (1500 kHz).  
Furuno Marine Radar.  
2 Microcats 100 and 250 m.  
Microcat 350 m.  
Multiparameters.  
CTD 1024 m.  
Limnigraph.  
Echo sounder.  
3 GPS positioners.  
2 Weather stations.  
Pressure sensor.  
9 Thermistors.

### **Microalgal Biotechnology Laboratory**

UV-VIS spectrophotometer.  
Laminar flow hood.  
OLYMPUS BX51 Microscope.  
Stereoscopic Microscope.  
Refrigerated Centrifuge  
Stove and Oven.  
Refrigerator.  
2 Autoclave pot type sterilizers with different capacity.  
Vortex Corning.

### **Mass Calculus Laboratory**

Workstation with two 6-core processors.  
Workstation with two 12-core processors, to perform numerical simulations of ocean circulation and physical-biological interactions in marine ecosystems

### **Environmental Engineering Laboratory**

Gas chromatography with flame derector.  
Atomic absorption spectrophotometer.  
Luminescence spectrophotometer.  
Double beam UV-VIS spectrophotometer.  
Single beam UV-VIS spectrophotometer.  
Raman spectrophotometer.  
Potentiostat-Galvanostat.  
Liquid chromatograph with diode array and fluorescence detectors  
Liquid chromatograph with refractive index detector.  
Liquid chromatograph with UV-VIS detector. Mortar mill.  
Kjendahl digestion equipment.  
Binocular microscope.  
Centrifuge.  
Sonicator.  
Freeze-drying machine.  
Water purification system.  
Double beam UV-VIS spectrophotometer.  
Refrigerated centrifuge.  
Analytical balance.  
Extraction hood.  
Laminar flow hood.  
Colony counting.  
3 Stereoscopes.  
Stove.

### **Aquaculture Laboratory**

Regenerative blower 1 HP.  
Regenerative Blower ½ HP.  
2 Centrifugal pump with sand filter.  
Centrifugal pump 3 HP.  
2 Vertical UV Sterilizers.  
2 Ozone generators.  
Multiparameter meter.  
4 Binocular microscopes.  
2 Stereoscopic Microscopes.

### **Food Technology and Analysis Laboratory**

Stirred.  
2 Meat grinders.  
Fryer.  
Vacuum sealer.  
Convection oven.  
Industrial grill.  
Frosting machine.  
Pulverizing mill.  
Muffler.  
Soxleth equipment.

Orbital incubator.  
Refrigerated incubator.  
Muffle.  
Sealing machine.  
2 Autoclaves.  
Tubular flow reactor.  
Filter press machine.  
Ice maker.  
Deep bed column.  
Pilot level distillation equipment.  
Demonstration unit for series and parallel pumps.  
Aerator.  
Photoreactor.  
2 Radiometers.  
Scale.  
Bench drill machine.  
Circular saw.  
Grinder.

#### **Systematic Laboratory of Marine Invertebrates**

5 Stereoscopes.  
2 Microscopes.  
Extraction bell.  
Multiparameter.

#### **Chemistry and Biology Research Laboratory**

Total organic carbon analyser.  
Microplate reader.  
3-SEAL nutrient analyzer of 5 channels  
2 Water distillers.  
Water demineralizer.  
Single beam UV-VIS spectrophotometer.  
Calorimeter.  
Horizontal freezer.  
Temperature controlled bath.  
2 digital analytical balances.  
Digital balance.  
Incubator.

#### **Biological Oceanography Teaching Laboratory**

8 Compound Optical Microscopes.  
28 Stereo microscopes.  
Stereoscopic binocular microscope.  
Epifluorescence microscope.  
Microtome.  
Freezing microscope for cuts.  
Dredge.  
Precision electronic scale  
Analytical balance.  
NISKIN sample bottle.  
4 NANSEN sampling bottles.  
Industrial drying oven (Stove).

Extraction hood.  
Van dorn sampling bottle.  
Fabric flotation bath.  
Inverted microscope.



*Epifluorescence Microscope.  
Mycotoxin Lab.*

#### **Geographic Information Systems and Remote Sensing Laboratory**

EVO-Super 800 Remote-controlled 6 rotor unmanned aerial vehicle.  
Plotter.  
Smart TV screen. YSI probe.  
Sonda YSI  
Creator Pro 3D printer.

#### **Chemical Oceanographic Teaching Laboratory**

Spectrophotometer.  
3 Extraction hoods  
Oven.  
Muffle.  
Incubator.  
Rotavapor.  
Analytical balance.  
2 Centrifuges.  
Wet balance.  
Potentiometer.  
Multiparameter.  
2 Vacuum pumps.  
Colony counter.  
4 Heating grids with magnetic stirrer. 4 Fisher fusion equipment.  
5 Water baths.  
3 Polarimeters.  
4 Calorimeters.  
2 Vortex shakers.  
Electrophoresis system.

### **Physical Oceanography Teaching Laboratory**

2 Stereoscopic clear field microscopes.  
4 Dark field stereoscopic microscopes.  
Collection of rocks and minerals.  
Calorimeter.  
Equipment to practice electricity.

### **Teaching Laboratory of Geological Oceanography**

Ultrasonics baths.  
Light and dark-field transmitted light microscope with phase contrast  
Freeze Dry machine.  
Electric rock cutter.  
Depth gauge.  
Extraction bell.  
GPS.  
6 Compasses.  
Nucleator.  
Distiller.  
Freezer.  
Scriber.

### **Fish Population Dynamics Laboratory**

Low Speed Precision cutting machine.  
Grinding and polishing machine  
Dissection Stereomicroscope.  
Portable digital electronic scale.

### **Histology Laboratory**

Tissue processor.  
Extraction hood.  
Electric drying oven.  
Drying plate for histology.  
Semi-automatic microtome.  
2 Optical microscopes  
Digitizing tablet.  
Tissue Inclusion Center.  
4 Water baths  
Paraffin dispenser.  
6 Multiparameter.

### **Development Ecology Laboratory**

3 Filters with ultraviolet light  
Aerator.  
Microscope.

### **Phycotoxin Analysis Laboratory (Larvatron)**

Microscope.  
Inverted microscope.  
Epifluorescence microscope.  
Photobioreactor Applikond of 3L with control system I.  
Fluorometer.

Liquid chromatography with diode array detector, fluorescence and post-column derivatizer.

Vertical Autoclave.  
Refrigerated centrifuge.  
Tissue homogenizer.  
Sonicator.  
Mini-beadbeater.  
Vacuum pump.  
Portable scale.  
Garmin GPS.  
Vortex.

## **Puerto Escondido Campus**

### **Laboratory of Biological Collections**

3 Garmin GPS.  
2 Freezers.  
Optical microscope.  
10 Stereoscopic microscopes.  
Pocket binoculars.  
2 Environmental Dehumidifiers.  
Scout-Pro SP401 digital scale.  
Clinometer.  
Examination case.  
3 Dynamometers.  
Weather station.  
Potentiometer.  
Salinometer.  
Rappaport-type animal stereoscope.  
2 Compasses.



*Anatomy room. Robotic Clinic. UMAR,  
Puerto Escondido Campus*

### **Paleobiology Laboratory**

Modular stereoscopic microscope.  
5 stereoscopic microscopes with attached cameras.

Laboratory sieve shaker.  
4 Pneumatic percussion drill.  
2 iMac computers.

#### **Genetics Laboratory**

Droplet Digital PCR System, QX200, BIORAD.  
Ultrafreezer.  
Refrigerated centrifuge.  
Denaturing gradient gel electrophoresis system (DGGE).  
2 Laminar flow hoods  
UV spectrophotometer.  
Autoclave.  
5 Binocular microscopes.  
2 Thermocyclers.  
Vilbert Courmart photo-documentary.  
Thermomixer equipment.  
Vacuum sealer for plates.  
Water purifier.  
3 Incubators.  
Orbital shaker.  
Analytical balance.  
12 electrophoresis chambers.  
3 Power sources.  
Potentiometer.  
3 Vortex shakers.

#### **Livestock Products Technology Laboratory**

Spectrophotometer.  
Lacticheck.  
Vacuum sealer.  
Captive bolt gun.  
Meat grinder.  
Malaxing machine.  
Spider type kneader.  
Pasteurizer.  
Band Saw machine.  
Marinator.  
Steel press.  
Pedal Sealing machine  
Cheese mill.  
Stainless steel grinder.  
Delta convection oven.  
3 Potentiometers.  
Manual gas pasteurizer (70 L).  
Meat smoker.  
Ham slicer.  
Manual sausage maker.  
Manual thermo-blender.  
Floor scale, Torrey.  
Industrial blender.

Double bottom curdling vat.  
Fryer.  
Microwave oven.

#### **Geographic Information Systems Laboratory**

Compaq Plotter.  
GTS 230W total station.  
Digitizing tablet.  
3 GPS.  
15 Dell computers.  
Stereoscope with magnifying mirror.  
Clinometers.  
Weather station.  
7 Silv-Suunto compasses.  
Digital planimeter.  
Planimeter of polar arms.  
6 Pocket Stereoscopes.  
Topographic milestone  
7 Altimeter-barometers.  
Precision topographic instruments.

#### **Biology Teaching Laboratory**

High speed adaptive rotor refrigerated centrifuge.  
Laminar flow hood.  
10 stereoscopic microscopes.  
12 Composite monocular microscopes.  
2 Microbiological incubators.  
Vertical autoclave.  
Gas extraction hood.  
Digital Colony counter  
Digital Display Magnetic stirrer.  
Round heating plate.  
Digital analytical balance.  
Digital balance.  
Hygrometer.  
8 Schott lamps.  
Refrigerator.  
Electronic vernier caliper.  
4 Digital timers with triple display.  
Fiber optic illuminator.  
2 Light sources.

#### **Chemistry Teaching Laboratory**

Grease remover.  
Kjeldahl device.  
Deionizer.  
Water bath.  
Steam Rotavator.  
Gas extraction hood.  
Muffle.

UV-Visible light spectrophotometer.  
Vacuum pump.  
2 Hygrometers.  
Ultraviolet light lamp.  
2 Water distillers.  
Drying stove.  
Fixed rotor table centrifuge.  
3 Magnetic stirrers.  
2 Vortex agitators.  
Two-speed industrial blender.  
Automatic digital multimeter.  
2 Electrophoresis systems.  
Drying oven.  
Digital analytical balance.  
Portable electronic scale.

### **Forest Seed Laboratory**

Seed germinator.  
Electronic digital scale  
GPS.  
Haga pistol altimeter.  
Altimeter.  
Compass.  
Digital vernier.  
Harness.

### **Wood Laboratory**

2 Stereoscopic microscopes.  
Optical microscope.  
Industrial drying oven.  
DYI Vacuum pump and chamber  
Chainsaw.  
Industrial Sawing machine.  
Circular saw.  
Rotary hammer drill.  
Potentiometer.  
Digital analytical balance.  
Orbital sander.

### **Robotic Clinic**

Anatomage table interactive.  
NOELLE childbirth simulator.  
Radiant heat cradle.  
2 Susie® Simon® female patient care simulators.  
2 Maniqués Deluxe Hospital Training Doll.  
8 Patient Care Mannequins and Simulators. 2  
SMASH Advanced IV Training Arms.  
2 Newborn Infusion and Intraosseous Injection Si-  
mulation Legs S409.  
Chester Chest care simulator with standard arm.  
Electrotocardiograph.  
3 Vital signs monitors.  
7 Recovery beds.  
Medical bed hydraulic Trendelenburg

Flower Manual bed.  
2 Transfer couches with handrails.  
Transfer stretcher with rails.  
Automatic external defibrillator.  
XHZ-90 child phototherapy unit.  
4 Surgical lamps in operation room.  
2 Operating tables.  
Ultrasonic bath.  
Pediatric venipuncture arm.  
Red Trolley for outdoor resources.  
Refrigerator for vaccines.  
Portable secretion aspirator.  
18 Adult CPR Training Manikins  
4 Infusion pumps.  
Piston nebulizer.  
19 Omron Nebulizers.

### **Electronics and Networking Laboratory**

5 Adjustable voltage sources 0-30V 5A.  
2 Tektronix 2 channel digital Oscilloscope  
4 Digital multimeters.  
2 Function generators.  
2 LEGO Mindstorm Robots.  
Electronic distance Meter.  
Imaging Source Polarsens camera.  
Vivotek security camera.  
Samsung label printer.  
External DVD recorder  
HP magnetic card reader.  
Metrologic barcode reader.  
Fingerprint reader.  
Dell Poweredge T710 Xeon Server.  
Nobreak Dell 30 min.  
2 Utp Cables Cat. 5e.  
8 RJ-45 connectors.  
5 X-Case ACCREDPI22 Punching Jacks RJ- 11/  
RJ-45.  
5 Utp Cable Tester Kits.  
5 Brobotix cable strippers.  
6 TP-LINK wireless routers.  
2 Managed switches.  
2 Load balancing routers.  
2 Intellinet cat5e patch panels for Rack.  
2 Contacts for Rack.  
2 No Break Koblenz.

### **Microbiology Laboratory**

Spectrophotometer.  
Potentiometer.  
Centrifuge.  
Analytical balance.  
Digital balance.  
3 Micropipettes.  
Incubator.  
Orbital shaker.

Autoclave  
3 Microscopes.  
Laminar flow hood.  
Freeze-drying equipment.  
Vacuum drying oven.  
Ultrafreezer.

#### **Postgraduate Laboratory**

Ostrich Eggs incubator.  
Dehumidifier Environmental controller.

#### **Laboratory of Animal Reproduction**

Micropic Sperm Class Analyzer.  
Immunoassay equipment.  
Egg incubator digital.  
Freeze drying system.  
Ultrafreezer.  
High performance Liquid Chromatography.  
Optical microscope.  
3 Stereoscopic Microscopes.  
Sonic bath.  
Refrigerated bath.  
Electrophoresis system.  
Peristaltic pump.  
Vacuum pump.  
2 Spectrophotometers.  
Incubator laboratory culture.  
Incubator.  
2 Potentiometers.  
Laminar flow hood.  
Industrial oven.  
Oven.  
2 Microcentrifuges.  
Centrifuge.  
2 Analytical balances.  
Digital scale 500 kg.  
Digital balance 100 kg.  
Digital balance 5 kg.

#### **Zootechnical Operating Room**

4 Autoclaves.  
Orbital shaker.  
Orbital shaker with open platform in the air.  
Heating grill laboratory.  
Water bath.  
Electric-scalpel.  
2 Ultrasound equipment.  
Curved laryngoscope.  
Straight laryngoscope.  
Optivisor professional.  
Electro-ejaculator.

#### **Biochemistry and Nutrition Laboratory**

Ultrafreezer.  
High-performance Liquid Chromatography.  
Optical microscope.  
Ultra Sonic bath.  
Refrigerated Water bath.  
Electrophoresis system. P  
eristaltic pump.  
Bomba de vacío.  
Spectrophotometer.  
Incubator laboratory culture.  
Incubator.  
Potentiometer.  
Oven.  
Centrifuge.  
Analytical balance.  
Digital scale -100 kg.  
Autoclave.  
Orbital shaker.  
Water bath.

### **Huatulco Campus**

#### **Communication Sciences Laboratory**

2 XD CAM video cameras.  
2 Cameras 72 N.  
Camera 270U.  
12 Reflectors.  
3 Audio consoles.  
2 Video mixers.  
3 Computers APPLE 27" IMAC  
IMAC.  
VTR Player.  
2 Scanners.  
Analog mixer.  
Monitor screen.  
2 Tripod kit for video.  
2 Tripod X PRO.

#### **Media Lab**

4 Digital Reflex Cameras.  
2 MacBook laptops.  
11 APPLE 27" IMAC computers.  
3 Portable Digital Audio Recorders.  
2 Portable Digital Audio Recorders. HD.  
Analog mixer.  
Monitor screen.  
2 Tripod kit for video.  
2 TripodX PRO.

#### **Tourism Laboratory**

2 Fume extraction hoods.  
2 Convection ovens.  
Electric salamander grill

5.3 cubic feet horizontal freezer.  
 16 cubic feet refrigerator display.  
 Industrial blender.  
 Industrial bar blender.  
 Sony W300 Cyber-shot digital camera.  
 Sony Hybrid plus digital video camera.  
 2 Kitchen stations.  
 Industrial Refrigerator.



*Tourism Laboratory. UMAR, Campus Huatulco*

## UNIVERSITY OF THE Isthmus

### Tehuantepec Campus

#### Electronics and Artificial Intelligence Laboratory

ERA-MOBI mobile robot.  
 Smart Industrial Robotic Arm.  
 Laser range finder.  
 6 FPGA cards.  
 3 LEGO Mindstorms Kits.  
 2 XBOX 360 Kinect Sensors.  
 3 Laptops: DELL, ALIEN, ACER.  
 Electric wheelchair.  
 4 Digital Multimeters.  
 2 Digital Oscilloscopes.  
 4 Voltage sources.  
 3 Function generators.  
 Wellon Universal programmer.  
 Mechanical Tess me1, me2, and me3.  
 Hooke's Law device.  
 Zeeman effect apparatus.  
 Rotary field changeover three-phases  
 Van De Graaff generator.  
 Wimshurst machine.

#### Computer Lab

2 ALIENWARE AURORA R6 computers.  
 Interactive screen.  
 20 Desktop Computers.

#### Applied Optics Laboratory

Hologram optical table 900x1200mm. Edmund Optics.  
 CMOS Color USB 3.0 Camera. Edmund Optics.  
 Fixed focal length lenses (8.5, 12.25 and 100mm). Edmund Optics.  
 Focusable laser diodes from 5mW to 633nm. Edmund Optics.  
 LDM laser line generating lenses. Edmund Optics.  
 36" optical rails. Edmund Optics.  
 75mm rail bases. Edmund Optics.  
 Infrared Thermometer. Fluke/568.  
 Fluke/1587 Insulation Meter.  
 Fluke/810 Vibration tester.

#### Wind Energy Laboratory

Smart Digital Multimeter.  
 Garmin Gps12xl Navigator.  
 EMERSON control techniques M100.  
 Imada DS2-220 Digital Force Gauge.  
 Accelerometers with amplifier and signal acquisition system with 4 channels from Kistler.  
 Impact hammer with modal output. Kistler 5000N measurement range.  
 Fluke 438-II quality analyzer.  
 Programmable 0-250V GW INSTEK switching power supply.  
 TEKTRONIX digital oscilloscope, TBS1102B-EDU.  
 Fluke 375 True RMS AC/DC Clamp meter.

#### Biomass Laboratory

VARIAN Gas chromatograph model CP 3380 with FID and TCD detectors.  
 VARIAN Cary 100 UV-Vis Spectrometer.  
 VARIAN Gas chromatography coupled to a mass spectrometer.  
 BUCHI Rotavapor.  
 VULCAN muffle.

#### Oceanic Laboratory

ADP 1.0 MHZ profiler configuration for stand-alone anchorage.  
 SonTek-FlowTracker handheld for field velocity measurements.

YSI 6600-M2 multiparameter field system.  
 ICP-OES iCAP 6000 series (includes a microwave oven).  
 Laminar flow hood.  
 Incubators.  
 Workstation with the geographic information system (TNTMips).  
 Multiparameter system for in situ parameter field measurements.  
 Optical microscope.  
 Quanti Tray Model 2X Sealing Machine.  
 Printers.



*Gas chromatography coupled to a mass spectrometer.  
Biomass Laboratory. UNISTMO, Tehuantepec Campus*

### **Hydrocarbons Laboratory**

Thermo Lindberg blue, M Mini-Mite, temperature range 100 - 1100°C, 120 V.  
 Heratherm advanced protocol security Oven from 30 to 330 °C.  
 Caframco agitators with low torque. Lab Hcs.  
 Analytical balance.  
 PolyScience® circulating baths. Soxhlet extraction equipment.  
 ChemiSorb 2750 Catalyst Characterization Equipment  
 ASAP 2020 Catalyst Characterization Equipment

### **Simulation Lab**

Equipment for the creation of printed circuits (117468 protomat s-62).  
 Kit for creating printed circuit boards (115790 lpkf proconduct manual).

4+16 CH, digital, 500 MHz mixed signal Oscilloscope.  
 120 MHz programmable dds function generator.  
 Digital multimeter.  
 Programmable linear DC power source.  
 6 1/2 digit digital bench multimeter.  
 Welding station.  
 Prototype system (circuit design workstation).  
 Desoldering station smd.  
 Blade test bench 1.2 m.  
 10 hp generator test bench.  
 Semikron converter of 30 kw.  
 VARIAC autotransformer 3kw.  
 System for development of virtual environments.  
 Printed circuit development system  
 Two-way power converter (back to back) 5 kw.  
 500 W solar generation system  
 DAVIS weather station.  
 QUANSER Q8-USB Data acquisition system.

### **Solar Energy Laboratory**

Source Meter Unit 2612B (Keithley) (evaluation of modules and solar cells).  
 1500 V I-V curve tracer (measurements of the current (I) - voltage (v) curve of the module, to know its maximum power).  
 UV-VIS Spectrophotometer (250 nm-2500 nm) + PC (optical characterization of semiconductors and solar cells).  
 100W Tungsten Lamp (Lighting for I-V tests).  
 Standard pyranometer (direct radiation) (radiation power measurement).  
 Albedometer (Diffuse radiation power measurement).  
 Celda Patrón (calibrating solar cells). PC Computer.  
 Photovoltaic System Module, Battery, Charge Controller, Inverter, Lamp) from several manufacturers (Conergy, BP Solar, Siemens, Atersa, Isofoton, Kyocera, etc.).  
 Monochromator (measurement of quantum efficiency or response spectral module for different wavelengths).  
 X-Ray Diffractometer XRD (structural characterization of semiconductor materials).

### **Hydraulics Laboratory**

2" Annubar with 150# flange and transmitter with 4-20 mA HART output.  
 Differential pressure transmitters.

Balance Manometric calibration of pressure transmitters.  
 MD Plus controller.  
 Rack.  
 Baumann Valve.  
 Simple interface for 16 Hart 2-W 4-20 mA analog input channels.  
 Interface for 8 Hart 4-20 mA analog output channels.  
 AE type cabinet with the following dimensions 600x600x350 mm.  
 Temperature transmitters 4-20 mA and HART output.  
 RTD temperature sensor.

### **Experimental Laboratory of Experimental Chemistry**

MONOWAVE 300 ANTON PAAR  
 2 Microwave synthesis reactor.  
 BUCHI R-215 Rotary evaporator with vacuum controller.  
 BUCHI Multi evaporator.  
 Cryogenic reactor (-80°C) for 4 SEV matrices.  
 MELT TEMP Melting point apparatus.  
 2 BUCHI vacuum pumps.  
 5 Lab heating mantles. SEV.

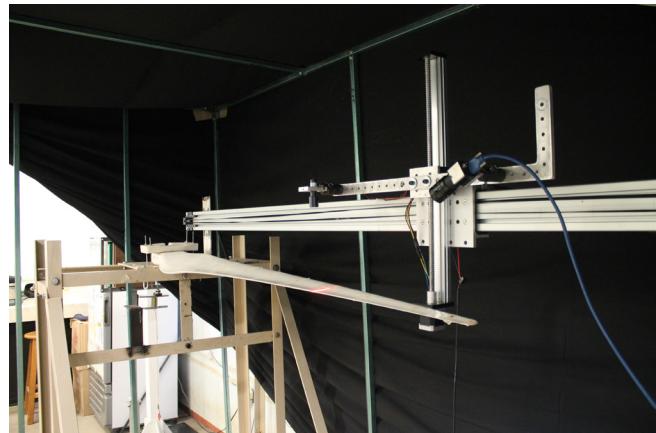
### **Chemical Engineering Laboratory**

Manual injection liquid chromatography, flow rate range: 0.025-25 ml/min and pressure limit: 6000 PSI.  
 Buchi digital rotary evaporator with an electric arm and 4 litre bath coupled to a v- 700 vacuum pump and a cold water recirculator.  
 GS Gasoline Analyzer PPA-1.  
 Programmable oven.  
 Heating-Cooling Bath circulators.  
 Bath for determination of kinematic viscosity meter.

### **Chemistry Laboratory**

ELIX® ADVANTAGE 3/5/10/15 system, ASM container and fibreglass cylinder.  
 Pedrollo water pump.  
 A&D GH-252 Analytical balance lab balance.  
 3 digital magnetic Stirrer with heating plate.  
 BARNSTEAD  
 2 Digital magnetic Stirrer with heating plate, SEV.  
 3 digital magnetic Stirrer with heating plate, MODEL SP46615.  
 Heating mantle with magnetic stirrer, digital temperatur control (2000ml), SEV.  
 2 Heating blankets with magnetic agitation 500 ml, SEV.

Electronic balance, capacity 610.  
 GONI 950. GONI compressor, 5 hp, 200 litre tank.  
 Compact centrifuge 6 place  
 Air compressor, hydropneumatic ½ hp, 24 lts, with pressure gauge.



*Wind turbine blade test bench. Simulation lab.  
UNISTMO. Tehuantepec Campus*



*Energy Research Laboratories.  
UNISTMO. Tehuantepec Campus*

## **Ixtépec Campus**

### **Electronics Laboratory**

Digital spectrum analyzer 9KHz-3.0GHz.  
 2 Didactic equipments for the elaboration of electric circuit practices.  
 2 Didactic equipments for the elaboration of practices of embedded systems  
 Digitizing tablet with a working area of 320 x 208 x 12 mm, for the design of electrical circuits.

2 Didactic equipments for the elaboration of line follower robots with Arduino cards.  
Didactic equipment for the elaboration of a line follower robot.  
6 Stations for soldering various components.  
4 DC power supplies from 0V to 30V.  
2 Function generators.  
2 Digital oscilloscopes with 2-channels for the analysis of electrical signals  
Eduino Dragino Lora Iot Development Kit 902-928 Mhz.  
2 IMU Accelerometers 10 degrees.  
4 Modules of 4 relays with optocoupler.  
Raspberry Pi Touch screen.  
5 DHT11 temperature and humidity sensors.  
6 Raspberry Pi Wifi USB adapter.  
3 MQ-6- gas sensors pinout.  
4 Mega CH340G cards.  
4 Shield Ethernet.  
2 Access Point Linksys WAP300N.  
Power meter measuring power consumption.  
LX1010B Digital Lux Meter.  
4 Computers All in One Dell Inspiron 20.  
10 Raspberry Pi 3.

### **Networking Laboratory**

4 Cisco switches.  
4 High-powered external wireless access points.  
2 Wireless routers with telephone ports. Router Mikrotik.  
Switch HPE GE-1920s.  
3 Drone DJI Phantom 3 Standard with camera.  
4 Nano drone pocket camera, Cheerson CX 10c.  
6 Computers Dell, mouse, keyboard, Dell monitor.  
Benq SVGA 800 x 600 projector.

### **Laboratory of software engineering**

2 Oculus Rift virtual reality Headset.  
Barcode reader.  
Biometric Enroler + card.  
Fingerprint reader.  
Barcode printer.  
Ticket printer.  
8 Dell Vostro 270S/Desktop

### **Computer Room 3**

Dell Desktop, mouse, keyboard, monitor Benq SVGA 800 x 600 Proyector

## **Juchitán Campus**

### **Microbiology-Biochemistry Laboratory**

Microscope.  
Analytical balance. C  
centrifuge.  
Stove.  
BTS 350 Semi automatic analyzer (clinical chemistry).  
Water bath.  
Scale.  
Digital scale.

### **Bromatology Laboratory**

Kjeldahl Distillation Digestion unit.  
Rotavapor  
Automatic water destiller.  
Water circulating pump.  
3 Vacuum dryers.  
2 Drying ovens.  
2 Magnetic laboratory stirrer horizontal hot plate.  
Analytical balance.  
Fume extraction hood.  
2 Mufflers.  
Water bath.  
Mechanical balance.

### **Nutrition Education and Communication Laboratory**

Woofers.  
2 Microphones.  
Food replica set.  
7 Nutrikcal Software.  
5 Nutrimind Software.

### **Anthropometry Laboratory**

12 Portable stadiometers.  
3 Mechanical columnscales with stadiometer.  
2 Infantometers.  
20 Plastic measuring tapes.  
2 Metallic tapes.  
2 Baby scales.  
35 Bioelectrical Impedance human body.  
Bodystat  
5 Harpenden Plicometros.

### **Body Composition Laboratory**

35 Bioelectrical Impedance human body.  
Bodystat.  
5 Harpenden Plicometros.

### **Food Production Laboratory**

3 Wall-mounted hoods 90cms. wide with filter holders.  
Vertical freezer CVC15.  
2 Industrial microwave ovens.  
3 Commercial stoves.  
2 Heavy duty juice extractors.  
Vertical refrigerator.  
4 Electronic scales.  
4 Industrial blenders of 3 lts.  
4 Industrial mixers. Meat mill.

### **Propaedeutics Laboratory and Chemical Biology Laboratory**

3 Microscopes.  
Centrifuge machine.  
AMBUS MAN CPR EMT Training.  
Mannequin.  
Fetal dummies.

### **Robotic Clinic**

Digital pediatric scale.  
Radiant heat cradle.  
Full body adult CPR manikin AED first aid training  
Dummy.  
Fetal doppler hand hold pocket portable.  
Duplex.  
Triplex.  
Mindray digital ultrasound system Dp 10.  
Breathing Spirometry Diagnostic Software.  
Rush manual resuscitator with bag, adult.  
Hermes Infusion pump with led display Hidraulic examination table.  
Hospital electric bed range 40 to 70 cm.  
Hospital electric bed rango 40 to 60 cms.  
Dekogon X-ray.  
Hergom Surgical aspirator with autoclave jars 20 L per minute.  
Single Knee Valve. Alvinox.  
Portable X-ray SOYEE SY31-100P.  
Twins CGT machine monitor FHR fetal heart monitor.  
3 Channels electrocardiograph digital.  
Edanmod.  
Welchallyn Diagnostic sets.  
Pediatric pulse Oximeter.  
Baby nasal aspirator with 23 hygiene filters.  
Insufflator  
Labor and delivery equipment.  
Infant CPR Manikins.  
Intubation manikin baby infant.  
Basic Geri nursing skills geriatric training manikin.  
Child birth simulator advanced.  
Led phototherapy unit BL100I.

Micro-controlled power regulator. Amcr-511.

3 Muscle fiber model 10000 times magnified  
Fiber optic laryngoscope set. Welchallyn 6 and 10 pieces.

Surgery instrument. Equipment for life. HP.  
General surgery set.

Imebio Z-1100 Radiant heat cradle.  
Standard ready or not Tot White female.  
Standard ready or not Tot White Male.  
Arm blood pressure monitor. LF01095u.  
Rescue live AED defibrillator (Sam).

50 liters automatic autoclave máxima temperatura of 130 °c.

7.5 hp Smartick piston compressor.  
Adult venipuncture and injection training arm LF01121u.

Nasco Newborn Baby doll sb17156u.  
Anatomical female pelvis model with fetus.  
3bs I10.

Figure with double sex muscles, detachable in 45 pieces.

Human eskeleton anatomy model a10 3bs.  
Male condom simulator model 3bsc I42.  
Female breast model I56 1008497.

Deluxe muscle arm odel 6 part life-size 3bsc m11.  
Deluxe functional knee joint model 3bsc I42.

Vital signs monitor model Zo-zd120d.  
Lamp for examination, diagnosis and major surgery slim royal model. Kd-202d-3c.

Deluxe functional hip joint.  
Peritoneal dialysis simulator LF01027u.  
Auscultation simulatorand smartcospe lf01142u.

Model lung anatomy.  
Chesterchest torso for central venous access.  
Life/form Moulage wound. Hand amputation Simulator.

Auxiliary instrument table.  
DNA double helix mode 1351005128.  
3B Scientific physiology of nerves series.  
Teaching supplies, biology classroom.  
Anatomical teaching model. Plastic nervous system model.

Digestive system in 3 pieces.  
Humal Skull model. 3 Scientific. Anatomical version.  
Enema administration simulator.

3B Scientific C30 model of human anatomy nervous system.

Human circulatory system model.  
Animal cell SIV5677.  
Breast examination trainer.  
Model of male urinary system.

General doctor emergency human patient simulator for CPR.  
ZOE gynecologic simulator.  
Breast self examination simulator.  
Child and adult tracheotomy care simulator model.  
Pneumothorax simulator.  
Intramuscular buttock injection model.  
Hospital instrumental table.



*Delivery room. Robotized Clinic.  
UNISTMO. Juchitán Campus*

## UNIVERSITY OF PAPALOAPAN

### Loma Bonita Campus

#### Materials Laboratory

Manual electric concrete mixer machine.  
Thermal conductivity meter.  
Electronic scale.  
Stirring hot plates.  
Hydraulic press 120 Ton.  
H Frame hydraulic press.  
Digital viscometer machine.  
Corrosion analyzer.  
Ultrasonic testing machine.

#### Physical testing Laboratory

General chemistry fume hood.

#### Reproduction Laboratory

Axio A1 vertical binocular microscope.  
Binocular fluorescence compound microscope.  
CO<sub>2</sub> Incubator

#### Mechatronics Laboratory

4- Propeller Drone with 4K Camera.

Tektronix digital phosphor oscilloscope.  
Sumitomo electric fusion splicers.  
Laser cutting machine.  
CNC Metal vertical turret milling machine.  
CNC lathe.  
Optical table.

#### Aquaculture Laboratory

YSI multi-parameter equipment.

**Laboratory of Biochemistry and Improvement of Aquaculture Species**  
Horizontal electrophoresis system.  
Kjeldahl digestion system.  
Thermal cycler.  
Soxhlet equipment.  
Ultra High performance liquid chromatograph

#### Software Laboratory

High performance Computing cluster.  
Samsung Interactive Board.

#### Media Lab

HP Design Large format printer.  
Samsung Interactive Board.

#### Chemistry Laboratory

Hygrothermograph.



*High performance Computing cluster. Software  
Laboratory. UNPA. Campus Loma Bonita*

## Tuxtepec Campus

#### Organic Chemistry Laboratory

4 Evaporators.  
2 Fume extraction hoods.  
Distillation Fume hood.

### Inorganic Chemistry Laboratory

Extruder.  
2 Ball mills.  
High temperatura muffle furnace.  
Hydraulic press.  
Reactor

### Instrumental Chemistry Laboratory

UV VIS Espectrophotometer.  
UHPLC liquid chromatograph.  
Gas chromatograph.  
Thermogravimetric analyzer.  
Graphite furnace atomic absorption spectrophotometer.  
2 Potentiostats/galvanostat.  
FTIR spectrometer  
X ray powder diffraction (XRD)  
Single crystal X ray diffraction.  
Real time PCR analyzer.

### Bioprocess Laboratory

Reactor.  
Freeze dryer machine  
UV Espectrophotometer.

### Nuclear Magnetic Resonance Laboratory

400 Mhz Nuclear Magnetic Resonance (NMR) equipment, gas supply control, NMR control console and computer equipment with NMR operation software.

### Mass Spectrometry Laboratory

High resolution mass spectrometry system UPLC-IM/MS/MS (1 UPLC liquid chromatograph, Waters Acquity M coupled to a high resolution mass spectrometer Synapt G2-Si quadruple hybrid type- time of flight (QToF) with ion mobility for separation of isobars and enantiomers).  
MS-GC gas chromatography (1 Agilent 7890B gas chromatograph with 144-sample autosampler coupled to a Waters SQD2 quad mass spectrometer with electrospray (ESI) and atmospheric pressure (APGC) probes).

### Animal Biotechnology Laboratory

Computer assisted Semen analysis system.  
Multicamera Miri flat incubator.  
Absorbance microplate reader.  
Ultrasound machine.  
Micro-manipulation and micro-injection system for in vitro fertilization.  
Osmmometer.

System to capture and analyze fluorescence images for inverted microscope.

### Molecular Biology Laboratory

2 Gel documentation systems.  
2 Thermocyclers.  
Mini Spin. Electrophoresis system.  
3 Ultracongeladores.  
QPCR machine.  
Nano spectrophotometer Nanodrop.  
2 Plant growth chambers.  
UVP hibridation oven.  
Chlorophyll fluorometer.  
Refrigerated microcentrifuge.  
Console freeze dry system.



Chemistry Laboratory. UNPA. Tuxtepec Campus

### Plant Biotechnology Laboratory

UV VIS spectrophotometer.  
Freeze dryer.  
Stirred tank reactor.

### Nanomaterials and Surface Physicochemical Laboratory

Differential Scanning Calorimeter (DSC).  
Rheometer.  
Gas Permeability Determiner.  
Nano spray dryer.  
Gas vaporizer system.  
Surface area analyser.  
Micro ball mill.  
Thermocycler.  
Trinocular inverted microscope  
Refrigerated Centrifuge.

### Theoretical Chemistry Laboratory

Cluster of 92 nodes.  
8 Workstations.

## **Robotic Clinic**

Virtual Anatomy Dissection table.  
Cardiotocography.  
2 Infant incubators equipment.  
Maternal neonatal delivery simulator.  
Trauma Hal-Rugged, resilient and tetherless.  
Thermal cradle.  
8 Gynecological simulators.  
2 Hospital ECG machine.  
Advanced childbirth simulator.  
Portable aspirator suction therapy.  
2 Cardiac monitors.  
2 Hospira Plum 360 infusion pump.  
Electrical hospital bed.  
Vaccine refrigerator.  
Bed head unit medintensive.  
14 Medical equipment console Wall units.

## **Organic Synthesis and Natural Products Laboratory**

Nuclear Magnetic Resonance equipment (NMR) at 80 Mhz, permanent magnet and computer equipment with NMR operation software.  
Continuos flow reactor - micro.  
2 Fume extraction hoods.  
Destillation fume hood.



*Laboratory of Organic Synthesis and Natural Products UNPA. Campus Tuxtepec.*

# **UNIVERSITY OF SIERRA SUR**

## **Center for Anatomy and Dissection**

ANATOMAGE Virtual Anatomy disecction table.  
12 Anatomy dissection table.  
Metal organizar wire rack. 5 shelf shelving storage unit.  
Wall mounted double autopsy station, made of stainless steel.  
2 Standard carts for transporting bodies for standard stainless steel trays (Concealment trolleys).  
Porti-Boy Mark V embalming machine.  
4 Spinal discs  
4 Life size human skull model.  
2 Human heart model.  
Bisexual torso luxury model with open back.  
Human muscular figure model.  
2 Antomical human skeleton model.  
Heart on diaphahm model.  
Stomach with ulcers model.  
Renal corpuscle model diagram.  
Human atherosclerosis cardiovascular model.  
Hemorrhoid model.  
3 Lung anatomical model.  
Human head, median and frontal section.  
Anatomical eye model.  
Functional larynx model.  
Human digestive system model.  
Human nervous system model.  
Sympathetic nervous system model.  
Anatomy model of female reproductive system.  
Anatomy model of male reproductive system.  
Middle section of female pelvis.  
Middle section of male pelvis.  
Fetal circulatory system simulator.  
Kidney, nephron and glomerulus mounted on board.  
Female pelvic skeleton.  
Learning brain model (in 6 pieces).  
Injection - air extraction system  
25 Computers.

## **Dental Center**

32 Trimodulares en simulación.  
32 Monitors.  
32 Dental training dental simulation Phantom.  
40 Dental treatment unit with hydraulic chair.  
32 Trimodulars in dental laboratory, for preclinical.  
32 Dental clinic lighting.  
3 Dental units for diagnosis.  
16 Dental units in the clinic.  
16 X-ray film viewer dental negatoscope.

Clini-cart emergency resus trolley.  
 3 Superdental plaster vibrator.  
 3 Plaster trimmer.  
 Autoclave of 85 liters.  
 3 Ultrasonic cleaning bath.  
 Oil free dental air compressor 1 HP 8 L.  
 2 Dental x-ray machines.  
 28 Computer equipments.



*Partial view of the interior of the Dental Center.  
 UNSIS. Miahuatlán de Porfirio Díaz*

### **Robotic clinic**

Noelle 2200 Victoria – Tetherless Maternal and Neonatal birthing simulators imitation.  
 SIMMAN 211-00050 - Advanced Patient Simulation.  
 2 Simulators for training in women's care, obstetrics, postpartum, wound assessment and treatment, and general patient assessment and treatment - Laerdal VitalSim 200 -10001.  
 Noelle 560 Teaching tips. Neonatal simulator for advanced intubation practice LF01213U.  
 Premie Hal 3009 Tetherless Premature Newborn Simulator.  
 2 Noelle s552 Automatic childbirth skill trainer torso OMNI 2.  
 6 Hospital simulators for training medical and nursing staff.  
 2 Simulation based-training on neonatal resuscitation - Laerdal 240-00001.  
 3 Female catheterization training simulator.  
 2 Male catheterization training simulator.  
 4 Pediatric Auscultation trainer.  
 Nita newborn infant venous Access simulator.  
 Anatomical Baby buddy model for CPR.  
 Child anatomical model.

3 Newborn-Wireless and Tetherless full term neonatal.  
 5 Special needs infant simulator.  
 2 Advanced pediatric venipuncture arm model.  
 5 Advanced hand vein puncture model.  
 5 Intravenous injection training arm.  
 2 Manikin heads.  
 Ear simulator.  
 Sakamoto gluteus injection.  
 Incubator with accessories and temperature control.  
 Radiant heat Cradle.  
 5 Simulators back with arm, venous access with removable skin for insertion and removal of vascular access.  
 15 Adult airway CPR trainer and 6 CPR child dummy.  
 3 Two-channel invasive pressure monitors - NAS-CO PROMT700.  
 3 Five-channel invasive pressure monitors - M9.  
 2 Infusion pumps with one channel range.  
 Defibrillator with external pacing and continuous monitoring.  
 11 Hospital electric beds with antibacterial mattress.  
 2 Ceiling mounted operating room lamps, 584 mm screen.  
 4 Vertical medical gas consoles (oxygen, negative pressure and air).  
 15 Vertical medical gas consoles (oxygen, negative pressure and air)  
 Digital control laminar flow hood, 1/4 HP extractor.  
 5 AERDAL gynaecological simulators with accessories and 7 interchangeable wombs with pathologies.  
 2 HIKVISION surveillance cameras, electric cable, 20 m HDMI cable, microphone and support.  
 3 Smart TV wall screens, LED with SAMSUNG 65" remote control.  
 4 SAMSUNG 75" LED smart TV wall displays with remote control.  
 2 Wall mount negatoscopes 3 mm plain acrylic screen.  
 Electro-hydraulic operating table.  
 3 Manual Lift Operating Tables.  
 Spirometer with software, calibrator and signal cable.  
 3 Electronic scales for infants. 7-segment BIO-NET cardiac pad.  
 2 emergency medical cart. 5 drawer crash cart.

2 Hospital stainless Steel free standing CB baby bath.  
5 M9 monitors and 6 vertical consoles to corroborate number.  
4 Medical supply carts.  
2 Hospital bassinets newborn.  
3 Buroescip.

### **Food and Nutrition Research Center**

Nutrical Versión 2013.  
25 Nutrimind Version 17.0.  
FITMATE Desktop Metabolic System.  
QUADSCAN BS-400. Bioimpedance equipment.  
Extracellular, intracellular and total body water measurement. Extracellular, intracellular and total body water measurement.  
2 Hillrom electric hospital beds.  
7 Measurement of weight, percentage of fat, muscle mass, bone mass, percentage of water, metabolic age and visceral fat level.  
2 SECA Electronic scales.  
2 SECA mechanical scales with a maximum capacity of 220 kg.  
4 Paediatric scales.  
9 Plicometers.  
2 Takei digital dynamometer.  
8 SECA portable stadiometers.  
4 Seca portable baby infantometers.  
5 Digital calibrators Vitruvian.  
5 Digital calibrators Vernier.  
7 Glucometers.  
3 Hemoglobinometers.  
6 Baumanometers.  
2 Hospital examination tables.  
3 Medical ear stethoscopes.  
Sobrinox industrial refrigerator. Used to preserve food.  
9 Delta Industrial Stoves.  
Stuffer.  
3 Industrial Blenders.  
Scale maximum weight of 5 kg.  
Blazer industrial mixer 20 liters.  
Vacuum packing machine.  
3 FELISA digital colony counter.  
IMBERA Refrigerator, to preserve sown culture media.  
3 Autoclaves.  
3 Electric Centrifuges.  
2 Incubators. It is used for the growth of some microorganism.  
7 Microscopes.  
2 Analytical balances.

2 FELISA Muffles furnace.  
Micro kjendhal Digestor.  
4 Advanced ion and pH meters for laboratory use.  
Microdistiller.  
Raw fiber content analysis crude fiber.  
Dehydrator  
5 Refractometers.  
Shelf freeze dryer  
KONICA colorimeter.  
Moisture balance machine.  
Labtech fume hood.  
Laminar flow Hood.  
Microplate reader.  
2 Mechanical Convection Ovens. Used to dry and sterilize laboratory material.



*Food and Nutrition Research Center.  
UNIS. Miahuatlán de Porfirio Díaz*

### **Information Technology Center**

45 Computer equipment, CORE i7 processor, Hard disk 2 tb.  
25 Computers, Intel Core-i5-4570 CPU at 3.20 GHz. 8 GB of RAM memory. 500 GB in hard disk. with Windows7 Pro.  
7 Acer Aspire V5-561-6414 Laptops, Intel Core Processor I5-4200, 1TB Hard Disk, 8 GB RAM.  
9 iMac, Apple A1225.  
Dron Phantom 4 pro.  
Cannon 6D MarkII camera.  
Cannon XF305 HP Camcorder.  
6 Lego Robots Mindstorms Education.  
3 Apple Tablets 1 GB A7 1.2 GHZ.  
11 Serial cards Cisco brand, Mod. HWIC-2T.  
Rack server cabinet Intellinet brand, model. 203623.  
ALFHER interactive whiteboard.

Rack Cabinet Intellinet of 19 inches, 27 units.  
 PowerEdge R320 1U server Intel Xeon E5- 2400 processor. Intel Chipset C600 series. 16 GB of RAM memory. 2 TB of hard disk.  
 PowerEdge R420 server. Intel Xeon E5- 2400 processor. Intel C600 series chipset. 16 GB of RAM. 1 TB of hard disk.  
 8 fixed racks 28JL NCS Jaguar 2 Post.  
 2 Fixed Racks of 26 U.  
 13 Routers Cisco 1921 of the series 1900. 512 MB of memory. With ports: 2 RJ-45, 1 auxiliary RJ-45, 1 console RJ-45, 1 usb type A, 1 usb type B, 2 expansion slots E HWIC- 0.  
 17 Cisco 2960 switches. Cisco Catalyst mod. WS-C2960-24-S with 24 RJ45 ports and 1 RJ45 console port. Internal memory 64 MB.  
 2 Nanostation, Ubiquiti brand, model M5.  
 4 Hand Held barcode readers  
 5 Posline LC2300U barcode readers.  
 3 Posline SL2020 barcode readers.  
 Posline SM2450 barcode reader.  
 5 Posline TMSR-12K-SM card readers.  
 2 Ticket Printers, Posline IM900 brand.  
 3 Epson TM-U220 ticket printers.  
 DATAMAX E-4203 ticket printer.



*Information Technology Center. UNSIS.  
Miahuatlán de Porfirio Díaz.*

**Compute and Electronics Laboratory**  
 6 Tektronik TDS 1002 2-channel oscilloscopes. 60 MHz, 1 GS/s.  
 6 K Precision 4017 A. 10 MHz function generators. Sweep/Function Generator.  
 3 FLUKE 110 Multimeters.  
 5 FLUKE 287 Multimeters.  
 2 FLUKE 187 Multimeters.

3 Power supplies Bk Precision 1627A.  
 3 Bk Presicion 1760A Power Supplies.  
 Universal microprocessor programmer BK PRECISION 864.  
 Zychem ZY-SUSE graphic printer.  
 4 WLC100 station electric switches.  
 2 PK-500 industrial mini-drills.  
 Industrial air compressor SS3R2-GM.

### **Public Health Laboratory**

Ultra-freezer.  
 Potentiometer.  
 Analytical balance.  
 Digital Magnetic stirrer with temperature control.  
 Vortex.  
 Refrigerator.  
 LCD Biological digital microscope with screen.  
 Luzere.  
 Oven.  
 Rotary Microtome.  
 Luzeren- 24L electric automatic portable autoclave.  
 Analytik Jena Biometra Tadvanced Thermal Cycler.  
 CFX96 Touch Deep Well real time PCR detection system.  
 High-Performance Liquid Chromatograph.  
 Water purification system Thermo Scientific Smart2pure pro uv/uf 16 lph.  
 Thermo Scientific NanoDrop one Spectrophotometer.  
 Bio Rad CFX96 Touch RT-PCR.  
 Spectramax Abs Plus Microplate Reader with Softmax Pro Software.  
 Refrigerated Centrifuge (Allegra X-30R) Beckman Coulter.  
 Vertical electrophoresis chamber and transfer module (Mini-Protean Tetra Cell).  
 VCX-130 Ultrasonic processor.  
 DLAB orbital shaker model SK-R330- PRO SK330.5.  
 Shel Lab 17L shaking water bath.  
 Electric Bunsen burner BA6101X1 CURRENT 36135-04.  
 Class II, Type B1 Biological safety cabinet.  
 Gel doc XR+ Gel documentation System.  
 PURAIR-PCR-24 laminar flow cabinet Horizontal electrophoresis chamber (Scientific Chamber, Model Cs-Spat).  
 Tabletop veterinary haematology analyser vet-scan hm5".

Licon Hemat 18 Human Hematology Analyzer. Difer 3 Parts 18 Param Licon, with Lexmark Ms310dn Printer.

Fuji Drichem Nx500i Blood Chemistry Analyzer. Digital Rotavapor with electric elevator and vertical glass. 3.5 litre bath, Usb port for data handling. Operates with 110v. Model Re100- Pro, Brand Dlab Series: Xz191aj0000664 Pedimento: 19 16 3458.

Veterinary Hematological Analyzer MEK - 6550J/K.



*Public Health Laboratory. UNSIS.  
Miahuatlán de Porfirio Díaz*

### **Chemistry Laboratory**

Mindray Hematological Analyzer.

Bayer Rapidlab blood gas analyzer.

Terlab Incubator with two stainless steel trays.

Felisa Bacteriological incubator with stainless steel chamber.

Buchi rotary evaporator dual main condenser.

2 OHAUS analytical balances.

Electric bain-marie.

Solvat laboratory centrifuge.

Micro hematocrit centrifuge.

2 Motic Binocular microscopes.

Carl Zeiss Trinocular microscope with projection camera.

Pressure cooker sterilization.

2 UV/VIS spectrophotometers

Fume extraction hood.

Edward Vacuum pump.

Felisa Vacuum pump.

Vacuum drying oven with 14 x 14 x 20" chamber, hydraulic thermostat.

Forced air analogue oven, maximum temperature 220°C.

100° Degree Celsius muffle furnace with thermo-couple sensor type "K".

ABBE refractometer, optical, with measurement range from 1.3000 to 1.7000 ND YK 0.25 BRIX. Handheld refractometer.

5 Organic Chemistry distillation equipment.

2 Electronic Handy Step devices with PLASTI-BRAND pD tips with 5µl adjustment range. 12.5µl. to 1250 µl.

Laboratory cooler.

2 Accutrend Plus Cholesterol, Triacylglycerol and Glucose Meters.

3 Granataria triple bar scales.

7 Magnetic stirrer and hot plates.

2 Test tube shakers.

2 pH meters.

Microhematocrit reader.

Pipette shaker.

Vortex shaker.

Wintrobe tube stand.

2 Cell counters.

2 Micropipettes.

3 Organic and inorganic chemistry sets.

### **Biology Laboratory**

Microscope with integrated detachable camera.

Automatic autoclave to sterilize healing material

Manual autoclave to sterilize healing material.

Culture oven for bacterial growth.

Oven for sterilizing glass or stainless steel material.

6 Microscopes.

2 Stereoscopes to observe microorganisms.

Laminar flow hood.

CO<sub>2</sub> incubator for bacteria culture.

Industrial drying oven for dry heat sterilization.

Double-wall calorimeter with oxygen pump.

Centrifuge.

2 Refrigerators to keep reagents, septa and blood.

Video projector.

Colony counter equipment.

Portable analytical balance.

2 Balance triple arm.

5 Magnetic stirrer and hot plates.

2 Vortex shakers.

Stainless steel water bath.

Air-cooled sliding vane vacuum pump.

Portable air compressor.  
4 Potentiometers.  
2 Automatic micropipettes.  
7 Laboratory dissection kits.  
Portable turbidity meter.  
Cell counter.  
Pediatric scale.  
Portable stainless Steel pot Sterilization autoclave.  
Microwave oven for galenic preparations.

### **Electronic Government Laboratory**

12 Computer Equipment Mod. Optiplex 9020.  
Intel Core-i7 CPU 8 GB of Ram memory 500  
GB.



*Environmental Analysis Laboratories.  
UNSIJ. Ixtlán de Juárez*

## **UNIVERSITY OF SIERRA JUÁREZ**

### **Ecology and Biodiversity Laboratory**

Portable solar radiation station, measuring environmental factors such as temperature, solar incidence, wind speed, pressure and humidity. In addition, it analyses atmospheric data and climate models.

Stereoscopic Microscope, observation, analysis and dissection of living and/or dead organisms measuring structures at different scales and taking pictures at different magnifications.

### **Environmental Microbiology Laboratory**

Plant incubator ICP-18 designed to maintain, at operator controllable points, the temperature and intensity of lighting as well as the programming of day-night periods, it is indispensable for research of plants, fungi, bacteria, etc.

Quany Tray Sealer; seals Quany trays of rapid methods containing microorganism cultures to bring them to incubation.

Electric Incubation Stove: maintains and grows microbiological or cell cultures. The incubator maintains temperature, humidity and other conditions at an optimal level, such as the content of carbon dioxide (CO<sub>2</sub>) and oxygen in its interior atmosphere.

Horizontal Laminar Flow Hood; serves as a sterile working place, to sow and manipulate microorganisms in different crops.

### **Soil and Water Laboratory**

Liquid Chromatography System with Collector; separates phases in samples by ion exchange, affinity and molecular weight.

4.5 L Tabletop Lyophilizer: sample drying by cryogenics.

UV-Visible Spectrometer; colorimetric and concentration determination by absorbance. Water distiller; purifies tap water, through controlled vaporization and cooling processes.

E-PURE water deionizer; To remove ions from water and obtain higher purity for equipment.

Muffle; normally used for firing ceramic materials and for melting metals through thermal energy. Within the laboratory a muffle furnace is used for substance calcination, substance drying, melting and control processes.

An industrial furnace is commonly used to dehydrate laboratory reagents or to dry instruments. The furnace increases its temperature gradually over time as well as its programming.

### **Molecular Biochemistry Laboratory**

2 IMAGUN SYSTEM and Bio- Rad GEL Doc EZ photo-documenters; used to visualize agarose and acrylamide DNA gels.

3 Gradient Thermocyclers; last generation amplification of DNA fragments (PCR).

3 Sequencing Gel Chamber with power source used for the separation of small DNA fragments.

Fume extraction hood for handling dangerous reagents.

### **Earth Science Laboratory**

Organic Carbon Analyzer; used as a non-specific indicator of water quality or the degree of cleanliness of the equipment, It measures the amount of carbon dioxide generated by oxidizing organic matter under special conditions.

Bioclimatic Environmental Chamber- environmental Management System with automatic temperature variation, for the conservation and aging of plants.

SOKKIA total station, for measuring angles from marks made on transparent disks.

Tree climbing bike built in high quality material for greater safety, suitable for trees with diameters over 26 inches

### **Ecotoxicology Laboratory**

Flowmeter kit watermark current meter.

Leaf meter, calculates the electrical conductivity in plants (stomachs), to measure the moisture content.

LUXEO 4D Digital Stereo Microscope specific with a static auxiliary objective.

Multiparametric meter without GPS, to measure water turbidity and temperature, conductivity in alkaline solutions.

DR 600 UV-VIS spectrophotometer, to measure absorbance and concentration, with tungsten and deuterium lamp with automatic wavelength.

### **Instrumentation Laboratory**

Gas chromatograph with FID detector for the study of organic contaminants in total waters such as insecticides and pesticides.

Liquid chromatograph with UV-Vis detector; identifies organic compounds, pesticides, proteins, amino acids.

ICP plasma emission spectrometer; determines heavy metals in water and soil samples in a spectral range from 160 to 900 nm.

### **Environmental Chemistry Laboratory**

20-seat Digestion Unit, hermetically sealed and waterproof container, is used to convert substances containing Nitrogen (protein) into a convenient form of Nitrogen, chemical demand for Oxygen can be determined.

Universal Refrigerated Centrifuge; Separates solids from a solution by a decanting or sedimentation process with cooling systems ideal for laboratory applications.

Standard Centrifuge; used for decanting or sedimentation processes mainly of solids or liquids, It serves for the separation of two liquid phases.

Fume hood; used for the separation of acidic solutions that give off toxic fumes.

Digital microscope for the observation of samples and microorganisms.

Microwave Oven (Multiwave pro sol 60HZ, rotor 16MF100, pressure and temperature sensor) performs the digestion and microwave-assisted extraction of inorganic and organic samples.

Multiparametric ORION VERSA STAR It is capable of gathering accurate data for advanced electrochemical laboratory operations all in one compact, versatile meter. The meter has four channels that accept interchangeable pH, conductivity, DO, pH/ISE, and pH/achievement modules.

Vacuum drying oven; performs heating, baking, drying, agricultural genetics, protein and starch digestion, drug metabolism, sterilization, conditioning, preheating, curing and aging, serum protein analysis.

Particle size meter (Nanotrac 252); by means of a power spectrum the particle size is distributed.

Raman Systems Inc (ALGITRON) and Dimension - P2. Raman spectroscopy (named after C.V. Raman) is a spectroscopic technique used in chemistry and physics of condensed matter to study low frequency modes such as vibratory, rotational, and others.



*Wood Technology Laboratory.  
UNSIJ. Ixtlán de Juárez*

### **Environmental Geology Laboratory**

Axioscopic polymer microscope; Used for the observation of smaller samples that are not visible to the human eye, to distinguish shapes and morphology.

## **Geographic Information Systems Laboratory**

1 24" DESIGNJET T610 Plotter prints high quality images such as maps, topographic charts, scientific research posters among other high resolution prints.

6 Desktop Computers; They have the capacity of Ram memory and hard disk for spatial and biogeographical analysis.

## **Laboratory Waste**

The separation of materials is carried out by compatibility synonymous with chemical affinity (Brethrick's Handbook of reactive chemical Hazards). Storage of materials with similar reactivity is performed.

## **Gas Storage Hut**

The storage of high purity carrier gas tanks such as Nitrogen, Helium, Argon, Extra Dry Air etc., connected to their corresponding equipment, is carried out.



*Environmental Chemistry Laboratory. UNSIJ. Ixtlán de Juárez.*

# **UNIVERSITY OF LA CAÑADA**

## **Chemistry Laboratory**

VARIAN liquid chromatograph.

Real double beam visible UV spectrophotometer with uvwinlab software version 2.85. PERKIN ELMER.

Professional microwave synthesis chemistry.

BINDER Drying oven with electronic regulation and digital reading.

Polarimeter 50/60 HZ.

Potentiostat METROHM 910 PSTAT mini. 15kw induction heating system with 5" quartz tuve and temperature.

Digital recirculating cooler.

Refrigerator.

Traceable infrared thermometer.

Rotary evaporator.

Fume and gas extraction hood. Built in stainless steel interior extraction system of 6" diameter, with a window of 6MM guillotine. Measures: 120x80x145 cm, operates with 120 VOLTS.

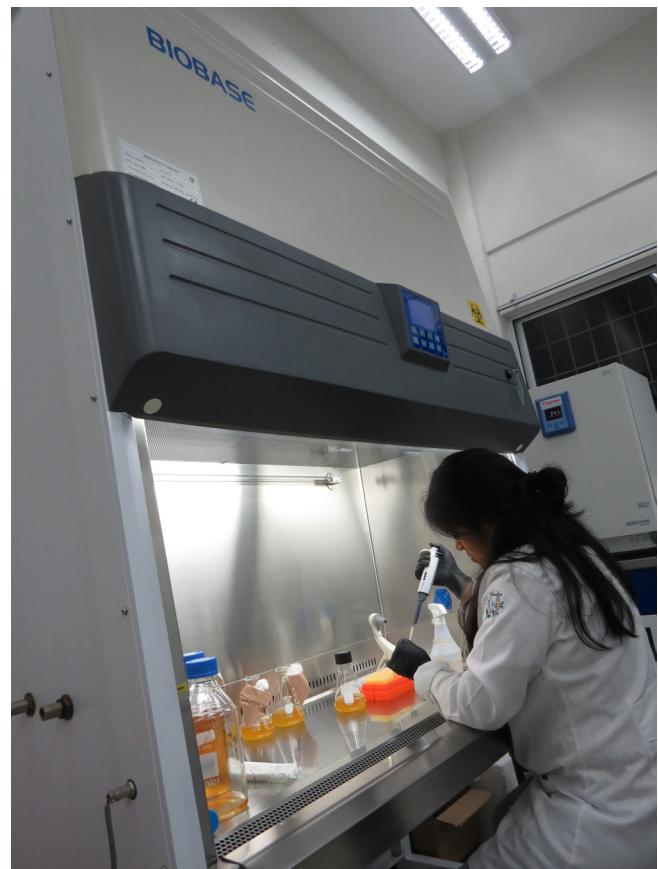
Potentiometers (pH meters).

High precision analytical balance, max. cap: 210g  
Sensitivity: 0.1MG.

Precision analytical balance.

Precision balance, cap. 610 x 0.01g German Icd display, rs232 output, current discharge protection, built-in application programs; stainless steel plate with 116 mm diameter, impact weighing system and correction insurance. 2 weighing modes and 19 different units as required. Operated by 9 volts batteries.

Low temperature circulating water bath of 120V.  
FISHER Vane vacuum pump, capacity 110- 115V.



*Research Laboratory. UNCA.  
Teotitlán de Flores Magón*

Portable vacuum pump.  
Anemometer, btu, ideal for ovens, refrigerators and air conditioning. Measures air speed, volume, btu capacity, temperature, humidity, dew point, includes batteries.

VORTEX agitator.

Ultraviolet light lamp.

Ultraviolet lamp DE 159 X 25X X 56 MM.

Safety eye wash.

Ultrasonic cleaner.

Variable digital micropipette 0.5-10 UL.

Digital variable micropipette 10-100 UL.

Digital variable micropipette 20-200 UL.

Single channel micropipette (0.5-10 L).

Single channel micropipette (100-1000 L).

Single channel micropipette (10-100 L).

Variable digital micropipette 100-1000 L.

Digital variable micropipette 500-5000 L.

Transferette Single cannel pipette spare parts 100-1000 L.

Transferette Single cannel pipette spare parts 10-100 L.

Transferette Single cannel pipette spare parts 20-200 L.

Porcelain desiccator plate with glazed 230mm OD, 8 holes.

### Biology Laboratory

UV-VIS spectrophotometer (VELAB).

Fluorescence spectrophotometer.

An. Uriplus KONTROLAB.

Laboratory refrigerated centrifuge.

Bio-rad horizontal electrophoresis system.

Laminar flow hood.

Horizontal freezer.

WOOD lamps.

Safety eye wash.

Serological water bath.

Potentiometer (Ph meter).

Binocular microscopes.

Stereoscopic microscopes.

MINI-P TET SYS/PAC BASIC BIO RAD.

Module type I CARTRIDGE KIT-TAP FEED.

Vertical refrigerator.

BARNSTEAD Water quality/react system in mega.

Transilluminator.

Digital colony counter.

Rotary vacuum dryer.

Distillation apparatus with full process and lab tools.

Mixer for tubes.

Micropipettes of various capacities.

Needle incinerator.

Incubator.

VORTEX shaker

Autoclave.

SARTORIUS electronic precision scale.

ADAM EQUIPMENT Electronic bench scale.

Magnetic stirrer and hot plates.



Fume and Gas Extraction Hood. Research Laboratory. UNCA. Teotitlán de Flores Magón

### Pharmacobiology Laboratory

FT-IR spectrometer.

PHARMA TEST tablet friability test instrument.

BIO RAD horizontal electrophoresis system.

Power supply for electrophoresis system.

Stainless Steel moonshine distiller.

HETTICH Benchtop centrifuge.

ECOSHEL dry oven.

Fume extraction hood.

ADAM electric analytical balance.

### Research Laboratory

MEDONIC hermatology analyzer.

Cryogenic Dewar flasks.

HETTICH Benchtop centrifuge.

Homogenizer stomacher without type r4 system.

Incubator.

Microplate reader.  
 Precision electronic scales.  
 DAIGGER binocular microscope.  
 Microscope with LCD monitor EUROMEX.  
 NATIONAL stereo microscope.  
 IROSCOPE laboratory microscopes.  
 ECOSHE Microscope without L type.  
 Micropipettes of various capacities.

### **Laboratory for the Evaluation of Nutrition Status and Nutritional Education**

LANGE skinfold plicometer.  
 HARPENDEN plicometer.  
 SLIM GUIDE plicometer.  
 VERNIER Anthropometer.  
 ADE digital ultrasonic stadiometer.  
 ADE Wall mounted stadiometer.  
 Portable stadiometer.  
 SECA Infantometer.  
 SECA Fiberglass tape measure.  
 Lufkin Fiberglass measuring tape.  
 InBody Body composition analyzer.  
 TANITA INNER SCAN body composition analyser.  
 TANITA FIT SCAN body composition analyser.  
 SECA scale.  
 High measuring stand and stadiometer.  
 SECA digital infant scale.  
 TANITA digital infant scale.  
 OMRON digital body fat analyzer.  
 Dynamometer.  
 Baumanometer.  
 POLAR heart rate monitor. Pedometers.  
 Food replica kits.  
 Nutrikit, nutritional consultation package.



*Partial view of a recording and transmission room.  
NovaUniversitas. Central Campus, Ocotlán de Morelos*

### **San Jacinto Campus**

#### **Media Room**

7 End point, Polycom HDX 7000 video conference equipment.  
 7 SMART Board 600i3 64" interactive whiteboard systems.  
 End point, video conference equipment Polycom RealPresence Group 300.  
 BenQ RP703 Interactive Flat Panel Display System from 70".

#### **Electronics Laboratory**

4 Agilent Technologies 4 10 Mhz function generators.  
 4 Agilent Technologies dual output variable power supply.  
 4 Agilent Technologies Digital Oscilloscopes with 8.5" display.  
 4 Agilent Technologies Digitalstation multimeters with 5-digit display.

#### **Chemical - Biological Laboratory**

3 Microsbinocular compound microscopes.  
 Analytical balance.

#### **ICT Lab**

Dell PowerEdge T30 server.  
 13 HP All in ONE 200G3-21.5" computers.  
 Cisco switch SG112-24-24.  
 Cisco RV130-Multifunction Router.  
 Cisco Rv325 Router-14 ports.  
 2 Nobreak APC BR1500.  
 Canon Rebel T6 DSLR camera.  
 Tripod.  
 Microphone.  
 BenQ MW550 digital projector.

## **NOVAUNIVERSITAS**

### **Ocotlán Campus**

#### **Central Campus Recording and Transmission Rooms**

Polycom Clarity video conference platform. with the capacity for 25 video conference sessions and up to 100 users connected in HD quality.  
 7 End point, Polycom HDX 7000 video conference equipment.  
 7 SMART Board 600i4 of 64" interactive whiteboard systems.

14 Regulators for electronic devices.  
12 Classroom tables.  
15 Chairs.  
Panoramic ACER monitor.  
Logitech keyboard and mouse set.

## Juxtlahuaca Campus

### Electronics Laboratory

3 Agilent Technologies function generators 10Mhz.  
3 Agilent Technologies dual output variable power supply.  
2 Agilent Technologies Digital Oscilloscopes with 8.5" display.

### Media Room

7 End point, Polycom RealPresence Group 300 video conference equipment.  
7 BenQ RP703 Interactive Flat Screen Systems from 70".

### Chemical – Biological Laboratory

13 Binocular compound microscopes.  
6 Stereo Zoom binocular microscopes.  
Analyticalbalance.



*Chemical-Biological Laboratory. NovaUniversitas.  
Juxtlahuaca Peripheral Campus*

Micro Kjeldahl apparatus.  
Goldfisch fat extractor.  
Muffle Furnace (ash content tester).  
Laminar flow hood.  
Industrial distilled water purification machine.  
Extraction hood.  
Stereoscopic microscope.  
Refrigerator.  
Freezer, capacity 300 gr, sensitivity 1 mg, tray diameter 80 mm  
Analog vortex mixer with speed from 0 to 3400 rpm.  
Potentiometer.  
VELAB UV. and visible spectrophotometer Melting point apparatus.  
Ergonomic Binocular Microscope.  
Binoplus Millenium.

### Robotic Clinic

Noelle® Maternal birthing simulator.  
19 Adult CPR training manikins.  
4 General doctor super simulated used medical manikins.  
Human body skeleton simulator.  
Medical anatomical brain model.  
Artificial human body anatomical model showing internal organs.  
IUD insertion training model.  
Female breast self examination model.  
Condom training model.  
2 Infusion pumps.  
2 Hospital electric beds.  
2 Anti scar mattresses.  
2 hospital mechanical beds.  
14 Mobile tripods for continuous infusions.  
Medical examination bed.  
Patient transfer bed.  
Patient transfer trolley.  
2 Portable oxygen cylinders.  
Wheelchair.  
Drive medical trigger release folding walker.  
Pair of crutches.  
4 Mechanical column scale.  
10 ANEROID baumanometers  
10 Stethoscopes.  
5 Glucometers.  
Laryngoscope with straight Miller blades.  
Econom diagnostic set with otoscope and ophtalmoscope heads and C handle.  
2 Portable aspirators.  
Pediatric scale.  
Portable doppler system.  
Touchcardiograph.  
Hospital baby crip.  
Radiant heat cradle.

## UNIVERSITY OF THE COAST

### Chemical – Biological Laboratory

Balanza Analítica.  
Analytical balance.  
Drying oven, digital temperature control for humidity determination, range 5 to 210 °C. Kjeldahl distillation apparatus.

Neonatal incubator.  
Nursing vital signs monitor.  
Autoclave for surgical instruments.  
Surgical lamp in operating room  
2 Pasteur tables.  
2 Medical Overbed tables.  
2 Curved instrumental trolley.  
General surgery equipment.  
Cesarean section set.

### **Laboratory Surgical Unit**

Autoclave.  
Surgical instruments.

### **Veterinary Anatomy Laboratory**

4 Dissection kits.  
10 Anatomy dissection tables.

### **Small-Species Veterinary Clinic**

2 Electrosurgical units.  
Inhalation Anesthesia machine.  
Ultrasound.  
Autoclave.  
Surgery table.  
Medical Overbed table.  
Sacale.  
Mobile tripods for continuous infusions.  
2 Steel instrument tray.  
Pre-surgery table.

### **Animal Reproduction Laboratory**

Embryo freezer.  
Microscope



*Partial view of the hospitalization area.  
Robotic Clinic. UNCOS. Pinotepa Nacional*

## **UNIVERSITY OF CHALCATONGO**

### **Chemistry Laboratory**

2 Binocular microscopes.  
Glucometer.  
Vertical autoclave.  
Centrifuge.  
2 pH meters.  
Analytical balance.  
Portable stadiometer.

### **Continuing Education Laboratory**

Video Conference Equipment: Real Presence Group Series 310-720p, with EagleEye IV-4x camera.

### **Bromatology Laboratory**

Manual autoclave.  
Rotary evaporator.  
Muffle

### **Microbiology Laboratory**

Upright freezer.  
Grease remover.  
System for crude fibre determination.  
UV-Vis spectrophotometer.  
Vacuum pump.  
Vertical laminar flow hood.  
Orbital shaker with a heating plate.

### **Robotic Clinic**

Newborn patient simulator for emergency procedures and resuscitation.  
Pediatric skills simulator.  
Realmom birthing simulator.  
Advanced Nursing Manikin. Vital Signs Simulation.  
Radiant heat cradle with phototherapy lamp and oxygen therapy.  
3-Position electric hospital bed with wheels. Wired remote control for operation of bed movements.  
Vital signs monitor 12" with 6 parameters.  
Electro CMS 600G. Main features: Touch screen color TFT LCD to show the working status and the ECG waveform. 12 simultaneous ECG leads, and digital signal processor.  
Hydraulic surgery table.  
Single operating room lamp of 50,000 - 150,000 lux halogen light. Integrated by two lamps. A screen with a diameter of 50 cm and the second with a diameter of 70 cm.

# Workshops

## Technological University of the Mixteca

### Ceramic Workshop

Gas oven. for burning gas ceramics with a trolley and door, maximum temperature of 1200 °C, 16 atmospheric burners, refractory insulating wall lining and ceramic fibre.

Electric furnace. with capacity of 10 cubic feet, cone 10 with digital temperature control of 4 ramps. Sasabe GC-12/29.

Electric oven. 110 volts int. 11.0" x 13.50", Skutt.

Micro-spray hammer mill, equipment with 1 H. P. electric motor, Comesa.

Roller table. with electric motor of 1/3 H. P. with three 1-gallon jugs, lined with porcelain (high in alumina), Comesa.

Extruder. with vacuum for ceramic pastes with motors of 2 H. P. and 1 H.P. in the vacuum pump, Comesa.

Vibrating screen. with electric motor of 1/3 H. P. with two frames with stainless steel mesh, Comesa.

Mixer for ceramic paste. with constant speed and 1CF single phase motor, capacity of 45 litres of paste.

Lathe with electric hand drill.

Scale lathe. manufactured in carbon steel, equipped with instantaneous start and stop system with brake and clutch, with lock and 1P. electric motor, Comesa.

### Glass Workshop

Electric oven. with fusing support 10 x 50.

Pujo Fusing Oven.

Spectrum ceramic kiln.

Beveling machine 8" Diam B4RV.

Glastar G14 Diamond Star Glass curling machine.

G8 All- Star Glass curling machine.

### Plastics Workshop

Vinyl cutting plotter of 60 cms. Roland CX24-camm-1.

ARSA vertical hydraulic plastic injection machine.

Sandblaster Intec blast. RX-1RT.

Router CNC of 1.00 X 80cm of cut MYD 2005.

Vacuum forming machine, Afisamatic VTF5261-P1.

Horizontal heating machine.

OTMT equipped drill and cutter.

Vimalert belt transmission column drill.

### Textile Workshop

Industrial sewing machine, brand: Brother, model: S7200A-405-2G40.

Brother PR600C Embroidery Machine.

2 Thermo Cimarec heating grids HP131225.

Straight machine Brother S7550A-5.

Overlock machine Yamato AZ7500SD- A4DF-8.

Kansan Special Interlock Machine WX-8803F.

Brother Hole Making Machine HE-800A-2.

Lunasew Cutting Machine LN- 100K.

Cutting machine Luna LN-100-RS.

Yamato Overlock Machine CZ6500A4DF.

Zig-Zag machine, brand: Zoje, model: 1906

Full Steam Iron SH-304.



Plastics and Textile Workshops. UTM. Huajuapan de León.

### Wood Workshop

Electric wood planer, 5HP motor .

Plastics and Textile Workshops. UTM. Huajuapan de León.

Circular saw with wood chisel, 3HP 220/440 motor. Straight guide. Cutting capacity 100 mm.

Truper Tromp 1. Diameter of 25.4 mm with 2HP motor and work table of 740x530 mm

Wooden floor making machine with motor from ¾ HP.  
Mini-Max T-124 copying lathe.  
Universal radial floor saw, with 300 mm disc. Industrial use, 2800 RPM and 2 HP motor.  
Radial saw.  
2 Radial arm saws.

### **Metal Workshop**

Pedal-operated reinforced motorized cutter, for cutting blades up to 1/8' gauge.  
Manual guillotine.  
Pipe Rolling machine.  
Sheet rolling machine.  
Slip roll machine.  
Manual milling machine.  
Sealey metal working lathe.  
Universal conventional manual lathe.  
Milling – Drilling machine.  
Air compressor motor, to paint repaired furniture.  
Metallizing machine

### **Silk-screen printing workshop**

Washout booths.  
Drawer auto open heat transfer machine 40cm x 40cm  
6-2 octopus screen printing machine (6 colours, 2 double rotation tables).  
Screen printing drying racks (50cm x 50cm).  
Screen printing drying racks (50cm x 100cm).  
Screen frame with emulsion 80cm x 90cm.  
Silk-screen printing machine 70x90 cm (inclined).  
Mesh strecher.

### **Fashion Design Workshop**

CNC laser cutting machine STM-4040.  
Digitizing tablet WACOM 20.

### **Food Workshop**

Centrifugal exhauster.  
Smoking grilling oven.  
Plate pasteurizer.  
Pulper machine.  
Hydraulic hose crimping machine.  
Autoclave.  
Bakery oven.  
Dough sheeter machine.  
Commercial kitchen boiler. Mixers.  
Bewtech chronical fermenter.  
Meat injector.  
Stuffer.

## **Universidad del Istmo Tehuantepec Campus**

### **Plastics Workshop**

Thermoforming machine.  
Industrial bench drill.  
Sandblaster cabin.  
Edging machine.  
Forming machine with template up to 40cm.  
Pipe beveling machine.

### **Silk-screen printing workshop**

Washout booths.  
Hot Stamping.  
Octopus screen printing machine.  
Screen stretcher.  
Silk-screen printing machine (inclined).  
Rack.  
Afford A flash heater

### **Ceramic Workshop**

Gas oven.  
Electric oven.  
Industrial furnace.  
Small gas oven.  
Mixer.

### **Textile Workshop**

2 Sewing machines  
4 Food pedal weaving wool.

### **Photography Workshop**

2 Photographic enlargers.

### **Wood Workshop**

3HP Tromp

### **Metal Workshop**

CNC vertical machining center.  
Hydraulic plate bending machine.  
Cabinet-mounted parallel lathe with single- phase 1.5 CF motor.  
1500 kg hydraulic lifting table. Analog hardness tester.  
Hydraulic tube bender.  
Milling drill machine.  
A.C. air welding machine.  
Welding machine with gas hose from ¼". Band saw machine.  
Universal radial arm saw.  
Woodworking lathe.  
Circular table saw.  
Belt and disc sander



*Workshops: Ceramics, Serigraphy and Plastics.  
UNISTMO. Campus Tehuantepec.*

## **University of Papaloapan Tuxtepec Campus**

### **Food Workshop**

Texture analyzer.  
Ultrasound system.  
Viscometer.  
Dehydrator.  
Kjeldahl micro.



*Partial interior view of the Food Workshop.  
UNPA. Tuxtepec Campus.*

## **University of Sierra Juárez**

### **Wood Technology Workshop**

Microtome.  
Scale.  
Microscope.  
Stereoscopic microscope.  
Rotary evaporator.  
Vacuum pump.  
Digital scale.

Truper Tromp 1.  
Mini Max T-124 copying lathe.  
Pneumatic nailer.  
Belt and disc sander.  
Horizontal belt sander.  
Hand grinding machine.  
Pendulum jigsaw.  
14" band saw.  
18" band saw.".br/>Circular saw.  
Radial arm saw.  
Compound miter saw.  
Industrial type table saw.  
Floor pillar drill.  
18X47" woodworking lathe.  
Thickness corded planer.



*Partial interior view of the Wood Technology Workshop. UNSIJ. Ixtlán de Juárez.*

## **University of La Cañada**

### **Food Workshop**

Industrial skimmer.  
Electric food dehydrator.  
Thermo-sealing machine.  
Refrigeration temperature control.  
Viscometer.  
Kjeldahl apparatus (6 posic with glass tube).  
Micro kjeldahl appliance (white).  
Milk analyser.  
Leaf area index measurement.  
Colorimeter.  
Electric canning machine.  
Horizontal freezer (white).  
Vertical freezer (1 door, stainless steel).  
Distiller.  
Kjeldahl digester with 4 units.  
Stuffer.

Vacuum packer.  
Vertical glass door fridge.  
Medium agitation equipment with 3 blades agitator and anti-slip base.  
Gas stove 6 burners with oven.  
Gas stove 6 burners with oven.  
Electric juice extractor.  
Manual citrus juicer.  
Soxhlet extractor 3 positions  
Baking machine stainless proofer for bread fermenting.  
Fryer.  
Small homogenizer industry cater.  
Digital high shear mixer emulsification  
High speed shearing emulsifying machine.  
Vacuum drying oven.  
Electric convention oven.  
Electric oven.  
Microwave.  
Bread cake electric baking oven double deck eight trays.  
Incubator.  
Industrial extractor hood.  
Domestic blenders.  
Industrial blenders.  
Heavy-duty immersion liquefier.  
Digestion systems.  
Portable chlorophyll meter.  
Ph meters (potentiometers).  
Portable digital bench top pH tester.  
Commercial microwave.  
Electric mill.  
Mufle.  
Digital muffle.  
GPS navigator.  
Automatic level (tripod in reagent room).  
Digital magnetic stirrer with heating plate.  
Digital fruit firmness tester.  
Food processor.  
Meat slicer.  
Digital refractometers.  
Refractometer (brixometer).  
Home refrigerator-freezer.  
4 channel thermometer.  
Thermometer digi-sense.  
Analytical balance (thermobalance).  
Kitchen scale.  
Electronic precision scale.  
Recirculator.  
Electronic scale.  
Electronic scale max 60kg min 250g.

Mixer.  
Industrial mixer.  
Bombo steel pot.  
Automatic coffee maker.  
Fume extraction hood.  
Centrifuge  
Mechanical Sieve shaker.

## University of the Coast

### Wood Workshop

Wood Jointer machine.  
Woodworking lathe.  
Floor drill press.  
Floor saw.  
Wood band saw.  
Wood copying lathe.  
Belt compressor.

### Metal Workshop

Metal cutting machine-Jointer.  
Woodworking lathe.  
Floor drill press.  
Floor saw.  
Wood band Saw.  
Wood copying lathe.  
Belt compressor.  
Electric Welder.  
Metal Cutting Saw 14" 3 Hp.  
Universal tool milling machine 2S.

### Silk-screen printing Workshop

4 color octopus screen printing machine.  
Screen stretcher.  
Drying tray.  
8 in 1 sublimation printer.

### Plastics Workshop

HER-MAQT hermoforming machine.  
3D printer

### Agro-Industrial Production Workshop

Semi-industrial mixer.  
Meat mill.  
Vacuum sealer machine.  
Semi-automatic industrial bakery oven.  
Electrical meat grinder sausage stuffer.  
3 Stainless steel cheese vats.



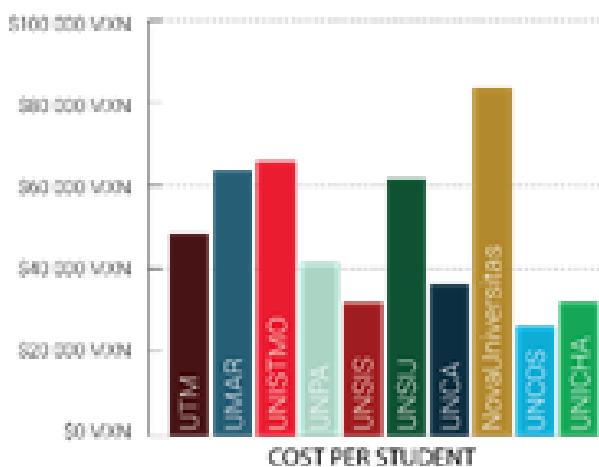
Droplet Digital PCR System, QX200, BIORAD. Genetics Laboratory. UMAR, Puerto Escondido Campus



Ultra High Performance Hybrid Liquid Chromatograph. Instrumental Chemistry Lab. UNPA. Tuxtepec Campus

# Quality Education

- Quality education costs, but it costs more not to educate or to educate halfway.
- The calculation of the actual cost of education must take into account the quality of that education.
- Lower cost per student than many universities.<sup>2</sup>



Average cost per student at OSUS \$46,751.82

Average cost per student at UNAM \$76,254.00

Source Annual Account 2000-2018, Budget 2019, UNAM



Main reading room, Library. UNSIS.  
Miahuitlán de Porfirio Díaz

## How do you measure the quality of a university?

- Only by RESULTS
- Testing the reality of students's knowledge
- Showing the productivity of research
- Demonstrating positive social impact

## How do you NOT measure the quality of a university?

- Accreditations and certifications do not prove quality.
- They only prove desire to obtain them.
- They certify procedures, not results
- The accreditation has a high cost: around \$200,000.00 pesos.
- To accredit 88 bachelor's programs at OSUS would cost: \$17,600,000 approximately.
- Therefore, they do not test knowledge because it is a high and unproductive expense.

**OSUS accredits  
RESULTS  
in teaching and research,  
NO NOT PROCEDURES.**

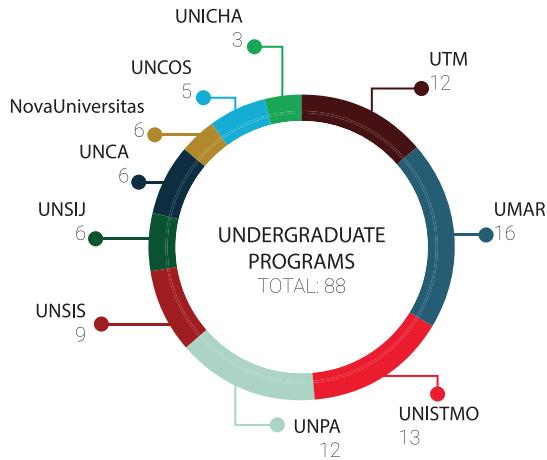
2 The calculation of the cost per student in a real university is quite complicated and can only be reached at the level of estimates, which are always debatable. There are universities that are really no more than schools, whose function is exclusively or almost exclusively teaching, in which case the calculation is relatively simple and is made by dividing the budget by the number of students. However, when a university performs (in addition to teaching) the other functions, the problem is complicated by calculating the share of expenditure that goes to teaching, scientific research, dissemination of culture, promotion of development and services to the community. This is what happens with the state universities of Oaxaca, in which the different functions of education and in particular scientific research are of great importance, which is positive for the country.

# Bachelor's degree

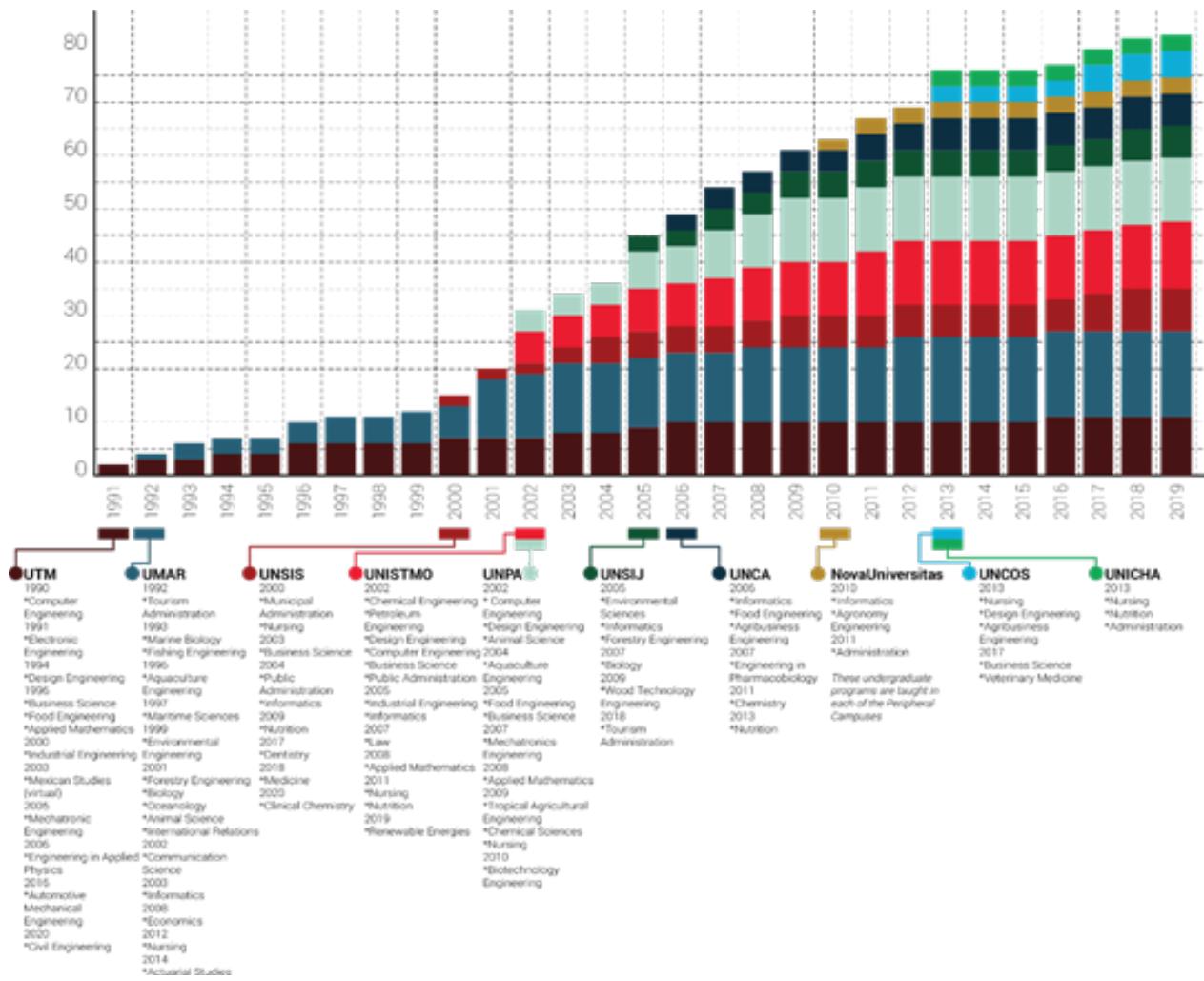


*Center for Anatomy and Dissection. Medicine.  
UNSISS. Miahutlán de Porfirio Díaz*

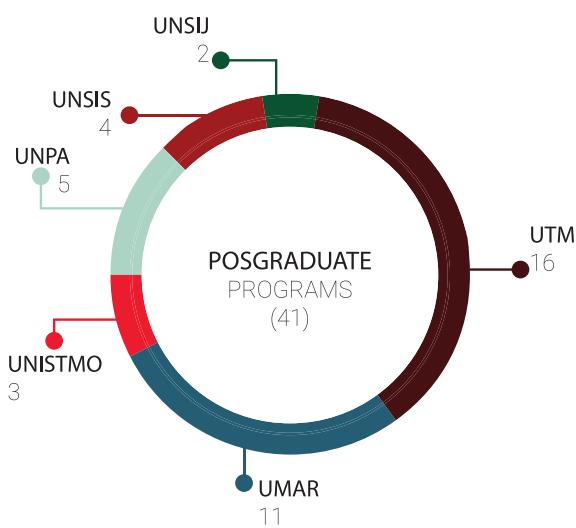
OSUS offers **88 undergraduate programs**, approximately 50% are engineering programs



## Evolution of the EDUCATIONAL OFFERINGS in areas of avant-garde knowledge



## OSUS offers 41 POSGRADUATE PROGRAMS



### 10 DOCTORATES

- Animal Production and Health (UMAR-Puerto Escondido).
- Applied Computer Technologies (UTM).
- Biotechnology (UNPA-Tuxtepec).
- Chemical Sciences (UNPA-Tuxtepec).
- Electronic Goverment (UNYSIS).
- Electronics with specialization in Applied Intelligent Systems. (UTM).
- Environmental Sciences (UMAR-Puerto Ángel).
- Marine Ecology (UMAR-Puerto Ángel).
- Mathematical Modeling (UTM) (Included in the National Postgraduate Quality Program).
- Robotics (UTM) (Included in the National Postgraduate Quality Program).

### 31 MASTERS

- Advanced Manufacturing Technology (UTM).
- Animal Production Health (UMAR-Puerto Escondido).

- Applied Computer Technologies (UTM) (Included in the National Postgraduate Quality Program).
- Biotechnology (UNPA) (Included in the National Postgraduate Quality Program).
- Business Administration (UTM)
- Chemical Sciences (UNPA) (Included in the National Postgraduate Quality Program).
- Computing with speciality in Distributed Systems (UTM-Virtual).
- Electronic Gouverment (UNYSIS) (Included in the National Posgraduate Quality Program).
- Electronics Option in Applied Intelligent Systems (UTM) (Included in the National Posgraduate Quality Program).
- Energy Law (UNISTMO –Ixtepec).
- Environmental Sciences with specialization in Environmental Engineering and Environmental Chemistry (UMAR-Puerto Ángel) (Included in the National Postgraduate Quality Program).
- Fashion Design (UTM).
- Furniture Design (UTM).
- Interactive Media (UTM).
- International Criminal Law (UMAR-Huatulco).
- International Relations: Environment (UMAR-Huatulco).
- Material Sciences (UTM).
- Mathematical Modeling (UTM).
- Municipal Strategic Planning (UNYSIS) (Included in the National Postgraduate Quality Program).
- Public Health (UNYSIS) (Included in the National Posgraduate Quality Program).
- Robotics (UTM) (Included in the National Posgraduate Quality Program).
- Science in Environmental Management (UNSIJ).

- Science in Solar Energy (UNISTMO-Tehuantepec).
- Sciences in Wind Energy (UNISTMO-Tehuantepec) (Included in the National Postgraduate Quality Program).
- Science Marine Ecology (UMAR-Puerto Ángel) (Included in the National Postgraduate Quality Program).
- Sciences in Conservation of Forest Resources (UNSIJ).
- Sciences: Genetics of Biodiversity (UMAR-Puerto Escondido).
- Sciences: Natural Products and Foods (UTM) (Included in the National Postgraduate Quality Program).
- Sciences: Wildlife Management (UMAR-Puerto Escondido).
- System Optimization and Control (UNPA-Loma Bonita).
- Tourism Marketing (UMAR- Huatulco).



*Partial view of the interior of the Postgraduate Division.  
UTM. Huajuapan de León*



*Postgraduate Studies Division. UNSIS. Miahuatlán de Porfirio Díaz*

# National and International Conferences at OSUS



## Meeting of Quantum Computing in the Mixteca at the Technological University of the Mixteca, November 2019

Opening ceremony presided over by the rector of the Technological University of the Mixteca (UTM), Dr. Modesto Seara Vázquez.

Among the participants were:

Dr. Carlos A. Pérez-Delgado, University of Kent, UK.  
Mtra. Vanessa Hernández Mateos. IBM Mexico.  
Dr. Guillermo Morales Luna. CINVESTAV - Mexico.  
Dr. William Cruz Santos. UAEM.  
Dr. Salvador Venegas Andraca. ITESM  
Dr. Manuel Hernández Gutiérrez. UTM.



## Second North American GOA-ON Meeting at University of the Sea, December 2019.

Opening ceremony presided over by the rector of the University of the Sea (UMAR), Dr. Modesto Seara Vázquez.

Among the participants were:

Dr. Richard Feely. NOAA, Nobel Peace Price 2007.  
Dra. Jan Newton. Washington University – USA.  
Dr. Wei Jun Chai. University of Delaware – USA.  
B.Sc Alicia Cheripka. National Oceanic & Atmospheric Administration (NOAA) – USA.  
Dr. Liqing Jiang. University of Maryland – USA.  
Dr. José Martín Hernández Ayón. Universidad Autónoma de Baja California.



## 4th Congress on Research and Liaison for Development. eHealth in Mexico: trends and challenges. University of Sierra Sur, November 2019.

Opening ceremony presided over by the rector of the University of Sierra Sur (UNSIS), Dr. Modesto Seara Vázquez.

Among the participants were:

Dr. Julián Rafael Dib. Universidad de Tucumán, Argentina.  
Dr. Juan Manuel López Oglesby. UPAEP.  
Mtra. Teresita de Jesús Miranda Salgado. DIDT IMSS.



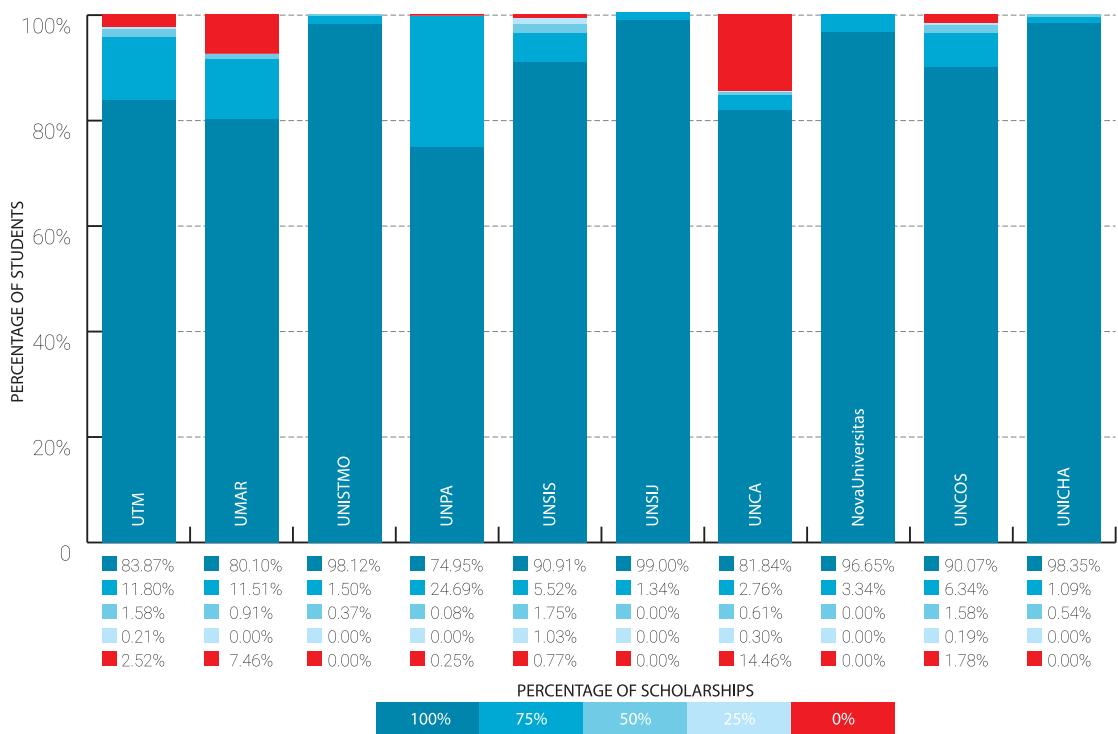
## 3rd International Congress on Renewable Energy. University of the Ishtmus, November 2019.

Opening ceremony presided over by the rector of the University of the Ishtmus (UNISTMO), Dr. Modesto Seara Vázquez.

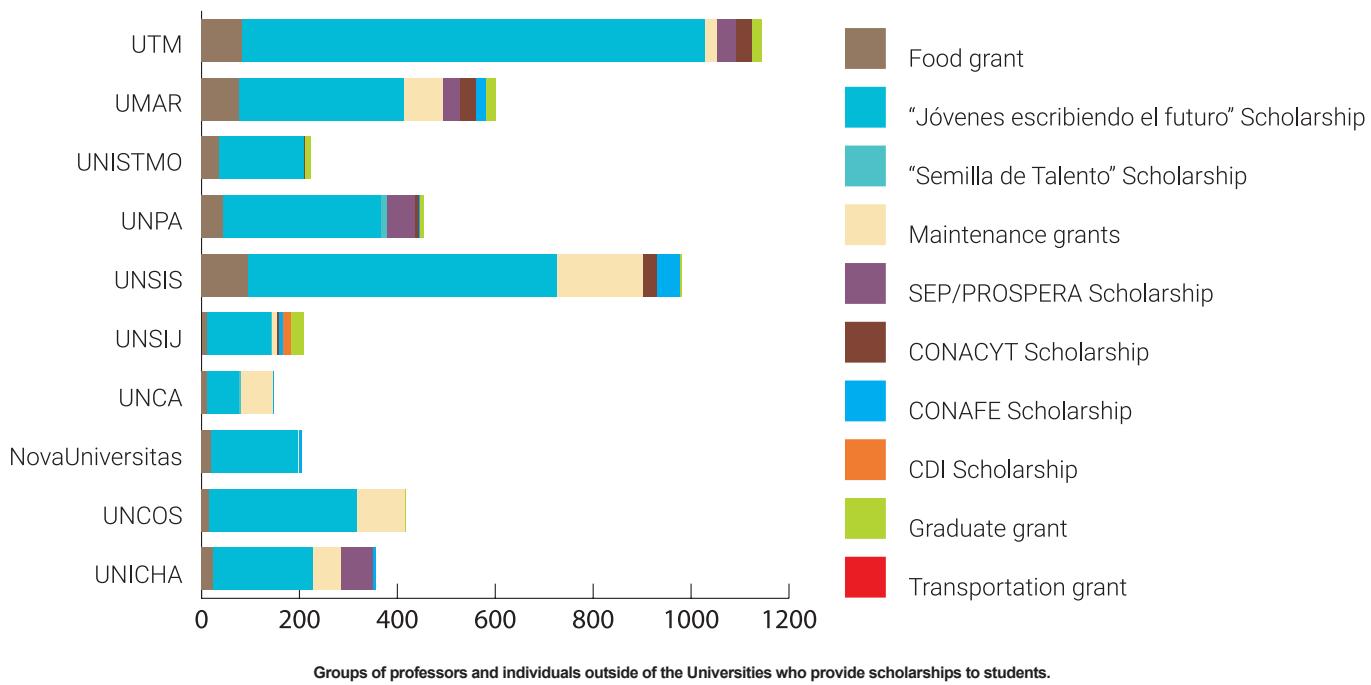
Among the participants were:

Dr. Ignacio Cruz. CIEMAT- Spain.  
Dr. David Wood. University of Calgary - Canada  
Dr. Maykel Couriel Piedrahita. Universidad de Guadalajara  
Dr. Liliana Márquez Benavides. Universidad Michoacana de San Nicolás de Hidalgo.

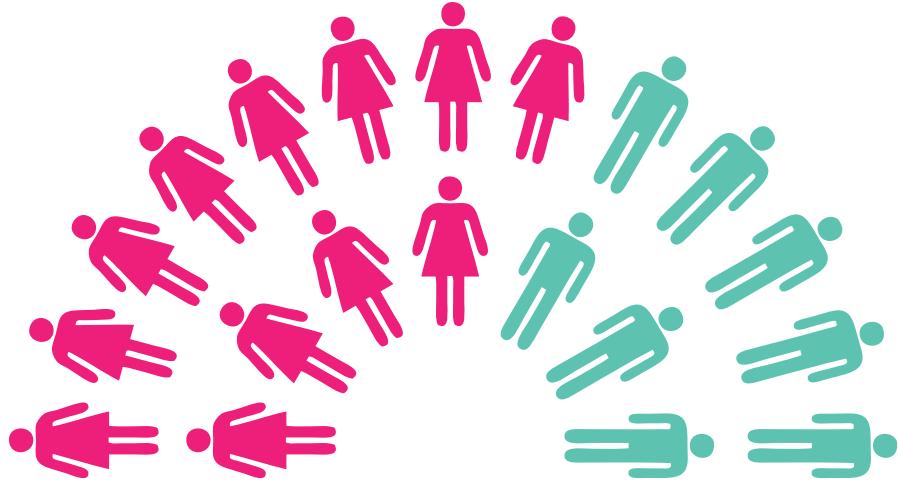
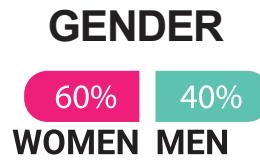
## 98% of our students have a TUITION SCHOLARSHIP\*



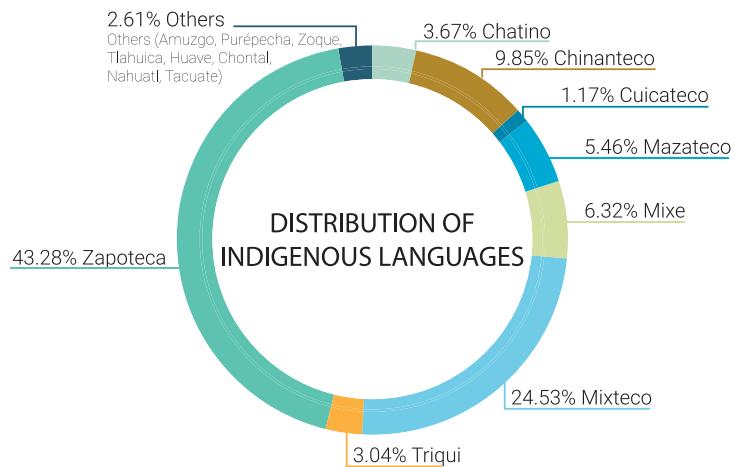
## 4,737 students benefit from scholarships for Higher Education\*



\* Data from October 2019



## CULTURAL DIVERSITY \*



## CENEVAL EXAM

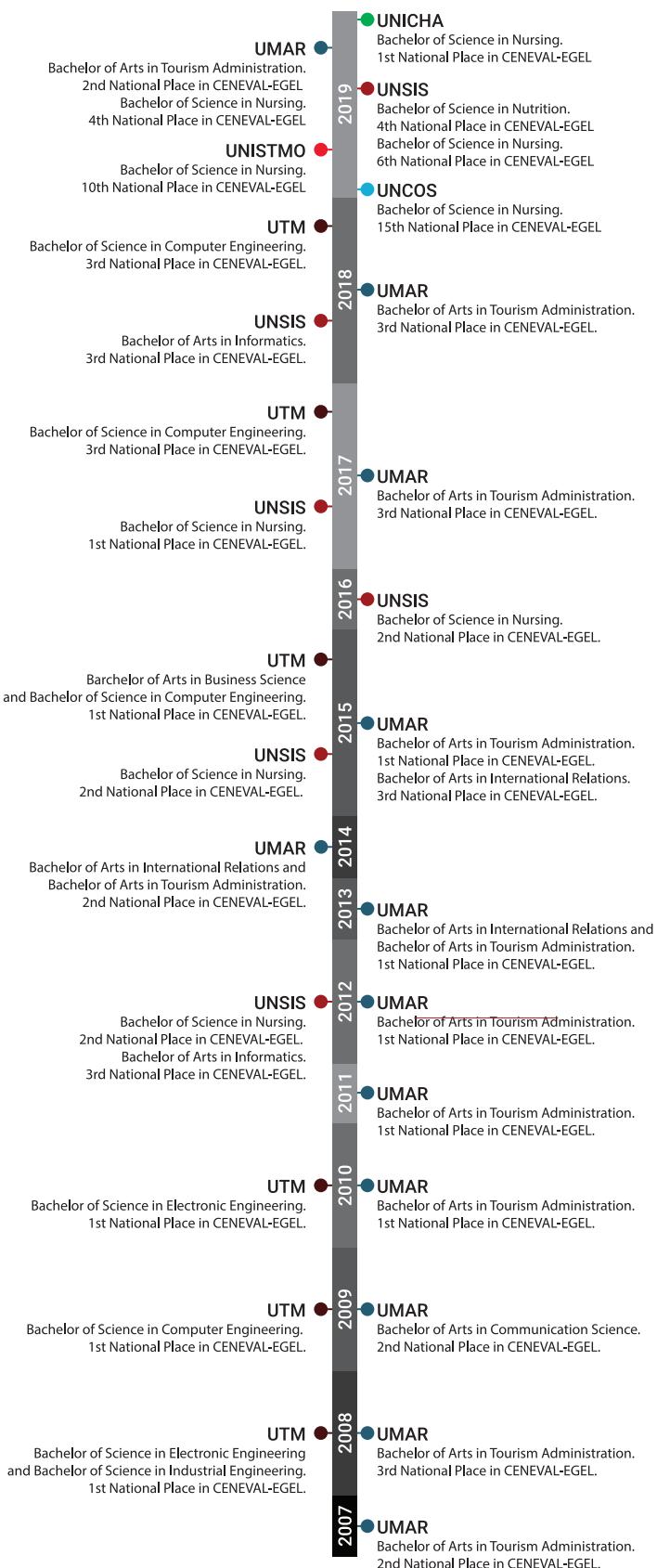
The EGEL (CENEVAL) is a national test specialized by professional career that aims to identify to what extent the graduates of degree courses have the essential knowledge and skills for the beginning of the professional practice of the country.

The continuous and systematic use of the EGEL provides valid and reliable information that contributes to fundamentally establishing the level of effectiveness and relevance of the different programs and modalities of professional training offered by the universities and is the only serious indicator of performance.

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\* The vast majority of our students are of indigenous origin. 15% claim to speak an indigenous language; the actual figure is higher. For cultural reasons, they often do not report their command of the indigenous language.

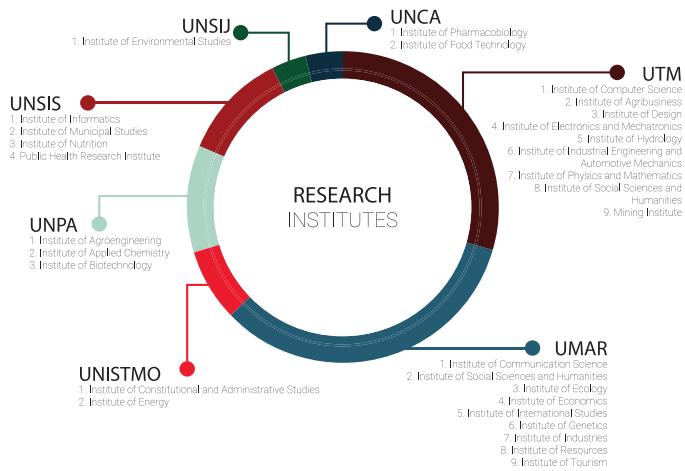
# Results and CENEVAL awards



\* CENEVAL makes the comparison based on the results of the previous year.

# Research and Publications

OSUS has:  
**30 Research Institutes**  
**183 Laboratories**  
**29 Workshops**



*Single crystal X-ray Diffractometer and Powder X-ray Diffractometer (left - right). Instrumental Chemistry Lab. UNPA. Tuxtepec Campus*

## Research Professors

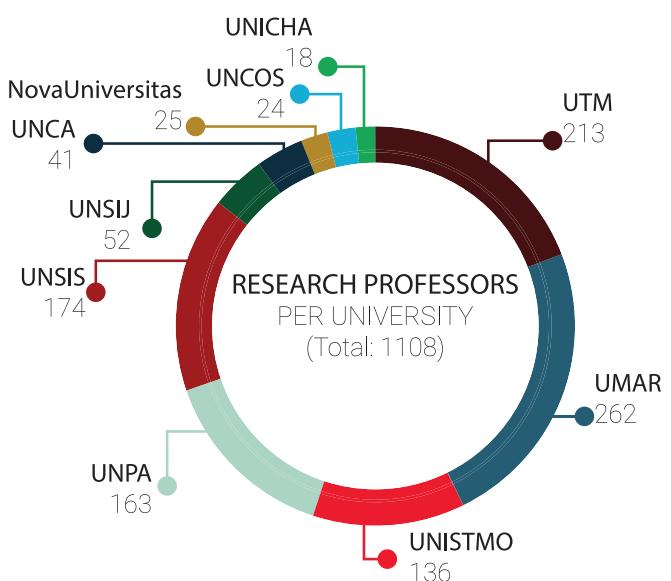
**1108** Research Professors<sup>3</sup>

**425** Doctorates

**169** of them belong to SNI

SNI= National Research System

**90** Language teachers, all native of the language they teach: 81 English: 4 Chinese, 4 French and 1 German



**332** research projects for the scientific and technological development of Oaxaca.

**24** patents in the process of being registered by UTM, UMAR, UNISTMO, UNPA, UNSIS, UNSIJ and UNCA.

**7** patents have been registered from UTM and UMAR.

Much of the equipment is obtained through federally funded research projects.

<sup>3</sup> The number of research professors is increasing throughout the year.

# Academic Staff by University

## Technological University of the Mixteca

**213** Full-time research professors  
**99** with a Doctoral degree  
**81** with a Master's degree  
**43** Researchers members of the SNI  
**20** Academic bodies  
**118** Research projects  
**99** Publications in 2019  
**9** Institutes

## University of Sierra Sur

**174** Full-time research professors  
**50** with a Doctoral degree  
**79** with Master's degree  
**17** Researchers members of the SNI  
**23** Academic bodies  
**41** Research projects  
**68** Publications in 2019  
**4** Institutes

## University of the Sea

**262** Full-time research professors  
**83** with a Doctoral degree  
**131** with a Master's degree  
**36** Researchers members of the SNI  
**17** Academic bodies  
**44** Research projects  
**107** Publications in 2019  
**9** Institutes

## University of Sierra Juárez

**52** Full-time research professors  
**20** with a Doctoral degree  
**27** with Master's degree  
**13** Researchers members of the SNI  
**7** Academic bodies  
**59** Research projects  
**7** Publications in 2019  
**1** Institute

## University of the Isthmus

**136** Full-time research professors  
**43** with a Doctoral degree  
**74** with Master's degree  
**16** Researchers members of the SNI  
**10** Academic bodies  
**3** Research projects  
**49** Publications in 2019  
**2** Institutes

## University of La Cañada

**41** Full-time research professors  
**19** with a Doctoral degree  
**20** with a Master's degree  
**6** Researchers members of the SNI  
**7** Academic bodies  
**33** Research projects  
**13** Publications in 2019  
**2** Institutes

## University of Papaloapan

**163** Full-time research professors  
**91** with a Doctoral degree  
**52** with a Master's degree  
**36** Researchers members of the SNI  
**24** Academic bodies  
**13** Research projects  
**69** Publications in 2019  
**3** Institutes

## NovaUniversitas

**25** Full-time research professors  
**11** with a Doctoral degree  
**13** with a Master's degree  
**2** Researchers members of the SNI  
**10** Research projects  
**2** Publications in 2019

## University of the Coast

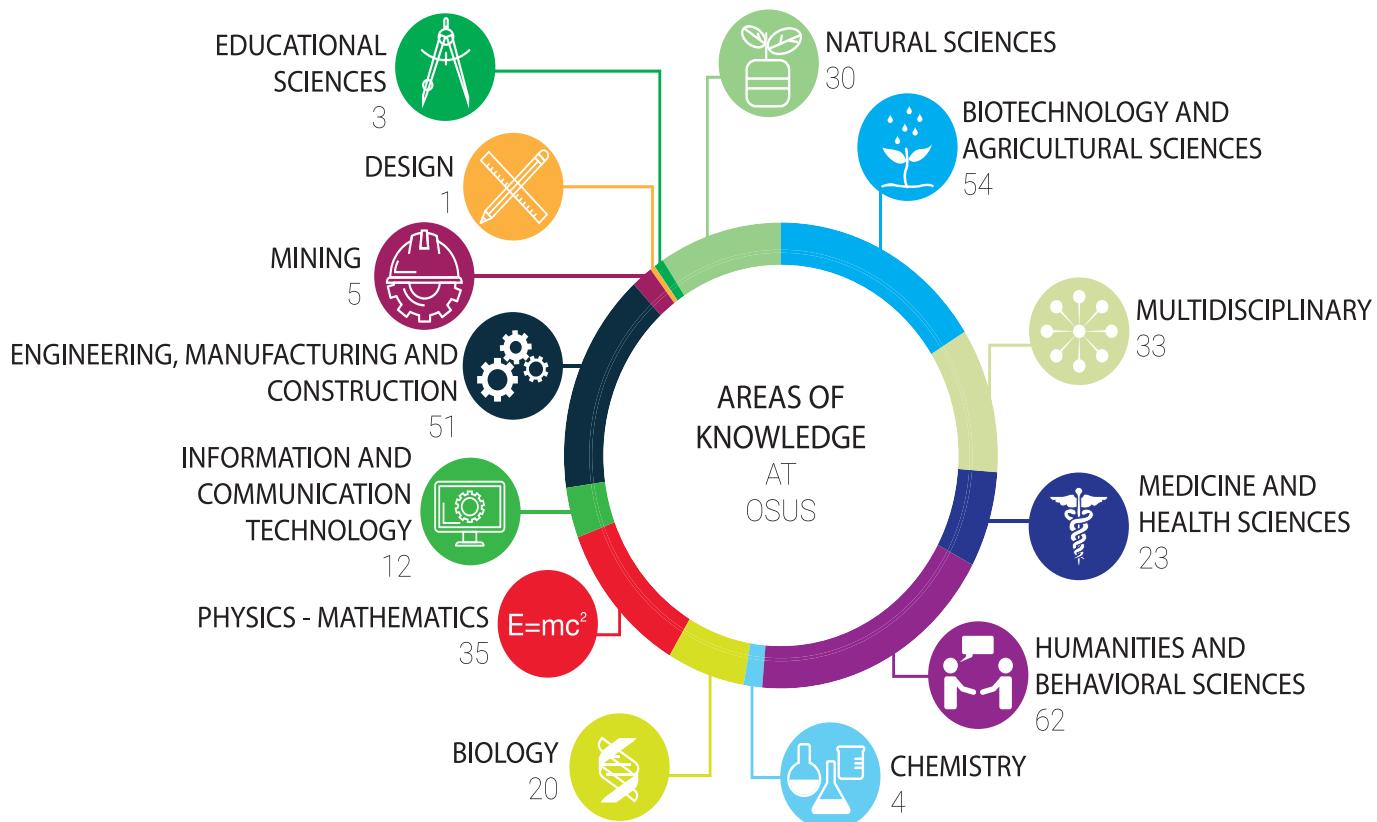
- 24** Full-time research professors
- 5** with a Doctoral degree
- 16** with a Master's degree
- 1** Researchers members of the SNI
- 2** Academic bodies
- 9** Research projects
- 4** Publications in 2019

## University of Chalcatongo

- 18** Full-time research professors
- 4** with a Doctoral degree
- 7** with a Master's degree
- 1** Researchers members of the SNI
- 2** Research projects

The number of professors at OSUS universities varies throughout the year as staff is hired and professors leave. In the newly created universities, it increases as the semesters progress.

OSUS explores and develops various areas of knowledge



# 332 Research projects in progress

## TECHNHOLOGICAL UNIVERSITY OF THE MIXTECA

- 4S Project.
- About the spatial dependence in the theory of extreme values.
- Advanced design, engineering and manufacturing applications for the design of furniture, mechanical parts and device housings.
- An analysis of the Pareto IV Distribution and its applications.
- Analysis and characterization of paraconsistency in multivalued logics.
- Analysis and proposal for the improvement of a micro chocolate production company using lean manufacturing.
- Analysis of business competitiveness in the Heroic City of Huajuapan de León.
- Analysis of competitiveness and entrepreneurship in Mexico II.
- Analysis of hydrated calcium sulphate mineral (case $4 \times 2\text{H}_2\text{O}$ ) from the community of Teotitlán de Flores Magón, Oaxaca.
- Analysis of samples using UHPLC- QTOF.
- Analysis of the surface finish generated by electric discharge machining on materials used for moulds through design of experiments.
- Application of community added value to foster local economic development.
- Application of genetic algorithms for the automatic generation of non-repudiation protocols.
- Aspects of collective dynamics: chaos.
- Asymmetric, bitopological spaces and applications in the complexity of algorithms.
- Attention to children with Special Educational Needs through the development of didactic resources with interactive technologies.
- Automated opto-mecatronic system capable of imitating topical refractive errors present in the human eye with application in artificial vision and physical vision.
- Biopolymers in the formulation and synthesis of materials for agro-industrial applications.
- Building the state of leadership knowledge about indigenous female leadership.
- Cartography and hydrogeological data of the southwestern portion of Huajuapan de león, Oaxaca.
- Characterization of PCB particles obtained through the crushing process: Morphology and size.

- Characterization of secondary metabolites from plant extracts and agro-industrial residues CONA-CyT Chair. Project number 741.
- Climate monitoring of the upper basin of the Mixteco River.
- Collaboration with the Center for Cultural Activities in the project for the recovery of the history of the Mixtec syrup.
- Computational system for the detection and diagnosis of masses in mammography images.
- Connections and loops in modified quantum gravity.
- Correlation of study habits and learning styles of students in the preparatory course for their bachelor's degree.
- Creation of a research network for the analysis of local organizational strategies.
- Design and construction of portable equipment for field diagnosis of the modules that make up the 135 kHz automatic piloting system.
- Design and construction of tourist letters in the municipality of La Heroica, Huajuapan de León, Oaxaca.
- Design and development of a goat milk product processing plant in San Juan Cuitito.
- Design and development of a polystyrene reticular slab system for passive housing.
- Design and development of products with natural fibers from the State of Oaxaca.
- Design and implementation of a pilot plant for the production of probiotic drinks based on milk serum. Project approved in the Stimulus Program for Research, Technological Development and Innovation.
- Design and manufacture of a multi-cavity injection mold applying concurrent engineering to manufacture plastic disposable knives.
- Design of a web site for the tourist promotion of Huatulco Bays and its surroundings in collaboration with UMAR.
- Design of aerodynamic profiles.
- Development and evaluation of anti-varroa formulations using agro-industrial waste.
- Development of a cereal enriched with moringa oleifera to combat malnutrition in children. Approved in the call for National Problems 2016.
- Development of a new method to solve the contouring problems associated with the perfect fluid models of FRW quantum cosmology.

- Development of an opto-mechatronic prototype of adaptive artificial vision to imitate the optical performance of the human eye.
- Development of applied research on the participation of women in the development of productive projects as a result of collaboration in different activities with the area of promotion of development at UTM.
- Development of bio-fungicides and growth promoters for tomatoes.
- Development of materials with natural fibres.
- Development of mathematics contests and dissemination of mathematics in the region of Huajuapan de León.
- Development of mathematics contests in the Huajuapan region.
- Development of robotic mechanisms for physical rehabilitation.
- Diagnosis and proposal for improvement in the delivery of agendas in the Zetuna company in the city of Huajuapan de León, Oaxaca.
- Didactics through Virtual Spaces.
- Dimensioned operators: spectral calculation and applications to differential equations.
- Dynamic and topological properties on induced dynamic systems.
- Dynamic Compactness and Sensitivity.
- Economic environment and labor market of vulnerable population groups.
- Educational and Cultural Promotion in Marginalized Communities.
- Effect of natural multifunctional additives on the correlation of lipid and protein stability of raw meat during storage.
- Establishment of an Agavetum. Conservation and propagation of agaves (first phase).
- Establishment of quality indicators for the black mass of Oaxaca. Project approved in the SAGARPA-CONACyT 2016-1 call.
- Estimation of maximum earthquake intensities with random census through analysis, non-stationary extreme values.
- Extraction and identification of majority components of essential oil from Hass avocado seed (*Persea americana* Mill.) using supercritical CO<sub>2</sub>.
- Follow-up and continuity of the project: Promotion of a culture of gender equity at the Universidad Tecnológica de la Mixteca.
- Fractal flow dynamics using the general and mixed finite element method in Fractional Hydrodynamics with the use of portable GPUs.
- Graphic signs of communication for children with Autism Spectrum Disorder.
- Hardware architecture evaluation system for object recognition in static images.
- Hierarchical Bayesian models for spatial extremes applied to carbon monoxide pollution in Mexico City.
- High Performance Computing for Advanced Large Scale Intelligence Methods.
- Implementation of a cognitive tool to reduce dropout at UTM.
- Improvement of the assembly of unicel blocks used in the construction of ecological houses.
- In vitro evaluation, isolation and characterization of metabolites from natural sources.
- Innovation management in renewable energy generation processes applied to FBR design.
- Integral management of urban solid waste generated in the city of Huajuapan de León. (KUILI).
- Integral project of goat milk cheese production in Cuititó.
- KUILI: intervention and implementation of activities for the good management of the upper basin of the Mixteco River, mainly with respect to contamination by solid residues and pesticides.
- Manufacture of products with added value from the use of agave bagasse leaves.
- Mathematics and Economics.
- Method for the reduction of workpiece preparation time in a vertical machining center.
- Mineralogical and Fossil Archive of the Institute of Mining.
- Mixing type functions in hyperspace.
- Modeling, analysis, design and implementation of a two-wheeled self-balancing vehicle (SEGWAY).
- Monitoring of seismic activity in the State of Oaxaca.
- Ñanduvi Project.
- Obtaining the chemical footprint of Agaves used for mezcal production in the State of Oaxaca.
- Optimization of the graphite milling process through design of experiments.
- Optimization of the process to improve the color, shine and texture of traditional chocolate.
- Paraconsistent trivalent logics.
- Participatory and self-management development of women artisans and their families through the creation of appropriate technology for the agro-environmental, social and cultural production systems of the Yosoyuxi San Juan Copala community.
- Photocatalysis applied to vinasse.
- Photovoltaic solar garden of 0.48 MW at UTM interconnected to the CFE's electricity grid.
- Production of soap from Ñanduvi waste oil.

- Program of Inclusion and Educational Equity PIEE-2019.
- Project to develop a methodology to strengthen the study habits and techniques of students in the first semester of the degree in business sciences.
- Proposal to promote the strengthening of tourism in Huajuapan de León Oaxaca.
- Proposal to reduce university desertion.
- Prototype of housing and structural design of a portable equipment prototype for field diagnosis of the modules that make up the 135 kHz automatic pilot (PA).
- Recovery and conditioning of automotive parts and components.
- Renewable energies and sustainable products: learning units for the processes of manufacturing, assembly, operation and supervision of biomass production systems.
- Searching for convex polygons in randomly generated point collections.
- Simulation model for the packaging area of the Purificadora Manantial San Sebastián.
- Solution of the inverse problem of identification of  $\text{eps}(x,y)$  for the equation  $\text{div}(\text{esp}(x,y) \cdot \text{grad}(u(x,y)) = f(x,y)$ , with a priori information about the field  $\text{eps}(x,y)\text{grad}(u(x,y))$ .
- Spectral analysis of a class of Jacobi matrices.
- Structural and optical properties of ZrO<sub>2</sub> impurified with Eu<sup>3+</sup>.
- Studies of extreme temperatures in the State of Oaxaca.
- Study and analysis of the participation of women in productive projects in the Mixtec Region.
- Study and production of visual culture: Education and creative processes.
- Study of costs in tourist passenger transport companies located in Huajuapan de León, Oaxaca.
- Study of honey: chemical profile, biological activities and estimation of shelf life.
- Study of photocatalytic films deposited on the surface of ceramics based on tin oxide.
- Study of the microbial dynamics and production of functional and aromatic compounds in the production of pulque.
- Synthesis of Photoluminescent ZrO<sub>2</sub>: Tb<sup>3+</sup> Films using the RPU technique.
- Synthesis of superconducting compounds based on arsenic iron in the form of thin films using the technique of chemical vapor deposition of metal-organic sources and diffusion processes.
- Synthesis of ZrO<sub>2</sub> nanopowders from zirconia nitrate by the polyol technique.
- Technical training: "Fundamentals of automotive diagnostics using OBD II and scantool".

- The impact of stunting (height) on central adiposity and metabolic syndrome among Mexican women and Mexican immigrants in the United States.
- Thermodynamic characterization of the extraction process using supercritical CO<sub>2</sub> applied to seeds of *Theobroma cacao* L.
- University Extensionism.
- Updating of the infrastructure for the research of natural products with potential in the treatment of chronic degenerative and infectious diseases.
- Use of agro-industrial waste to obtain biocomposites used for the development and evaluation of functional foods with antioxidant and antiviral activity in the respiratory system.
- Variational methods for the restoration of lost image domains and their numerical resolution using wavelets.

## UNIVERSITY OF THE SEA

- Abundance, habitat use and diet of Psitacids during the breeding season in the municipality of Santa María Colotepec, Oaxaca.
- Catalogue of species that form Harmful Algal Blooms on the coast of Oaxaca.
- Coastal Acidification Time Series Salina Cruz.
- Design and implementation of an associative network of entrepreneurs and microentrepreneurs (local and indigenous) of the Pochutla district of the Oaxaca Coast region.
- Development with new materials based on residual lignin from industrial processes such as food or paper.
- Diagnosis of the profile and satisfaction of the tourist who visits Huatulco Bays, Oaxaca 2019.
- Effect of phytovaccine, phosphite ion and *Trichoderma harzianum* on the growth and development of *Cedrela odorata* L.
- Effect of temperature and packaging on the deterioration of seed and germination parameters of *Moringa oleifera* Lam.
- Ethnobotanical study of medicinal plants from the municipality of Santo Domingo de Morelos, district of Pochutla, Oaxaca, Mexico.
- Evaluation of the beneficial effect of *trichoderma* spp. on apple banana plants regenerated in vitro.
- Evaluation of the decline in the distribution range of the vaquita (*Phocoena sinus*), an endemic species in virtual extinction.
- Evaluation of the growth and yield of three varieties of grasses in the coastal valley of Oaxaca, induced by various saline conditions in greenhouses.

- Evaluation of the potential of mass sequencing techniques, environmental DNA and genetic barcoding for the description of benthic biodiversity in marine and coastal ecosystems of Oaxaca.
- Evaluation of the use and importance of artificial and natural waters in a critical habitat of the central coast of Oaxaca.
- Exudates of forage plants in the structural development and succession of the ruminal microbial community.
- Fisherwomen on the Oaxacan Coast.
- Functional diversity of beetles in an agroforestry system for livestock research.
- Genetic barcoding of macroscopic fungi from selected localities in the coastal region of Oaxaca.
- Geographic analysis of coastal production areas (Coastal Industrial Port Systems).
- Horizontal and vertical distribution of *Narcine vermiculatus* Breder, 1928 in the Gulf of Tehuantepec.
- In vitro chemical and antifungal study of three species of the genus *Salvia* (Family: Lamiaceae) from the state of Michoacán.
- Integral development of a molecular and computational tool for the identification of hermaphrodite seedlings of *Carica papaya* variety maradol from the coast of Oaxaca through Lamp type analysis.
- Modeling trophic interactions in the Gulf of Tehuantepec through network topology.
- Molecular characterization and analysis of the activity of ornithine decarboxylase enzyme (ODC) in differentiation and pathogenesis of *Colletotrichum* sp., causal agent of antrachnose in papaya fruits.
- Online seminars on the use of remote sensing in scientific research.
- Pan-American experimental initiative in macroecology.
- Plants that heal.
- Potential study of biogas generation from mezcalera vinasse and hydrolyzed human urine.
- Preliminary standardization of the identification of viral agents in papaya plants of the coastal region of Oaxaca with molecular techniques and digital image processing.
- Production of insects for inclusion in the diet of black iguana (*Ctenosaura pectinata*).
- Professional digital identity and the management of personal learning environments (PLE) in students in Tourism Administration.
- Reliability of INEGI source information: inconsistencies in the 2007 Geological Map for the Isthmus Region.
- Reproductive ecology of three species of damselflies (Teleostei: Pomacentridae) in the rocky portion of La Entrega Bay, South Pacific Mexico.
- SenSky A mobile open and distributed collaborative architecture to characterize georeferenced variables of environmental pollution at a block level in cities of the Mexican Republic through citizen participation.
- Shallow soft bottom mollusks from Oaxaca.
- Simulation of release, maintenance of genetic variability, nutritional analysis of the black (*Ctenosaura pectinata*) and green (*Iguana iguana*) iguanas of CECOREI-UMAR.
- Social appropriation of the paleontological heritage by communities in the Upper Oaxacan Mixtec region.
- Social Capital: an exploratory diagnosis in the municipal seat of Santos Reyes Yucuná, Oaxaca.
- Space and Municipal Human Development in Oaxaca.
- Spatial characterization of the mesopotamian reef ecosystems of the Veracruz reef system; ecological and economic implications for their conservation and management.
- System for automatic acquisition and processing of climatological data in the tropical sheep area of the UMAR experimental field.
- Taxonomic and conservation status of the chondrichthyan fauna and teleost fishes of Mexico.
- The use of *Delonix regia* pod, *Laburnum anagyroides* and *Cocos nucifera* fiber as an alternative hydroponic substrate in poblano pepper cultivation.
- Traditional forms of communication in Oaxaca.

## UNIVERSITY OF THE Isthmus

- A-cores in colored quasi-torns.
- Design and development of software with RA and RV for the tourist promotion of the historical center of Santo Domingo Tehuantepec, Oaxaca.
- The internet of things as a driver of cutting-edge solutions in intelligent buildings.

## UNIVERSITY OF PAPALOAPAN

- Characterization by mass spectrometry of products from different starch sources obtained by high energy mechanical milling.
- Characterization of the region's bovine production units with animal welfare indicators.
- Design, synthesis and evaluation in silico and in vitro of 2-amino derivatives 2-amino benzoxazole and 2-amino benzotiazole 1 - phenyl - ona as potential inhibitors of protein tyrosine phosphatase 1- β.

- Development of biotechnological tools for the production of 1g and 2g bioethanol from agro-industrial waste at pilot plant level.
- Didactic robotics in the community context, continuation, extension and progress.
- Didactic robotics in the community context.
- Homotopic characterisation of g-fibres and their fungal properties.
- Maintenance and expansion of the analytical infrastructure of the Institute of Applied Chemistry of the University of Papaloapan.
- Nanoencapsulation of bioactive compounds applied in the design of functional foods.
- Synthesis of new arylpiperazine and evaluation of its antibacterial, antifungal and antibiofilm activity in priority pathogenic microorganisms and in multiresistant clinical isolates.
- The circadian clock control and biotechnological potential of carbon conservation regulators belonging to bzip transcription factors in plants.
- The impact of tourist activities on the intangible cultural heritage and landscape in the lower Chianatlán of the state of Oaxaca. Towards an interdisciplinary study with a regional focus.
- The use of central hypoxia genes to improve starch content and flood tolerance in plants.

## **UNIVERSITY OF SIERRA SUR**

- Academic burnout and school performance in university students.
- Analysis of complex systems in the planning of development strategies: the case of the mezcal system in the district of Miahuatlán, Oaxaca.
- Approaches and perspectives of e-government in Mexico.
- Capacity building in Oaxacan municipalities: a contribution to institutional development.
- Characterization of the production of the maguey- mezcal system in the Miahuatlán District of Porfirio Díaz, Oaxaca.
- Citizenship as a Space for Sustainable Human Development: Participation, Accountability, Food Security and Sustainability as Development Factors in Municipalities of Uses and Customs in the Southern Sierra of Oaxaca.
- Collective actors and transformations in the Internal Normative Systems (SNI) regime of six municipalities in the Sierra Sur of Oaxaca.

- Community water management: access and distribution in the municipality of San Simón Almolongas, Oaxaca.
- Democracy, citizenship and human development: a theoretical and practical problem in today's world and its influence on Latin America.
- Determinants of poverty traps in Mexican microenterprises: perspectives from the theory of entrepreneurial choice.
- Determination of the glycemic index in typical Oaxacan foods as an alternative for the prevention of Diabetes mellitus 2 at a population level.
- Development and characterization of edible films with antifungal potential to extend the shelf life of fruit and vegetable products.
- Development and evaluation of software-hardware tools based on neurometric and biometric information, which allow to determine the emotional state of a user when interacting with user interfaces.
- Development of prototypes of computer systems oriented to the health sector in the Sierra Sur region of Oaxaca.
- Diagnosis for Strategic Planning of natural resources with a sustainable focus in two municipalities of the 06 Amatlanes-Coatlanes micro-region in Oaxaca.
- Diagnosis of environmental goods and services of ecosystems in the sub-basins that make up the municipality of Miahuatlán de Porfirio Díaz, Oaxaca.
- Digital inclusion as an instrument of transformation and development in the State of Oaxaca.
- Discovery of non-trivial patterns in the ATUS database of traffic accidents in Mexico using automatic learning techniques: period 1997 to 2016.
- Evaluation and diagnosis of the neurocognitive state of older adults in Valles Centrales, Oaxaca.
- Factors associated with the problem of overweight and obesity in children in the state of Oaxaca.
- Financing for municipal development. Inter-municipal associationism in Oaxaca.
- Free ERP for informal microenterprises in the Sierra Sur region of Oaxaca.

- History of disasters in Mexico, their health, demographic and economic implications from 1900 to 2016.
- Instruments for the evaluation of pain in patients with advanced dementia.
- Market integration and price transmission in the artisanal production of the Maguey- Mezcal Product System, Sierra Sur region, Oaxaca.
- Moodle as a teaching tool.
- Municipal environmental governance in the state of Oaxaca: in the framework of the fulfilment of the Agenda 2030 of the Sustainable Development Goals.
- Peasant economy and family survival strategies in rural municipalities of the Sierra Sur of Oaxaca, 2018-2019.
- Proposal for the elaboration of the Manual of Medical - Health Law for health professionals.
- Public policies in peripheral regions and their adaptation to the new mercantilist world order.
- Social determination of care trajectories of children with cancer in Oaxaca, Mexico.
- Systems for analyzing medical images.
- Technical cards of the main pathogenic microorganisms of the man.
- The emotional significance of clothing for older Oaxacan women.
- The political change in the state of Oaxaca between liberalization and transition in the period 2007-2010.
- The study of logic from a systemic perspective.
- Urban Growth and Sustainable Development in the Municipality of Miahuatlán de Porfirio Díaz, Oaxaca, in the 21st century.
- Use of ICT for the analysis of Mexico's macro regions by contrasting indicators to foster the development of society in Oaxaca.
- Use of simulators as a teaching resource in the training of nursing professionals.
- Validation of haptic device models.
- Analysis of student enrollment at the Universidad de la Sierra Juárez.
- Analysis of technological infrastructure, advantages and disadvantages in the use of ICT in the Primary Schools of Ixtlán de Juárez, Capulalpam de Méndez and Guelatao de Juárez.
- Analysis of the ecological flow by hydrological sub-region.
- Bacterial communities associated with *Pinus Patula ectomycorrhizae* and their biotechnological application.
- Biometrics of the forests of the Multifunctional Forest Reserve "El Manantial".
- Calculation of stem volume of *Pinus patula*, *Pinus Oaxacana* and *Quercus laurina* using machine learning.
- Citizenship and female political participation in electoral districts with an indigenous majority.
- Collection and systematization of local knowledge in the Sierra Juárez
- Collection of UNSIJ cones.
- Collective action institutions in community and territorial forest management in the Sierra Juárez region of Oaxaca.
- Community forest management and sustainability in Sierra Juárez, Oaxaca.
- Connectivity of distributed ecosystems in the Pueblos Mancomunados of the Sierra Norte of Oaxaca.
- Construction of self- management processes in communities of the Sierra Juárez of Oaxaca (Local Solutions for Environmental Justice, 2nd Phase).
- Design and construction of a biodigester for the production of biogas from cattle excreta.
- Determination of the volumetric yield and dimensional quality of sawn wood in Ixtlán de Juárez, Oaxaca, Mexico.
- Determination, evaluation and quantification of heavy metals present in two Natural Areas of the state of Chiapas, Mexico.
- Development of competences and Increase of knowledge in the Computer Science Students of the UNSIJ for the improvement of the performance in material of the integral calculation of one or several variables.
- Dynamic structure, production and ecology of forest species in the Sierra Norte of Oaxaca.
- Ecological and socioeconomic attributes of family gardens in the Sierra Juárez of Oaxaca. A strategy for rural sustainability.

## UNIVERSITY OF SIERRA JUÁREZ

- Alpha richness and seasonal variation of avifauna on ecotourism trails in Santa María Yahuiche, Oaxaca. Conservation perspectives.
- Analysis of standardized Codecs for VoIP, under Free Software platform in DualStack Network environments.

- Ecology and conservation of wild mammals in communities of the Sierra Norte-Chinantla region, Oaxaca.
- Ecology and distribution of *Pachyphytum Caesium* (Crassulaceae), a species endemic to the state of Aguascalientes, Mexico.
- Economic and social impact of the Universidad de la Sierra Juárez on the community of Ixtlán de Juárez.
- Educational innovation applied to the teaching-learning of calculus.
- Educational innovation using the Blended Learning model in the teaching of the Universidad de la Sierra Juárez.
- Educational robotics.
- Effect of agricultural practices on soil microbial biomass in Villa Talea de Castro, Oaxaca.
- Environmental management and climate change.
- Evaluation of phytotoxicity in the removal of heavy metals by adsorption in nanostructured iron oxides.
- Evaluation of the effect of *Eisenia fetida* cell fluid on the growth of phytopathogenic fungi.
- Evaluation of the methodology for the qualitative protein enrichment of five varieties of native corn from the Sierra Norte of Oaxaca from opaque gene-2.
- Evaluation of the natural regeneration of timber forest species and non-timber forest resources present in communities of the Sierra Juarez of Oaxaca.
- Factors affecting the pine sawn timber market in Oaxaca, an econometric analysis.
- Flora of the Sierra Norte Oaxaca.
- Forest and agricultural soil morphology in San Juan Chicomezuchil, Oaxaca, Mexico.
- Growth in dominant height and taper-volume of *Pinus douglasiana* Martínez.
- Integrated systems for solid waste management in localities of the Sierra Norte of Oaxaca.
- Introduction of CAD and CNC technology in the University of the Sierra Juarez through the development of wooden furniture prototypes.
- Kraft Cellulose Pulp quality of *Pinus Oaxacana Mirov*, compared with Cellulose Pulp quality of *Pinus Strobus Linnaeus* var. *Chiapensis* Martínez.
- Legal situation of the use of wood in small quantities in the Sierra Juarez and Coastal areas of the State of Oaxaca.
- Obtaining activated carbon from forest species biomass in the Sierra Juarez.
- Obtaining tannins from the bark of forest species in the Sierra Juarez.
- Participation and equity of women in the Community Forest Enterprises of the District of Ixtlan, Oaxaca.
- Prediction of school desertion through Artificial Intelligence techniques.
- Preliminary inventory of risks and hazards of abandoned mines in the municipality of Santa Catarina Lachatao, Ixtlán de Juárez, Oaxaca, Mexico.
- Preservation of Oaxacan *Pinus Mirov* wood with boron salts and CCA salts.
- Proposal for a wastewater treatment plant in the UNSIJ Campus.
- Radial variation of density and its relation to the mechanical and energetic properties of the woods of *Pinus Oaxacana Mirov* and *Pinus patula* Schl. Et Cham, from the community of Ixtlán de Juárez, Oaxaca.
- School failure and educational exclusion, a theoretical approach and case study.
- Study of the genetic diversity of *Panthera Onca* (Felidae) in the Jaguar Conservation Center (Yaguar-Xoo): an approach for its Ex Situ Conservation.
- Study of the relationship and dependence between the aerial components of three tropical species in the northwest of the State of Puebla.
- Technological characterization of wood from forest species of Ixtlan de Juarez, Oaxaca.
- The diversity of Psocodea: 'Psocoptera' (Insecta) in the district of Ixtlán, Sierra Norte, Oaxaca.
- The erosion of natural and cultural knowledge in the community of Ixtlán de Juárez, Oaxaca.
- The orchids of Ixtlan de Juarez, Oaxaca, Mexico.
- The role of environmental variables in the distribution and abundance of tree species in Northwest Mexico.
- Vulnerability and community management of water supply systems for human consumption in the Sierra Norte of Oaxaca.
- Web platform for the management of reading reports.

## UNIVERSITY OF LA CAÑADA

- 3D representation of some sentences of Mexican Sign Language in the context of a personal presentation.

- AMATL: Conservation and digital dissemination of old photographs of Teotitlán de Flores Magón, Oaxaca.
- Analysis of the immune response induced by two Mexican isolates of *T. cruzi* with different virulence.
- Analysis of the role of insulin and its receptor in brain metabolism.
- Association of occupational stress with the nutritional status of workers at the University of La Cañada.
- Autonomous flight control of an unmanned aerial vehicle.
- Biological management of the cultivation of Criollo beans (*Phaseolus sp. L.*) var. Quarenteño in Teotitlán de Flores Magón, Oaxaca.
- Characterization of Mazatec honey (*Apis mellifera*).
- Computer technology applied to the rescue, conservation and diffusion of the Mazatec language in the region of La Cañada.
- Construction of a pilot biodigester.
- Design of an algorithm to measure the similarity of literary synopses and summaries of an average reader.
- Determination of the frequency of the dengue virus in the town of Teotitlán de Flores Magón, Oaxaca.
- Determination of the immunogenicity of the bacteriophage M13 as a vaccination vector.
- Determination of the possible mechanism of action and specificity of medicinal plants from the Cañada Region on pathogenic microorganisms.
- Effect of a diet based on concentrate with decaffeinated pulp, parchment and silvery coffee film (*Coffea arabica L.*) on Pelibuey lambs.
- Effect of mountain microorganisms on the nutritional quality of maize stubble (*Zea mays*), wheat straw (*Triticum spp*) and alfalfa hay (*Medicago sativa*).
- Evaluation of biological products in Huacle chili (*Capsicum annuum L.*) seedlings.
- Evaluation of the cytotoxic effect of medicinal plants from Oaxaca on the liver cell line (HepG2).
- Evaluation of the in vitro fermentation kinetics of a totally mixed ration for small ruminants including *Prosopis laevigata* pods from the Cañada region.
- Genetic improvement of sunflower (*Helianthus annuus L.*) with  $^{60}\text{Co}$  gamma rays to improve ornamental characteristics.
- Microscope as Absorbance Reader with Utility in Clinical Analysis.
- Morphometry of neurons in a model of Chagas disease.
- MSWN for video capture and temperature data collection at the University of La Cañada.
- Prevalence theories of poverty in the state of Oaxaca, Mexico.
- Proposal for the formulation of a business project with pre-baked and frozen stored bakery products.
- Proteomic analysis of intestinal parasites obtained from samples of child patients from the Cañada region.
- Prototype of an augmented reality book for the conservation and dissemination of the Mazatec mother tongue variant of Huautla de Jimenez, Oaxaca.
- Recommending system for the improvement of eating habits.
- Study of functional foods with possible antimicrobial activity.
- Study on the school career of basic education students in the region of La Cañada.
- Study to determine the seroprevalence of Chagas disease in the community of Teotitlán de Flores Magón, Oaxaca.
- Synthesis and characterization of new solid forms of isoniazid.

## NOVAUNIVERSITAS

- Biological parameters of the guava weevil (*Conotrachelus spp.*) and determination of the species in Ocotepec de Morelos, Oaxaca.
- Design of a solar reflective roadway vial embedded with a light alert system.
- Effect of inorganic fertilization on the growth of *Agave potatorum* Zucc.
- Effect of mycorrhizal fungi and phosphorus on the growth and development of wild agaves.
- Inoculation of plant growth promoting bacteria in *Agave potatorum* Zucc.
- Morphological and molecular identification of black fly (Diptera: Sciaridae) associated with lily (*Lilium spp.*) culture.
- NovaUniversitas accounting system, for students studying the subject of Accounting at NovaUniversitas University and its Campuses (SICONU).
- NovaUniversitas University (REPINU) research project repository.

- Proposal of a framework to foster soft skills in the teaching of the global software development paradigm at the undergraduate level.
- Toxicity of different aqueous and ethanolic plant extracts for the control of *HeilipuslauriBoheman* under controlled conditions.

## UNIVERSITY OF THE COAST

- Agricultural, physical, bromatological, mineralogical, phytochemical and sensory characterization of different improved varieties of the hibiscus.
- Agro-industrial diversification of products obtained from the hibiscus.
- Agronomic and agro-industrial evaluation of sunflower.
- Determination of subclinical mastitis using the California and Wisconsin diagnostic test.

- Evaluation of five protocols of additives applied to silage feeds through a proximal chemical analysis.
- Evaluation of two synchronization protocols in dual purpose cattle in the tropics.
- Obtaining compost and worm compost from university organic waste.
- Saving footprints.
- Territorial development (Prodeter) SADER.

## UNIVERSITY OF CHALCATONGO

- Development of competences in the health area of the University of Chalcatongo.
- Technological Laboratory for Educational Innovation and Community Linkage.



*Rotary evaporator. Bromatology Laboratory. Food and Nutrition Research Center. UNISTMO, Juchitán Campus*



*Orbital Shaker Incubator. Biotechnology Laboratory. UTM. Huajuapan de León*



*Institute of Agroengineering. UNPA. Loma Bonita Campus*



*Mechatronics Laboratory. UNPA. Loma Bonita Campus*

# FAUNA AT OSUS



Great kiskadee (*Pitangus sulphuratus*).  
UNISTMO, Tehuantepec Campus



Russet-crowned Motmot (*Momotus mexicanus*).  
UMAR, Huatulco Campus



Red postman (*Heliconius erato*). UNPA,  
Tuxtepec Campus



White-tailed deer (*Odocoileus virginianus*).  
UMAR, Huatulco Campus



White-throated magpie-jay (*Calocitta Formosa*). UMAR, Huatulco Campus



Chachalaca Pálida (*Ortalis poliocephala*).  
UMAR, Huatulco Campus



White-nose coati (*Nasua narica*). UMAR, Huatulco Campus



The green heron (*Butorides virescens*).  
UNPA, Loma Bonita Campus

\* Once a Puma was sighted at UMAR, Puerto Angel Campus and a Jaguar at UNSIJ, Ixtlan de Juarez.

## FLORA AT OSUS



Cacti native to Mexico (*Pachycereus weberi*).  
UNCA. Teotitlán de Flores Magón



Paper flower (*Bougainvillea glabra Choisy Fam.*). UNISTMO, Tehuantepec Campus.



China rose (*Hibiscus rosa-sinensis*). UNPA, Tuxtepec Campus



Apple (*Malus*). UNSIJ, Ixtlán de Juárez



Attenuated Agave (*Agave attenuata*).  
UNISTMO, Tehuantepec Campus



Plumeria (*Plumeria rubra*). UNISTMO,  
Tehuantepec Campus



Smooth bark mexican (Pinus pseudostrobus).  
UNICHA. Chalcatongo de Hidalgo



Partial view of the UNPA forest, Tuxtepec Campus  
composed mainly of rubber, cedar, mahogany,  
mango, lychee, moringa, coffee and cocoa trees

# PUBLICATIONS

## BOOKS: 94

### Technological University of the Mixteca

11. *Un Nuevo Modelo de Universidad. Universidades para el desarrollo.* Seara Vázquez, Modesto. 3a. Ed. 2019.
2. *Modelación Matemática III. Biomatemáticas e Ingeniería.* Barragan Mendoza Franco, Palafox Delgado Sergio, Santiago Santos Alicia (Editores), 2019.
3. *Mitos, creencias e iconografía mixteca.* Ortiz Escamilla Reina, (compiladora). 2019.
4. *La región Mixteca de la arqueología a la política.* Ortiz Escamilla, Reina (Compiladora). 2018.
5. *El uso del software libre en la academia y la industria de México.* Fernández y Fernández, Carlos Alberto y Lluvia Carolina Morales Reynaga (Coordinadores). 2018.
6. *Modelos matemáticos en Biología, Ciencias Sociales e Ingeniería.* Reyes Mora, Silvia y Santiago Santos, Alicia (Coordinadoras). 2017
7. *Tierras y dioses en la Mixteca.* Ortiz Escamilla, Reina (Compiladora). 2017.
8. *Mitos y simbolismos en la cultura mixteca.* Ortiz Escamilla, Reina (Compiladora). 2017.
9. *Memorias de las XIV y XV Reunión Nacional de Ciencias Empresariales.* Sánchez Meza, Francisca A. et al. 2015.
10. *Modelación matemática. Ingeniería, Biología y Ciencias Sociales.* Reyes Mora, Silvia y Luna Olivera, Beatriz C. 2015.
11. *El pasado lejano de la Mixteca.* Ortiz Escamilla, Reina (Compiladora). 2015.
12. *5 fases de la mercadotecnia para lograr microempresas agroindustriales exitosas.* Espinosa Espíndola, Mónica Teresa, Maceda Méndez, Adolfo y Sánchez Meza, Francisca A. (Coordinadores). 2014.
13. *Escenario internacional. Ventajas y desventajas para México y las empresas.* Espinosa Espíndola, Mónica T., Maceda Méndez, Adolfo y Sánchez Meza, Francisca A. (Coordinadores). 2014.
14. *Análisis multifactorial de Mipymes del municipio de Huajuapan de León, Oaxaca* Espinosa Espíndola, Mónica T., Maceda Méndez, Adolfo y Sánchez Meza, Francisca A. (Coordinadores). 2014.
15. *Recuerdos y costumbres vivas en la Mixteca.* Ortiz Escamilla, Reina (Compiladora). 2014.
16. *Efemérides oaxaqueñas.* Vasconcelos Beltrán, Rubén. 2013.

17. *El árbol vivo de Apoala.* Ortiz Escamilla, Reina (Compiladora). 2013.
18. *Los microcontroladores de AVR de ATMEL.* Espinoza Espinoza, Felipe. 2012.
19. *Las rutas de la tierra del sol.* Ortiz Escamilla, Reina (Compiladora). 2012.
20. *Miradas al mundo mixteco.* Ortiz Escamilla, Reina (Compiladora). 2011.
21. *Diccionario del idioma mixteco.* Caballero Morales, Gabriel. 2da. Ed. 2011.
22. *La investigación científica en el Sistema de Universidades Estatales de Oaxaca.* Seara Vázquez, Modesto (Coordinador). 2010.
23. *A New Model of University. Universities for Development.* Seara Vázquez, Modesto. 2010.
24. *Tres mixtecas. Una sola alma.* Ortiz Escamilla, Reina (Compiladora). 2010.
25. *El significado de los sueños y otros temas mixtecos.* Ortiz Escamilla, Reina (Editor). 2009.
26. *Caminos de la historia mixteca.* Ortiz Escamilla, Reina (Editor). 2008.
27. *Agua: el líquido de la vida. Como darle un uso eficiente al agua para el bienestar social.* Cuadernos de divulgación técnica y científica, no. 2. Álvarez Olguín, Gabriela, et al. 2008.
28. *El secreto del espectro. Historia, descripción y análisis del espectro electromagnético.* Cuadernos de divulgación técnica y científica, no. 1. Vázquez de la Cerda, Alberto Mariano. (Editor) 2008.
29. *Presencias de la cultura mixteca.* López García Ubaldo, et al. 2008.
30. *Raíces mixtecas.* Ortiz Escamilla, Reina e Ignacio Ortiz Castro (Editores). 2007
31. *Ñuu Savi. La patria mixteca.* Ortiz Escamilla, Reina e Ignacio Ortiz Castro (Editores). 2006.
32. *Pasado y presente de la cultura mixteca.* Ortiz Escamilla, Reina e Ignacio Ortiz Castro (Editores). 2005.
33. *Personajes e instituciones del pueblo mixteco.* Rivera Guzmán, Ángel Iván, et al. 2004.
34. *A New Charter for the United Nations.* Seara Vázquez, Modesto. 2003.
35. *La tierra del sol y de la lluvia.* Galindo Trejo, Jesús, et al. 2002.
36. *Aplicación de un modelo de balances hídricos en la cuenca del Río Mixteco.* Blanco Andray, Alfredo y Saúl Martínez Ramírez. 2001.
37. *La vivienda tradicional en la mixteca oaxaqueña.* Fuentes Ibarra, Luis Guillermo. 2000.

38. *El agua recurso vital*. Arias Chavez, José et al. 1993.
39. *Una Nueva Carta de las Naciones Unidas*. Seara Vázquez, Modesto. 1993.
40. *Huajuapan de León. Estado de Oaxaca*. Cuaderno Estadístico Municipal. 1993.
41. *Inteligencia artificial en México*. Galindo Soria, Fernando et al. 1992.
42. *Electrónica y computación en México*. Factores estratégicos en la modernización del país. Gil Mendieta, Jorge (Compilador). 1991.

### **University of the Sea**

- 1.. *Around the World in 80 Years*. Seara Vázquez, Modesto. 2020.
2. *The Decisive Hour*. Seara Vázquez, Modesto. 2020.
3. *Mezcal*. Isidro Moctezuma. 2018
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#### **University of Sierra Sur**

*Salud y Administración*

Issue published: 19

# Publications in 2019 by OSUS Research Professors: 417

**Books, articles, essays, book chapters and national and international articles in refereed and indexed publications.**

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Nuclear Magnetic Resonance Equipment. UNPA.  
Tuxtepec Campus

# Promoting Development

The services of Promotion of Development offered by the universities to the governmental, social and private sectors of the state of Oaxaca, have the objective of linking the scientific-technological activity of the universities with society.

Based on this concept, the Promotion of Development is one of the main functions carried out by the universities of SUNEO and consists of the support provided to rural communities, producers' organizations and private producers, through technical consultancy, training courses and the development of productive research projects, in which professors-researchers and technicians from the universities participate. Through these actions, we wish to strengthen the productive nuclei with technological innovations that allow the adequate development of their primary activities through the sustainable use of the natural resources of the regions, in order to promote a rational use and management of them. The purpose is to contribute to the socio-economic development of the primary production sector in the regions in order to make a significant contribution to the transformation of society and to foster better conditions of well-being.



*Children in free basic computing course.  
UMAR. Huatulco Campus.*

**817** High School Teachers in  
refresher courses between July 2018 and  
December 2019.

# **122 Productive projects**

promoting community development.

# Cultural Diffusion

## Knowing the past to forge the future

Promotion of the **knowledge, appreciation and development** of the cultures of the state.

In these years, the Weeks of Cultures have become one of the most representative forums in the academic field and in the various artistic manifestations in the State, bringing together outstanding researchers and artists from different areas including: painters, sculptors, musicians, dancers, singers, actors, craftsmen and bands. All the richness of the State has been able to meet and show itself in an open space not only for the university community, but for the population in general.

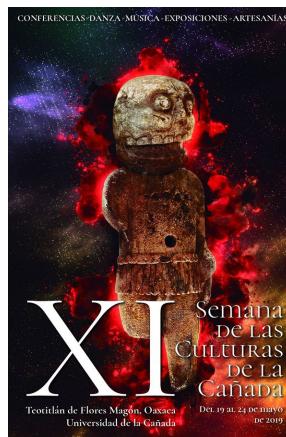
Mixtecos Popolocas Afromestizos  
Ixcatecos Cuicatecos Zapotecos  
Triquis Chatinos Mixes  
Zoques Huaves Chocholtecos  
Mazatecos Tacuates Chontales  
Chinantecos Amuzgos Nahuas

Together with the results of preservation, dissemination and diffusion of culture, it has been possible to gather research material for the publication of books that now constitute the paradigm of specialized studies on the subject of a certain culture, placing us as the institution that gathers the greatest number of published researches on the corresponding culture.

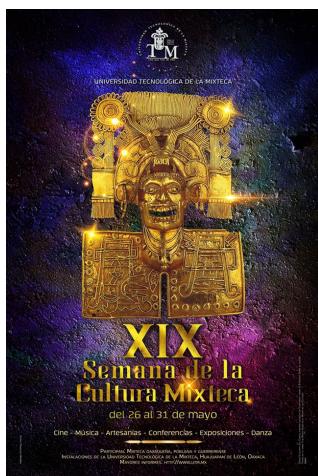
Until 2019,  
**87 Cultural Weeks**  
have been held and  
**94 books** have been  
published.



# Culture Weeks at OSUS 2019



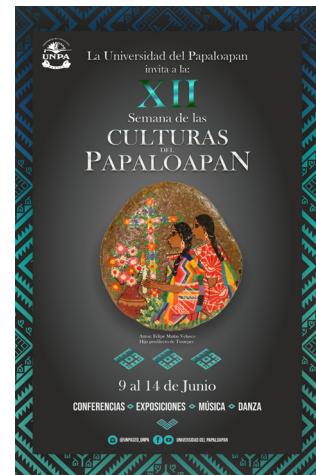
*XI Week of the Cultures of the Cañada.  
May 19th to 24th. UNCA. Teotitlán de Flores Magón.*



*XIX Mixtec Culture Week.  
May 26 to 31. UTM  
Huajuapan de León.*



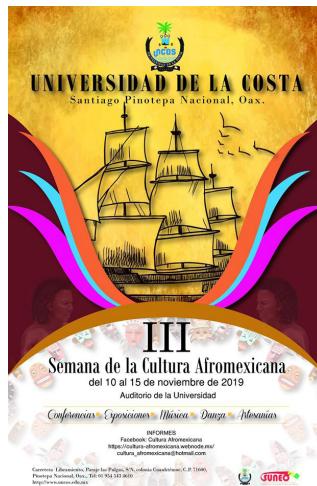
*XVIII Zapotec Culture Week. June 2nd to  
7th. UNISTMO. Tehuantepec Campus,  
Ixtepec Campus and Juchitán Campus.*



*XII Week of the Cultures of the  
Papaloapan June 9th to 14th. UNPA.  
Loma Bonita and Tuxtepec Campus*



*XII Week of Cultures of the Sierra  
Sur October 13th to 18th. UNSIS.  
Miahualtán de Porfirio Díaz*



*III Week of Afro-Mexican Culture  
November 10th to 15th.  
Pinotepa Nacional*



*XII Week of Cultures of the Sierra Juárez.  
November 24th to 29th.  
UNSIJ. Ixtlán de Juárez*

# Celebration of the Weeks of Cultures at OSUS



XIX Mixtec Culture Week. UTM. Huajuapan de León.



XVIII Zapotec Culture Week. UNISTMO,  
Tehuantepec Campus.



XII Week of the Cultures of the Papaloapan.  
UNPA, Tuxtepec Campus.



XII Week of Cultures of the Sierra Sur. UN-  
SIS. Miahuatlán de Porfirio Díaz.



XII Week of Cultures of the Sierra Juárez.  
UNSIJ. Ixtlán de Juárez.



XI Week of the Cultures of La Cañada.  
UNCA. Teotitlán de Flores Magón.



III Week of Afro-Mexican Culture.  
UNCOS. Pinotepa Nacional

# Services to the people of Oaxaca

## 13 Public Bookstores

Huajuapan de León, Puerto Escondido, Pochutla, Huatulco, Oaxaca, Tehuantepec, Ixtepec, Juchitán, Loma Bonita, Tuxtepec, Miahuatlán, Ixtlán, Teotitlán de Flores Magón.

## Public Library

Tehuantepec.

## 2 Botanical gardens

Chepilme (Pochutla) and Puerto Escondido.

## University Clinic

### 20,549 medical consultations

(July 2018- December 2019)

UNSID – Miahuatlán.

## 2 Seismological stations

UTM and UMAR.

## 22 Meteorological stations

In all campuses except CECAT, Ocotlán, San Jacinto, Pinotepa Nacional, Juxtlahuaca and Chalcatongo

## 3 Experimental fields

Bajos de Chila and Loma Bonita (2).

## Technological Park

UTM - Huajuapan de León.

## 2 Solar Parks

UTM - Huajuapan de León.

UNISTMO - Tehuantepec Campus

## Historical Mining Archive of the State of Oaxaca

UTM - Huajuapan de León.

## Tourism Training Center

UMAR - Oaxaca de Juárez.

## Wind Training Center

UNISTMO - Juchitán

## Agavetum

UTM - Huajuapan de León.



*Training workshop for strawberry and tomato producers in Santo Domingo el Viejo, Mixtepec, for the use of the solar dehydrator designed by professors -researchers from the Institute of Agroindustry of UTM, Huajuapan de León.*



*Children from the primary school of the "Laguna" agency in San Miguel Amatitlán, boarding the UTM bus after their free Saturday course in the computer labs of the Universidad Tecnológica de la Mixteca, Huajuapan de León.*

# Awards, achievements and most significant results

**Every process requires time to obtain the expected results**

**First places in national and international competitions in various disciplines.**

**Among 133 universities of Mexico that attended CENEVAL's General Examinations of Knowledge in Nursing (EGEL), five universities of the SUNEO were in the top 5 in the classification 2020.**

- **University of Chalcatongo:** Number 1
- **University of the Sea: Puerto Escondido: Campus** Number 4
- **University of Sierra Sur:** Number 6
- **University of the Isthmus Juchitán Campus:** Number 10
- **University of the Coast (Pinotepa Nacional)** Number 15

**This places OSUS universities among the best to study the major in Nursing in the country.**

## 2019

- UTM. First and second place in Robots minisumo at the Continental Robomatrix in Quito, Ecuador.
- UTM. Second place in the Student Design Competition (SDC) that took place during the IX Latin American Congress on Human- Computer Interaction (CLIHC 2019) held in Panama City, from September 30 to October 4. Second place, YAKUIN project: Personal Content Verifier in Digital Messaging.
- UTM. The student Frida E. Ramirez Ortiz from the Engineering in Applied Physics ungraduate program was selected to attend the event Frontiers in Optics 2019 held in Washington, D.C., by the American Optical Society (OSA) USA, from September 12 to 18, 2019.
- UTM. Participation in the RoboChallenge in Beijing, China, as the only team from Oaxaca to

participate at the university level. The competition was held from August 9 to 11, 2019.

- UTM. First place in the RoboCup Soccer Standard Platform League category of the Mexican Robotics Tournament in Guadalajara, Jalisco; the most important Robotics Tournament in the country. It took place from March 21st to 23rd, 2019.
- UTM. First place in the Humanoid Challenge category and first place in Autonomous Vehicle in the Talent Land Competition in Guadalajara, Jalisco. Talent Land is the largest technological event in the country, held from April 22nd to 26th, 2019.
- UTM. Participation in the National Design Award, Diseña México 2019 contest on October 14, 2019, where the thesis entitled "Design of a Prefabricated Aquaponic System, combining Vertical and Horizontal Cultivation Areas" by the graduate Noemi Cruz Martinez, received an honorable mention in the category of best design thesis and absolute winner in the category of other professional products. In addition, her work was exhibited at the Franz Mayer Museum for some time.
- UTM. Daniela Isis Flores Silva, student of the tenth semester of the Bachelor of Applied Mathematics at UTM, had outstanding participation obtaining second place in the XVI International Logic Olympiad 2019, which was held on May 18, 2019 at Colegio Madrid in Mexico City. Additionally, four finalists from UTM attended the Final Phase of said International Logic Olympiad.
- UTM. First and second place in the 7th National Mathematics Competition in the higher level student category, the winners were: Viridiana Itzel Méndez Vásquez and Ludwig Cortés Reyes respectively, both students who were in the sixth semester of the Bachelor of Applied Mathematics. The event was held on May 19, 2019.
- UTM. Leobardo Elí Sánchez Velasco, a graduate in Mechatronics Engineering, won first place in the "Dr. José Emilio Vargas Soto" award for the best thesis in Mechatronics Engineering and related areas granted by the Mexican Association of Mechatronics A.C. The award ceremony took place during the closing ceremony of the 18th National Congress of

Mechatronics held at the Instituto Tecnológico Superior de San Andrés Tuxtla, in the city of San Andrés Tuxtla, Veracruz, on October 19, 2019.

- UTM. Francisco Javier Espinosa García, a graduate of the Master's Degree in Robotics, received the AMRob award for best graduate thesis in the area of Robotics. This award was given by the Mexican Association of Robotics and Industry (AMRob) and presented at the closing ceremony of the XXI Mexican Congress of Robotics (CoMRob 2019) held on November 15, 2019.
- UMAR. The student Luz María García García in the Economics degree program won second place in the XX Political Essay Contest of the State Electoral Commission (CEE) of Nuevo Leon with its theme: Civil Society Organizations (CSOs) as a form of citizen participation in the municipalities of the State of Oaxaca: a proposal for its measurement.
- UMAR. Communication Sciences graduate Erick Daniel Cruz Mendoza was the winner of the 2019 "Luis Estrada" award for scientific dissemination.
- UMAR. Students Noel García García and Catalina Habana Vargas of International Relations and Tourism Administration, respectively, received the academic merit encouragement of young indigenous and Afromexican "Seeds of talent" awarded by the Secretariat of Indigenous and Afromexican Peoples of the state of Oaxaca. The award is given to outstanding students who have a project to promote the languages and customs of their place of origin.
- UMAR. The students of the seventh semester of the Bachelor's Degree in Economics, Christian Jair Gálvez Cortéz and José Ángel Cantera Cruz, won first place in the "University Entrepreneurship Award" of the Oaxacan Institute of Entrepreneurship and Competitiveness, in the category of Solidarity Economy and Social Impact.
- UMAR. Margoth Liliana Castro Cubillos, PhD student in Marine Ecology, Puerto Angel campus, won 2nd place in the category of papers at the 6th International Symposium Campeche 2019 RECORECOS "The Network for Knowledge of Southeast Coastal Resources" under the direction of Dr. Valentina Islas Villanueva, CONACYT Professor attached to the Institute of Genetics.

• UMAR. Students from the Master's Degree in Marine Ecology, Puerto Angel campus, Francisco Muñoz Reyes, Diego Alberto Medrano García and Luis José Ortiz Martínez won 1st, 2nd and 3rd place respectively in the poster presentation modality at the 10th Congress of the Mexican Society of Coral Reefs, under the direction of M.A.I.A Eduardo Juventino Ramírez Chávez.

• UMAR. Student María Luisa Rodríguez Medellín won third place for best poster presentation with the work entitled: Sexual dimorphism through the genital papillae of the irregular hedgehog Rhynchosoma pacificus at the 4th Latin American Congress of Echinoderms from November 10 to 15, 2019 in Ciudad de la Paz, Baja California Sur.

• UNISTMO. Emanuel Marcial Castillo ninth-semester student participated in the XXIX Summer of Scientific Research, in the Robotics and Mechatronics Laboratory of the Computer Research Center of the National Polytechnic Institute, collaborating with the project called "Machine vision for biological image recognition", under the tutelage of Dr. Juan Humberto Sossa Azuela.

• UNISTMO. Rigoberto Hernández Cruz and Consuelo de los Ángeles Luis Peralta from the Petroleum Engineering major participated as lecturers in the course "Introduction to Refining Processes" from July 22 to 26, 2019. The course was held at the Faculty of Engineering of UNAM.

• UNPA. The student Itzamary Romero Sosa from Mechatronics Engineering received an honorable mention from the Mexican Society of Mechatronics for her thesis "Application of the Sagnac Fiber Optic Interferometer to Control an Angular Movement Mechanism".

• UNSIS: Miguel Silva Castellanos, a tenth-semester student of the Bachelor of Municipal Administration program, received the 1st place award in the State Essay Contest "Municipalism in Mexico", from the hands of the Magistrate President of the Electoral Tribunal of the State of Oaxaca. The award ceremony was held within the framework of the Fifth Anniversary of the Foundation of the First Municipality in Mexico.

• UNSIS. Gudelia Martínez Sala, a fourth semester student in the Master of Public Health program at UNSIS, under the tutorship of professors: Dr.

Alejandra Sánchez Bandala, Dr. Ariel Abeldaño Zúñiga and Dr. Hady Keita, won 1st place in the Competition for free research papers at the 5th International Congress of Nursing 2019, Global Health: A topic for all, oral modality, with the theme: "Intergenerational transmission of domestic violence and its social determinants".

- UNSIS. Irma Cruz Martínez, a ninth-semester student in the Bachelor of Public Administration program, participated in the Seminar on Identity and Community Leadership, organized by the U.S. Embassy in Mexico in collaboration with ANUIES and the University of New Mexico at Albuquerque. The seminar, held from July 7 to August 3rd, 2019 in the city of Albuquerque, was aimed at Mexican students, belonging to an indigenous people, noted for their proven academic performance and leadership in both academia and their communities.
- UNSIS. Students Jesús Aguillón Chávez and Ángel Rojas Ruiz, both students of the Bachelor's Degree in Municipal Administration, were selected as members of the First Youth Parliament of Oaxaca, convened by the LXIV Legislature of the State Congress. As part of the activities on August 19, 2019 they attended the Training Workshop on Legislative Matters and on August 20th they protested as Youth Deputies presenting proposals and law initiatives on Sustainability and Citizen Participation, as an exercise for the generation of public policies for the benefit of society from the youth sector.
- UNSIS. Two projects from the Master's Degree in Public Health received 2nd and 3rd place in the State Award for Health Research 2019. M.S.P. Gabriel Guerrero Reyes obtained 2nd place in the Public Health Modality with his thesis project "Post-traumatic stress in the Oaxacan population affected by the 2017 earthquakes", which was directed by Dr. Roberto Ariel Abeldaño Zúñiga, with the collaboration of Mtro. José Isaías Siliceo Murrieta and Dr. María Alejandra Sánchez Bandala. Likewise, Dr. Ruth Ana María González Villoria obtained the 3rd place in the Public Health Modality with the research "Parental practices and presence of bacteria in urinary tract infection", with the collaboration of M.S.P. Guadalupe Alejandro Ledesma Hernández and Dr. Jesús Silva Sánchez.

• UNSIS. Jesús Hernández Jiménez, a student in the Computer Science program, receives an Honorable Mention in the "Genius of Logic SUNEO 2019" contest, organized by the Universidad Tecnológica de la Mixteca.

- UNCA. Approval of Project A1-S- 55142, "Dilution of the in vitro action mechanism of medicinal plants used in Oaxaca against scorpion venom" in the CONACYT Basic Science 2017-2018 call. Technical Manager: Dr. Mayra Herrera Martínez.
- UNCA. Participation of Lilia Lucía Estrada Fabián in the XI International Forum of Science and Engineering, Supranational Category (FICI 2019) in Santiago, Chile.
- UNCOS. Students of the Engineering in Design program obtained 3rd place in the state for a short film to prevent child sexual abuse, entitled: Te Creo en Corto.
- UTM. CIEES Level 1 recognition for the Design Engineering program, accreditation that began in December 2018 and ends in January 2024.
- UTM. CIEES Level 1 recognition for the Bachelor of Business Administration program , accreditation that began in March 2019 and concludes in April 2024.
- UTM. CIEES Level 1 recognition for the Engineering in Applied Physics program, accreditation that began in October 2019 and concludes in November 2024.
- UMAR. Three undergraduate programs of study have Level 1 CIEES as quality educational programs. The Level 1 programs are Marine Biology, Environmental Engineering and Tourism Management.
- UNSIS. The Bachelor's Degrees in Nursing, Business Administration and Public Administration renewed the five-year Level 1 of the List of Higher Education Programs Recognized for their Good Quality, granted by the Inter- Institutional Committees for the Evaluation of Higher Education (CIEES), effective from March 2019 to April 2024.

- UNSIS. The Bachelor's Degree in Nutrition obtained Level 1 of three years in the List of Higher Education Programs Recognized for their Good Quality granted by the Inter-Institutional Committees for the Evaluation of Higher Education (CIEES), valid from December 2018 to January 2022.
- UNSIJ. CIEES accreditation for five years for the Bachelor of Environmental Sciences program.

## 2018

- UTM. Second place for best "Student paper" at the 6th International Workshop on New Trends in Medical and Service Robotics MESROB 2018, with the work "A characterization of a robotic hand with movable palm", by Francisco Javier Espinoza García, Manuel Arias Montiel, Giuseppe Carbone, Esther Lugo González and Matteo Russo. Event held from 4th-6th July 2018 in the city of Cassino, Italy
- UNCA. Wins the National phase of the Expo-Sciences 2018 and obtains a pass to the International Forum of Science and Engineering in the Supra Level Category, to be held in August in Santiago de Chile in 2019.
- UNCA. Second place in the Student Design Competition (SDC), held in the city of Merida, Yucatan, within the framework of the National Congress MEXIHC 2018.
- UTM. Third place in the Student Design Competition (SDC), held in the city of Merida Yucatan, within the framework of the National Congress MEXIHC 2018.
- UTM. First place in the "Humanoid Challenge" for the Robotics team of the Mixteca (RDM) Humanoides UTM. Second place in the "UAS Challenge" category for the RDM DRONES UTM team and third place for the RDM AUTONOMOS UTM team, in the "Automodel Car" category. This represents the first participation of UTM in the Talent Network, being the first university in the state to participate in this competition, held from April 2 to 6, 2018.
- UTM. Third place in the VI National Mathematics Competition for Daniela Isis Flores Silva, student of the Bachelor of Applied Mathematics program. The competition was organized by the Teachers' Torch, the Mexican Center for Economic and So-

cial Studies (CEMEES) and the National Federation of Revolutionary Students Rafael Ramirez (FNERRR). The event took place in Tecomatlán, Puebla, on May 19 and 20, 2018.

- UTM. Third place in the Third Robotics Tournament, with the participation of the RDM HUMANOIDES UTM Team in the Robocup Standard Platform.
- League category. The participating students were: Oscar Alberto Zavala Salas, José Armando Sánchez Rojas, Eduardo Akio Sánchez Watana-be, Rocío Ambrocio Delgado. The students were assisted by Dr. Alberto Elías Petrilli Barceló. This Event was organized by the Mexican Federation of Robotics, with headquarters at the Instituto Tecnológico de Estudios Superiores de Monterrey in Monterrey, Nuevo Leon from March 22 to 24, 2018.
- UTM. CIEES Level 1 quality recognition for three years for the Industrial Engineering Program in May 2018.
- UNSIS. The Bachelor's Degree in Computer Science renews the five- year level 1 of the CEIES' Register of Recognized Higher Education Programs in 2018.
- UNSIJ. Selection of the student Laura Yasmin Flores López, through the Young Forest Entrepreneur contest, to participate as the Forestry Delegate of the Institution for the period March 1st, 2018 to March 1st, 2019.
- UNCOS. 1st place obtained by students of Agribusiness Engineering and Design Engineering in the First ExpoProyectos Productivos, held by the H. Ayuntamiento Constitucional de Santiago Pinotepa Nacional on May 25, 2018.

## 2017

- UTM. Finalists of the global competition in the Student Design Competition (SDC) that was held at the International Conference on Human-Computer Interaction (ACM SIGCHI) 2017, in the city of Denver, Colorado, United States, from May 6 to 11, 2017. Finalist, Project PACo: An educative Instrument to Transform Society.
- UTM: First and second place in the Student Design Competition (SDC) and first place in the poster competition, which took place during the 8th

Latin American Congress on Human-Computer Interaction (CLIHC) 2017, held in the city of Antigua Guatemala from November 8 to 10, 2017. First place, SBK project: Smart Braille Keyboard for Learning Braille Literacy in Blind or Visually Impaired People. Second place, YAMI project: Auxiliar complement to enable visually impaired people to use mobile devices. First place, poster competition, YAMI: Compendium of Good Practices for Usability Studies with Visually Impaired Children.

- UTM. In May 2017, it became the first university in the state to have a functional prototype rescue robot, designed and built by UTM students and faculty. This classification will allow it to participate in the World Robot Summit 2018 in the category of Disaster Robots, to be held in October in Tokyo, Japan.
- UTM. International Award “Dr. José Emilio Vargas Soto” granted by the Mexican Association of Mechatronics A.C. for the best thesis at the undergraduate level in the area of mechatronic engineering, awarded to Aldo Aragón Martínez with the thesis entitled “Design and construction of a haptic glove with force feedback”. The award ceremony took place during the closing ceremony of the 16th National Congress of Mechatronics held at the Faculty of Higher Studies (FES) Aragón of the UNAM, on October 28, 2017.
- UTM. First place for the project “Capulin Sauce” and second place for “Mango and Jamaican Jam” in the 7th Innovation Competition for Processed Foods held at the University of La Cañada on June 9, 2017.
- UTM. Best Master’s thesis protocol to the I.Q. Yésica Ruiz Ramírez, Master of Science student: Natural Products and Foods, UTM, in the framework of the XVII National Congress of Biotechnology and Bioengineering, held from June 25 to 30, 2017 in Puerto Vallarta, Jalisco, Mexico. The work is entitled “Probiotic potential and production of in vitro antimicrobial peptides from lactic acid bacteria of pulque”; directed by Dr. Rogelio Valadez Blanco and co-directed by Dr. Paula Cecilia Guadarrma Mendoza.
- UTM. Third place in the Higher Level category of the National Mathematics Competition Pierre Fermat 2017, to the student of Engineering in Applied Physics, Pedro Fernando Ocaña García; awarded from among 1700 participants. The competition was organized by the School of Physics

and Mathematics of the National Polytechnic Institute on November 17, 2017.

- UMAR. The student Yazmin Virgen Malpica won the prize for the best thesis on “Natural protected areas and climate change” in the Biology Degree program.
- UNSIS Enactus-UNSID was one of the 7 teams selected from 33 universities across the country, to be supported in seed capital in the Special Competition Enactus Mexico and Walmart USA “Women’s Economic Empowerment (WEE)”, Project Accelerator 2016-2017.
- UNSIS. The tenth-semester students of the Bachelor’s Degree in Nutrition: Cruz Jiménez Lino René, Flores García Angélica and Reyes Hernandez Rocío, obtained third place in the Didactic Material Contest organized at the XXXII National Congress of the Mexican Association of Members of Schools and Faculties of Nutrition (AMMFEN), held on April 7th, 2017.
- UNSIS. The tenth-semester students in Nutrition Degree program: Carreño Rodríguez Edith Abigail, García Reyes Keila Marleni, Martínez Martínez Areli, Ríos Díaz Gabriela and Ríos Ortiz Misael, obtained third place in the Contest of Development of New Food Products organized in the XXXII National Congress of the Mexican Association of Members of Schools and Faculties of Nutrition A.C. (AMMFEN), held on April 7, 2017.
- UNSIS. UNSIS received a Special Mention as an Institution of Higher Education that has stood out for its academic work linked to the Agenda for Municipal Development Program, within the framework of the 2017 Award Ceremony of the Agenda for Municipal Development Program, held at the Ministry of Education on December 7, 2017.
- UNSIS. Rodrigo Silva Martinez, a graduate of UNSIS, received the National Research: Promotion of the development of state finances, for his research work on the thesis “Analysis of the collection capacity of municipal tax revenues for the years 2013 and 2014 in Santa Catarina Cuixtla, Oaxaca”.
- UNSIS. The Bachelor of Nursing program holds the First Place in the National Performance of Excellence EGEL.

- UNSIS. EGEL Performance Excellence Awards.
- UTM. EGEL Performance Excellence Awards.
- UTM. CIEES Level 1 quality recognition for an additional year in the Mechatronics Engineering, Computer Engineering and Applied Mathematics Program.
- UMAR EGEL Performance Excellence Awards.
- UNISTMO. Level 2 in the Padrón- EGEL High Academic Performance Program Nursing, to the Bachelor of Nursing program.
- UNPA. EGEL Performance Excellence Awards.

## 2016

- UTM. The Enactus Team of the Universidad Tecnológica de la Mixteca was a finalist in the Knorr Company Special Competition.
- UTM. Students of Electronic Engineering and Mechatronics Engineering participated in the First Robotics Tournament held at the Instituto Tecnológico del Istmo. They won awards in the following categories: 1st place in Line Followers, 1st and 2nd place in Minu-Sumo, 1st place in Mega- Sumo, 1st place in Free Robot.
- UTM. The ENACTUS team won 2nd place in the First State Contest of Sustainable Productive Projects "Use your Ideas." This contest was called by the Foundation for Development "Coatlicue", A.C., the Coordination of the National Service of Employment - Oaxaca (CSNEO). Oaxaca Youth Institute (INJEO), the Oaxacan Council of Science and Technology (COCYT), the Technological University of the Central Valleys of Oaxaca (UTVCO), the Delegation of the Ministry of Economy (SE) in the State of Oaxaca and Notary Public No.48.
- UTM. Recognition to the ENACTUS team for its participation in the XI Santander Award for Business Innovation where the project "KUILI" was chosen among the first 20 places out of a total of 1,066 projects registered and evaluated nationwide.
- UTM. Rafael Adrián García García and Juan Pablo Avendaño Santiago graduated from the Universidad Tecnológica de la Mixteca with a degree in Mechatronics Engineering and won first and second place in the national contest for mechatronics engineering thesis "Dr. José Emilio Vargas Soto Award" granted by the Asociación Mexicana de Mecatrónica A. C.
- UTM. The Enactus Team participated and was the winner of the ECOSOL Youth Convocation of INAES, IMJUVE and SEDESOL, to carry out the accompaniment and orientation of Social Enterprises of Collective Youth Enterprises.
- UTM. Dr. Ana Laura Medina Conde, Professor-Researcher at the Institute of Social Sciences and Humanities at the Universidad Tecnológica de la Mixteca, was a finalist in the Raquel Bernal Award for Female Resilience 2016 (INMUJERES), (AMPIEP).
- UMAR. María José Fernández Aldecua won the "Eduardo Ibarra Colado" Award for best presentation at the 6th Latinamerican and European Meeting on Organization Studies (LAEMOS). Viña del Mar, Chile.
- UNISTMO. Erick Álvarez López, student of the Bachelor's Degree in Computer Science, obtained a scholarship from the S.R.E. Proyecta 100,000 for a stay in the United States from October 29 to December 10, 2016.
- UNPA. First place in the Newton Fund Video Competition organized by the Royal Academy of Engineering in London, England with the project entitled: Eco- efficient construction system for social housing.
- UNSIS. The Enactus Team was one of the 7 selected among 33 projects in the Enactus Special Competition - Walmart Women's Economic Empowerment (WEE), Project Accelerator 2016-2017.
- UNSIS. The ENACTUS-UNSI team was awarded 3rd place for university social entrepreneurship in the National Enactus Competition 2016.
- UNSIS. First place nationally in the HACKATHON OpenStack, held in Guadalajara, Jalisco. Participating students Benito Alfredo Reyes Hernández and the graduate Luis Ángel Pérez Herrera, from the Bachelor's Degree in Computer Science, developed an application for Electronic Clinical File in the cloud. The application was presented in October 2016 in Barcelona, Spain.
- UNSIS. First place in the Didactic Material Contest organized at the XXXI National Congress of the Mexican Association of Members of Schools and Faculties of Nutrition (AMMFEN). Students

participating in the Degree in Nutrition were: Díaz López Vianey, Flores García Angélica and Reyes Hernández Rocío.

- UNISJ. Identification of a new species of insect belonging to the order Psocoptera. It was named "Lachesilla casasolai", in recognition of Dr. José Arturo Casasola González, professor-researcher at the University of Sierra Juárez (UNSIJ) for his dedication over the last 10 years to the study of this group of insects in the Sierra Norte region of the state of Oaxaca.
- UNSIJ. The student Gerardo Cruz Jiménez from the Bachelor's Degree in Biology program participated in the International Forum PROTIST 2016 held at Lomonosov Moscow State University in Moscow, Russia, from June 6 to 10, 2016, presenting part of his thesis work entitled First records of moss ciliates in Mexico, which was selected to receive the HOLZ-CONNER AWARD granted by the International Society of Protistologists (ISOP) 2016.
- UNSIJ. The student José Jiménez Ramírez from the Environmental Sciences department won first place for the state of Oaxaca in the second contest "Let's gather actions for water", Puebla, Oaxaca and Tlaxcala editions. The objective is to encourage the generation of university, multidisciplinary proposals that contribute to the discussion, analysis and solution of water problems in the participating states.
- UNCA. Third place in the Student Design Competition at the VI Mexican Congress of Human-Computer Interaction (MexIHC 2016), held in Colima. Winning project: "Kui Xékua: Help for Older Adults". "Kui Xékua", translated from the Mazatec indigenous language means "help".
- UNCA. First place in the competition Vive ConCiencia 2016, at state level with the projects "Study, conservation and use of huacle chili in Oaxaca" in the challenge 'Food Security' presented by students from UNCA and NovaUniversitas.
- UNCA. Students obtained first place in the Vive ConCiencia 2016 contest with the project "Conservation of Pochocuil (*Arsenura armida*) and reforestation of its pochote (*Bombacopsis quinata*) and Jonote (*Trema micrantha*) host trees."
- UNCA First place in the contest Vive ConCiencia 2016 with the project "Conservation of Pochocuil (*Arsenura armida*) and reforestation of its host trees of pochote (*Bombacopsis quinata*) and Jonote (*Trema micrantha*)".

- UNCOS. First place in the first short film contest, organized by the University of La Cañada (I am black I am white).
- UTM. CENEVAL Award for Performance of Excellence-EGEL in the Bachelor of Business Administration and Industrial Engineering.
- UMAR. CENEVAL Award for Performance of Excellence-EGEL in the Bachelor's Degrees in Tourism Administration, International Relations and Communication Sciences
- UNPA. CENEVAL Award for Excellence Performance-EGEL in the Bachelor's Degrees in Nursing and Mechatronics.
- UNSIS. CENEVAL Award to the Performance of Excellence EGEL in the Nursing and Business Sciences degrees.

## 2015

- UTM. Tetra Enactus National Champion 2015. UTM won its fourth consecutive national championship. The project is called ÑU'U-SAÁ (from the Mixtec "Tierra Nueva"); it seeks a holistic development of the region through youth development and university extensionism.
- UTM. First place in the National Competition and obtaining the trophy "Empowering Change" from KPMG, which symbolizes the impact of an entrepreneurial culture in favor of society in the National Competition ENACTUS.
- UTM. The UTM Team of Entrepreneurs represented Mexico in the Enactus World Cup, which took place in Johannesburg, South Africa, from October 14 to 16, 2015, where they won third place in the league.
- UTM. First, second and fourth place in the Latin American Congress on Human-Computer Interaction (CLIHC), held in Córdoba, Argentina.
- UTM. Municipal Excellence Award 2015, held from October 28 to 30 in Chihuahua, Chihuahua Recognition of the project: "Inclusive, dignified and productive recycling for the sustainability of Huajuapan de León" (KUILI), a project initiated by the ENACTUS team from the Universidad Tecnológica de la Mixteca, working in conjunction with the Ecology Department of the Municipality of Huajuapan de

León, the organization KANDA International Solidarity and the city's recyclers.

- UTM. Recognition for the participation of the ENACTUS team in the third World Forum on Local Economic Development in Turin, Italy from October 13th to 16th. Organised by the Municipality and City of Turin, the global network of United Cities and Local Governments (UCLG) and its LED working group, the Andalusian Fund of Municipalities for International Solidarity (FAMSI), the United Regions Organisation (ORU, FO-GAR), the Brazilian Service of Support to Small and Medium Enterprises (SEBRAE), the International Labour Organisation (ILO) and the United Nations Development Programme (UNDP).
- UTM. The prestigious British weekly magazine The Economist, published "The Grasshoppers of Hope" on its cover on September 19. This article a reference to Oaxaca and its State University System.
- UTM. The ENACTUS team won 5th place in the third edition of the Walmart + Ibero Sustainable Innovation Award organized by Walmart de México y Centroamérica, together with the Universidad Iberoamericana.
- UTM. Fourth place in the Mexican Human-Computer Interaction Competition held in Colima, Colima, Mexico.
- UMAR. Student Cindy Reyes González from the Bachelor of Marine Biology obtained the Pedro Mercado Sánchez National Oceanography Award, during the XVIII National Oceanography Congress held in La Paz, Baja California Sur.
- UNISTMO. Students Zanya Vera Gross, Emmanuel Velázquez Sánchez, Ariadne Mardely Díaz Cortés and José Alberto Aragón won first place in the 6th National University Competition for Social Service and Agrarian Development, held in the Senate Chamber in December 2015.
- UNSIS. The ENACTUS-UNISIS team was a national finalist in the special competition "Heredando Salud y Sabor" organized by ENACTUS Mexico and the Unilever Corporation, through its Knorr brand, for its campaign "Cocinando Rico con Mama" (Cooking with Mom) which consisted of developing a social program that promotes proper nutrition for Mexican families.
- UNSIS. Integration of UNSIS to the National University Extension and Innovation Network

that arises as a Binational Cooperation agreement between SAGARPA and the University of Arizona with the aim of contributing to rural development.

- UNSIJ. The student Luz Bernardita Silva from the Environmental Sciences Degree program obtained first place for the state of Oaxaca in the first contest "Let's gather actions for water: Puebla, Oaxaca and Tlaxcala edition". The objective is to encourage the generation of multi-disciplinary university proposals that contribute to the discussion, analysis, and solution of water problems in the participating states. Convened by the Program of Support of the Hydraulic Development of the States of Puebla, Oaxaca and Tlaxcala (PADHPOT), the Water Network UNAM and the Program for the Management, Use and Reuse of Water at UNAM (PUMAGUA).
- UNSIJ. The M.I.T.I Florentino Orocio Méndez, Professor- Researcher of the IEA, obtained third place in the 22nd SNCyT 2015, with the project "Wireless control of devices that work with alternating current".
- NOVAUNIVERSITAS. Students of the Bachelor's Degree in Computer Science and Bachelor's Degree in Administration obtained first place in the Hackaton organized at state level by the Secretary of Administration within the framework of the 2015 Digital Fair.
- NOVAUNIVERSITAS. Students in the Computer Science degree program obtained first place in the 5th Programming Contest Cprog- UNCA 2015.
- UTM. Number 1 nationally in the Bachelor of Business Administration, CENEVAL, EGEL- ADMON, and Computer Engineering, CENEVAL, EGEL- COMPU.
- UMAR. CENEVAL Award for Excellence Performance-EGEL in the Degrees of Tourism Administration, International Relations and Marine Biology.
- UMAR. 1st place at the national level in the Bachelor's Degree in Tourism Administration, EGEL- CENEVAL.
- UNISTMO. CENEVAL Award for Excellence Performance-EGEL in the Bachelor's Degrees in Business Administration and Law.
- UNPA. CENEVAL Award to the Performance of

Excellence-EGEL in the Bachelor of Business Administration.

- UNSIS. CENEVAL Award to the Performance of Excellence -EGEL in the Bachelor of Business Sciences.

## 2014

- UTM. Three-time Enactus 2014 National Champion with its sustainable proposals “Crece” and “Kuili”, focused on business creation and development.
- UTM, first and third place in the Mexican Congress of Human- Computer Interaction (MexIHC 2014) and the Mexican Computer Meeting (ENC 2014), respectively.
- UTM. The UTM Enactus Team won 3rd place in its league at the 2014 Enactus World Cup International Competition held October 22-24 in Beijing, China.
- UTM. The ENACTUS team from the Universidad Tecnológica de la Mixteca qualified as a finalist in the NESTLÉ “nurturing young people” competition
- UMAR. Student Alejandra Gricelda Hernández, represented UMAR, at the first University Meeting on Foreign Policy organized by the Ministry of Foreign Affairs and the Matías Romero Institute.
- UNISTMO. The Creator Team of the University won 1st place in the Science and Technology and Innovation Creativity Contest 2014. organized by the Technological Institute of Salina Cruz.
- UNISTMO. The students Alejandra Clavel Martínez, Sarahí Alonso Miguel and Sandra Muñoz Martínez, from the Law degree program, passed to the regional stage of the II National Competition of Oral Litigation, organized by the Institute of Criminal Sciences “INACIPE” and the Initiative for the Rule of Law of the American Bar Association “ABA ROLI”.
- UNSIS. The UNSIS-ENACTUS team, in which students from the Bachelor’s Degrees in Nutrition, Business Administration, Municipal Administration and Computer Science participate, obtained 1st place in the National Competition as “Amateur of the Year”.
- UNSIS. The Bachelor’s Degrees in Nursing and Nutrition, as well as the Master’s Degree in Public Health received Academic Technical

Opinion issued by the Inter-institutional Commission for the Training of Human Resources in Health (CIFRHS).

- UNSIS. M.P.E.M. Emanuel Lorenzo Arellanes, a graduate of the Master’s Degree in Municipal Strategic Planning, obtained the Luciano Parejo Award for Studies on Urban Land Management, Promotion and Planning, in San Juan, Argentina.
- UNSIS. Santiago Landeta Velázquez, graduate of the Master’s Degree in Public Health, obtained second place in the State Research Award in the category of Public Health.
- UNSIS. Fourteen students of the Bachelor’s Degree in Business Administration and Municipal Administration were winners of the incentive to recognize productive projects of social groups integrated by young university students between 18 and 28 years of age by INAES.
- UNSIJ. Students from the Universidad de la Sierra Juárez won first place in the area of Environmental Protection in category A of the National Call for Young People’s Initiatives for Mexico issued by the Youth Commission of the LXII Legislature and the Electoral Institute.
- UNSIJ. Daniel Cruz Paz and Erick Ramirez Lopez, undergraduate students in Computer Science, won first place in the fourth programming contest held at the University of La Cañada on the occasion of the 5th Week of Computer Science.
- UNCA. Obtained 1st and 3rd place in the contest of creativity in Science, Technology and Innovation in the State of Oaxaca. Oaxaca State Science Expo 2014.
- UNCA. The UNCA team won first place in the science and technology event held from November 18-20, 2014 in Tepic, Nayarit.
- UTM. CENEVAL Award for Performance of Excellence-EGEL in the Business Sciences and Mechatronics Engineering degrees.
- UMAR. CENEVAL Award for Performance of Excellence-EGEL for the Bachelor’s Degrees in Communication Sciences and International Relations.
- UMAR. 2nd place nationally in the Degree in Tourism Administration, CENEVAL-EGEL.
- UNISTMO. CENEVAL Award to the Performance

of Excellence- EGEL in the Bachelor of Business Administration.

- CENEVAL Award to the Performance of Excellence EGEL in the Nursing Degree.

## 2013

- UTM. Obtaining 1st place in its league and 1st place nationally in the 2013 Enactus Mexico National Competition, Enactus- UTM represented Mexico as National Champion in the 2012 World Cup Enactus Competition held for the first time in a Latin American venue, the City of Cancun, Qro.
- UTM. The Universidad Tecnológica de la Mixteca placed second in the 2013 World Usability Competition (HCI or Human- Computer Interaction) held in Paris, France from April 27 to May 2, 2013.
- UMAR. Student Elizabeth Santiago Hernández wins 4th place in the National Francophonie by the French Embassy in a poetry contest.
- UMAR. Students Joel Ricci López and Jennifer Abascal Vázquez obtained second place for the oral presentation of the work "Evaluation of the effectiveness of fungicides in the cultivation of carica papaya in the area of the Oaxacan coast for the control of Colletotrichum sp" that was presented in the XV International Congress of the Mexican Society of Phytopathology, July 2013.
- UNISTMO. The National Wind Training Center "CNCE" was inaugurated in conjunction with the Gamesa Group, Global Technology Leader in the Wind Industry. The CNCE is the first of its kind at a national level. Its purpose is to train personnel in the region at no cost.
- UNSIS. The student Sindy Monserrat Zavaleta in the Bachelor's Degree in Computer Science program was awarded a prize in the Technological Challenge contest, for developing the "System for cognitive rehabilitation in senior citizens".
- UNSIS. The QFB. Santiago Landeta Velázquez, student of the Master's Degree in Public Health, was awarded 1st Place in the State Research Award in the category of Public Health.
- UNSIS. First place for the thesis "A software for low-cost haptic interfaces for motor assessment

and rehabilitation" by Luis Ángel González Rojas, from the degree in computer science, awarded by the National Association of Educational Institutions in Information Technology (ANIEI), within the framework of the XXVI National Congress and XII International Congress of Computer Science and Technology".

- UNSIS. The student Heriberto Ramírez López, member of the UTM-UNSIIS team, won 3rd place in the International Human Computer Interaction Competition, held in Costa Rica.
- UNSIS. 1st Place for the team of students in the Bachelor's Degree in Computer Science at the Hackaton, held within the framework of the Oaxaca Digital Fair, for developing the "Control system of services for people with motor disabilities using voice commands".
- UNSIJ. C. Enrique Hernández Rodríguez, graduate of the Bachelor's Degree in Biology, obtained third place among all the categories at the undergraduate level in the competition organized by COCYT, the National Network of Youth Activities in Science and Technology and the International Movement for Scientific and Technical Recreation (MILSET) in the framework of the 20th National Week of Science and Technology.
- UNSIJ. Students in the Environmental Sciences degree program obtained first place in the area of Environmental Protection in category A of the National Call for the Youth Initiative for Mexico, issued by the Youth Commission of the LXII Legislature and the National Electoral Institute.
- UNCA. Technological Challenge Award Oaxaca.
- UNCA. Obtained 2nd place in the contest of creativity in Science, Technology and Innovation in the State of Oaxaca. Oaxaca State Science Expo 2013.
- UNCA. 1st Place in the Student Design of the Latin American Congress of Human-Computer Interaction (CLIHC 2013). Held in Costa Rica.
- UTM. CENEVAL Award to the Performance of Excellence - EGEL in the Mechatronics Engineering and Business Sciences degrees.
- UMAR. Number 1 in the Bachelor's Degree in Tourism Administration at the national level, EGEL-CENEVAL.
- UMAR. CENEVAL Award for Performance of Excellence EGEL in the Degree in International Relations.

- UNPA. CENEVAL Award for Performance of Excellence - EGEL in the Bachelor's Degree in Business Administration.
- UNSIS. CENEVAL Award for Performance of Excellence - EGEL in the Bachelor of Business Sciences.

## 2012

- UTM. UTM. Finalist in the ACM- ICPC competition in its world phase to be held at the University of Warsaw, Poland.
- UTM. Won 1st National Place in the 2012 Enactus Mexico National Competition; therefore Enactus- UTM represented Mexico as the National Champion in the 2012 World Cup Enactus Competition held in Washington DC in October 2012.
- UTM. First and third place in the Mexican Congress of Human- Computer Interaction (Mex-IHC), held at ITAM, Mexico City.
- UTM. Received the RASHID award for best scientific article. at the 22nd International Conference on Electronics, Communications and Computing. CONIELECOMP 2012.
- UTM. Obtained its pass to attend the final phase of the 2012 multimedia project, within the framework of the VI Latin American Competition for Computer Projects.
- UTM. Won 1st Place in the Walmart Women's Economic Empowerment Project Partnership Competition 2011-2012.
- UTM. First Place in the National Competition SIFE Mexico by the Team Students in Free Enterprise (SIFE) held at the Centro de Convenciones Banamex in Mexico City on May 27 and 28, 2012.
- UTM. A student from the Bachelor of Business Administration program obtained the 2011 State Youth Award for designing the ITA- YAJI system, which encourages the creation of productive projects by Mixtec women from highly marginalized communities.
- UMAR. Ilda Olivia Santos Mendoza, graduate of the Bachelor of Marine Biology, obtained 1st place for the best thesis in Electrochemistry 2012, during the 27th Congress of the Mexican Society of Electrochemistry and 5th Meeting of Mexican Section of the ECS.
- UMAR. Cervando Sanchez Munoz, a graduate of the Master of Environmental Sciences, won 3rd place for best Master's thesis in Electrochemistry 2012, during the XXVII Congress of the Mexican Society of Electrochemistry and 5th Meeting of Mexican Section of the ECS.
- UMAR. The student Isabel Raymundo Gonzalez who graduated from the Bachelor of Marine Biology program, won third place in the discipline of research papers in the National Competition of University Papers 2012 organized by the Commission of Natural Areas (CONANP).
- UNISTMO. The Tehuanos team won 3rd place nationally in the National Programming Competition, organized by the University of the Gulf of Mexico, Oaxaca Campus.
- UNSIS. The Commission on Biosecurity received a favorable opinion issued by the Inter- Ministerial Commission on Biosecurity of Genetically Modified Organisms (CIBIOGEM), the National Commission for Knowledge and Use of Biodiversity (CONABIO), the Ministry of Agriculture, Livestock, Rural Development, Fisheries and Food (SAGARPA) and the Ministry of Environment and Natural Resources (SEMARNAT) as a quality body in the field of Biosecurity.
- UNSIS. Graduate Juan Manuel Jiménez Canseco, from the Bachelor's Degree in Computer Science program, obtained 1st place in the National Computer Science Thesis Contest organized by the National Association of Educational Institutions in Information Technology A.C. (ANIEI).
- UNCA. National Youth Award Arturo Sánchez Anastasio, a student of the Agroindustrial Engineering program.
- UTM. CENEVAL Award for Performance of Excellence -EGEL in the Degrees of Business Sciences, Mechatronics Engineering and Industrial Engineering.
- UMAR. Number one in the country in Tourism Administration, EGEL- CENEVAL.
- UNPA. CENEVAL Award for Performance of Excellence-EGEL in the Bachelor of Business Administration.

- UNSIS. 3rd place nationally in the Degree in Computer Science, EGEL-CENEVAL.
- UNSIS. 2nd place nationally in the Bachelor of Nursing, EGEL- CENEVAL.

## 2011

- UTM. Third regional place in Mexico and Central America in 2011 in the competition organized by the MCL and the Special Interest Group of Computer-Human Interaction. Obtaining the pass to the world final held in Warsaw, Poland.
- UTM. Ranked among the 10 best in the world by the MCL SIGCHI in its Student Design Competition, by the Project called VITU, held in Vancouver, Canada.
- UTM. Ranked among the top 5 in the world by the SIGCHI ACM in its Student Design Competition for the TIMI Project, held by the UPA in Atlanta in May 2011.
- UTM. 1st place in its league and 2nd place nationally in the National Competition Enactus Mexico 2011. Special invitation as runner-ups to be part of the Mexican Delegation in the World Competition held in Kuala Lumpur, Malaysia.
  - UTM. 1st and 2nd Place in the category of Design for students at the Postgraduate level, in the X Symposium on Human Factors in Computer Systems and the V Latin American Congress on Human- Computer Interaction, held in the city of Porto de Galinhas, Brazil.
  - UTM. First place in the Isdc contest organized by the UXPA (User Experience Professional Association), held in Atlanta Georgia.
  - UTM. 1st place in the ACM ICPC Cities Finals of Mexico Occident & Pacific, held at ITESO University, Guadalajara.
  - UTM. 3rd place in the Mexico & Central America Regional Contest, held at ITESO University, Guadalajara.
  - UTM. Dr. Olexandr Glot and Dr. Marco Polo Tello Velasco obtained the 2011 State Science and Technology Award.
  - UTM. Professors from UTM were assigned the project design and construction of a prototype

of portable equipment for field diagnosis of the modules that make up the automatic pilot (pa) of 135 khz, for the Metro Collective Transport System of Mexico City.

- UTM. Paola Viridiana Espinosa Gordillo, student of Business Studies, received the UVM award for Social Development 2011; and state youth award 2012.
- UTM. In October, David Alberto Benítez González, a student in the Applied Mathematics program at the Universidad Tecnológica de la Mixteca, won third place in the Pierre Fermat National Mathematics Competition organized by the Escuela Superior de Física y Matemáticas of the Instituto Politécnico Nacional.
- UMAR. Ricardo Adrián Gallegos Lara, a graduate of the Bachelor of Animal Science, won the Isabel Guerrero Award with first place in the poster category with the thesis topic "Effect of the Stunning Method on the Sensitivity and Quality of Pork", during the 5th National Colloquium on Meat Science and Technology.
- UMAR. Students Alí Hassan Cruz Galicia and Evelio Matus Martínez, from the Computer Science degree program, won second place in the "Sumo" category, in the 5th State Minirobotics Competition, at the Universidad Tecnológica de la Mixteca (UTM).
- UNISTMO. The "RJ-LMU" team, made up of students José Luis González Gálvez, Ervis Melchor Pérez and José Pablo Santiago Cabrera, won third place in the V State Mini-Robotics Competition. Event organized by the Universidad Tecnológica de la Mixteca.
- UNPA. The LOBOAX team, made up of students in the Mechatronics Engineering career, won first place in the V State Mini-Robotics Competition, held at the Universidad Tecnológica de la Mixteca in Huajuapan de León, Oaxaca.
- UNPA. The H2R team, made up of students in the Mechatronics Engineering program, won second place in the V State Competition of Mini-Robotics Competition, held at the Universidad Tecnológica de la Mixteca in Huajuapan de León, Oaxaca.
- UNSIS. The student Carlos Flores Aguilar, from the Bachelor's Degree in Nutrition, obtained 1st place in the competition for research papers with

the theme: Nutritional quality of a hamburger made from black kite (*Euthynnus lineatus*). During the 26th National Congress of the AMMFEN, held at the Casino of the Aguascalientes Fair.

- UTM. 2nd place at national level in Computer Engineering EGEL- CENEVAL.
- UTM. 2nd place at national level in Mechatronics Engineering, EGEL- CENEVAL.
- UTM. 10th place at national level in Business Administration, EGEL- CENEVAL.
- UMAR. The Bachelor's Degree in Tourism Administration, number 1 at the national level, EGEL- CENEVAL.

## 2010

- UTM. First place nationally in the interface design competition at MexIHC 2010, with the project called TIMI: A system to help indigenous groups in the use of public transportation. Held in San Luis Potosí.
- UTM. UTM's SIFE team wins 1st place in its league and 3rd place nationally in the SIFE Mexico National Competition and the honor of being an invited observer at the world competition on October 10 and 12 in Los Angeles, California.
- UTM. UTM's SIFE team wins 2nd place overall and a \$2,500 economic prize in the Let's Can Hunger, Campbell's competition.
- UTM. 1st and 2nd place in the 4th Mini-Robotics Competition organized by the UNPA.
- UTM. 1st, 2nd, 3rd and 4th place in the Second National Programming Contest 2010 organized by the Institute of Higher Studies of the Gulf of Mexico, in Oaxaca.
- UMAR. Honorable Mention for the thesis "Biological activity of plant species in the state of Oaxaca: *Sycos bulbosus* (Curcurbitaceae), *Encyclia michuacana* (Orchidaceae) and *Acalypha cuspidata* (Euphorbiaceae)" by the Bachelor of Science in Biology by graduate Mayra Herrera Martínez, in the thesis contest of the 2010 solemn session of the Botanical Society of Mexico.

- UMAR. Lorenzo Ruiz Santos, student of the Master's Degree in Wildlife, UMAR, obtained 2nd place in "Oral Presentations" with "Birds of the Lowland Deciduous Forest in Santa María Colotepec, Oaxaca", in the X Congress for the Study and Conservation of Birds in Mexico, Xalapa, Veracruz.
- UMAR. The short film, "Trazos de Resistencia," produced by students at the Universidad del Mar, Huatulco Campus and directed by Alma Cizaña won the aforementioned award.
- UNISTMO. 2nd Place in the Bioprocess and Sustainability Poster Category, organized by the Latin American Society for Environmental Biotechnology and Algal.
- UNISTMO. The student Alan Carrasco Caballero from the career of Chemical Engineering program obtained "Gold Medal" in the XV Iberoamerican Chemistry Olympics, which took place in the Faculty of Chemistry of the National Autonomous University of Mexico, on November 1st, 2010.
- UNSIS. Graduate Paula Cortés Acacia, Bachelor of Business Administration, received an Honorable Mention in the XXVI International Financial Research Award, IMEF-DELOITTE, Category: Research Papers, with the thesis "Analysis of the Financing of Microenterprises in the Commerce Subsector of the City of Oaxaca de Juárez".
- NOVAU. Students from the sixth semester of the Bachelor's Degree in Administration prepared the Municipal Development Plan for San Pedro Apóstol, Ocotlán, thus allowing the municipality to comply with one of its municipal requirements before the state government.
- UTM 4th place nationally in Computer Engineering, EGEL- CENEVAL.
- UTM: 1st place nationwide in Electronic Engineering, EGEL- CENEVAL.
- UTM. 9th place nationwide in Business Administration, EGEL- CENEVAL.
- UMAR Number 1 nationwide in the Bachelor's Degree in Tourism Administration, EGEL-CENEVAL.

## **2009**

- UTM. Finalist in the ACM-ICPC competition in its world phase, held in Stockholm, Sweden.
- UTM. A student in the Food Engineering program received an Honorable Mention from the Chemical Society of Mexico, A.C. in the National Student Poster Contest with the work “Dehydrated tomato salade in a rotating tray dryer”.
- UNISTMO. First place in the design of the logo of the Gastroenterology Service, of the National Medical Center November 20. Obtained by the student Dhanaé Alheli Pérez Arellanes.
- UNISTMO. Shunco Team, composed of students: Getsemaní Arista López, Josué Cervantes Sánchez and Carlos Mijangos Jiménez, won third place in the competition “Robots that follow trajectories” within the framework of the International Congress of Mechatronics and Second National Congress of Polytechnics held at the Universidad Tecnológica de la Mixteca on April 24, 2009.
- UTM. 5th place nationally in the Electronic Engineering degree, EGEL-CENEVAL.
- UTM. 1st place nationally in the Computer Engineering degree, EGEL-CENEVAL.
- UMAR. 2nd place at national level in the Bachelor of Science in Communication, EGEL-CENEVAL.

## **2008**

- UTM. First place in the Student Design Competition within the CHI, a student competition held worldwide. Organized by the ACM and the Special Interest Group of Computer-Human Interaction, it is the most prestigious competition in this area of the world. Held in Florence, Italy. The project with which UTM participated was Ñuu Xaa with the title “A System to Support homeless People’s Self Subsistence”.
- UTM. 1st place in the SIMUL-AT competition at the Sixth International Congress of Engineering in Mechatronics, held at the ITESM, Monterrey Nuevo León headquarters.
- UTM. Second regional place in the ACM-ICPC (Association of Computing Machinery-International Collegiate Programming Contest) in the

regional phase of Mexico-Central America, obtaining the pass to the world phase held in Stockholm Sweden in 2009.

- UMAR. The student Juan Pablo Gutiérrez de la Mora obtained second place in the University Advertising Award in the category of printed matter; the event was sponsored by the National Advertising Association with the theme “Alcohol marks the end of the road”.
- UMAR. The student Elizondo Paredes Luis Constantino, was selected as the Delegate of Mexico in the “World Youth Congress of Peace Child International and UNICEF, Quebec, Canada.
- UNISTMO. The students José Yedid Aguilar López, Martha del Carmen Ferra González and María del Rosario Santiago Carrasco, obtained the first place in the contest “Robots that follows trajectories”, within the framework of the International Congress of Mechatronics and Second National Congress of Polytechnics. Held at the Polytechnic University of Chiapas from April 2nd to 4th, 2008.
- UNPA. Rodolfo Morales Ramírez student of Engineering in Design won fifth place in the 2nd National Competition of Furniture Design organized by the Universidad Autónoma Metropolitana (UAM) and the Mexican Association of Suppliers of the Wood and Furniture Industry (AMPIMM). Held in Mexico City, June 14, 2008.
- UNSIJ. Elizabeth Judid Vázquez Pérez, student of the degree in Environmental Sciences received the 2008 National Indigenous Youth Award in the area of Conservation and Use of Natural Resources.
- UTM. 1st place nationally in Electronic Engineering, EGEL- CENEVAL.
- UTM 1st place nationally in the Industrial Engineering Degree, EGEL-CENEVAL.
- UTM: The Bachelor’s degree Computer Engineering within the first places nationwide in the, EGEL-CENEVAL.

## **2007**

- UTM. Second place in the Student Design Competition within Computer Human Interaction held in San Jose California, USA.

- UTM. Finalist in the ACM-ICPC competition in its world phase, held in April in Tokyo, Japan.
- UTM. Finalists in the Google Code Jam Latin America 2007 held in Belo Horizonte, Brazil.
- UTM. Students from the Business School obtained 1st place nationally as the best investment project in the Industrial Economic area, with the COCOVID project, a coconut water bottling machine. Within the framework of Espacio Vanguardia 2007 organized by Televisa.
- UTM. A student of the 7th Semester of Engineering in Design obtained the award Instituto Estatal de la Juventud, with the Project: Ergonomic Base for Lap top.
- UMAR. The student Sanchez Garcia Lucila was a Youth Delegate for Mexico in the 62nd General Assembly of the United Nations.
- UNISTMO. The student Dhanaé Alehli Pérez Arellanes, student from the Engineering in Design program, obtained the first place in the 1st Student Contest of Design “Logo and Motto”, celebrated in the University of Sonora, Division of Social Sciences, on November 7, 2007.
- UNPA. The Computer Engineering, students, Carlos Manuel Coto del Puerto and Gerardo Roque Celis won fourth place in the 2nd Mini-Robotics Competition, organized by the Universidad Tecnológica de la Mixteca on April 12, 2007.
  - UNPA. The Computer Engineering students Pedro Camacho Díaz and Luis Fernando López Castillo won third place in the 2nd Mini-Robotics Competition, organized by the Universidad Tecnológica de la Mixteca on April 12, 2007.
  - UNPA. The Computer Engineering students, Carlos Manuel Coto and Gerardo Roque Celis won fourth place in the Mini-Robotics Competition of the Instituto Tecnológico de Oaxaca (ITO) on May 19, 2007.
  - UNPA. The students Pedro Camacho Díaz and Luis Fernando López Castillo, from the Computer Engineering program, obtained fourth place in the Mini-Robotics Competition of the Instituto Tecnológico de Oaxaca.
- UNPA. National Award for Best Doctoral Thesis in Chemical Sciences was given to Dr. Eduardo Baez Garcia. Convened by the Chemical Society of Mexico.
- UNPA. National Award to the Best Doctoral Thesis in Polymers was given to Dr. Eduardo Baez Garcia, convened by the Polymer Society of Mexico.
- UNSIS. Elizabeth Judid Vázquez Pérez, student of the degree in Environmental Sciences received the National Youth Award 2007 in the branch of Environment.

## 2006

- UTM. First place ACM-ICPC (Association of Computing Machinery-International Collegiate Programming Contest) in the regional phase of Mexico-Central America, passed to the world final held in Tokyo, Japan in 2007.
- UTM. Finalist in the ACM-ICPC competition in its world phase, held in April in San Antonio, Texas, USA.
- UTM: Computer Engineering obtained accreditation from the Council for Higher Education Accreditation (CACEI).
- UTM. A student of Food Engineering degree program obtained 1st place in the National Student Poster Contest in the XLI Mexican Congress of Chemistry, in Mexico City.
- UTM: A student in the Mathematics degree program obtained 3rd place nationally in the 2006 Pierre Fermat National Mathematics Contest organized by IPN Escuela Superior de Física y Matemáticas.
- UMAR. The students Yahvé Cervantes, Irving Galán, Rafaelo Balderas and Gustavo López won the National Contest in which the best short films were included in the DVD of the film “La ciencia del sueño” by Michael Gondry, 2006.
- UMAR. The student Felipe Valdivieso Vega, Distinction VII Oratory, was the winner of the National Youth Award.
- UMAR. Student Felipe Valdivieso Vega was a Mexican Youth Delegate for the 61st General Assembly of the United Nations.

## 2005

- UTM. First place in the ACM- ICPC (Association of Computing Machinery-International Collegiate Programming Contest) in the regional phase of Mexico-Central America. Obtained the pass to the final held in San Antonio, Texas, USA, 2006.
- UTM. Finalist in the ACM-ICPC competition in its world phase, held in Shanghai, China.
- UTM: Students of Computer Engineering and Business Administration obtained 1st place in the university competition for entrepreneurs organized by the UABJO, in the project "iClock"
- UMAR. Felipe Valdivieso Vega won the State Youth Award 2005, Luis Donaldo Colosio Murrieta medal.

## 2004

- UTM. First prize in the national competition "Let's Read Science for All" of the Fondo de la Cultura Económica.
- UTM. Students from the Electronics Engineering program obtained 2nd place in the IX National Mini Robotics Competition in Santiago de Querétaro.
- UTM. Second place in the ACM- ICPC (Association of Computing Machinery-International Collegiate Programming Contest). in the regional phase of Mexico-Central America obtained the pass to the world final, held in Shanghai, China in 2005.
- UTM. Obtained 1st place in category C in the VIII National Competition "Science for All"; competition organized by SEP, Fondo de Cultura Económica and CONACyT.
- UMAR. In December 2004, the National University Prize for Advertising was awarded to the students Juan Pablo and Jorge Ramírez de la Mora, from the Communication Sciences department, Huatulco Campus. They occupied the first place in the television category, an event sponsored by the National Advertising Association with the theme: "Debating Insecurity".
- UTM. Number 1 nationally in the Bachelor of Business Administration, EGEL- CENEVAL.

## 2002

- UTM: Ivonne Lilian Martínez Cortés, a student with a degree in Applied Mathematics, was awarded the Mexican Daily Medal for obtaining the best grade point average in her generation. The event was organized by Artes, Letras, Ciencias Tecnología A.C. and the Diario de México.
- UTM. 2nd, 3rd and 5th place in the First Contest of Democratic Culture organized by the Federal Electoral Institute and the State Government.

## 2001

- UTM: Five Design Engineering students participated in the 100 Ideas for Mexico contest organized by Televisa, within the framework of Espacio 2001; in which they won a prize for the video "Cambiando Por México" ..

## 2000

- UTM: Motorola Gold Award for technological innovation with the project: Renewable Energies, Authorized Remote Control and Maintenance, granted in the framework of the II Edition of the Mission XXI Mexico competition.



UNCA student participated in the International Forum of Science and Engineering in Santiago de Chile in August 2019.



*Students from the Technological University of the Mixteca won gold and silver medals in the Latin American Robotics Competition, held in Quito, Ecuador in March 2019.*



*Students from the Technological University of the Mixteca won 2nd place in the Student Design Competition in Panama in October 2019*

# Achivements

**The same model is applied throughout the System, so similar results are expected.**

**The system has proven its effectiveness. The following have been achieved:**

- Decentralization of higher education, thus avoiding the concentration of academic and scientific resources in areas that are becoming disproportionately stronger and increasingly differentiated from the rest of the country;
- Preventing human decapitalization of the most disadvantaged regions, not at the desirable levels. However, efforts are made to contribute to this;
- Improving knowledge of the economic resources of the region concerned, in order to lay the foundations for sound economic and social development;
- Training social leaders in the public and private spheres;
- Improving the cultural competitiveness of the university's area of influence, combining the reception of modernizing ideas and concepts, with the conservation and strengthening of the university's own values;
- Contributing to the competitiveness of the economy of Oaxaca and Mexico, seeking the highest standards of quality in teaching and research. Proof of this are the prizes and acknowledgements obtained at state, national and world level;
- The Universidad Tecnológica de la Mixteca, in particular, has put into operation the Parque Tecnológico de la Mixteca, built on land owned by the university, which for several years has housed software development and usability companies.



- Kadasoftware began operations on February 17, 2006. It has an area of 15,400 square meters. It is a software development company whose purpose is to generate a greater impact through tools and techniques for working with the development area to create software products with quality standards established by regulations. It currently promotes the following projects:
- Cédulas Profesionales Digitales: System that sends, registers and validates the electronic diplomas of SUNEO students to the Dirección General de Profesiones (DGP) so that they can apply online for their cédula in digital format, which is valid for the Secretaría de Educación Pública.
- NES. School control system of the Department of School Services of UTM with a vision of standardization in the SUNEO in February 2020.
- REHUS: Standardized system in the Human Resources Departments in SUNEO, which automates the tasks related to the registration of workers, incidence, permits and also generates templates and statistics.
- System for a 5 star hotel in Huatulco, Oaxaca. It has a mobile application compatible with iOS and Android systems in Spanish and English, which is used to access and quickly request the services of the hotel, allowing the user to pay by debit or credit card. In addition, it integrates a web system for the hotel's employees, which has the purpose of registering the services offered by the hotel
- System for a workshop in San Martín Tilcajete, Oaxaca that makes and exports abroad alebrijes handcrafted figures. The system allows monitoring of the process of creating artisan figures, registering and consulting all the expenses that entails each process of production, and thus to obtain a real cost of elaboration.
- Another objective of Kadasoftware is to identify opportunities in the health and energy sectors to generate new products, designs, processes, services and methods

- The services offered are: Web application development applying Usability, Custom Systems, Java Development and Outsourcing. Among its products are: SIMA, KA'VI, ALQUIMISTA, WEB PORTALS, POINTS OF SALE, among others.

Web: <http://www.kadasoftware.com/>

### **UsaLab - Usability Lab**

The Usalab was created in 2002 and renewed in 2010. It tests about 74 systems annually from students, thesis writers, academic bodies and researchers. It has the services of consulting and analysis of results; courses on the use of tools focused on the development of usability tests.

The Usability Lab offers the following services: Usability studies, cross-cultural usability, expert analysis, contextual studies, interface redesign, Focus Group and Consulting, Certification from the UXPA (User Experience Professionals Association) and the W3C (World Wide Web Consortium). Some of the recognized clients are: Volkswagen, Siemens, Audi, KadaSoftware, Sistemas Digitales de Guadalajara, Motorola, LG, IMSS, Infonavit, Oaxaca State Government, Oro de Monte Albán, Ka`vy, Palm, Mabe, Sistemas Digitales de telefonía, BlackBerry, PayPal, Infotec, Apple, Blue Line, UANL and Hoteles.com.

### **Agavetum**

Botanical garden specialized in plants of the agave genus (maguey) with 52 species of them, extending two thousand square meters. The purpose of the Agavetum is the conservation, propagation and study of endemic species in the state and in the future of the country, as a recognition to its great historical, cultural and economic importance in the state of Oaxaca.

In a period of one year it is expected to have a greater number of agave species from all over Mexico. This is ex situ conservation (outside the natural habitat) to reduce the risk of species extinction and establish plantations in their natural habitat.

México has about 150 species of agaves. In Oaxaca 43 of them are distributed. They grow in arid areas where water is limited and sleep fertility is low (xerophytic scrub).



*Agavetum. UTM.Huajuapan de León*

## Photovoltaic Solar Park UTM

The Solar Park will contribute to the protection of the environment and to economic savings in the use of electrical energy, an important resource for the development of activities linked to science and technology that UTM promotes. With an investment of \$17.6 million pesos, it has 6,256 square meters of land and 1560 photovoltaic modules are installed that will produce an average of 750 thousand kWh per year thus, generating a favorable impact on the environment because they will stop omitting 516 metric tons of greenhouse gases that are equivalent to burning 219 thousand liters of gasoline per year. It is intended that by 2020, 80% of the energy consumption of UTM will be renewable energy and 100% in the next 10 years.



*Heliport and Photovoltaic Solar Park. UTM. Huajuapan de León.*

# How much does it cost?

- 10 Universities
- 18 University campuses
- 1,108 Full-time research professors
- More than 11,000 full-time students<sup>4</sup>
- 666 Buildings
- 30 Research Institutes
- 183 Laboratories
- 29 Workshops
- 516 Hectares of land
- 88 Bachelor's degree
- 41 Posgraduate programs (10 Doctorates and 31 Masters)
- 13 Bookstores
- 22 Meteorological stations
- 2 Seismological stations
- 3 Experimental fields
- 2 Botanical gardens
- 2 Photovoltaic Solar Parks
- Public Library
- University Clinic
- State Mining History Archive
- Tourism Training Center
- Wind Training Center
- Technological Park
- Agavetum

All this costed  
**\$841** million pesos<sup>5</sup> in 2019

Yes, but **OSUS returned**  
**\$235** million pesos in taxes

Real Total Cost:  
**\$605** million pesos



Computer lab. UNSIS. Miahuatlán de Porfirio Díaz



Computer lab. UNPA. Campus Tuxtepec

All this could be done because we work with

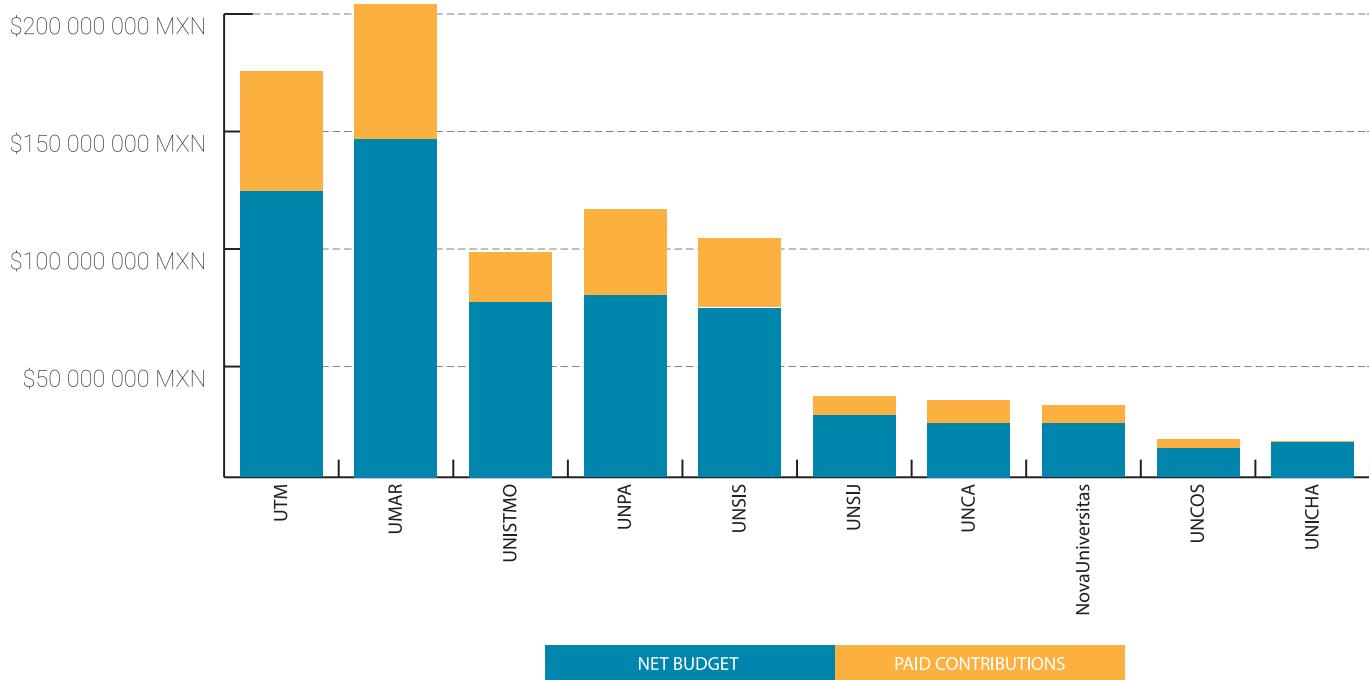
**Efficiency and Honesty!**

For all this, the people of Oaxaca have many reasons to be proud!

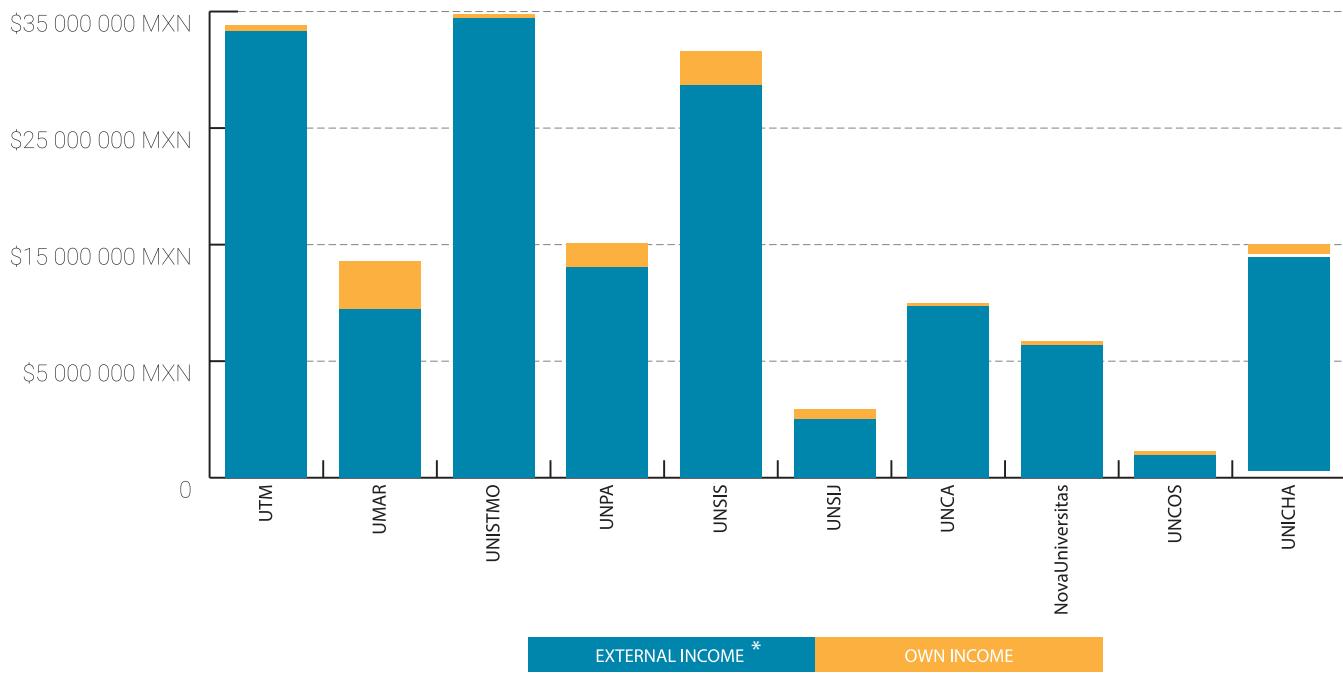
<sup>4</sup> The number of students varies throughout the year

<sup>5</sup> Authorized budget for the year 2019

# Paid Contributions in 2019

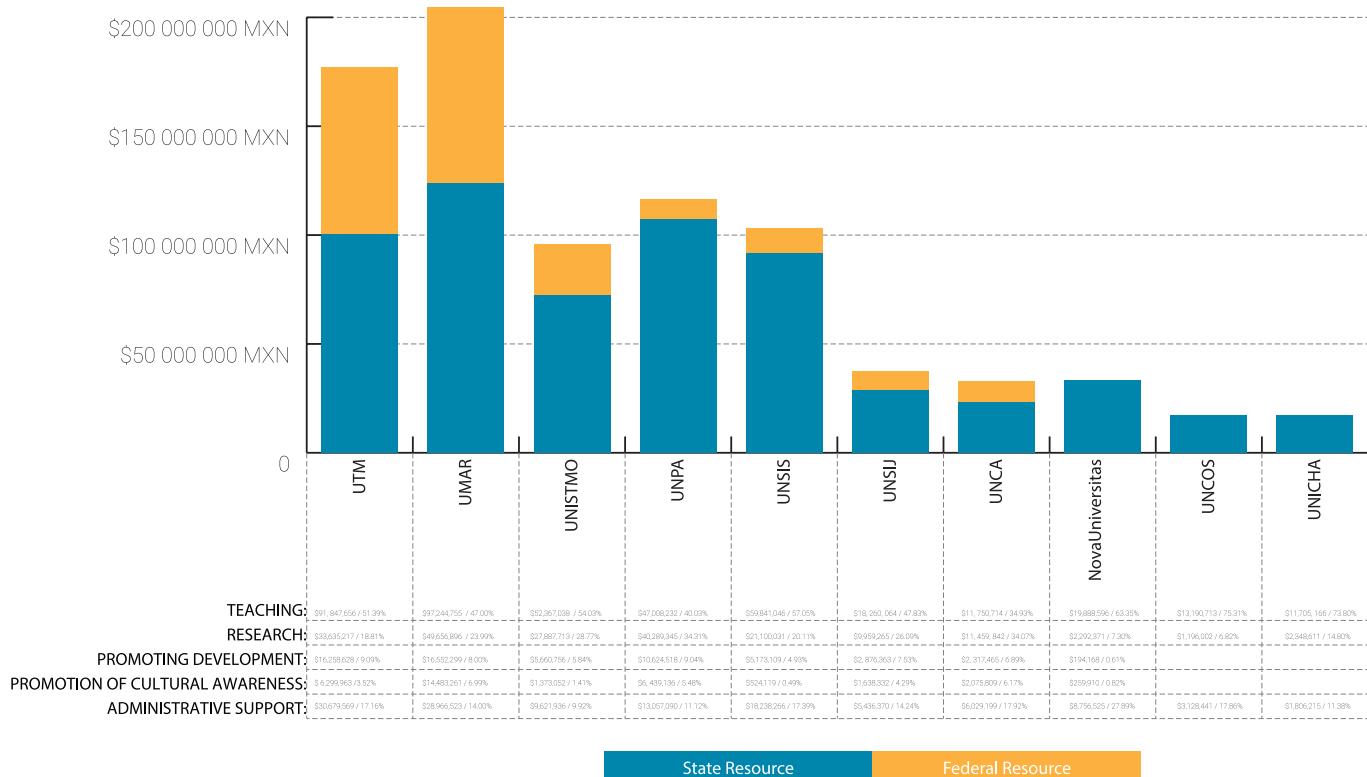


# Other Income 2019



\* It Includes FAM projects, PROFOCIE (PIFI), PRODEP (PROMEP), ProExOEES (FADOEES), SEDESOL, SEMARNAT, SAGARPA , CONABIO, COCyT, and CONACyT revenues, among others.

# Budget source and destination<sup>6</sup>



*Partial interior view of the Food and Nutrition Research Center. UNISTMO, Juchitán Campus.*



*Walking frame. UNCOS. Pinotepa Nacional.*

<sup>6</sup> Services: Thirteen bookstores, one public library, two botanical gardens, one university clinic, two seismological stations, twenty-two meteorological stations, three experimental fields, one technological park, one state mining historical archive, one wind training center, one tourism training center, two photovoltaic solar parks and one agavetum.

# Control of the use of resources at OSUS

As public institutions, Oaxaca's state universities must and do maintain a strict control system, both in planning and in controlling spending.

## A. The controls are internal and external:

**Internally**, each university has:

**Internal auditor**, with the function of verifying the correct functioning of the administration, from the point of view of both honesty and efficiency, and who must make the observations he considers appropriate to the administrative authorities. In addition, there are,

**Audit committees** made up of five university auditors of which the auditor of the audited university is never a member. The results of these audits must be submitted to the corresponding university authorities and communicated to the **Academic Council** of the said universities.

**Externally**, universities are subject to control by the **Superior Audit Office of the Federation** and the **General Comptroller of the State**.

## Analysis and dissemination of counts

Periodically, in accordance with state regulations, the **Finance Commission of the Academic Council** analyzes the accounts and presents a report that is read by the Administrative Vice-Rector before the Academic Council for discussion and approval, after which the statement of results is **published in the Official State Newspaper**.

## B. Budget, its approval and exercise

The budgets that are prepared in each university are submitted to the State Government (Secretary of Administration and Secretary of Finance) for approval. This includes the salary tabulators. There is a double control, one by the Academic Council of each university and the other by the State government, which sends it to the local Congress.

**Important note:** Oaxaca State Universities have NO debt

## C. Works

The planning of the works is made to respond to the new needs, according to the rhythm of growth of the academic demand (teaching, research and diffusion of culture).

1. Once the construction of a certain plant has been decided, university technicians draw up the plans, in consultation with the sectors concerned.
2. The Procurement and Public Works Committees, constituted in each university, in accordance with state and federal regulations, carry out a cost study, which serves as the basis for the preparation of a public tender, the basis of which must be submitted for approval by the State Comptroller's Office.
3. Once the legal requirements have been met, the call for applications is published and monitored by the **Works Committee**, which finally submits its recommendation to the **Academic Council**, which makes the final decision. Normally, it tends to rule in favor of the lowest bid, but in particular cases it may not do so; for example, when there are doubts about the capacity of the builder (lack of machinery,

extremely low salaries, unrealistic calculation of prices, etc.), or when the background of the builder's work with the universities is not positive. In any case, contracts always require a **deposit to ensure** that commitments are met. In addition, the universities carry out their own **monitoring of the works**, as each university has a works manager who monitors both quality of the materials, the volume of work carried out and the compliance with the works schedule.

4. When local circumstances allow, universities directly perform two types of work:

a. land improvement (if expansive clay soils or earthworks are involved), for which we try to get the loan of machinery (paying salaries and fuel) and the donation or sale at low cost of the improved land, and

b. the finishing touches, since it is a fact that the companies executing the contracts almost always subcontract the finishing touches to local companies, so that the universities end up assuming the indirect costs of two contractors. This construction policy has resulted in substantial savings.

#### D. Equipment

Everything related to university equipment is analyzed by the Acquisition Committee and submitted to each Academic Council for authorization. The normal procedure is open public bidding, but there may be an exceptional procedure if there are particular circumstances, such as: a. no proposals, b. exceeding the amounts budgeted, or c. the equipment being so specialized that it is required to be attributed to a certain manufacturer. Depending on the case, what would proceed would be a restricted invitation to three companies or direct award. In all cases, the approval of the Academic Council, upon recommendation of the Procurement Committee, is equally mandatory.

#### Dissemination and transparency of information

In accordance with the legal provisions, all the universities' websites include a transparency section with the format and content required by law. In addition, the pages always present a digital version, with free access, and the brochure "Facts" which informs about all the activities of the SUNEO universities, in a wider and more detailed way.

It should be stressed that, although for formal reasons, the Rector's salary is included in the budget of each university, in nine of them the Rector does not receive a salary, as indicated there, nor has he ever done so. Likewise, it should be noted that during the first three and a half years (1989, 1990, 1991 and the first half of 1992), he did not receive any salary.

#### Where to check the budget and tabs?

On the web sites of each of the universities, the budgets and tabs are published in the Transparency section (icon), in the section of Common Obligations Article 70 Regulations 2018, or in the following **links**:

<http://www.utm.mx/transparencia/obligaciones.html>  
<http://www.umar.mx/transparencia/obligaciones.html>  
<http://www.unistmo.edu.mx/transparencia/obligaciones.html>  
<http://www.unpa.edu.mx/transparencia/obligaciones.html>  
<http://www.unsis.edu.mx/transparencia/obligaciones.html>  
<http://www.unsj.edu.mx/transparencia/obligaciones.html>  
<http://www.unca.edu.mx/transparencia/obligaciones.html>  
<http://www.novauniversitas.edu.mx/transparencia/obligaciones.html>  
<http://www.uncos.edu.mx/transparencia/obligaciones.html>  
<http://www.unicha.edu.mx/transparencia/obligaciones.html>

# OSUS

**ML. Alejandro Murat Hinojosa**  
Governor of the State of Oaxaca

**B. Manuel Francisco Márquez Méndez**  
General Coordination of Secondary and Higher Education, Science and Technology

**Dr. Modesto Seara Vázquez**  
Rector of the Oaxaca State University System



## Technological University of the Mixteca

Dr. A. Santiago A.  
Academic Vice-Rector  
B. Acy. J. J. Ruiz S.  
Vice-Rector of Administration  
M.A. M. A. Peralta A.  
Vice-Rector of Relations and Resources

## University of the Isthmus

Dr. I. Flores S.  
Academic Vice-Rector  
BBA. E. Cortés H.  
Vice-Rector of Administration

## University of Sierra Sur

M.Eng. S. K. Ramírez V.  
Academic Vice-Rector  
BBA. E. A. Ochoa V.  
Vice-Rector of Administration

## University of La Cañada

Dr. M. Bernabé P.  
Academic Vice-Rector  
BBA. A. Martínez L.  
Vice-Rector of Administration

## University of the Coast

M.Sc. J. L. Hernández H.  
Academic Vice-Rector  
M.B.A. O. Cortés O.  
Vice-Rector of Administration

## University of the Sea

Dr. M. del R. Enríquez R.  
Academic Vice-Rector  
BBA. J. L. Ramos E.  
Vice-Rector of Administration  
Dr. A. J. Reyes T.  
Vice-Rector of Relations and Resources

## University of Papaloapan

M.Sc. H. López A.  
Academic Vice-Rector  
B.Acy. R. Jiménez C.  
Vice-Rector of Administration

## University of Sierra Juárez

Dr. S. A. Rodriguez T.  
Academic Vice-Rector  
BBA. A. L. Peña M.  
Vice-Rector of Administration

## NovaUniversitas

Dr. I. L. Martínez C.  
Academic Vice-Rector  
BBA. A. Moya S.  
Vice-Rector of Administration

## University of Chalcatongo

M.Sc. Gerónimo C.  
Academic Vice-Rector  
B.Acy. I. Pérez A.  
Vice-Rector of Administration

# Technological University of the Mixteca



*Auditorium*



*Postgraduate Studies Division.*



*Institute of Electronics and Mechatronics*



*Mural inside the Postgraduate Studies Division: The Human Being, Art and Nature. Rufino Tamayo's replica.*



*Panoramic partial view of the UTM*



*Institute of Agribusiness*

# University of the Sea



Robotic Clinic. Puerto Escondido Campus



Auditorium. Puerto Escondido Campus



Multipurpose Hall. Huatulco Campus



Tourism Institute. Huatulco Campus



Postgraduate Studies Division. Puerto Escondido Campus



Genetics Laboratory. Puerto Escondido Campus

# University of the Isthmus



*Photovoltaic solar park. Tehuantepec Campus*



*Institute for Energy Studies. Tehuantepec Campus*



*Institute of Constitutional and Administrative Studies.  
Ixtepec Campus*



*Classrooms. Ixtepec Campus*



*Nursing Graduation Ceremony, July 2019.  
Juchitán Campus*

# University of Papaloapan



*Partial view of the entrance to the Loma Bonita campus*



*Mechatronics Laboratory. Loma Bonita Campus*



*Robotic Clinic. Tuxtepec Campus*



*Computer lab. Tuxtepec Campus*



*Classrooms. Tuxtepec Campus*

# University of Sierra Sur



*Partial panoramic view of UNSIS*



*Walkways*



*Inside the Center for Anatomy and Dissection*



*Computer lab*



*Auditorium*

# University of Sierra Juárez



*Partial panoramic view of UNSIJ*



*Institute of Environmental Studies*



*CMS Metrology Universal Machine for Wood Mechanics Testing*



*Classrooms*



*Total carbon analyser. Earth Science Laboratory*

# University of La Cañada



*Institute of Pharmacobiology*



*Language Center*



*Auditorium*



*Basketball Court*



*Computer lab*



*Research Laboratory*

# NovaUniversitas



*Recording and Transmission Rooms.  
Ocotlán Central Campus*



*The Direction. Juxtlahuaca Peripheral Campus*



*Professor's Offices. Ocotlán Central Campus*



*Classrooms. Juxtlahuaca Peripheral Campus*



*Auditorium. Ocotlán Central Campus*



*Technical Staff Offices. Juxtlahuaca Peripheral Campus*

# University of the Coast



*Classrooms.*



*Robotic Clinic*



*Auditorium*



*Computer lab*



*Library*



*Professor's Offices*

# University of Chalcatongo



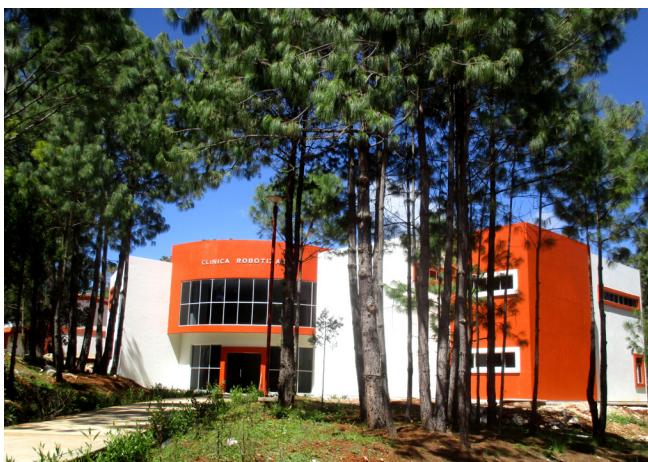
*Partial panoramic view of UNICHA*



*Apartments for Professors*



*Main entrance with Nursing students*



*Robotic Clinic*



*Professor's Offices*

# Oaxaca State University System

## Academic Calendar 2020-2021

Approved by the respective Academic Councils

OCTOBER						
Su	Mo	Tu	We	Th	Fr	Sa
			1	2	3	
4	5	6	7	8	9	10
11	12	13	14	15	16	17
18	19	20	21	22	23	24
25	26	27	28	29	30	31

### NOVEMBER

Su	Mo	Tu	We	Th	Fr	Sa
1	2	3	4	5	6	7
8	9	10	11	12	13	14
15	16	17	18	19	20	21
22	23	24	25	26	27	28
29	30					

### SEMESTER 2020 – 2021 A

#### REGISTRATION DEADLINE

October 5th-9th 2020.

### DECEMBER

Su	Mo	Tu	We	Th	Fr	Sa
		1	2	3	4	5
6	7	8	9	10	11	12
13	14	15	16	17	18	19
20	21	22	23	24	25	26
27	28	29	30	31		

#### Partial exams

- 1° November 4th to 11th, 2020.
- 2° December 4th to 11th, 2020.
- 3° January 22nd to 29th, 2021.

### JANUARY

Su	Mo	Tu	We	Th	Fr	Sa
			1	2		
3	4	5	6	7	8	9
10	11	12	13	14	15	16
17	18	19	20	21	22	23
24	25	26	27	28	29	30
31						

#### Ordinary exams

- February 5th to 12th, 2021.
- Extraordinary exams

February 17th to 24th, 2021.

March 1st to 8th, 2021.

#### Special exam

March 11th and 12th, 2021.

#### Holidays

December 21st to January 5th, 2021.

### FEBRUARY

Su	Mo	Tu	We	Th	Fr	Sa
1	2	3	4	5	6	
7	8	9	10	11	12	13
14	15	16	17	18	19	20
21	22	23	24	25	26	27

#### Non working days

- November 2nd, 2020.
- November 16th, 2020.
- December 5th, 2020.

January 1st, 2021.

February 1st, 2021.

### MARCH

Su	Mo	Tu	We	Th	Fr	Sa
(1)	2	3	4	5	6	
7	8	9	10	11	12	13
14	15	16	17	18	19	20
21	22	23	24	25	26	27
28	29	30	31			

1) Non-working days were considered in accordance with the Federal Labor Law.

2) The deadline for submission of grades to the Department of School Services by teachers is the third working day after the day of the relevant exam.

Su	Mo	Tu	We	Th	Fr	Sa
			1	2	3	4
5	6	7	8	9	10	11
12	13	14	15	16	17	18
19	20	21	22	23	24	25
26	27	28	29	30	1	

Su	Mo	Tu	We	Th	Fr	Sa
			1	2	3	
4	5	6	7	8	9	10
11	12	13	14	15	16	17
18	19	20	21	22	23	24
25	26	27	28	29	30	

### APRIL

#### Long introductory course:

Open for registration:  
December 1st, 2020 to February 9th, 2021.

#### Selection test

February 15th, 2021.

#### Registration for the introductory course:

February 22nd to 26th, 2021.

#### Introductory course:

Start: March 1st, 2021.

End: September 24th, 2021.

#### Partial exams of the introductory course:

1° April 26th to 30th, 2021.

2° June 21st to 25th, 2021.

3° August 30th to September 3rd, 2021.

Su	Mo	Tu	We	Th	Fr	Sa
			1	2	3	
2	3	4	5	6	7	8
9	10	11	12	13	14	15
16	17	18	19	20	21	22
23	24	25	26	27	28	29
30	31					

### MAY

Su	Mo	Tu	We	Th	Fr	Sa
			1	2	3	
2	3	4	5	6	7	8
9	10	11	12	13	14	15
16	17	18	19	20	21	22
23	24	25	26	27	28	29
30	31					

### SEMESTER 2020 – 2021 B

#### REGISTRATION DEADLINE

February 22nd to 26th, 2021.

#### Partial exams

- 1° April 5th to 12th, 2021.
- 2° May 7th to 14th, 2021.
- 3° June 10th to 17th, 2021.

#### Ordinary exams

- June 23rd to 30th, 2021.
- Extraordinary exam

July 7th to 14th, 2021.

September 24th to October 1st, 2021.

#### Special exam

October 7th and 8th, 2021.

#### Holidays

March 29th to April 2nd, 2021.

July 19th to 30th, 2021.

#### Non working days

March 15th, 2021.

May 1st, 2021.

September 16th, 2021.

Su	Mo	Tu	We	Th	Fr	Sa
			1	2	3	
4	5	6	7	8	9	10
11	12	13	14	15	16	17
18	19	20	21	22	23	24
25	26	27	28	29	30	31

### AUGUST

Su	Mo	Tu	We	Th	Fr	Sa
			1	2	3	4
5	6	7	8	9	10	11
12	13	14	15	16	17	18
19	20	21	22	23	24	25
26	27	28	29	30	1	

Su	Mo	Tu	We	Th	Fr	Sa
			1	2	3	
4	5	6	7	8	9	
10	11	12	13	14	15	
16	17	18	19	20	21	
22	23	24	25	26	27	
28	29	30	1	2	3	

### SEPTEMBER

Open for registration: September 1st, 2021.

#### Selection test

September 15th, 2021.

#### Registration for the short introductory course and summer course:

Start: September 2nd, 2021.

End: September 24th, 2021.

#### Introductory course and summer course:

Start: August 2nd, 2021.

End: September 24th, 2021.

#### Partial exams of the Summer course:

1° August 17th, 2021.

2° September 2nd, 2021.

3° September 20th, 2021.

#### Ordinary exams of the Summer course:

September 23rd and 24th, 2021.



*Students of the Bachelor's Degree in Nursing. University of Isthmus, Juchitán Campus*



*Powder X-ray Diffractometer. Instrumental Chemistry Laboratory. University of Papaloapan. Tuxtepec Campus.*



*Cafeteria. UTM*



## **Information about OSUS**

**Oaxaca**

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C.P. 68100 Oaxaca, Oax.  
Phones.: 951-1326958,  
951-1325330

**Ciudad de México**

Sacramento No.347  
Col. del Valle. Delegación Benito Juárez  
C.P. 03100 Ciudad de México  
Phones.: 55-55751365,  
55-46237562



Universidad Tecnológica de la Mixteca  
Huajuapan de León  
<http://www.utm.mx>



Universidad de la Sierra Sur  
Miahuatlán  
<http://www.unisis.edu.mx>



Universidad del Mar  
Pto. Escondido, Pto. Ángel, Huatulco  
<http://www.umar.mx>



Universidad de la Cañada  
Universidad de la Cañada  
Teotitlán del Camino  
<http://www.unica.edu.mx>



Universidad del Istmo  
Tehuantepec, Ixtapa, Juchitán  
<http://www.unistmo.edu.mx>



Universidad de la Sierra Juárez  
Ixtlán  
<http://www.unsj.edu.mx>



Universidad del Papaloapan  
Tuxtepec, Loma Bonita  
<http://www.unpa.edu.mx>



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Campus central. Ocotlán  
<http://www.novauniversitas.edu.mx>



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Chilacatongo de Hidalgo  
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Universidad de la Costa  
Pinotepa Nacional  
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