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Abstracts Collection

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Volumen XVIII

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SERRUDO-GONZALES, Javier

ECORFAN Coordinator

International Conference Science, Technology and Innovation

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Preface

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CDMX.
Diciembre 13, 2021.

Serrudo-Gonzales, Javier BsC.

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1 Physical and Mathematical Sciences and Earth Sciences

SCADA system for agricultural cultivation under a greenhouse prototype

Sistema SCADA para cultivo agrícola bajo prototipo de invernadero

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Abstract

This article presents a proposed model for the acquisition, monitoring and control of parameters using the concept of SCADA. In addition, it will be applied to a greenhouse prototype, in order to monitor the climatological relationships in a crop. The development of this project was approached with an action-research type design, which focuses on solving immediate and everyday problems, building knowledge through practice. The state of the art was reviewed. Subsequently, the existing components and technologies were identified, with the aim of determining the ideal tools for the design of the prototype. Simultaneously, the electronic system of the greenhouse will allow to measure, control, automate and monitor the temperature, humidity and luminosity. To conclude the experimentation, the behaviour of the variables is observed by monitoring the irrigation process of a crop, within the greenhouse prototype.

SCADA, Greenhouse, Control

Internet of things applied to agriculture using the ESP32 module in connection with the Ubidots platform

Internet de las cosas aplicado a la agricultura usando el módulo ESP32 en conexión con la plataforma Ubidots

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Abstract

This article presents the use of the ESP32 module as a linking device for the Internet of Things (IoT). A prototype was implemented in the area of agriculture, specifically, in greenhouses. This prototype allows us to read and control some variables present in the microclimate of a greenhouse. These variables are: percentage of relative humidity of the soil, the amount of illumination that the crops receive, the measurement of the pH of the soil and the environmental temperature. In the second instance, a pump that supplies water for irrigation can be controlled, as well as the on/off of the ultraviolet light that falls on the plants. That is why the MQTT protocol was used to communicate with the Ubidots platform, creating a client from the ESP32 module, which was programmed using the Arduino IDE only as an editor, compiler and code store.

ESP32 module, Protocol, Communication, Ubidots

Estimation of the phytoplankton biomass in Bahia Manzanillo, Colima (2016-2017)

Estimación de la biomasa fitoplanctónica en Bahía Manzanillo, Colima (2016-2017)

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Abstract

Phytoplankton biomass (Chl-*a*) was estimated in 7 stations of Manzanillo Bay, Colima on the surface and at the Secchi depth in the rainy and dry season (2016-2017). To evaluate the biomass, a Millipore equipment and fiberglass GF / F filters were used using the spectrophotometric technique (Lorenzen, 1967). The physicochemical parameters were estimated with a YSI 85 equipment and the nutrients using a San Plus II segmented flow autoanalyzer. The average depth of the Secchi disk ranged from 5.9 m at the Puerto station to 12.8m at the center (A1 and A2). The temperature ranged from 26.9 to 28.1 ° C, the salinity between 31.6 and 33 ups and the dissolved oxygen from 3.81 to 4.82 mg L-1. The nutrients presented high values in Puerto, A1 and Carrizales. The central part of the bay registered values greater than one mg of Chl-*a* and a maximum of 2.67 mg .m-3 in the Puerto station. In 2016, Chl-*a* decreased significantly because of a very intense Niño event, also showing high concentrations of phaeopigments, which reveal grazing conditions or degraded chlorophyll. Through an analysis of variance, it was determined that there is a significant difference between the chlorophyll-a values ($p \leq 0.05$).

Phytoplankton, Biomass, Manzanillo

Design and development of a prototype for the drying of coffee from the use of sieves in a controlled environment

Diseño y elaboracion de un prototipo para el secado de café a partir de la utilizacion de zarandas en ambiente controlado

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Abstract

Coffee production, being a high consumption product, one would think that each of the participants in the value chain would have high profits, but the economic income in the first stage (harvest) is low for the small producer. When coffee is sold at more advanced levels of the value chain, profits increase. Unfortunately, few coffee growers can access these levels due to the cost of the equipment.The project's goal is to develop a method that, based on the design of drying equipment, allows coffee growers to commercialize their coffee in parchment, obtaining higher profits. The methodology begins by identifying the right moment to carry out the harvest with the analysis of the Brix degrees of coffee in cherry, and subsequently, take it to the drying prototype where coffee with high scores in the cup of excellence can be obtained.The main goal is to give small producers a way to work their harvest through implementing a process that will provide them with a high-quality parchment coffee with which they will be able to enter a new sales market.

Brix degrees, Coffee drying, Cup quality

Image Segmentation with K-Means and Color-Manipulation Techniques for the Identification of Corrosion Patterns

Segmentación de imágenes con K-means y técnicas de manipulación de color para la identificación de patrones de corrosión

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Abstract

This article presents an experimental case study on images of corroded metal surfaces, which are processed and segmented using the K-means algorithm and color-manipulation techniques such as Grayscale, HSV, RGB, and CIE L*A*B*. The objective of this research is to identify corrosion patterns on processed metal surfaces, providing experts with a basis for decision-making. Papers related to image segmentation of areas or surfaces with corrosion always subject the results obtained to a second or third manual analysis, which means spending more time and resources on analysis. In the research presented here, the results obtained show that preprocessing the test images, separating the layers of the images into color spaces, and then processing and segmenting them with the K-means algorithm can offer different perspectives with each technique implemented and can speed up the assessment time and mark off the area showing corrosion damage on the metal surface under analysis.

K-means, Image segmentation, Pattern recognition

Web system for monitoring physical variables in aeroponic crops

Sistema web para el monitoreo de variables físicas en cultivos aeropónicos

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Abstract

This article presents the design, development and simulation of a web system for aeroponic crops that allows the registration of users, crops, nebulization cycles and planting and crop periods. In relation to these, the averages, graphs and reports of physical variables that intervene in the monitoring process are generated, in addition backups are generated and the database is restored, as well as the tracking of the history of the actions performed by the user. The simulation of data collection was carried out using a prototype (electronic circuit) in order to evaluate the functionality of the system.

Aeroponics, Monitoring, Web system, Physical variables

Development of interface for kinematic analysis of a delta-type parallel robot

Desarrollo de interfaz para análisis cinemático de robot paralelo tipo delta

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Abstract

The development and implementation process of a computer interface for the kinematic analysis of a parallel robot, in delta configuration, and its application to a previously formed prototype are exposed. Being identified the associated equations, and deduced the respective geometric parameters. On the other hand, the synthesis of the direct and inverse kinematic models, with the Matlab software, guarantees the calculation of a specific Cartesian position, in the end effector of the robot used, once certain joint values have been assigned to it, or vice versa. Finally, a user-friendly graphical interface is created, whose functions are: data entry, resolution of the models described, issuance of the corresponding results, representation of the robot used and its physical manipulation. The results obtained in the real location of the end effector with respect to the values deduced by the interface, are competitive for both models analyzed, even though the prototype used operates by means of servomotors. An average position error of 0.083 cm per axis and overall of 0.006 cm is observed during the tests developed.

Graphical user interface, Kinematic analysis, Parallel robot in delta configuration

2 Biology, Chemistry and Life Sciences

Productive performance of York x Landrace sows in a semi-technified farm

Comportamiento productivo de cerdas York x Landrace en una granja semi tecnificada

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Abstract

The aim of this work was to evaluate the productive performance of sows in a semi-technified farm. Sows were F1 York x Landrace inseminated with Pietrain. For the study, we considered 13 litters of the same age. It was recorded number of piglets born, weight at birth and at weaning, as well as number of piglets weaned. The information was recorded in the Pigchamp© program. When analyzing all the information regarding litter size and litter weight, compared with other studies, the data obtained in this work is good.With all the variables recorded, we observed a high and positive correlation, similar to Murillo *et al*. (2017) results. The use of these variables as indicators of maternal productivity increases with each sow calving.

Production, Piglets, Temperature

Noninvasive thermographic evaluation of the thermal condition of piglets in the first month of life

Evaluación termográfica no invasiva de la condición térmica de lechones el primer mes de vida

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Abstract

In a commercial swine farm located in Zacoalco de Torres, Jalisco, we carried out an experiment to obtain information regarding environmental temperature effects on the performance of 13 litters of piglets during the first twenty eight days. It was used a Fluke® thermograph to obtain temperature images. Hypothesis was it is possible to establish the effect of heat sources trough thermographic images on the response of the litters. The aim was to evaluate the thermal condition of the piglets in the first twenty eight days of life and their performance until weaning. Piglets were F_1 crosses (York x Landrace) x Pietrain. Treatments were minimum, maximum, average and central point temperatures. Variables registered were mortality, weaned piglets, weight of the weaned litters, piglets' individual weight and number of lactating days. Contribution is that temperatures in the first week have more influence on mortality, weaned piglets, weight of the weaned litters, piglets' individual weight and number of lactating days, than the ones in the first month.

Thermography, Piglets, Temperature

3 Humanities and Behavioral Sciences

Integration of Four Basic Functions of Education in the Arts Unit of the Autonomous University of Zacatecas

Integración de Cuatro Funciones Básicas de la Educación en la Unidad de Artes de la Universidad Autónoma de Zacatecas

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Abstract

Four of the educational functions are: Teaching, Research, Management and Extension. These functions have led to an inequitable impact that has been determined by the identity characteristics of the Arts Unit (UAA) of the Autonomous University of Zacatecas (UAZ). At the same time, they have developed in an evolutionary way within the Institution because it requires an organization and promotion process sheltered by certain parameters and indicators that can affect internal execution. In this work it was verified through a qualitative analysis how the integration of the four mentioned functions takes place from the artistic perspective projected by this Institution. The objectives pursued were to establish and analyze the disconnect that exists between these functions and the educational relationship of the Zacatecas Arts Unit, as well as to point out the integration needs with the community. It was found that these are determined and developed differently in the artistic area, so the pertinent evaluations through rigid models do not allow a complete integration of them. It is therefore concluded that it is necessary to detonate constant dialogic measures in order to carry out the desired integration, as well as actions determined by a correct analysis and organization within the Unit itself that lead to a more successful fusion of these educational functions.

Educational function, Art, Integration, Community

Good practices, in educational inclusion experiences in a Higher Education Dependence

Buenas prácticas, en experiencias de inclusión educativa en una Dependencia de Educación Superior

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Abstract

The Academic Body of Academic-Administrative Management of an Engineering Higher Education Unit studied school trajectories to contribute to school success in a group of students who a specialized institution warned that their prognosis of permanence in training as engineers was reserved. This study is oriented towards the inclusion of quality members of the Collegiate Corps who undertook the task of preventing their desertion, analyzing each case with the support of academic advice and tutorials. They were presented with various factors that influenced their career transition during this period, from school procedures, special programs, study habits, teaching methods, pandemics, etc. The satisfactory results are shown through a descriptive, historical-logical, documentary method, highlighting that 40% were favorable when they managed to conclude their higher education studies within their academic training.

School Paths, Inclusion, Education

Music education at the infant level through Educational Technology

La enseñanza musical en el nivel infantil mediante la Tecnología Educativa

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Abstract

The teaching of music at children's levels is enriched using playful didactic tools to encourage interaction between students and teachers, which has traditionally been carried out in person. However, the global health situation has forced teachers to make use of technology to continue exercising the beautiful art of teaching. The objective of this research is to expose the experience obtained in the planning of instructional design in the music class with the use of Educational Technology for the children's level, where motivation, teaching through games, as well as elements and technological resources available, both the teacher and the student, plays a very important role in the development of the class. Aspects of instructional design are offered, particularized to the teaching of music at the children's level with the use of Educational Technology that can be a useful complement to the face-to-face class, without replacing the necessary communication and face-to-face interaction of the teaching model that is developed in the classroom.

Educational Technology, Instructional design,Teaching music at the children's level

The impact of research results on art education

Impacto de los resultados de investigaciones en la enseñanza artística

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Abstract

Music teaching today represents a greater effort compared to previous eras. Before, quality and rigor, combined with ideas, resources, techniques and emotions were shared, inside or outside of the school environment. Currently, the same process is accelerated: the considerable number of research in, about and in favor of art, joined with technological impact, and the existence of social networks, activates informational exchange, and causes contrasts that require higher creativity from the teacher in order to offer tools for the student to qualify the cumulus of information at their grasp. This is made possible by integrating teaching with research, a popular theme in education-related events; which constitutes the objective of this work: to popularize alternatives for the achievement of the possibilities the research process offers in music teaching. The analytic-sinthetical metod, the life history method, documental analysis method and interview were combined from a qualitative standpoint, which was conducive to a multilateral study of the composer and his creativity's developmemt, and also to the activities' design, and the search for information. Ideas and experiences about the potential of research for art education, plus extracurricular activities designed and based on the research are therefore offered.

Research process, Art education, Research methods

Resistances, results and learning from Organizational Change. The case of the Higher Education Institution in central Mexico

Resistencias, resultados y aprendizajes del Cambio Organizacional. El caso de una Institución de Educación Superior del centro de México

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Abstract

Organizational change processes are constant and inherent not only in organizations, but in life itself. In this particular case, we will refer to a public institution of higher education (IES) in central Mexico which, as of January 2009, began to operate with a new academic-administrative structure, going from a Napoleonic model to one matrix-departmental-multicampus. Although it seems simple, although the legal-normative process involved difficulties, they were not as many as the resistance that has been experienced since then, and the lessons learned to achieve the transformation that, indisputably, represents this proposal in the academic field. In this work, the results of an investigation dedicated to the analysis of this change and its relationships with the organizational culture will be reported. For the development of this project, documentary research, classical methods such as analysis-synthesis and self-observation were used; all this, with the aim of reflecting on the administrative, labor, academic and personal implications of an organizational change of this magnitude. Likewise, a brief description of some gaps, opened and overcome, is presented; of the learning and the indicators that show us that it is possible to advance in the realization of this organizational change.

Organizational Change, Higher Education Institution, Organizational Culture

Vocational Decision Making and Anxiety During the Coronavirus 19 Pandemic

Toma de decisión vocacional y ansiedad durante la pandemia de coronavirus 19

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Abstract

Vocational decision making and anxiety during the coronavirus pandemic.The objective of this research is to identify the relationship between vocational decision making and anxiety during the coronavirus pandemic. The study is descriptive, cross-sectional, non-experimental, correlational. The study subjects are high school students who are at the time of making a vocational decision. The students were selected using the snowball technique since they were not in the classrooms of educational institutions during the semester period from January to July 2021. The variables of the study are vocational decision-making and anxiety in times of coronavirus pandemic. The reliability of the evaluation instruments such as the Herrera and Montes Interests and Aptitudes Questionnaire and the Beck anxiety test were obtained. Locating the correlation between the variables. The SPSS statistical package was used for data analysis. The obtained results, in terms of the reliability of the instruments that place them on a Cronbach's Alpha, are between .8 and .9 each of them. The main conclusion is that the relationship between anxiety and vocational decision is not important for vocational decision making since anxiety during the coronavirus pandemic does not affect vocational decision.

Vocational decision making, Anxiety, Coronavirus pandemic

An invisible pain in the parents' separation and divorce process in the State of de Victoria de Durango, Dgo.

Un dolor invisible en el proceso de separación y divorcio de los padres en el Estado de Victoria de Durango, Dgo.

CALDERÓN-PALENCIA, Laura Araceli, CEJAS-LEYVA, Luz María, SOTO-RIVERA, Jesús Abraham and SALAS-NAME, Sagrario Lizeth

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Abstract

Objective: To identify the emotional effects of Parental Alienation Syndrome in the children of separated parents, in the process of divorce or divorced; of the mothers who go to the Comprehensive Family System (DIF, after its Spanish acronym) for psychological care, as well as the girls, boys and adolescents from the Casa Hogar in the city of Victoria de Durango, Dgo., also belonging to the DIF; Through the application of the ZICAP Scale in order to have the elements that allow a diagnosis to be made in the face of the manifestations of this syndrome.Methodology: With the interest to explain the phenomenon raised both in the hypothesis and in the question and the research objectives, in this study we worked under the paradigm of quantitative research oriented towards the observation of the aforementioned phenomenon (Inche, Andia, Huamanchumo, López , Vizcarra and Flores 2003, p.2).Contribution: through statistical processing, the conditions experienced by the girls, boys and adolescents surveyed were identified, which, in turn, present parental alienation.

Separation, Divorce, Parental alienation síndrome

Anxiety and Academic Performance based on the school average, in Students of the Faculty of Psychology and Human Communication Therapy (FPYTCH) of the Juárez University of the State of Durango

Ansiedad y Rendimiento Académico con base al promedio escolar, en Estudiantes de la Facultad de Psicología y Terapia de la Comunicación Humana (FPYTCH) de la Universidad Juárez del Estado de Durango

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Abstract

In undergraduate students, it is not uncommon to hear that they have symptoms of anxiety, due to the workload they have.Objectives: Identify the presence of anxiety in FPyTCH students, Indicate if academic performance is affected with respect to anxiety in FPyTCH students.Methodology: This research was non-experimental, exploratory, observational, by survey, cross-sectional and descriptive, since no experimental maneuver was performed, in a non-probabilistic sample obtained by accident and convenience, after signing the informed consent.Procedure: 104 students participated corresponding to the semesters of 1st, 2nd, 3rd, 4th and 5th, to who were administered the Beck anxiety questionnaire. For statistical processing, spss version 20.0 software was used. Contribution: .906 CRONBACH. The results obtained show that 28.8% of the students present severe anxiety and 13.5% do not have anxiety, as well as the minimum grade average found is 6.9 and the maximum is 9.7, however, said grade average is not found. influenced by the presence or not of anxiety.

Anxiety, Academic Performance, University student

Mental health and school life in Durango Parents' perspective

Perspectiva de los padres de familia

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Abstract

Objective: Identify the effects of the National School Coexistence Program on mental health in parents of primary and secondary education students, applied in the 2020-2021 school year, a period characterized by confinement caused by COVID-19.Methodology: research carried out by an exploratory, non-experimental, observational and cross-sectional survey with descriptive statistical analysis. A non-probabilistic sampling was used by accident and convenience, selected with 95% reliability. To carry out the present investigation, the questionnaires, GAD7, PHQ9 and Burnout of Shirom-Melamed Burnout were used, for the statistical analysis of the characteristics of the studied population, measures of central tendency and dispersion were used.Contribution: significant data are presented on the emotional well-being of parental figures, during the 2020-2021 school year, in which educational institutions worked online due to COVID-19 and the National School Coexistence Program was applied.

Mental health, Parental figures, Emotional state

The social skills developed in professional practices with psychology students at the FPyTCH community service center at UJED

Las habilidades sociales desarrolladas en las prácticas profesionales con estudiantes de psicología en el centro de servicios a la comunidad la FPyTCH de la UJED

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Abstract

Objective: To know the evolution of the social skills developed in the professional practices in students of the Degree in Psychology of the Faculty of Psychology and Human Communication Therapy of the Juárez University of the State of Durango.Methodology: A flexible procedure was followed to read the data obtained with the application of the Gismero social skills scale, which allowed us to examine the data and categorize them with the idea of describing the evolution in the skills analyzed in the population described.Contribution: The evolution of the social skills of psychology students as residents is described, within the Community Services Center at the Faculty of Psychology and Human Communication Therapy belonging to the Universidad Juárez del Estado de Durango.

Social skills, Students, Psychology, Professional practices, Evaluation

Epidemiological characterization of high-risk cardiovascular factors using data collected "Smart Health Kiosks" in participants of the "Por Tu Corazón" project: Intergender Analysis through Artificial Intelligence strategies.

Caracterización epidemiológica de factores cardiovasculares de alto riesgo utilizando los datos recolectados de los "Kioskos de la Salud Inteligentes" de participantes del proyecto "Por Tu Corazón": Un análisis intergénero a través estrategias de Inteligencia Artificial

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Abstract

According to the World Health Organization (WHO), cardiovascular diseases are the leading cause of death worldwide. Cardiovascular risk (CVR) is defined as the probability of developing cardiovascular disease (coronary heart disease, cerebrovascular disease) or peripheral arterial disease in a defined period, usually 10 years; whereas a "cardiovascular risk factor" only corresponds to a biological characteristic or comorbidity present in a person that is independently related to development.Recently, the start of the “Por Tu Corazón” (“For Your Heart) project has been proposed, an initiative of the Upjohn division of Pfizer whose objective is to raise awareness in the population about cardiovascular risk factors and the importance of early detection as part of the prevention of cardiovascular diseases. This project proposes the installation of digital kiosks for measuring cardiovascular risk in some companies with the support of the Business Council for Health and Well-being to offer their collaborators a diagnosis indicating the probability that a cardiovascular event will occur (cardiovascular risk). 734 workers were evaluated anonymously and voluntarily. This database represents an opportunity to learn about the main factors that generate an estimate of risk in a sample of the economically active population. This database can be efficiently analyzed. This project proposes the analysis of the database generated from cardiovascular risk factors and the calculation of cardiovascular risk obtained through the " Por Tu Corazón Project " and the comparative differences between the distinct genders.

Cardiovascular diseases, CVD, Cardiovascular Risk, Cardiovascular Risk Factors, For Your Heart, Database, Analysis by Artificial Intelligence, Economically Active Population

Extension and linkage in university practice within the framework of Social Responsibility

Extensión y vinculación en la práctica universitaria desde el marco de la Responsabilidad Social

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Abstract

The university is called to attend to the needs of the community, for this, it is necessary to generate socially responsible attitudes and significant learning, through promoting work in the field where the needs and problems of the context are addressed so that extension-linkage is decisive for the achievement of social impacts. The objective of this study is to describe the actions that the university carries out to integrate the social responsibility guidelines in its extension-linking function, considering the indicators established by international organizations; It is qualitative, descriptive, and transversal, it was carried out in the Sonora Institute of Technology, considering a population of 15 teachers. For data collection, the focus group technique and a self-diagnosis questionnaire were used as a complement, in the data treatment the qualitative analysis process proposed by Hernández (2018) was followed. The main results show that the extension-linkage actions under social responsibility should consider: 1) meeting real, relevant, and pertinent needs of the community; 2) clearly defined objectives; 3) defined scopes; 4) identification of beneficiaries; 5) impact measurement; and 6) develop under ethical values.

Social responsibility, Extension and bonding, Teaching practice

Academic tutoring as a tool for Social Responsibility in Higher Education

Tutoría académica como herramienta de Responsabilidad Social en Educación Superior

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Abstract

This article is part of a research whose general objective is focused on Identifying the impact of tutoring actions, for the improvement of the Social Responsibility activities of Accounting students in a campus of the National Technology of Mexico, they are also among the objectives carry out actions that strengthen mentoring to improve its efficiency. It is an exploratory investigation, a case study, where the current situation of students is investigated, who in a pandemic modified all their behavior when they stopped attending face-to-face classes and migrated to a life with a high degree of sedentary lifestyle, in which there have been cases of depression and they require the pertinent attention. Anyone who has worked in education for some years knows that new generations of students have another way of perceiving the world, on the one hand they are more critical and analytical, but on the other they are less committed to activities that require effort, which is reflected with Jobs downloaded from the internet for example, or with great aspirations but requiring the least effort, because before children were interested in being a doctor, engineer, astronaut, etc., now they want to be youtuber, influencer…

Tutoring, Social Responsibility, Student Development

Comfort´s evolution analysis of low-cost housing in Ciudad Valles, S.L.P.

Análisis de la evolución del confort en la vivienda en serie en Ciudad Valles, S.L.P.

ZAPATA-PADILLA, Néstor Juan, GÓMEZ-PEDRAZA, Carlos, BOJÓRQUEZ-VARGAS, Alma Rafaela and HERNÁNDEZ-GONZÁLEZ, Beatriz Gisela.

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Abstract

This research is the product of the monitoring carried out from year 2019 to 2020 about the environmental parameters that determine the person´s comfort in six low-cost housing in Ciudad Valles, San Luis Potosí, México. These buildings were built in 1985, 1987, 1990, 1997, 2006 and 2008 respectively, between 1972 to 2006, foundation of INFONAVIT and CONAVI respectively, period of interest to analyze the thermal behavior of materials as block and concrete, which transcend the time due to their industrialization characteristics rather than their benefits in the person´s termal confort.The main objective is analyzes and demonstrate the thermal confort evolution provided by these classic materials in the hygrothermal environment, in order to suggest adjustments to improve it. the research questions are next; Do the classic materials provide a comfortable environment? How is the evolution of thermal comfort in the interior of the low-cost housing when building them with cement block and concrete? And if not; What are the recommendations to generate a better thermal environment?With the support of the PRODEP 2018 Program, some measuring equipment is obtained that are used to record the relative humidity, temperature, wind speed and temperature of the materials like the floor, the roof and the walls.

Comfort. Evolution. Low-cost housing

4 Social Sciences

Optimización Y Mejora Del Proceso De Carga De Mercancías En Las Unidades De Trasporte

Optimization And Improvement Of The Goods Loading Process In The Transportation Units

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Abstract

This research work was carried out with the objective of optimizing and improving the process of loading the goods transported in a commercial company of industrial products, where it was required to diagnose the area of shipments or departures, pointing out the current problems of the company through from an Ishikawa diagram, Later the stages of the loading process were identified by taking and recording the times taken, Likewise; The items with the highest turnover and their characteristics were recorded, by reviewing historical loads, proceeding to the taking and recording of volumetric dimensions measurement in the; load units, to the packaging or boxes and wooden pallets with the support of a flexometer and the use of Hopewell Autocube 8200 (Volumetric measurements), through the use of AutoCAD some load simulations were carried out, comparing and identifying the empty spaces that They were left due to poor arrangement, managing to optimize them by increasing the amount of cargo and thus preventing the goods handled from being damaged during transport, in addition, an improvement was obtained in the completion times of the stages of the registered process under constant supervision.

AutoCAD, Improvement, Optimization

Analysis of SARS-CoV-2 cases in the State of Guanajuato during the third wave of infections using advanced information analysis techniques

Análisis de los casos de SARS-CoV-2 en el estado de Guanajuato durante la tercera ola de infecciones mediante técnicas avanzadas de análisis de información

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Abstract

The State of Guanajuato, located in the center of Mexico, is one of the regions of the country with a high rate of infections of the SARS-CoV-2 virus in relation to its population size, according to official data provided by the federal government. Motivated by this fact, we undertook to further analyze such data in order to identify correlations between a possible complication of the COVID-19 disease, caused by the SARS-CoV-2 virus, and some non-transmissible chronic diseases and other comorbidities. To carry out our study, we rely on the KDD methodology and specialized machine-learning tools, that allow to extract hidden knowledge in the data, which cannot usually be obtained using traditional information analysis techniques. In this way, initially, the cases infected by the SARS-CoV-2 virus were characterized in a general way and, later, classification models were built to identify some rules among the comorbidity variables.

SARS-CoV-2, COVD-19, Knowledge discovery in Databases

Administrative audit tool as support for the ISO 27001 standard towards managing the quality of information in smses, 2021

Herramienta de auditoría administrativa como apoyo para la norma ISO 27001 hacia la gestión en la calidad de la información en las pymes, 2021

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Abstract

The problem is raised in which the drawbacks that Small, Medium-sized Enterprises (SMSESs) currently have that do not have an Information Security Management System (ISMS) in place are evidenced, the possible risks that are caused by various practices and the treatment of each one in order to minimize the negative impact.The objective of this research was to create a computer tool for conducting an administrative audit using the ISO 27001 standard in information quality management for (SMSESs), aiming to reduce computer risks and proposing a risk treatment plan.The methodology consists of determining the scope of the project that is limited by the control objectives obtained from ISO 27001:2013 standard. The project is structured by phases: the objectives of the ISMS to be developed, the reference framework from which the project dimensions and the proposed technological solution are measured, the theoretical and reference framework from which they are measured. the dimensions of the project to develop and implement it in an SMSESs.The contribution is a computer application with the aim of preventing vulnerabilities and threats to the quality of the security system.The information was collected and analyzed, documenting the results, generating a proposal for other SMSESs.

Computer application, Iso 27001, SMSESs

Psychosocial factors, work stress and its relationship with labor alienation in organizations

Los factores psicosociales, el estrés laboral y su relación con la alienación laboral en las organizaciones

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Abstract

Changes in work rhythms in these times have led to the emergence of different behaviors in the collaborators of organizations, severely affecting their social, physical, mental and emotional health. The purpose of this research has to characterize work alienation in organizations as highly interrelated psychosocial risk factors and work stress as a consequence of the dynamism of the environment in which current organizations find themselves. Its main objective is to determine the relationship between work alienation, Psy-cosocial Factors at Work and Work Stress in employees of a business integration company.The methodology is the construction of the research is descriptive in the research process, observing the behavior of these variables in their natural context; by selecting and reviewing different documentary sources.The results obtained are summarized in observations made on the theoretical and practical interrelation that is deduced between these constructs. Main aspects of work alienation are presented, psychosocial factors and work stress issues are addressed, what it is and how they originate, and how to reduce them.Finally, a proposal is presented as a means for counteracting these effects among the collaborators of an organization.

Psychosocial factors, Stress, Job alienation

A methodology to evaluate the safety-based witch ISO 25010:2011

Una metodología para evaluar la seguridad basada en la ISO 25010:2011

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Abstract

This paper proposes a methodology to evaluate the security of a web portal based on the international standard ISO 25010:2011. The methodology includes an evaluation instrument, a table of criteria and the formulas necessary to calculate the five security sub-characteristics. Subsequently, the evaluation is executed in the case study “Sistema Institucional de Seguimiento de Convenios” of San Francisco de Campeche as planned, obtaining satisfactory results.

ISO/IEC 25010, Product Quality, Software, SecurityAbstract

COVID-19 pandemic: Virtual technology applied to higher education at CU UAEM Valle de México and Ecatepec

COVID-19 pandemia: Tecnología virtual aplicada a la educación superior en los Centros Universitarios UAEM Valle de México y Ecatepec

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Abstract

One of the most important challenges in the education system are the technological advances in the educational models at a higher education, achieving a transformation of the student's thinking, in an approach of analysis and innovative construction based on interdisciplinary processes and creativity. The Autonomous University of the State of Mexico is aware that its teachers must have a comprehensive training in communication and creativity with a social and humanistic commitment with transcendence of technological research. Due to COVID-19, pandemic caused by an infectious virus that produced a total closure of educational facilities, in which the only teaching alternative is online, this technology has been integrated by necessity to the educational system with a different pedagogical approach, which has been questioned by the type of knowledge acquired by students. Finally, this research awareness among the teachers of Valle de México and Ecatepec that they must face the challenges in the use of virtual technology.

Virtual Technology, Creativity and Education

Interactive infographics as a digital tool for the appropiation of concepts

La infografía interactiva como herramienta digital para la apropiación de conceptos

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Abstract

The educational process has changed substantially, migrating to a digital format, where traditional practices and digital resources coincide for the construction and deconstruction of knowledge. According to the previous background, the research focuses on identifying whether interactive infographics as a digital resource allow the appropriation of concepts in different contexts. For this purpose, the study was analyzed quantitatively with 20 undergraduate students and 20 from High School during spring 2021, finding these results: infographics do promote the appropriation of concepts in English and Spanish, thanks to the existing association between such an appropriation and the use of the fundamental characteristics in the design of infographics as visual representations, keywords, and information, which show coherence, cohesion, logical sequence and a relationship between its elements: images, text, hypertext, and hyperlinks. In conclusion, interactive infographics are an adequate resource for conceptual changes in virtual environments.

Infographics, Appropriation of concepts, Virtual environments

Tourism and gastronomic marketing strategies to increase tourist flow at Hotel Tosepan Kali

Estrategias de marketing turístico y gastronómico para aumentar el flujo de turistas en el Hotel Tosepan Kali

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Abstract

Tourism and gastronomic marketing has served as a strategy for many destinations or establishments in order to be visited frequently, this promotes a more direct relationship between the consumer and the seller, which influences to achieve the positioning; however, there are some companies that do not have the appropriate elements for this, this is the case of the hotel Tosepan Kali located in the Sierra Norte of the State of Puebla, therefore, the objective of this research is to select tourism and gastronomic marketing strategies and tools to position it, as one of the most visited hotels in the destination. In this sense, the design of this research is quantitative, not experimental and transversal, uses a documentary and field technique with an exploratory and descriptive scope. A measuring instrument was used to find out which tools and strategies are preferred by the population of the states of Puebla and Morelos, with the results obtained, it was observed that the most used strategy is digitization through the use of social networks, and it was obtained that most of the participants trust more in the web pages and phone calls to the hotel to make their reservation.

Tourism and gastronomic marketing, Tosepan Kali, Tourism

Marketing strategies to attract LGBTQ+ tourism in Puebla City

Estrategias de mercadotecnia para atraer turismo LGBTQ+ en la Ciudad de Puebla

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Abstract

The present research aims to create tourism marketing strategies for making Puebla an attractive place for the LGBTQ+ segment, issues related to Puebla City as a gay friendly destination are addressed, as well as tourism marketing strategies to attract this segment taking into account discrimination and exclusion, as well as the lack of training in the area of customer service in touristic companies.The design of this research is quantitative, not experimental and transversal, with a descriptive and exploratory scope. The method of data collection is through an 18-question questionnaire with multiple choice, Likert scale and open answers, applied through the google forms platform to 164 LGBTQ+ tourists who have visited Puebla City.Based on the information obtained, it was determined that most tourists did not know that Puebla city was a gay friendly destination, so the present research proposes different strategies for the attraction of the LGBTQ+ market segment.

LGBTQ+ tourism, Puebla city, Tourism marketing

Measurement of Burnout in university professors during COVID-19

Medición del Síndrome de Quemarse por el Trabajo en profesores universitarios durante el COVID-19

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Abstract

The COVID-19 pandemic has led university professors to use new work modalities as demands exceed the response capacity, putting their occupational health at risk. This work provides the preliminary results of an ongoing investigation whose purpose is to determine the presence of Burnout that may be experienced by university professors in the State of Tabasco, Mexico, as a consequence of the adaptations they have made to continue working during the health contingency caused by the SARS-CoV-2 virus. In relation to the methodology, it is a descriptive, cross-sectional and quantitative research, which uses the survey as a data collection technique through an online form. The main contribution of this work is to provide indicators on occupational health that facilitate decision-making by educational authorities regarding the management of teaching staff working in Higher Education Institutions.

Burnout, Teachers, Occupational Health

Use of Strategic Management Accounting in the determination of costs in SMEs in the furniture sector

Uso de la Contabilidad de Gestión Estratégica en la determinación de costos en PYMES del sector mueblero

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Abstract

Determining cost in industry of all sizes represents a starting point for determining your desired returns. For this reason, the precise calculation matters greatly to the administration of any economic entity.We are currently facing the so-called knowledge era and where changes are looming permanent, so the colloquially called traditional accounting systems must be reinforced with innovative techniques.The objective of this research work is to propose to Small and Medium-sized companies (PYMES) dedicated to the manufacture of furniture an innovative tool with which the cost is determined starting from a hybrid counting system, a traditional system strengthened with a technique of Strategic management.The Cost Management System proposed by this research is based on the conclusion found in the theoretical framework that a system is not something isolated, but is formed as a gear of techniques, procedures and techniques; according to the needs of the companies under study.To carry out the present research work, a diagnostic analysis of the furniture SMEs was carried out, where information was obtained regarding the characteristics for the determination, measurement, analysis and cost management of these companies.According to the result of said analysis, the system proposal is presented, which is in the validation process for its dissemination and, where appropriate, commercialization, prior to its registration.If the SMEs dedicated to the manufacture of furniture have a system according to their characteristics, it will be possible to determine with certainty indicators that are essential for making strategic decisions that infer in the improvement of the administration of the SMEs under study.

Cost in SMEs, Furniture SMEs, Strategic management

Corruption contagion as a sociocultural phenomenon: an agent-based model

El contagio de la corrupción como fenómeno sociocultural: un modelo basado en agentes

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Abstract

Corruption is a social problem that seriously affects the functioning of society and in some cases, it is even perceived as an acceptable social behavior. The acceptance or rejection of corruption depends both on the own judgment and on the observed behavior in the environment; so that corruption can be spread or eradicated through social interaction.In this work, we study the convergence dynamics of society towards honesty in view of the implementation of two mechanisms: the modification of the individual perception of corruption; and the complaint of corruption. Since corruption is a complex socioeconomic phenomenon, we study it from the perspective of Agent-Based Modeling. The framework of our analysis is corruption in public administration, which is the one that has the most incidence in Mexico.We found that the mechanism that most favors the eradication of corruption is the complaint. Results also suggest that societies can converge towards honesty even when initial corruption is high, but not majority. Unfortunately, the low credibility in the system discourages reporting, so effective implementation and monitoring of reporting, together with fostering social awareness that corruption affects us all, should be promoted.

Corruption, Diffusion, Agent-based models

Management processes in the implementation of environmental legislation in civil engineering companies in the south of Veracruz

Procesos de gestión para implementar la legislación ambiental en empresas de ingeniería civil en el sur de Veracruz

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Abstract

The successes and errors that have arisen in the management process to implement environmental legislation in civil engineering companies were determined, and information related to the evolution of civil engineering companies in their environmental legislation certification process was presented, and finally the successes and errors that these companies have had in complying with environmental legislation were compared. As a first step, companies with ISO 14001 standards located in the region were sought. The model and instrument that served as the object of analysis of the companies was an interview by means of a survey. From the business perspective, it is stated that the companies that have as a basis to involve all their personnel, receive training, correctly establish their objectives, environmental policy, vision, mission and goals, prepare a diagnosis, a work plan and above all a change in their culture, tend to be the companies that manage to obtain ISO 14001 certification at the first attempt, as 66.67% of the organizations in the research, with 100% of the companies that prepared the environmental diagnosis and work plan, to become certified.

Management, Legislation, Environmental

Training of competences in Entrepreneurship and collaboration between students of different disciplines and degrees of the University of Guadalajara, based on their school projects. Rapporteurship of experience

Formación de competencias en Emprendimiento y de colaboración entre alumnos de diferentes disciplinas y grados de la Universidad de Guadalajara, teniendo como base sus proyectos escolares. Relatoría de experiencia

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Abstract

The results of experiences of the link in order to motivate entrepreneurship between students of two different careers are reported. Food science develops, characterizes and validates a food and marketing makes its business plan. And the Master of Law supports the working relationship with confidentiality letters, advice for product protection and collaboration contract, in case both students decide to continue together in incubation towards a company.The information used for this work was obtained from the anecdotal experiences documented during the work with the students during the 2019B, 2020A and 2020B school cycles. Students' comments were retrieved from the comments they left on their teacher evaluations at the end of the semester.The participating students valued the experience very much and learned new things that in their career they do not normally receive. Relating to other disciplines enriches and fosters new ideas, new relationships and the best results of any project. It lets them see how, their project, seen with different eyes can offer greater and better advantages. From the legal part, they live it, not only study it. And new forms of interaction-experience are proposed that add for their professional training.

Entrepreneurship, Collaboration, Multidisciplinary

Proposal for a Public Policy in Reference to NOM-035-STPS-2018 and SARS-CoV-2/ COVID 19

Propuesta de política pública en referencia a la NOM-035-STPS-2018 y al SARS-CoV-2/ COVID 19

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Abstract

The economic development of companies has not been simple, continuously, they have to reinvent themselves, to keep up with the requirements and national and international changes that are generated, so the present study, seeks to harmonize the guidelines of the NOM-035-SPTS-2018, which generates substantial changes in the contract and management of personnel; and on the other hand, the pandemic Covid-19, which generated a special condition; The government and companies have modified their ways of working, are facing unexpected situations that adhere in several aspects to NOM-035, with the aim of seeking the proposal of a public policy to encourage such changes and alleviate the situation of public and private enterprise, which is reflected in the health and welfare of the working population, in turn achieve an economic benefit in Public Health. An analysis is made with a qualitative, exploratory documentary approach, based on the laws, articles of the organizations in charge and formal research on the subject, evaluating the possibility of creating a public policy to address this problem.

NOM-035, México, Covid-19

Diagnosis of financing capacities in companies in the Food sector dedicated to the production of dairy products in the South of Sonora

Diagnóstico sobre las capacidades de financiamiento en empresas del sector Alimentario dedicadas a la elaboración de productos lácteos del Sur de Sonora

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Abstract

Objectives. The objective of the research is to elaborate a methodological proposal of a reference framework that facilitates the diagnosis of what are the financing capacities of the Food sector dedicated to the elaboration of dairy products from the South of Sonora for the detection of areas of opportunity that increase their possibilities of permanence in the market. Methodology. The research is documentary-theoretical in nature. For the characterization of the variables, the National Survey on Productivity and Competitiveness of Micro, Small and Medium Enterprises was used as a reference. The methodological approach applied was qualitative since the phenomenon under study was contextualized under the existing literature. Contribution. Among the main findings, it was found that microentrepreneurs choose more to finance themselves with fintech, pawn shops or Sofomes; On the governmental side, it was found that there is a concern to encourage regional economic growth. For future research, the collection of surveys could be carried out to evaluate the perception of microentrepreneurs regarding current financing options.

Public Financing, Private Financing, Government Support

Sectoral system of innovation and agricultural policy in export products. A case study of dried mango

Sistema sectorial de innovación y Política Agrícola en productos de exportación. Un estudio de caso del deshidratado de mango

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Abstract

This document aims to analyze some of the challenges facing economic policy to promote and reactivate regional development in the face of an unprecedented crisis that has deepened the pre-existing problems in the agricultural sector and to reveal the fragility of neoliberal policy in the face of a contingency such as that caused by the COVID-19 pandemic. A change in current policy by promoting a strong share of public spending through programs to support producers to counteract the effects of the deterioration of private investment as a result of the pandemic becomes evident and essential. In this sense, it is pointed out the existence of a strong dependence that this sector keeps with the regional market of North America to activate the agricultural development and the Sectoral System of Innovation (SSI) in agricultural export industries from a case study in the production of dehydrated mango.

Public policy instruments, Sectoral innovation system, Covid-19 pandemic

Disparities in Oaxaca's Economic Development: A Regionalization Proposal

Disparidades en el desarrollo económico de Oaxaca: Una propuesta de regionalización

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Abstract

The state of Oaxaca is one of the states of Mexico with a very low level of economic development, within it its municipalities present strong problems of disparities in their development, these disparities are reflected through variables such as income, education and health. This research makes use of an analytical regionalization method that seeks to contribute to the reduction of disparities between the municipalities of the state through their spatial grouping by optimizing criteria; likewise, to contrast the proposed regionalization, other alternatives such as a cluster-type regionalization and the traditional regionalization that already existing in the state are evaluated through the multicriteria analysis method. The analysis of the results shows that the proposed regionalization contributes to the reduction of disparities in economic development, also with the grouping of the created regions a positive spatial dependence between the municipalities is originated and the disparity between the regions.

Economic Development, Regionalization, Spatial Analysis

Incidence of the COVID-19 Pandemic in the family economy of the toast producers in Huarumbo, San Pedro Mixtepec, Oaxaca Mexico (2019-2020)

Incidencia de la Pandemia COVID-19 en la economía familiar de las productoras de tostadas en Huarumbo, San Pedro Mixtepec, Oaxaca México (2019-2020)

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Abstract

In this research, it is considered that the main problem faced by the 52 micro-enterprises of women producers of toast in Huarumbo, San Pedro Mixtepec, Oaxaca in Mexico, in the period 2020-2021, is the decrease or loss of their subsistence income, leading them to remain weakly in the market, which affects the social welfare of their families. This problem is considered a product of the COVID-19 pandemic and the economic crisis generated, as well as the Mexican neoliberal economic model that no longer responds to the well-being of the majority of society, but on the contrary, contributes to inequalities of the regional development; and on the other hand, due to the inefficient model of traditional individual organization in the production and sale of toasts, which limits the obtaining of income. The objective was to carry out a strategic analysis (SWOT) of the rural producers through field work, to arrive at the identification of a strategy that improves the organization of their economic activity. The results of the analysis made it possible to determine the existence in the external environment of four threats and six opportunities; meanwhile, in the internal environment, four strengths and six weaknesses were appreciated. Based on this, a strategic objective, a general strategy and six specific strategies were established. The final conclusion establishes as necessary to promote the formation of a Cooperative under the social and solidarity economy approach for the 52 toast producers, in order to enhance their strengths and reduce their weaknesses, in the face of a hostile and threatening external environment.

COVID-19 pandemic and family economy, Strategic analysis, Toast producers

Micro and small enterprises and their impact on external financing

La micro y pequeña empresa y su impacto ante el financiamiento externo

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Abstract

The present research is carried out with the purpose of analyzing what are the sources of extrabank financing of micro and small enterprises, the study was developed through a statistical analysis to present the failures of the financial system, which have an effect on the participation of the directors of micro and small enterprises in extrabank loans.In this research the participants that were studied were the micro and small companies of the commercial sector of the municipality of San Martin Texmelucan, according to the SIEM there are 1127 registered companies that were taken as a base, of which 45% are commercial, 30% of services and the rest are industrial.The failures of the demand of the financial system, based on descriptive statistics and means, it can be perceived that the most noticeable difference appears in Failure 4: Mismanagement of resources, in Failure 2: Self-exclusion, and Failure 3: Risk aersion, and that these three failures have a significant effect on extrabank financing among the directors of MSEs.

MyPe, Extra-bank financing, Financial decisions

The subcontracting of specialized services or the execution of specialized works by socially responsible companies versus labor outsourcing

La subcontratación de servicios especializados o de ejecución de obras especializadas por parte de las empresas socialmente responsables versus el outsourcing laboral

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Abstract

Socially responsible companies are economic entities that know their tax obligations, serving them correctly and in a timely manner. The prohibition of outsourcing as established in art. 12 of the LFT and the permission of specialized services or execution of specialized works of art. 13 of the LFT is the link by which a company that provides specialized services must act ethically against the third parties involved.The prohibition of outsourcing has been a step forward in the face of the relaxation in terms of contributions and contributions related to subordinate work relationships. However, it is necessary to thoroughly review if this intention is carried out in accordance with current legislation and procedures regarding the contracting of specialized services by the different regulatory bodies such as the Secretary of Labor and Social Security, among others. Objectives.- Identify the opportunity to be a socially responsible company in the face of specialization services or execution of specialized works versus the prohibition of outsourcing. Methodology. Analysis of current legislation on outsourcingbjetivos

Socially responsible companies, Labor outsourcing, Specialized services

Digital Platform as a Strategy for Economic Activation

Plataforma Digital como una Estrategia ante la Activación Económica

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Abstract

The development of new technologies allows companies to join new markets and therefore helps to achieve its inclusion.The problem is that not all companies have the possibility to develop appropriate strategies or implement them.This paper addresses the problems that SMEs in the region of San Martín Texmelucan have, to develop and implement strategies based on current technologies, and through them obtain positioning and permanence of their establishments, through the study and analysis of the main problems that affect these companies, an interactive tool is presented that will increase sales in small businesses, which allow to know the advantages of being able to sell through electronic commerce in the state of Puebla. Unfortunately, not all companies have the possibility to develop appropriate strategies or implement them.

Trade, Merchant, Product

Educational games as a strategy for teaching and learning Accounting

Juegos didácticos como estrategia para la enseñanza y aprendizaje de la Contabilidad

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Abstract

Throughout the history of education, tools or mechanisms have been used for student learning, which is why educational institutions have not only focused on increasing their use, but also on updating the way and means they use to to teach. These institutions are also concerned with innovating and generating didactic tools, so that students can have the means of support that allow them to obtain new knowledge or reinforce those acquired in the classroom.In the present work, the design of a simulation kit or sets of support means is presented to carry out learning activities in an individual or group context, for the subject Introduction to Financial Accounting of the Public Accountant career of the National Technological Institute of Mexico , San Martín Texmelucan campus (ITSSMT). The methodology used was a non-experimental design, the variables in question were not manipulated, with a descriptive study to identify and design the content of the kit, a qualitative approach, having as object of study the needs of the students of the Public Accountant career ITSSMT, to which the survey for field research was applied.

Learning, Accounting, Games

Procedure for the elaboration of institutional policies on university social responsibility

Procedimiento para la elaboración de políticas institucionales de responsabilidad social universitaria

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Abstract

It is essential to make knowledge explicit in a clear way so that it can last and be passed on for the benefit of future generations. In reference to the establishment of institutional policies on University Social Responsibility (USR) in the institution under study, there are still areas of opportunity, which is why the objective of this work was established as a clear procedure for creating institutional public policies on USR, which will serve to detect needs and propose appropriate policies that will influence or contribute to the development of the various dimensions of USR in the institution. A mixed type of research was used, gathering information from various bibliographical sources and from teachers from different faculties that allowed to validate that the proposed procedure is correct, the approach was qualitative, and observation and dialectics were used as a research technique. The study was carried out by proposing the procedure derived from documentary research, own experience and discussion with teachers who participated in the exercise of drawing up proposals for institutional public policies using the procedure in question to corroborate its effectiveness. The main result of the work was to establish the procedure for the development of institutional policies on USR with their respective techniques and instruments, which will help to develop institutional policies and contribute to the implementation of USR in the institution under study, and in the medium term, to obtain distinctions from national and international organizations in this area.

Procedure, Institutional policies, University social responsibility

Influence of job satisfaction and training on individual performance of microfinance advisors in Sonora and Chiapas, Mexico

Influencia de la satisfacción laboral y capacitación en el desempeño individual de los asesores de las microfinancieras en Sonora y Chiapas, México

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Abstract

Objective. Measure whether job satisfaction (JS) and the training of advisors (TA) influence the individual performance of advisors (IPA) of microfinance institutions to identify areas of opportunity and determine solutions so that the performance is as expected by managers. Methodology. This research was carried out with microfinance institutions located in Tuxtla Gutierrez, Chiapas, as well as in the south of the State of Sonora, in the municipality of Ciudad Obregon. This study is quantitative, exploratory, correlation type , non-experimental, using the SPSS and Smart PLS Systems to explain the results. Contribution. In microfinance institutions, a very important point is the training that the advisors have, so that, in turn, they can maintain a good performance in the area they work and thus meet the goals and objectives of the microfinance institution to which they work and be able to offer a good service to the borrowers who go to the offices to request a microcredit, most of them being highly vulnerable people in their economic situation; Being able to involve the borrower in decision-making with the assurance that he can understand the risks and benefits that he will have with each microcredit he requests.

Job satisfaction, Advisors, Microcredits

5 Agricultural Sciences and Biotechnology

Design, construction and testing of a floating hood biodigester prototype for municipal waste organic waste

Diseño, construcción y prueba de prototipo biodigestor de campana flotante para residuos orgánicos de rastro municipal

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Abstract

This paper documented the design, construction and operation test of a floating hood biodigester prototype, using organic residues (ruminal content, blood, bovine excreta and viscera) from the municipal trail of Ciudad Valles, S.L.P., with the purpose of generating biogas. The components of the biodigester system considered were: loading duct, concrete biodigester tank, biogas pipeline, floating hood, gas reservoir, discharge duct and discharge tank. A biodigester with storage capacity in the 0.178 m^3 floating hood was designed for a 30-day trial operation and storage of 0.120 m^3 of organic waste mixture in the biodigester tank. As of day 17 of operation the daily average of biogas generated was 0.1801 m^3. The composition of the biogas at day 30 of operation, showed a content of 59.4% of CH_4. When performing the flame test, an intense blue coloration was obtained, which indicates that the biogas produced has a high calorific value that will allow heating and flammability.

Biodigester, Floating hood, Organic waste, Municipal trail

Physicochemical analysis in *Averrhoa carambola* L., var. Golden star and Arkin, in two post-harvest periods

Análisis físico-químico en *Averrhoa carambola* L., var. Golden star y Arkin, en dos estadios post-cosecha

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Abstract

Golden Star (GS) and Arkin (Ar) are important varieties of carambola fruits cultivated in México. Fruits were collected in a plantation of Jalisco and their physicochemical characterization was performed either in fresh or lyophilized fruits in two post-harvest time-points: immediately after harvest (IH-0) and 10 days post-harvest (PH-10), at room temperature. In IH-0, in GS the content of starch, glucose and total reducing sugars (TRS) was higher, while fructose was reduced. At PH-10, the size of GS fruits decreased, whereas an increase in total soluble solids and acidity in Ar fruits contrasted with a reduced pH and TRS content. Non-structural carbohydrates (NSCs) increased, from IH-0 to PH-10 in both varieties. Pectinolytic activity was highest in GS and Ar at DC-10, as was amylolytic activity. However, both activities were higher in Ar. Lyophilization significantly decreased the protein and starch contents, particularly in PH-10 fruits, whereas NSCs increased considerably. These results indicated a contrasting post-harvest behavior between the two varieties. The reported findings could be used to improve post-harvest management of carambola fruits.

Carambola, lyophilization, Post-harvest ripening

Yield and stability in synthetic maize varieties for the humid tropic in Mexico

Rendimiento y estabilidad de variedades sintéticas de maíz para el trópico húmedo de México

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Abstract

Synthetic maize varieties present advantages in adaptability, they can be used for several planting seasons, without affecting the yield and is easier the seed production. Thus, with the main objective of knowing the yield and agronomic traits of synthetic maize varieties for the tropic, during 2013 to 2018 there was conducted an experiment in Cotaxtla and Carlos A. Carrillo in Veracruz and Huimanguillo in Tabasco state locations. The experiment was distributed in complete blocks at random design with 21 entries and three replications in plots of two rows 5m long and 62,500 pl ha^{-1}. The agronomic traits were: Grain yield, days to tassel and silking, plant and ear aspect and sanity, lodging, bad husk cover and ear rot. From the combined analysis for yield, there was found high significant differences for Varieties (V), For environments (E), and for the interaction VxE, and a coefficient of variation of 16.20%. The Carlos A. Carrillo, Ver., location in 2016B, recorded the highest yield with 6.94 t ha^{-1}. The best five synthetics at 0.05 of probability were: VS-536, Synthetic 2B, Synthetic 5B, Synthetic 2C and Synthetic 11C.

Synthetic, Maize, Varieties

Physiological Effects of Hyperprotein Diets with the Addition of *Eisenia foetida* in Broilers. Proposal for a Model for Heart Disease

Efectos fisiológicos de las dietas hiperproteicas con la adición de Eisenia foetida en pollos de engorde. Propuesta de modelo de cardiopatía

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Abstract

Proposing animal models that allow predicting results in humans becomes critical when the analogies in physiology between both entities are reviewed. With regard to heart disease, the heart rate in humans is more similar to that of chickens than that of the mouse, rat or other mammalian models generally used to study this disease. In the present work, the ethology on the attraction of chickens to earthworms as a food source was reviewed, in addition hematological, organ and urological parameters were measured in chickens fed with double and triple the protein percentage supplied with *Eisenia foetida* live added to the feed. commercial for the Cobb500 line. The results show a marked attraction depending on the nutritional status of the birds for *Eisenia foetida* and differences in hematological parameters, but not for urological parameters. The morphological characteristics of the heart showed a clear association between three times the protein load in the food and cardiac damage in 2 of 7 animals fed during 7 weeks of study. The present work represents the first contribution with the animal model approach in chickens to study cardiac damage and its possible prediction for humans.

High protein diet, *Eisenia foetida*, Heart disease

PLA2A gene from *Arabidopsis thaliana* in response to infection by *Ustilago maydis*

Gen *PLA2A* de *Arabidopsis thaliana* en respuesta a la infección por *Ustilago maydis*

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Abstract

In this work, *U. maydis-Arabidopsis* pathosystem was used to evaluate the *PLP2A* Arabidopsis gene roll in response to *U. maydis* infection. For this, both wild-type and *pla2a* mutant plants were inoculated with a haploid strain of *U. maydis*, and the progress of the infection was followed, results show that transcript plays an important role in the establishment of the infection being evident in the mutant plant compared to wild-type plants. On the other hand, the orthologous gene was found in corn, the natural host of *U. maydis*, with 69% identity to the *AtPLA2A* gene. The *PLP2A* gene expression was analyzed by RT-PCR assays and the results showed that this gene is induced from the first day after inoculation, the transcript increases as the infection progresses; this supports the theory that the transcript *AtPLA2A* is involved in the mechanisms of resistance and susceptibility to the pathogen. The use of Arabidopsis has made it possible to understand the defense responses in the plant and the pathogenic process of *U. maydis*, therefore, the results obtained can clarify the role of *PLA2A* in a comparative and integrative way in host and non-host plants of *U. maydis.*

***U. maydis*, Arabidopsis, Corn**

Production and Effects of Green Tea Kombucha with Blueberry and Orange Blossom Honey without caffeine as probiotic inhibitor of pathogenic bacteria

Producción y efectos de kombucha de té verde con arándano azul y miel de flor de azahar sin cafeína como probiótico inhibidor de bacterias patógenas

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Abstract

Kombucha is a probiotic drink of Asian origin, whose symbiotic relationship between acetic bacteria and yeasts provides a wide range of compounds with antioxidant and antimicrobial power (against Gram-negative and Gram-positive bacteria); thus, improving digestion and preventing chronic diseases. Blueberry (*Vaccinium corymbosum*) of the *Ericaceae* family is one of the most studied and used fruits due to its high antioxidant benefits. In turn, orange blossom honey is one of several products rich in flavonoids obtained from the *Citrus sinensis* plant. Due to the high amount of phenolic compounds in these products, a homemade kombucha based on blueberry and orange blossom honey was developed to increase the beneficial properties of this probiotic, generating a value-added product. First, the tea fungus (SCOBY) was obtained in a caffeine-free medium of green tea and white sugar, through a process called "First fermentation". Then we performed a "Second fermentation" by adding the fruit and honey, giving it flavor and increasing its antioxidant properties. Finally, we tested it pleasant taste by means of a sensory evaluation of 30 people, which was statistically analyzed.

Kombucha, Caffeine-free, Green tea, Antioxidant

Making "Gluten free" cauliflower *(Brassica oleracea var. botrytis L.)* flour to make tortillas with linaza *(Linum usitatissimum)* and chía *(Salvia hispánica)*

Elaboración de harina de coliflor *(Brassica oleracea var. botrytis L.)* "Libre de gluten" para realizar tortillas con linaza *(Linum usitatissimum)* y chía *(Salvia hispánica)*

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Abstract

The current interest in the ketogenic diet provides the industry with the opportunity to develop new and better products, such as gluten-free foods for celiac patients and low-carbohydrate foods for overweight people, which in turn help prevent diseases that this provocative suffering. The tortilla is a globalized food in the daily diet, which makes it possible to add alternative ingredients. The objective of this work was to make cauliflower flour to make tortillas with flaxseed and chia with low carbohydrate content to verify if it is feasible as a daily food for those suffering from celiac disease, incorporate them into the ketogenic diet and in turn prevent the diseases caused by being overweight. For this purpose, tortillas with a diameter of 12 cm. and a thickness of 1 mm. were made with 50% cauliflower flour, 25% powdered chia and 25% powdered flaxseed.

Ketogenic diet, Cauliflower, Gluten-free, Flour, Tortillas

Chihuahuan Desert Ornamental Cactaceae Seed Anatomy

Anatomía de Semillas de Cactáceas Ornamentales del Desierto Chihuahuense

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Abstract

The seed anatomy of eight species of ornamental cacti from the Chihuahuan desert was described, germplasm in the process of long-term conservation in the Germplasm Bank of the National Center for Genetic Resources of INIFAP; different qualitative, quantitative and pseudo-qualitative aspects were tested for the characterization of the seed, likewise it was supported with an X-ray equipment. The shape of the seed was varied as well as the size, probably associated with the ecological conditions in which species are distributed; X-rays provide important information on the development and condition of the embryo, however, it is not indicative of the viability of the seed.

Anatomy, Seed, Characteristics

6 Engineering

COVID-19 Tracking Mobile Application at ITCG

Aplicación Móvil de Rastreo COVID-19 en el ITCG

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Abstract

Objectives: Implement a mobile application to control COVID-19 in all its variants, containing or reducing the spread of the virus during the return to face-to-face classes at the ITCG.Methodology: The project was developed in Android Studio using different libraries and technological resources. You have access to a web server with a MySQL database. The application allows scanning the QR code of the visited site from the mobile application, reporting a positive case and vaccine reactions, monitoring any unusual adverse effects, as well as receiving notifications via SMS.Contribution: Contain the advance of the virus, avoiding saturating health systems, monitoring users in the event of any eventuality. The application was distributed to the student community of the Technological Institute of Ciudad Guzmán (ITCG) during the application of the first dose of the AstraZeneca vaccine, to monitor any symptoms, as well as positive cases during the return to face-to-face classes.

COVID-19, Mobile app, Tracking

Remote perception and image processing for the management of sugar cane crops

Percepción remota y procesamiento de imágenes para la gestión de cultivos de caña de azúcar

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Abstract

This research work shows that with the use of remote sensing technology it is possible to more effectively fulfill two of the purposes pursued by farmers in the field; manage crops more efficiently and include environmental care in decision-making.Specifically, remote sensing is applied in the context of precision agriculture through geographic information systems (GIS), unmanned aerial vehicles (UAV), multispectral sensors that capture the reflectance of the infrared band of the light spectrum (for interpretation of the biochemical state of the crop), global geopositioning systems (GPS), among others. This study limits the use of this technology to the processing of multispectral images obtained by aerial photogrammetry, and its subsequent treatment for the generation of orthoimages, the calculation of the NDVI vegetation index and the classification of land cover by clustering.Finally, the effect of classification with RGB and multispectral images is analyzed.

Remote sensing, Clustering, GIS, UAV, NDVI

Effects of color in humans generated by led lighting systems

Efectos del color en seres humanos generados por sistemas de iluminación led

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Abstract

This research evaluates the effects of color in humans generated by LED lighting systems. This evaluation allows us to know the different parameters that these systems generate, such as: the temperature and color of light suitable for human vision and thus be able to implement them in LED lighting designs for work areas. Having an adequate lighting system contributes to visual health and safety by avoiding work accidents. Each color has a different percentage of light reflection and in the same way each color affects us optically and psychologically by causing different sensations and perceptions in human beings such as visual fatigue, exhaustion, eye disorders, lacrimation, irritation, stress, migraines and even impaired vision Taking care of visual health is of vital importance. The methodology for evaluating lighting designs will be with NOM-030-ENER-2012. The contribution of this research will be to know the optimal colors and color temperature of light to use in LED lighting systems and to help lighting system designers in the selection of suitable LEDs and area colors that contribute to the visual health of humans

Led lighting design, Visual Health, Color psychology

Characterization of adobe bricks used in developing countries: Mexico as a case of study

Caracterización de ladrillos de adobe usados en países en desarrollo: México como caso de estudio

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Abstract

In Mexico adobe masonry is a traditional building material common in rural areas with low economic development and a high degree of marginalization. In addition, a growing interest in adobe masonry is noticed in two ways: for rescuing the heritage and as a rediscovered environmentally friendly building material. The problems are found of how to carry out the conservation works of the great built heritage with this material, as well as the lack of skilled people at all levels, from designer to masons, because it is a forgotten technique. Hence, some recent investigations about the obtention of adobe mechanical properties and characterization of adobe bricks, including earth blocks, have been performed. This article investigates experimentally destructive and nondestructive tests used for this purpose, especially elastic mechanical properties, considering new sensors, systems and different techniques has led to the inspection of adobe bricks. The results show, compared destructive with nondestructive methods, a good correlation between both techniques. This study contributes towards a better understanding of the elastic mechanical properties of adobe bricks built in Mexico, considered as a developing country.

Adobe masonry, Destructive tests, Nondestructive tests

Development of a practical module created with 3D printing for the education and training of students in the oil area maintenance career

Elaboración de un módulo práctico creado con impresión 3D para la formación y capacitación de alumnos en la carrera de mantenimiento área petróleo

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Abstract

This article is based on an experience carried out in the classroom for the drilling of wells in the Oil Area Maintenance career. The creation of this practical module was carried out thanks to the design and 3D printing and its objective is to motivate in the search for new teaching strategies using technology that is currently available, with this module it is intended that the student visualize the process to follow for the correct assembly of a preventive safety system used in the oil and gas industry in order to make classroom classes more dynamic and practical and make the process easier to understand as opposed to just looking at images on slides which is the most common method of teaching for a career that is new to an institution. The contribution of this method in teaching and learning is reflected through the practices and the exams that the students take and it is demonstrated that it is no longer just about memorizing a process, but about knowing the why of the steps to follow the process.

Pla, 3D Printing, Preventor

Innovative process of a food supplement made from oregano bagasse. "NUTRIOREG"

Proceso innovador de un suplemento alimenticio elaborado a base del bagazo del orégano. "NUTRIOREG"

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Abstract

The South Central Region of Chihuahua is a highly agricultural and livestock area. It has 41,900 hectares of non-timber forest resource (oregano) (Alarcón, 2005), which is processed and generates waste up to 1,470.17 tons per season cycle, which do not take advantage of its economic and nutritional benefit. The niche of opportunity was born here where it was found that the oregano residue contains 16.44% of protein per 100 g according to studies at the Center for Research in Food and Development of Delicias (CIAD), attached to CONACYT, and in the laboratory of the company Alimentos Concentrados de Delicias. The proportion that is generated from this waste is very rich, it is considered as an area of commercialization opportunity. In this region there are 257 potential clients according to SAGARPA (2017) dedicated to raising cattle. As quoted by Almeida G, (DIGAL 2018) specified that 8363 livestock production units participate directly in the dairy activity with a daily volume of 3,000,000 liters of milk. Of the five dairy basins in the state, Delicias is the most important, therefore, there is the opportunity to establish the NUTRIOREG company as a producer of concentrated feed supplement for livestock.

Innovation, Oregano residues, Nutrioreg

Design and simulation of a piezoelectric transducer by finite element

Diseño y simulación de transductor piezoeléctricos por elemento finito

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Abstract

One of the problems encountered in the manufacture of microstructures (MEMS) is the presence of residual stress caused by high temperatures during the manufacturing process.Residual stress generates deformation (ε) in materials, which consists of fractional changes in their dimensions (linear, surface or volume). The application of amorphous materials in the manufacture of MEMS is carried out at a lower temperature than those used with Polysilicon, so it is an alternative to reduce residual stress. The objective of the work is to analyze the mechanical behavior of thin films of amorphous Silicon germanium (a-SiGe).The analysis is carried out through the behavior of springboard type resonant structures and using the simulation of the finite element method (FEM). The resonance frequency of a trampoline-type structure depends only on its geometric dimensions, its density, and its Young's modulus. The simulation results show that the behavior of the resonance frequency and the Young's Modulus of thin films of a-SiGe, placed on a trampoline-type structure changes linearly whit Germanium content.

ANSYS, Piezoelectric, Mechanical vibrations

Analysis of Postural Geometric Ergonomic Risks and their impact on the Productivity of Manufacturing Industry Workers

Análisis de Riesgos Ergonómicos Geométricos posturales y su incidencia en la Productividad de Trabajadores de la Industria Manufacturera

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Abstract

Currently, technological changes and innovations are very dizzying, which also implies a constant update in work systems. The case addressed is a manufacturing company where the staff has increased disabilities and absences with the change of product; they claim to have had accidents due to pain in the shoulders, arms, legs and / or back. This has had an impact on health, productivity and profits. The objective of the present study was to identify if the conditions of the job and the procedures favor the presence of occupational diseases DTA's (Cumulative Traumatic Disorder), in the operators; as well as studying the behavior of risk factors associated with inappropriate postures, handling loads and their interrelation to determine the effect on the health of exposed workers and their incidence on productivity. The applied methodology was an analysis of the Work Station in reference to the Anthropometry and Goniometry of the angular movements of two representative workers of the use of tools and load handling respectively. The Ergonomic methods applied were the RULA Method for postures and flexions giving a value of 7 (Maximum) and FCD for lifting a value of 3 (Maximum). The results indicated high risk for the two workers with the need for a redesign of the work station and the procedures to preserve the health of the workers since there are threats of deterioration both of a psychosocial and physical nature. It is necessary to establish an Ergonomic Plan of preventive action with emphasis on biomechanical and environmental factors.

Work station, DTA's, Risk

Robust linearization scheme by structural state feedback for a quadrotor

Esquema de linealización robusta por realimentación de estado estructural para un cuadricóptero

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Abstract

In this work a feedback linearization technique is proposed, to carry it out to linearize the dynamic model of the quadrotor, a change of variable is introduced that maps the nonlinearities of the system into a nonlinear uncertainty signal contained in the domain of the action of control and is applied to the dynamic model of the quadrotor. To estimate the nonlinear uncertainty signal, the Beard-Jones filter is used, which is based on standard state observers. To verify the effectiveness of the proposed control scheme, experiments are carried out outdoors to follow a circular trajectory in the (x, y) plane. This presented control scheme is suitable for unmanned aerial vehicles where it is important to reject not only non-linearities but also to seek the simplicity and effectiveness of the control scheme for its implementation.

Linearization, Trajectory tracking, Quadrotor aircraft

Characterization and simulation of rubber derived from tire recycling as a proposal in the development of a solar heater

Caracterización y simulación del caucho derivado del reciclaje de neumáticos como propuesta en el desarrollo de un calentador solar

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Abstract

The present work was developed under the experimental procedure to verify the thermal potential of rubber derived from tire recycling (Pannucharoenwong et al., 2016) (Norambuena-Contreras et al. 2017) with the aim of characterizing the rubber material, to Through NOM-117-SSA1-1994 (SSA, 1995), to know its properties and components that this material possesses and to be incorporated in the design of a prototype of solar heater as a substitute for materials such as glass or copper, incorporating Recycled rubber, as a suitable material for the elaboration of this product, the solar heater design proposal was also subjected to a thermal simulation through SolidWork 2018 software to measure its behavior under thermal conditions. Contributing to the research line of recycled rubber in its thermal behavior and heat transfer potential, thus being a substitute in an efficient product, such as the water heater, in different homes.

Rubber, Simulation, Solar heater

Design and automation of CNC milling machine for the machining process of printed circuits

Diseño y automatización de una fresadora CNC para el proceso de mecanizado de circuitos impresos

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Abstract

This article describes the design and automation of a CNCmilling machine for the machining process o f printed circuitboard with THT (Through Hole Technology) technology. Aswell as the use of one ardui no to control the actuators ofdisplacement of the three axes (X, Y, Z) of the CNC machine.Describe the application of manufacturing in the area ofelectronics to facilitate the design and construction of cards electronic and the extensive application of the prototype inthe materials processing industry, also explai ned in detailthe advantages and disadvantages that presents the use ofthe CNC technology regarding th e environmental impactcaused by electronic waste generated in the traditionaldesign process. Design of the prototype and the calculations necessary tocarry out the PCB manufacturing process as well as thed escription of the different stages of operation will be presented.

Milling machine CNC, Machining, Printed circuit, Automation, CAD

Design of a lettuce dryer machine for the company JASL TETLA

Diseño de una máquina secadora de lechugas para la empresa JASL TETLA

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Abstract

The development of agricultural production of horticultural services is growing in the company JASL TETLA, which is dedicated to the sowing, harvesting, washing, drying, packaging and delivery of vegetables. This company require the use of machinery to increase work productivity, which makes the acquisition of specialized equipment necessary. The purpose of the present work is to develop the design of a lettuce centrifuge machine that reduces the drying time, which is currently 30 minutes for approximately 20 kg of lettuce, the centrifugal system is the most suitable for the drying process but it was considered a variant on the traditional circular design. The analysis was carried out to determine the appropriate type of the machine's transmission system, determining the number of transmissions bands to be used and the power of the motor, due to the characteristics of the process and the environment where the material used in the machine will be worked is steel stainless AISI 304.

Centrifuge machine, Design, Transmission System

Web system of interviews for tutoring in high school

Sistema Web de encuestas para tutorías en Bachilleratos

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Abstract

Academic tutoring is one of the strategies implemented at different educational levels where students (tutors), teachers (tutors) and parents are involved, which aims to improve school performance, solve school problems and develop habits of study and work, contributing to the decrease in failure rates and school dropouts. Some techniques that help to identify if a student is going through difficult situations are interviews and tests that allow evaluating aptitudes, abilities and behaviors. That is why a web system is developed for the high school that allows supporting the different actors of the tutoring in storing and consulting the information provided, the system will be able to register users, subjects, groups, assign tutors, conduct interviews and tests, view the results obtained, write comments on students with school performance problems and allow reports on failure and dropout rates.

School tutoring, School dropout, Web system

Web System Reactiva TEC

Sistema Web Reactiva TEC

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Abstract

This article presents the development and application of a web system that allows the registration of data from small businesses, in order to publicize their products and services, as well as their opening hours, type of payment received, location, social networks and telephone. There are three types of users: the administrator, the business owner, and the customer. The SCRUM methodology is applied for its development. Only the Execution and Adaptation phases will be presented in this article.In addition, its improvements and application in businesses in the San Martín Texmelucan región are visualized, an MVC architecture (Model-View-Controller) and free development technologies were used.

System, Web, Economic

Development and evaluation of 3d virtual tours as a cognitive basis of chemistry laboratories at utsv

Desarrollo y evaluación de recorridos virtuales 3d como base cognitivo de los laboratorios de química en la utsv

GOMEZ-MANUEL, Esbeidy, DOMINGUEZ-CAMPOMANES, Margarita, ORTIZ-HERNÁNDEZ, Elena and KATT-MORALES, Luz Alondra

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Abstract

The objective of this article is to develop virtual tours in three dimensions (3D) of the Chemistry laboratories of the Technological University of the Southeast of Veracruz (UTSV). For its progress, it was carried out: analysis, selection, training, design, development and integration of software and hardware tools. The same ones that were necessary for the development of virtual reality on 3D modeling of the General Chemistry, Instrumental Analysis and Chemical Plants laboratories, achieving a product that would allow university students to be approached virtually, and thus be able to know the spaces and devices located in each laboratory, where it presents the description of the operation of each of the equipment, by means of multimedia effects accompanied by an avatar within the virtual tour. Finally, the final result was evaluated with a group of students with the support of the Chemistry teachers and knowledgeable about the laboratory spaces, where the degree of acceptance and perception was obtained as a consequence through a survey carried out.

Virtual Tour, 3D Modeling, Chemistry Labs 3

Web prototype "Pressus v1.0" for the detection of depressed young people: Psychometric analysis of reliability and validity

Prototipo web “Pressus v1.0” para detección de jóvenes depresivos: Análisis psicométrico de confiabilidad y validez

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Abstract

Depression, according to the World Health Organization (WHO), is a common and treatable affective mental disorder. Currently, it is the main public mental health problem, being the leading cause of suicide in the world and the fourth as disability, in relation to the loss of years of healthy life.In Mexico, the National Institute of Statistics and Geography (INEGI) indicates that 29.9% of the inhabitants over 12 years of age suffer some level of occasional depression and that in 2018 alone there were 6,370 suicides.The present work aims to develop a Web tool called Pressus, which, based on an evaluation instrument for depression, developed and validated by experts, allows to identify particularities of young people, associating them with depressive disorder, with the intention of support in the timely diagnosis of this.The results can be used by Institutions, psychologists or patients with this condition, to offer support strategies, channeling, timely treatment and follow-up.

Depression in young people, Web tool, Screening instrument

Strategies to promote university permanence in times of COVID-19

Estrategias para propiciar la permanencia universitaria en tiempos de la COVID-19

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Abstract

The research provides strategies that allow to promote school permanence at the Technological University of the Southeast of Veracruz (TUSV) during the period of confinement derived from the contingency due to SARS COV II. Information was collected from various sources: department of school services, tutoring and through a survey-type instrument with seventy questions, using the Likert scale and it was carried out to evaluate four tutorial areas experienced during the pandemic, such as: health, academic, socioeconomic, and personal. The survey was applied to 420 students out of a population of 1208, for which there is a level of confidence higher than 95%. Derived from the analysis of data on failure, monitoring of tutorials and tutorial areas, the diagnosis was made, generating a list of findings, derived from the above, strategies validated by a group of experts are proposed, such as: Establish an induction program for teachers and students, institutionalization of leveling courses related to the result of the entrance exam, creating the area of emotional support, Implementing technological tools for academic monitoring, establishing regularization groups, peer support, positive incentives for outstanding students, generating financial plans and establish a personal development program.

Strategies, Permanence, Desertion

A didactic platform for the study of Linear Quadratic Regulator (LQR) control for Trajectory Tracking of dc motor

Plataforma didáctica para el estudio del Regulador cuadrático lineal (LQR) para seguimiento de trayectoria en un motor DC

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Abstract

The main objective of this work is to show in detail the methodology to apply the Linear Quadratic Regulator (LQR) for Trajectory Tracking in an experimental way in a didactic platform which consists of a DC motor, the motor model is explained, and how the parameters were estimated experimentally and the validation thereofs. Results are shown applying the LQR control in simulation and experimentally.

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