Agricultural Engineering

TOPIC/ TITLE OF THE THESIS:
Model for the distribution of water in collective irrigation systems
DESCRIPTION:
The model will represent the land divisions and the elements of the irrigation system layout (conveyance elements, hydraulic structures, hydrants/turn-outs, etc.) and it will store the links between elements, their flow capacity and other relevant characteristics. Then the water circulation will be calculated based on the principle of the water balance accounting for capacity constraints. Previously, all water distribution modalities will be defined, from on-demand distribution to fixed rotation. Farm irrigation demand will be simulated based on a root zone soil water balance. Finally, the model will compute performance indicators.
PROMOTER:
Luciano Mateos, Instituto de Agricultura Sostenible (CSIC), Córdoba, Spain: ag1mainl@uco.es
LANGUAGE(S)
English
KEYWORDS
Irrigation, modelling
REQUIREMENTS
Basic knowledge on irrigation hydraulics, knowledge on irrigation management, ability on computer programming.

TOPIC/ TITLE OF THE THESIS:
Modelling the hydrological behaviour of a large olive orchard catchment with a spatially distributed model
DESCRIPTION:
The aim of this work is to identify a suitable model for predicting the water balance in a large catchment whose main land-use is olive orchard. Climatological data series, daily runoff flow, and soil and topographical maps will be well-characterized in order to explore the results and limitations of different spatially distributed models. The results will allow identifying a suitable model to describe the hydrological behaviour of the catchment, the most appropriate temporal scale to carry out the simulations as well as the analysis of the long-term scenarios that will assist in taking environment management decisions.
PROMOTER:
Encarnación V. Taguas (University of Cordoba (evtaguas@uco.es) and Luciano Mateos (IAS-CSIC; ag1mainl@uco.es)
LANGUAGE(S)
English
KEYWORDS
Hydrological model, catchment scale, olive orchard land-use.

TOPIC/ TITLE OF THE THESIS:

Hypersectral, multispectral and thermal remote sensing methods for stress detection in crops

DESCRIPTION:

Facilities at QuantaLab laboratory at the Institute for Sustainable Agriculture (IAS), National Research Council (CSIC) include unmanned aircraft platforms for high-resolution imagery acquisition over crops under stress conditions. Methods for stress detection are based on indices developed using hyperspectral, multispectral and thermal imagery acquired over study sites where field validation is conducted. The prospective candidate will learn methods to process the imagery, apply algorithms for the estimation of biophysical and biochemical constituents, and perform validation methods using data acquired in the field. Indicators are based on chlorphyll, xanthophyll, carotenoid and anthocyanin pigment content, leaf area index and fluorescence emission from the vegetation.

PROMOTER:

Pablo J. Zarco-Tejada
pzarco@ias.csic.es
http://quantalab.ias.csic.es

LANGUAGE(S)

English

KEYWORDS

remote sensing, stress detection, pigment content, hyperspectral, multispectral, thermal.

TOPIC/ TITLE OF THE THESIS:

Carbon balance of citrus trees

DESCRIPTION:

The carbon balance (photosynthesis and respiration) of young citrus trees will be measured in the field using chambers. The data will be used to calibrate a simple model of canopy assimilation, conductance and dark respiration. Model predictions of assimilation and transpiration will serve to analyze the productivity of citrus orchards under different climatic scenarios.

PROMOTER:

Francisco J. Villalobos (ag1vimaf@uco.es)

LANGUAGE(S)

English

KEYWORDS

Carbon, photosynthesis, respiration, model

TOPIC/ TITLE OF THE THESIS:

Spatial explicit model for weed population dynamics

DESCRIPTION:

Spatial explicit modelling provides a tool from which spatial pattern in habitat suitability, seed dispersal and plant population dynamic can be integrated in a spatial frame at different spatial scales (from field to landscape level) to determine mechanisms of invasive colonization, identify potentially vulnerable areas, and optimize management strategies for weed control. The objective is to develop spatially explicit population models (a two-dimensional lattice map model of R x R spatial cells) to Avena sterilis (wild oat) and use the model to explore different management scenarios.

PROMOTER:

Dr. Jose Luis Gonzalez-Andujar (andujar@ias.csic.es)

LANGUAGE(S)

English

KEYWORDS

population dynamic, weed management, spatial model

TOPIC/ TITLE OF THE THESIS:

Study of the interaction between biotic and abiotic stresses in plants

DESCRIPTION:

This project will address several aspects of the interaction between biotic and abiotic stresses such as their effect in plant physiology, synergic and antagonic metabolites and common pathways involved in the resistance to both stresses. Biotic stress studied will be mainly carried out on fungal pathogens and the abiotic stress on drought and high light intensity.

PROMOTER:

Elena Prats (elena.prats@ias.csic.es)

LANGUAGE(S)

English or Spanish

KEYWORDS

biotic-abiotic interaction, disease resistance, fungal pathogens, drought, oxidative stress

TOPIC/ TITLE OF THE THESIS:

Signaling pathways during powdery mildew disease resistance in cereals

DESCRIPTION:

This project will study signaling molecules and pathways involved in powdery mildew disease resistance during the execution of different resistance mechanisms, in particular during papilla formation and hypersensitive response.

PROMOTER:

Elena Prats (elena.prats@ias.csic.es)

LANGUAGE(S)

English or Spanish

KEYWORDS

powdery mildew, reactive nitrogen and oxygen species, disease resistance, fungal pathogens, signaling, cell-wall defenses, hypersensitive response

TOPIC/ TITLE OF THE THESIS:

Identification and characterisation of mechanism of disease resistance in legumes

DESCRIPTION:

Dry pea (Pisum sativum) is the most widely grown grain legume in Europe and second-most in the world, being a versatile and inexpensive protein source for animal feeding. However, inconsistency or unpredictability of yields due to sensitivity to disease is a strong limitation to obtain reasonable and stable yields. We will search for sources of resistance to fungal diseases in pea covering several aspects:
1)Development and refinement of quick and reliable screening methods; 2) Identification of new sources of resistance; 3) Study of the stability of identified resistances; 4) Study of the components of resistance both macro- and microscopically. 5) Study of physiological components of resistance

PROMOTER:

Diego Rubiales (diego.rubiales@ias.csic.es)

LANGUAGE(S)

English or Spanish

KEYWORDS

legumes, disease resistance

TOPIC/ TITLE OF THE THESIS:

Analysis of the hydrological response of three small olive catchments in contrasting soils in Southern Spain.

DESCRIPTION:

The objective is to evaluate the hydrological and erosional behaviour of three (8 - 16 ha) catchments under olive cultivation in Andalusia using a dataset of 4 or 5 consecutive hydrological years. Standar hydrological analysis will be combined with information about soil, management and climate at the catchments to provide an estimation of the actual variability in erosion and sediment delivery at catchment scale in olive orchards in Southern Spain.

PROMOTER:

Jose A Gomez (joseagomez@ias.csic.es) and Dra. Encarnación V Taguas (ir2tarue@uco.es)

LANGUAGE(S)

English

KEYWORDS

runoff, erosion, olive catchment.

TOPIC/ TITLE OF THE THESIS:
Effectiveness of cover crops strips in reducing sediment and herbicides transports in live orchards.
DESCRIPTION:
The objective is to evaluate the effectiveness of cover crops strips in reducing sediment and herbicides transports in live orchards using a combination of simulated rainfall experiments and sediment tracing with magnetic iron oxides.
PROMOTER:
Jose A Gomez (joseagomez@ias.csic.es), Dra. Encarnación V Taguas (ir2tarue@uco.es) and Dra. Elena de Luna.
LANGUAGE(S)
English
KEYWORDS
olive, erosion, sediment, cover crops.

TOPIC/ TITLE OF THE THESIS:

Generation of hourly weather from daily data in Andalucia

DESCRIPTION:

Many models in agronomy and environmental sciences use hourly time steps which precludes their use for locations where only daily weather data are available. This problem may be solved by using disaggregating models, able to generate hourly weather series. This work will be devoted to testing and calibrating different disaggregation schemes for temperature, vapor pressure, solar radiation and wind speed in different locations of Andalucia using existing weather data.

PROMOTER:

Francisco J. Villalobos (ag1vimaf@uco.es)

LANGUAGE(S)

English

KEYWORDS

Weather, models, hourly data, temperature, radiation, vapor pressure, wind

TOPIC/ TITLE OF THE THESIS:

Modelling root growth of sunflower crops

DESCRIPTION:

OILCROP-SUN is a daily-step crop simulation model of development, growth and yield of sunflower. Simulation of root growth and functioning requires several improvements in the model as it does not include responses to soil compaction or flooding. This work will be devoted to increase our understanding of the response of sunflower roots to soil compaction using existing literature and specific experiments under controlled conditions.

PROMOTER:

Francisco J. Villalobos (ag1vimaf@uco.es)

LANGUAGE(S)

English

KEYWORDS

Sunflower, Helianthus annuus L., root growth, compaction.

TOPIC/ TITLE OF THE THESIS:

Mapping of genes/QTLs controlling resistance to diseases in pea

DESCRIPTION:

Breeding for resistance is the most efficient, economical and ecologically sound strategy to control diseases. The use of molecular marker linked to the genes controlling resistance is an useful tool for the selection of the resistant individuals in breeding programs avoiding the disadvantages of disease screenings. The student will develop genetic maps in pea populations segregating for resistance to diseases and will identify the genes/genomics regions involved in the resistance in these populations by QTL analysis (polygenic resistance) or Bulk Segregant Analysis (monogenic resistance).

PROMOTER:

Dra Sara Fondevilla (cr2foaps@uco.es)

LANGUAGE(S)

Spanish/English

KEYWORDS

genetic maps, QTLs, molecular markers, resistance to diseases, pea

TOPIC/ TITLE OF THE THESIS:

Protein S-nitrosilation in Pisum sativum in response to Erysiphe pisi.

DESCRIPTION:

Pea powdery mildew (Erysiphe pisi) causes important crop damage and yield losses of legumes. Upon pathogen infection complex signalling networks are activated in the plant in order to restrict pathogen development. These involve among other the regulation of metabolic enzymes which intricately arises in part from posttranslational modifications (PTM). Nitric oxide (NO) plays a major role in formation of defensive structures. We aim to dissect PTM of proteins occurring during plant defence responses in pea-E. pisi interaction. In particular we will focus in S-nitrosylation to determine the events through which NO transduces signals into cellular responses. To this purpose we will use Biotin switch methods to detection (Jaffrey et al. 2001) followed by purification of the biotinylated proteins. Differential proteins will be identified by mass spectrometry.

PROMOTER:

Dra Mª Angeles Castillejo (bb2casam@uco.es)

LANGUAGE(S)

English or Spanish

KEYWORDS

S-nitrosylation, pea powdery mildew, mass spectrometry

TOPIC/ TITLE OF THE THESIS:

Chemical investigation of phytotoxins produced by crop patogenic fungi.

DESCRIPTION:

Phytotoxins are secondary metabolites harmful to plants at very low concentration which can play an important role in the developement of the disease symptoms. They have proved to be a valid tool for screening plants for toxin insensitivity (disease resistance) and as probes of normal physiological plant function. The chemical nature of these metabolites range from low to high molecular weight compounds. The aim of the present thesis is to study the phytotoxins produced by strains belonging to Ascochyta and Botrytis sp. Fungi will be isolated from infected leguminosae, identified and growth in vitro. On the culture filtrate will be carried out the preliminary chemical investigation (extraction with solvents of increasing polarity at different pH, dialyses). Bioactive metabolites will be isolated by means of chromatographic tecnique (thin layer chromatography, high performance liquid chromatography) using a bioassay-guided fractionation.

PROMOTER:

Dr Alessio Cimmino (alessio.cimmino@ias.csic.es)

LANGUAGE(S)

English

KEYWORDS

phytotoxins, patogenic fungi, chromatography.

TOPIC/ TITLE OF THE THESIS:
Identification of novel defensive genes against the major biotic constraints of Pisum sativum

DESCRIPTION:
Pea cultivation is strongly hampered by the occurrence of the fungal pathogen Micosphaerella pinodes, causing important yield losses. Previous studies in our department identified new sources of resistance to these pathogens in a collection of wild relative of Pisum sativum. Here we propose to apply a cDNA-AFLP approach to characterise their underlying resistance mechanisms at molecular level and, in particular, to identify new genes involved in the defensive response of these resistant Pisum spp accessions.

PROMOTER:
Dr Nicolas Rispail (ge2ririn@uco.es)

LANGUAGE(S)
English or Spanish

KEYWORDS
Pisum sativum; parasitic plant; Micospaerella pinodes; Orobanche crenata; cDNA-AFLP; Resistance mechanism

TOPIC/ TITLE OF THE THESIS:
Improving performance of faba bean in the context of low-input systems by breeding and management

DESCRIPTION:
The research will be developed in the frame of an EU FP7 project and it will be focused in the development of specific and novel breeding approaches integrated with management practices to improve the performance, sustainability and stability of faba bean adapted to low-input systems. The specific goals are: 1. Identify traits specific for adaptation to low-input/organic conditions. 2. Develop the use of within-crop diversity to stabilise yield and quality in the face of current and increasing variation in low-input agriculture. 3. Compare the effectiveness of different breeding strategies under conventional and low input to set up optimal strategies for the production of cultivars suitable for low input farming taking into account the traits which are avoided in conventional breeding with special reference to traits related to the plant-pollinator interaction in order to develop pollinator friendly cultivars.

PROMOTER:
María José Suso (mjsuso@ias.csic.es)

LANGUAGE(S)
English

KEYWORDS
low-input, breeding, management, diversity, sustainability, performance, pollinator –friendly cultivars

TOPIC/ TITLE OF THE THESIS:

1. Genetic diversity in Fusarium oxysporum f. sp.dianthi populations.
2. Fenotipic characteristics and genetic factors associated to different virulence groups of Fusarium oxysporum f. sp. dianthi.
3. Quantification of defoliating and non-defoliating pathotypes of Verticillium dahliae in soil by RT-PCR

DESCRIPTION:

PROMOTER:

Dr. ENCARNACIÓN PÉREZ ARTÉS (eperezartes@ias.csic.es)

LANGUAGE(S)

English

KEYWORDS

Carnation, molecular diagnosis, olive, PCR, phytopathogenic fungi, races, vascular wilt, virulence factors.

TOPIC/ TITLE OF THE THESIS:

Analysis of the hydrological response of three small olive catchments in contrsating soils in Southern Spain

DESCRIPTION:

The objective is to evaluate the hydrological and erosional behaviour of three (8 - 16 ha) catchments under olive cultivation in Andalusia using a dataset of 4 or 5 consecutive hydrological years. Standar hydrological analysis will be combined with information about soil, management and climate at the catchments to provide an estimation of the actual variability in erosion and sediment delivery at catchment scale in olive orchards in Southern Spain.

PROMOTER:

Jose A Gomez (joseagomez@ias.csic.es) y Encarnación V. Taguas (evtaguas@uco.es)

LANGUAGE(S)

English

KEYWORDS

runoff, erosion, olive catchment

TOPIC/ TITLE OF THE THESIS:
Accuracy and use of high-resolution elevation data for catchment-scale research and applications.
DESCRIPTION:
The work aims at assessing the accuracy and explore possible uses of high-resolution topographical information (RTK-GPS) obtained during proximal soil sensing surveys in three small catchments (~10 ha). The possible sources of uncertainty in these data are identified and quantified using geostatistical tools, and the propagation of uncertainty in DEM-derived topographical indexes and drainage networks is evaluated. The results are expected to show under which circumstances high-resolution elevation data can be used to delineate sediment source and sink areas within the catchments.
PROMOTER:
Karl Vanderlinden (karl.vanderlinden@juntadeandalucia.es>) y Encarnación V. Taguas (evtaguas@uco.es)
LANGUAGE(S)
English
KEYWORDS
DEM, catchment, uncertainty, geostatistics

TOPIC/ TITLE OF THE THESIS:

Modelling the hydrological and erosive response of the olive orchard land-use at the microcatchment scale.

DESCRIPTION:

The aim of this work is to evaluate different models predicting runoff and soil losses such as AnnAGNPS and SEDD in three microcatchments of olive orchards where a data series of more than 5 years are available. The results will allow to describe the limitation of the models as well as the analysis of the larger temporal scenarios to take environmental decisions.

PROMOTER:

Encarnación V. Taguas (evtaguas@uco.es) y Jose A. Gómez (joseagomez@ias.csic.es) .

LANGUAGE(S)

English

KEYWORDS

DEM, catchment, uncertainty, geostatistics

TOPIC/ TITLE OF THE THESIS:

Analysis of complex turbulent flow phenomena using simple hydraulic approximations.

DESCRIPTION:

The water flow in rivers, open channels and hydraulic structures is frequently described with the Saint-Venant equations, which are constrained by highly restrictive hypotheses in order to simplify the solutions in practice. Nevertheless, the introduction of less restrictive hypotheses relating to the streamline curvature and the bed shear-stress law result in simple solutions with increased accuracy. In some cases, it is possible to obtain simple solutions for water flow in the presence of obstacles, like protruding rocks or emergent vegetation, that disturb the turbulent flow pattern. The purpose of this work is the analysis of the performance of these simple hydraulic equations when they are compared with more complete description of free surface flow using a numerical method such as the lattice Boltzmann model, an equivalent model to the Reynolds-Averaged Navier-Stokes (RANS) equations, so far not tested in hydraulic structures.

PROMOTER:

Juan Vicente Giraldez (ag1gicej@uco.es) University of Cordoba
Oscar Castro-Orgaz (oscarcastro@ias.csic.es) CSIC
Francisco J. Jimenez-Hornero (fjhornero@uco.es) University of Cordoba

LANGUAGE(S)

English

KEYWORDS

hydraulics, numerical models, free surface flow; turbulence

Topic/ Title Of The Thesis:

Plant responses to fungal pathogens: Botrytis pathosystems.

Description:

Promoter:

Jesús V. Jorrin novo (bf1jonoj@uco.es)

Language(s)

it is not a requisite and can be written in English, Spanish, French, and other European language.

Keywords

TOPIC/ TITLE OF THE THESIS:

Cation homeosthasis in Saccharomyces cerevisiae.

DESCRIPTION:

PROMOTER:

Jesús V. Jorrin novo (bf1jonoj@uco.es)

LANGUAGE(S)

It is not a requisite and can be written in English, Spanish, French, and other European language.

KEYWORDS

TOPIC/ TITLE OF THE THESIS:

Seeed development and germination in herbaceous and woody plants.

DESCRIPTION:

PROMOTER:

Jesús V. Jorrin novo (bf1jonoj@uco.es)

LANGUAGE(S)

It is not a requisite and can be written in English, Spanish, French, and other European language.

KEYWORDS

TOPIC/ TITLE OF THE THESIS:

Implication of phytopathogenic oomycetes in the decline affecting centennial cork oaks at Doñana National Park

DESCRIPTION:

Centennial cork oaks growing at Doñana are suffering a severe decline leading to their death. Different factors of decline have been pointed out: nesting wading birds inducing physical and chemical changes in the soil, lack of regeneration due to high herbivorous pressure, insect pests and diseases. Among fungal diseases already described in the park, some pathogenic oomycetes causing root rot appear as the most dangerous. The aim of the proposed thesis will be to clarify the role that these soilborne microorganisms are playing in the cork oak decline. Field sampling, isolation and inoculation of young oaks growing in clean or modified soil under greenhouse conditions will be conducted.

PROMOTER:

María Esperanza Sánchez Hernández, Lecturer in Forest Pathology and Main Researcher of one Project financed by the Spanish Ministry of Environment to study and prevent oak decline at Doñana National Park. ag1sahem@uco.es

LANGUAGE(S)

Spanish and/or English

KEYWORDS

natural parks, oak decline, Phytophthora, Pythium

TOPIC/ TITLE OF THE THESIS:

Chemical control of Plasmopara halstedii (downy mildew of sunflower)

DESCRIPTION:

The main topic is the research on the chemical control of Plasmopara halstedii, the causal agent of sunflower downy mildew. The effect of the seed treatment with phenylamides on the development of the disease, and the reaction of populations of the oomicete to this compounds will be investigated.

PROMOTER:

Dr. Molinero-Ruiz

LANGUAGE(S)

Spanish

KEYWORDS

Plant pathology, crop diseases, crop protection, soilborne pathogens, sunflower

TOPIC/ TITLE OF THE THESIS:

NIR based sensors for the quality control of products and processes.

DESCRIPTION:

The objective of this research topic is the development of knowledge and technology in the field of NIRS and hyper-spectral sensors, for the non-destructive and on-line inspection and control of the agro-foods products. The activities include the aspects related to the optimization of the instrumentation, the development of predictions models, based on quantitative and qualitative parameters, the development and use of advanced algorithms for modeling the data and the implementation of the spectral information in support decision systems.
In particular, the applications developed will be focused in animal feeding, Iberian pig products and fruits&vegetables.

PROMOTER:

Prof. Ana Garrido-Varo (pa1gavaa@uco.es, University of Córdoba-ETSIAM)
Prof. Dolores Pérez-Marín (dcperez@uco.es, University of Córdoba-ETSIAM)
Prof. José Emilio Guerrero-Ginel (pa1gugij@uco.es, University of Córdoba-ETSIAM)

LANGUAGE(S)

English

KEYWORDS

Near-Infrared Spectroscopy, NIR-imaging, quality control, process control

REQUIREMENTS

Basic knowledge of statistic and spectroscopy, quality control of agro-food products.

TOPIC/ TITLE OF THE THESIS:
Isolation, distribution and genetic diversity of entomopathogenic fungi from soils and phylloplane of Mediterranean agroecosystems: implications for pest control
DESCRIPTION:
Even if the soil has been known to be the most important reservois of entomopathogenic fungi (EF), recent findings point out the presence of their presence in the abaxial and adaxial surfaces of the leaves. The objective of the work is to evaluate the presence of EF in the soil and leaves of important Mediterranean ecosystems such as olive crops, "Dehesa" (Oak ecosystem), etc., under different crop management practices, and to understand the genetic relationship among isolates form the soil and from the leaves. Finally, we are interested on understanding whether there are some advantages or not in terms of virulence and toxicogenic activity when isoltes from the soil or from the phylloplane are selected for pest control.
PROMOTER:
Dr. Enrique Quesada Moraga. E.T.S.I.A.M. University of Cordoba.
LANGUAGE(S)
English
KEYWORDS
entomopathogenic fungi, pest control, virulence, insecticidal proteins, endophytism, genetic diversity

TOPIC/ TITLE OF THE THESIS:

NIR based sensors for the quality control of products and processes.

DESCRIPTION:

The objective of this research topic is the development of knowledge and technology in the field of NIRS and hyper-spectral sensors, for the non-destructive and on-line inspection and control of the agro-foods products. The activities include the aspects related to the optimization of the instrumentation, the development of predictions models, based on quantitative and qualitative parameters, the development and use of advanced algorithms for modeling the data and the implementation of the spectral information in support decision systems.
In particular, the applications developed will be focused in animal feeding, Iberian pig products and fruits&vegetables.

PROMOTER:

Prof. Ana Garrido-Varo (pa1gavaa@uco.es, University of Córdoba-ETSIAM)
Prof. Dolores Pérez-Marín (dcperez@uco.es, University of Córdoba-ETSIAM)
Prof. José Emilio Guerrero-Ginel (pa1gugij@uco.es, University of Córdoba-ETSIAM)

LANGUAGE(S)

English

KEYWORDS

Near-Infrared Spectroscopy, NIR-imaging, quality control, process control

REQUIREMENTS

Basic knowledge of statistic and spectroscopy, quality control of agro-food products.

Forestry Engineering

TOPIC/ TITLE OF THE THESIS:
Near Infrared Technology for quality control and traceability of intact fruits and vegetables.

DESCRIPTION:
The fruit producing and processing industry requires fast, non-invasive analytical methods for determining the quality of individual fruits. Internal fruit quality is defined by a number of attributes, including sweetness, firmness, and absence of defects; these attributes may vary considerably, even among individual fruits of the same variety. Near-infrared Reflectance Spectroscopy (NIRS) technology shows considerable promise for the non-destructive analysis of fruits, and is ideally suited to the requirements of the agri-food industry for on-site and on-line measurements for quality control purposes. Our research lines focus on applications of NIRS technology for characterising the major parameters that determine fruit internal and external quality, both during on-tree ripening and during postharvest storage and processing, as well as the technical challenges involved

PROMOTERS:
Mª Teresa Sánchez and Dolores Pérez Marín.

LANGUAGE(S)
English

KEYWORDS
NIRS, Non-destructive Analysis, Shelf-life, Quality, Traceability

REQUIREMENTS
Good levels of physics, mathematics, and food science

TOPIC/ TITLE OF THE THESIS: TWO DIFFERENT TOPICS

1. Forecasting water consumption in urban areas
2. Optimization of the distribution processes of perishable goods

DESCRIPTION:

1. Design an hybrid forecasting system using econometric tools, to solve practical problems of desaggregated/aggregated forecasts, towards an integration with business data bases
2. The distribution through a network of point of sales with random non homogeneous demand, present several challenges of planning of sales and estimation of the desaggregated demand, and the procedures to consolidate these set of demands with the global offer. The aim is to build a system that can tackle the planning of supply to each point of a network, with the implementation of different business policies

PROMOTER:

Prof. José Mª Caridad y Ocerin   ccjm@uco.es

LANGUAGE(S)

English/French/Spanish

KEYWORDS

1. Business forecasting, artificial intelligence, Econometric techniques, hybrid models
2. Optimization of distribution, perishable goods, conflicting interests

REQUIREMENTS

Courses in Statistics and Econometrics; computing with statistics/econometric software

TOPIC/ TITLE OF THE THESIS:
Multidisciplinary Study of the Almaden Mines
Virtual Reconstruction of Baeza during Renaissance period

DESCRIPTION:

PROMOTER:
Francisco Monte Tubío: ir1motuf@uco.es

LANGUAGE(S)
Spanish

KEYWORDS

REQUIREMENTS
Engineers with a good knowledge of Design and Computer Design are preferred