University of Crete

UCNET
Unit of Communication NETworking

A Short Profile
1./ The University of Crete at a glance

The University of Crete, established in 1973, is a public educational institution committed to excellence in research and teaching.

Education

The University of Crete aims for excellence in education in the degree programs offered at all levels: Bachelors (B.A, B.Ed, B.Sc, MD), Masters (MA, MSc), Doctoral (PhD). The University of Crete has 16 Departments belonging to 5 Schools (Philosophy, Education, Social, Economic & Political Sciences, Sciences & Engineering, and Medicine). Each of the University’s Departments offers an undergraduate programme. Postgraduate studies include 36 Masters Programs and doctoral education in all fields. Currently, over 16,000 undergraduates and 2,500 postgraduate students are enrolled at the University of Crete.

Research

Research and research training activities at the University of Crete are organized along the lines of the Divisions within each Department. Multi-disciplinarity and inter-disciplinarity are core characteristics in both basic and applied research at the University and are also reflected in the University’s postgraduate programmes, which further benefit from the outward looking academic environment built up over the last 30 years in Crete.

Besides the University of Crete, this environment contains the Institute of the Foundation for Research and Technology-Hellas, the Institute of Marine Biology, Biotechnology & Aquaculture, the University General Hospital, as well as other Higher Education Institutes in Crete, the Technical University of Crete the Technological Educational Institute and the Mediterranean Agronomic Institute of Chania.

Close collaborations between the above institutions give access to excellent complementary research facilities, supporting the educational mission of the University of Crete, and promoting strong regional, national and international collaborations in developmental initiatives.

Staff

The University is recruited with outward looking academic faculty which currently counts around 500 members, who are assisted in teaching by adjunct lecturers, post-doctoral researchers and laboratory instructors. Research activity at the University involves also around 300 researchers on project-related contracts, as well as graduate research students. Administrative and technical support is provided by a staff of around 300 employees.

Benchmarking

According to the CWTS Leiden Ranking for 2014, normalized for size, the University of Crete has the highest percentage of high impact publications of the six major Greek HEIs included and, overall, ranks #150 among the total 288 European HEIs listed and #5 in Europe for Natural Sciences.

In the Times Higher Education (THE) 2014-15 “One Hundred Under Fifty” ranking, which recognizes the ‘halo effect’ favouring old HEIs, the University of Crete was ranked #51 in 2015 among the world’s best young universities under the age of 50.

The University of Crete has also taken part in the new U-Multirank university ranking, which compares and grades HEI performance across five broad dimensions (teaching and learning, regional engagement, knowledge transfer, international orientation and research). The edition released in March 2015 shows that the University of Crete primary strengths are in research and research linkages.
2./ UCNET: Unit of Communication NETworking at the University of Crete

UCNET aims at the continuous provision and upgrade of ICT services to the community of the University of Crete, taking into account the evolution of needs and the relevant technological developments.

The ICT scientific state-of-the-art is provided to UCNET by faculty members of the, University of Crete’s, Department of Computer Science.

UCNET is recruited with expert scientific and technical personnel, network engineers, mechanical engineers, programmers, technicians and administrative personnel.

Given the accumulated know-how and expertise, the available human resources and infrastructure, UCNET also initiates and participates in ICT related developmental collaborations at the local, national and international level, and provides advisory and technological services.

3./ UCNET towards an outward looking developmental strategy

UCNET has accumulated know-how and expertise through the provision of ICT services to the University of Crete’s community and the broader Greek academia.

This expertise has been further strengthened through the UCNET’s consistent participation in regional, national and international R&D projects, providing advisory and technological services in key fields of the Digital Agenda for Europe, such as:

- ICT enabled regional development policies and operational practices, in urban and rural areas.
- Incorporation of Information Society to public administration and open government.
- Cooperative knowledge- and technology- transfer & share in SMEs, with emphasis to SMEs from the tourism industry.

Within these R&D projects, UCNET has developed ICT services for a wide range of active agents:

- Public (Local, Regional, National) Managing Authorities
- Agencies (Regional Development, ICT Implementing, Innovation and Technology)
- Associations of SMEs, Chambers of Commerce, Private companies
- ICT University Departments and R&D Institutes
- Free / Open Source Software Societies

For the effective development of the relevant services, besides the continuous and wide collaboration between the UCNET and the University of Crete’s Department of Computer Science, UCNET has well-established collaborations with Departments from the School of Social, Economic & Political Sciences, the School of Sciences & Engineering, as well as the School of Medicine.

Given the accumulated know-how and the expert personnel UCNET has designed, deployed and operate a highly available set of services consisting by cloud computing, online storage and high performance computing. This was made possible through the introduction of a newly established datacenter facility that operates conforming to all relevant international standards, following principles such as modular design and scalable architecture, efficient and reliable power & cooling and integrated monitoring & management.

In the context described by the above components, UCNET has adopted an evolving strategy towards promoting the wide exploitation of its ICT expertise and R&D results by providing ICT services, contracting with partners to jointly develop new services and promoting ICT related developmental initiatives at the regional, national and international level.
The UCNET Mission is stated as follows: **To provide consulting and advisory services on ICT infrastructure and service provision that can lead to comprehensive analysis and design of process-centric strategies and models for ICT operations, helping public and private sector’s organizations to plan, integrate and improve the effectiveness of their processes through ICT.**

### 4./ UCNET fields of expertise

#### 1: Open Government Services
The UCNET has developed expertise in the provision of services in the ongoing core challenge of e-Government: The delivery of dynamic and personalised citizen-centric public services with high added-value, promoting transparency and accountability. The relevant expertise covers widely documented objectives in the current e-Government status:

- Effective provision of services to citizens, business, visitors, NGOs and other civil society organizations based on their specific needs.
- Minimization of administrative burdens and exclusion phenomena; promotion sustainable social cohesion and welfare.
- Unification of public services into common information models and into a common interface across various entities.
- Enabling the “openness”, the federation and the smart use of large volumes of publicly available data sets (that are also partitioned in a not clear manner across various external catalogs and hubs, and others) in order the provided public services to be customized on individual needs.
- Enabling citizens, businesses, visitors, NGOs and other civil society organizations to co-operate with public administrations so as to:
  - Co design dynamic and citizen-centric public services in all fields.
  - Provide feedback and new structured information in a flexible and directly exploitable manner.

#### 2: Open Data
The UCNET has developed expertise in exploiting existing open data sets and strengthening the openness potential for other data sets. In this field, the UCNET has special expertise in the specification of the technical requirements and the required modeling activities for the exploitation of the Open Data so as to:

- Optimize administrative processes
- Improve public policies
- Provide access to external problem-solving capacity
- Provide easier access to data and discovery of data
- Create new data based on combining data
- External quality checks of data (validation)
- Provide the ability to merge, integrate, and mesh public and private data

#### 3: Enrichment of Tourism Sector through ICT Enabled Personalized Services
In an attempt to solve current core challenges of e-Government regarding the delivery of dynamic and personalised touristic services with high added-value, promoting transparency and accountability, we support activities oriented at the creation of integrated and differentiated products and services, according to personalized preferences.

These preferences might be developed in the thematic areas of tourism services, culture, and agro-food products, through the enhancement of inter-linkages amongst different sectors and simultaneous use of innovative ICT tools and Open Data. In this
perspective, major related end-users/communities are mobilized including coastal and rural/mountain tourism business, as well as business from the agro-food and nutrition industries and culture/creative economy.

These initiatives support training and capacity-building of rural communities so as to effectively implement adaptation and facilitate the development of sustainable ways to add value to local products and services.

5./ Groups and Services

UCNET is constituted by groups, each of which is active in certain thematic areas of Information and Communication Technologies.

1: Software Development & Deployment Group

Development, operation and support of IT and network systems is performed by a highly qualified Software Development and Deployment Group recruited by computer scientists, networks and communications technology experts as well as by experienced developers & programmers with core competencies in new technologies of design, development and operation of system services.

Given the continuous developments in this area, the Group operates in topics related to:

- Web Information Portals and Applications
- Web Services & Monitoring Systems
- Systems supporting Personalized and User-Oriented Services
- Multimedia and Live Content Services & Applications
- Customizing and Supporting eLearning Services and Platforms
- Open Technologies, Open Source Software and Open Data

1.1: Open Technologies and Open Private & Public Data

One of the main objects of the software development Group is the field of open data and open technologies following current trends and the pillars of institutional policy that exists at the University of Crete.

Within national and European actions, the Group designs, develops, evaluates and maintains a set of services and applications based entirely on free and open source software.

Utilizing open data and open technologies the Group has as main scope the creation of innovative services based on systems having as main characteristics the interoperability, the reuse of data, open services as well as the security of information.

1.2: Free and Open-Source Software, Units of Excellence Community

UCNET develops a community of consisted by students, scientific and IT professionals as well as developers through activities based on one of the projects involved, Units of Excellence.

The activities undertaken for the project Units of Excellence aim at bringing Foss (Free and open-source software) users of any educational background together, to cooperate, exchange views and ideas on the use of Foss systems and tools.

Anyone interested can participate, offer views on these systems and contribute to the amelioration of projects. In this way, the gradual development of the users’ community contributes to the development and maintenance of Foss projects.

2: Network Services Group

The Group operates in the following topics:
Design and deployment of multi-layered core, distribution and access architectures across the span of all sizes of networking infrastructures, from small business to enterprise level.

- Design and integration of wired, mobile and remote access services based on both commercial hardware/software and open source software solutions. Extensive network and services oversight is achieved through resourceful integration of open source management and monitoring solutions.
- Security solution analysis, design and implementation of consistent security services for infrastructure, endpoints, and user data through the utilization of specialized advanced security equipment and open source software.
- Design and provisioning of large scale centralized and distributed, information processing and systems services, comprising of user directory services, authentication and authorization services, email-webmail and mailing list services, virtual desktop sharing services and many more.

3: E-Learning Services Group
UCNET has a deep expertise in developing and administrating e-learning services. The main focus is on areas such as:
- Customization and operation of Learning Management Systems: UCNET mainly uses open source LMSs and basically moodle (moodle.org) and openeclass (openeclass.gr).
- Synchronous tele-education: Teachers and students can collaborate from distance by using voice and video in a number of ways, either from their personal pc/laptop/mobile or from specially equipped rooms (tele-education classrooms).
- Creation of multimedia educational content, by using state of the art technologies and practices.
- Directing and editing services regarding the shooting of lectures in the academic environment.
- Live webcasts.

It should be mentioned that all the above can be combined according to current needs.

4: Unified Communication and Collaboration Services Group
UCNET has developed deep knowledge and expertise in designing, applying and operating unified communication and collaboration services mainly by provisioning and supporting those services to the University of Crete personnel that are placed in three distant campuses. It is one of the first Groups in the Greek academic community which transformed all analog communications to an IP based environment, centrally offered to all University staff members. IP communications joined a set of live and on-demand video services that were also designed and developed by UCNET, in order deliver an integrated environment where local and remote users could collaborate effortlessly.

UCNET has integrated a number of hardware and in-house designed and developed software applications in order to form and operate the unified communication and collaboration environment for the University of Crete:
- Collaboration through IP voice and Video telephony to all campuses.
- Centralized control and management of tele-presence systems supporting multiple connections and seamless tele-presence provisioning to tele-presence rooms, tele-education classrooms and desktop / laptop connections that use standards based equipment or software from inside or outside of the University data network.
- Web conference services.
- Video platform supporting recording of multiple tele-presence connections, live webcasts and video on demand services.
- Video Lab with equipment to support HD and SD recording and encoding as well as sound and video processing.

### 4. Projects

#### 4.1 International Projects

**Interreg IVC - Regions for Better Broadband Connection**  
[www.b3-regions.eu](http://www.b3-regions.eu)

**Short Description:** B3 Regions aimed at improving the effectiveness of regional development policies in the Information Society area, by optimising the expert partners' good practices that are related to broadband implementation in disadvantaged areas.  
This capitalisation process was achieved through two main activities:  
1. A transfer process which aimed to share and structure in a harmonised way all the Broadband experiences around specific sub-themes, such as demand aggregation and state aid regulation.  
2. A dissemination process that spreaded the benefits achieved among the consortium to external stakeholders and that particularly targeted Managing authorities and ICT agencies willing to implement successful Broadband strategies through structural funds.  
**Duration:** 2008 – 2010  
**Budget / UoC Budget:** 200.000,00€

**Interreg IV C – DANTE, Digital Agenda for New Tourism Approach in European Rural and Mountain Areas**  
[http://danteproject.eu](http://danteproject.eu)

**Short Description:** The project aimed to promote a new regional policy approach to design a knowledge-based plan for the tourism sector. DANTE improved the effectiveness of regional policies in the area of innovation, enhanced the role of ICT in tourism industry in rural and mountain areas and promoted a knowledge sharing process through an Interregional European cooperation framework. To reach its objectives, the project optimised nine innovative good practices that demonstrated the benefits of Information Society for competitiveness of the tourism sector in disadvantaged areas.  
**Duration:** 2012 - 2014  
**Budget / UoC Budget:** 2.222.042,85€ / 166.500,00€

**MED – HOMER: Harmonising Open Data in the Mediterranean through Better Access and Reuse of Public Sector Information**  
[http://danteproject.eu](http://danteproject.eu)

**Short Description:** HOMER focused on stimulating the accessibility and re-use of Public Sector Information (PSI) across the Mediterranean, in coherence with one of the key actions of the Digital Agenda for Europe and the PSI Directive. Through a coordinated strategy addressing the specific barriers to PSI re-use in the MED area, HOMER tried to enable governments in Spain, France, Italy, Slovenia, Greece, Malta, Cyprus and Montenegro to realise the full potential of PSI in strategic economic sectors for the Med growth. Project activities included (among others) the development of technical guidelines and a legal and licensing report, the deployment of open data portals of the participating organizations, the establishment of an open data federation among the above portals, the organization of an international hackathon and the development of local action plans.  
**Duration:** 2012 - 2015  
**Budget / UoC Budget:** 3.666.437,50€ / 175.875,00€
COST Action (IS1104): The EU in the new complex geography of economic systems: models, tools and policy evaluation. (Financed by European Science Foundation)  
www.gecomplexity-cost.eu

Short Description: The Action aims at developing a more sophisticated modeling of the EU visualised as an evolving trade network with a specific topology determined by the number and strength of national, regional and local links. Economic policies should be specifically designed to take into account this pervasive network structure assessing the position of backward locations within the network and focusing on instruments that favour interconnections. The expected results will provide a basis for an improved evaluation of such policies, in particular for the European Cohesion policy, considering their impact on the welfare level of EU citizens and its geographical distribution.
Duration: 2012 - 2016
Budget / UoC Budget: 500.000,00€ / 20.000,00€

4.2 National Projects

Hellenic Academic Opencourses of the University of Crete  
http://opencourses.uoc.gr

Short Description: The project aims at: (a) The development and open provision of digital educational content; (b) The promotion of tele-education for the reinforcement of conventional learning that takes place in the greek academic institutions.
Duration: 2012 – 2015
UoC Budget: 587.000,00€

STIRIZO: Supporting Schools towards the “Digital School” through the development of new ICT services  
www.sch.gr

Short Description: The project aims at the provision of support services at Greek schools. More specifically it involves the development and provision of two important services on panhellenic level: 1) Advanced video services; 2) Integrated real time communication and collaboration environment; 3) Provision of local and distant technical support and practical training for all schools in Crete as well as the interconnection of Cretan schools with the Metropolitan Optical Fiber Networks in order to provide them with ultra high speed connections (100 Mbps - 1 Gbps) to the Internet.
Duration: 2012 – 2015
UoC Budget: 910.968,00€

F/OSS Units of Excellence of the University of Crete  
https://ma.ellak.gr

Short Description: F/OSS Units of Excellence of the University of Crete" is a subproject of the project "Electronic Services for the development and dissemination of open software" (OP Digital Convergence), implemented by the National Research and Technology Network (GRNET). In this project, the University of Crete organizes and operates training sessions on programming using F/OSS in the thematic areas of "Tourism" (primary area), "Education Software" and "Public Administration" (secondary areas). Specifically, three field training schools, three code schools and three dissemination events will be organized.
Duration: 2014 – 2015
UoC Budget: 120.000,00€
Title of the Project: Tele-Ophthalmological Retinal Pathology Screening Service based on an Automated Fundus Camera
Short Description: The overall scope of the project is to develop a low cost and uncomplicated tele-health service for the screening and preventive examination of the eye’s fundus. This will be based on a newly developed, low cost, automated eye fundus camera with networking capabilities. The particular goals of the proposed project are the scientific investigation, the development, and the elucidation of importance of such a service.
Duration: 2012 – 2015
UoC Budget: 78.000,00€

Title of the Project: Age Management Action Plan for Commerce in Greece
Short Description: The aim of the project we three-fold: (a) To address the problem of succession in the commercial business sector; (b) To facilitate the entry and development of new personnel; (c) To improve the quality of employment of older workers in the industry.
Duration: 2012 – 2013
UoC Budget: 35.000,00€

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