

Escuela Politécnica Superior de Albacete Ingeniería Técnica en Informática de Gestión		
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Datos del Centro	Dirección	Escuela Politécnica Superior Campus Universitario s/n Albacete – 02071
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Descripción Planes de Estudio	Titulación	Ingeniería Técnica en Informática de Gestión
	Duración	3 años
	División en Ciclos	1 ciclo

Nombre de la Facultad/Centro	Escuela Politécnica Superior
Titulación	Ingeniería Técnica en Informática de Gestión
Fecha Plan de Estudios	1998
Carga lectiva global en créditos UCLM	219
Carga lectiva global en créditos ECTS	180

Primer Curso

Código	Asignatura	Créditos ECTS
42501	Álgebra y Matemática Discreta	9
42502	Cálculo	7,5
42503	Fundamentos Físicos de la Informática	7,5
42504	Fundamentos de Programación I	7,5
42507	Lógica	5
42505	Sistemas Digitales	6,5
42509	Análisis Numérico	4,5
42512	Estructura y Tecnología de Computadores	7,5
42511	Fundamentos de Programación II	5

Segundo Curso

Código	Asignatura	Créditos ECTS
42513	Estadística	5
42515	Estructura de Datos y de la Información	10
42516	Sistemas Operativos	7
42518	Técnicas de Administración y Contabilidad	5
42519	Organización y Gestión de Empresas	5
42528	Teoría de Automatas y Lenguajes Formales	7
42521	Organización de Computadores I	5
42523	Redes	5
42526	Metodología de la Programación	7

Tercer Curso

Código	Asignatura	Créditos ECTS
42529	Bases de Datos	7
42530	Ingeniería del Software de Gestión	10
42535	Técnicas de Administración de Empresas	5
	<i>Optativas (Elegir 5)</i>	25
	<i>Libre Configuración</i>	13

Optativas

Código	Asignatura	Créditos ECTS
42578	Herramientas de Desarrollo de Aplicaciones	5
42577	Sistemas de Ficheros	5
42576	Tratamiento Digital de Imágenes	5
42579	Diseño y Programación Orientada a Objetos	5
42580	Programación Visual	5
42599	Lenguajes para Internet	5
42560	Investigación Operativa	5
42539	Simulación	5
42584	Inglés Técnico	5
42582	Ampliación de Estadística	5
42583	Multimedia, Hipermedia y Realidad Virtual	5
42556	Control de Gestión	5
42565	Ofimática	5
42566	Sistemas de Información Empresarial	5
42557	Derecho Informático y Empresarial	5
42574	Diseño y Fabricación por Computador	5

Subject code	20205
Subject name	Basic Science of Materials
Duration	15 weeks
Hours per week	4
Subject type	Compulsory
Credits	5.5
Description	
Objectives	The understanding of the minimal field of theoretical knowledge which allows the selection of the appropriate material and the way of manipulating it in order to obtain the desired properties and to predict its behaviour, and therefore, the possibilities of modification of the material.
Contents	Properties and structure of the materials. Microstructural control. Hardness methods. Behaviour in service. Materials for Mechanical Engineering.
Bibliography	Smith, W.F.: <i>Fundamentos de la Ciencia e Ingeniería de Materiales</i> , McGraw Hill/Interamericana de España 1998. Mangonon, Pat.L.: <i>Ciencia de Materiales. Selección y Diseño</i> , Prentice Hall, 2001.
Lecturer	
	Gloria Begoña Sánchez Bravo
Teaching Methodology	Lectures and problems.
Evaluation Methodology	Theoretical/practical exam, practical works.

Subject code	20206
Subject name	Basic Mathematics I: Calculus
Duration	15 weeks
Hours per week	4
Subject type	Compulsory
Credits	5.5
Description	
Objectives	The knowledge of the basic methods of the Mathematical Analysis of one real variable and its applications in engineering.
Contents	Continuity, differentiability and integration of functions of one real variable. Sequences and series. Introduction to Ordinary Differential Equations.
Bibliography	-Fernández Viña: Lecciones de Análisis Matemático I. Ed. Tecnos -Ortega: Introducción al Análisis Matemático. Ed Labor. -Salas – Hille - Etgen: Calculus. Vol 1.Ed. Reverté. -Spivak: Calculus. Ed. Reverté.
Lecturer	
	Sebastián Lajara López and Aurora Sanchis Puig
Teaching Methodology	Lectures, problems and practical work (laboratory).
Evaluation Methodology	Theoretical/practical exam.

Subject code	20207
Subject name	Basic Mathematics II: Algebra
Duration	15 weeks
Hours per week	4
Subject type	Compulsory
Credits	5,5
Description	
Objectives	The knowledge of the utility of linear algebra in the courses and the subsequent use of it in the professional life.
Contents	Complex numbers. Vector spaces and linear maps. Diagonalization of endomorphism and matrices. Euclidean space. Quadratic forms.
Bibliography	Serrano, R. Lozano, M. Villaverde, J. Martínez, A. Apuntes de Álgebra; Popular Libros. Serrano, R. Lozano, M. Villaverde, J. Martínez, A. Apuntes de Álgebra:Ejercicios; Popular Libros. Burgos, J. de: Álgebra Lineal. Ed. Mc. Graw Hill. Martínez, A.- Serrano, R.- Tintero, A.: Algunos problemas de Álgebra Lineal.Ed. A5.
Lecturer	
	Antonio Martínez Plaza, Mariano Lozano Sánchez, Sebastián Lajara López.
Teaching Methodology	Lectures, problems and practical work (computers).
Evaluation Methodology	Theoretical/practical exam.

Subject code	20211
Subject name	Basic Computing
Duration	15 weeks
Hours per week	4
Subject type	core
Credits	5
Description	
Objectives	To study fundamental concepts gives programming and operation gives the computer.
Contents	Introduction to computer science. The software in the computer. Operating Systems. Programming languages. Translators. Algorithms and programs. The C programming language. Representation of computer information. Computer structure. Functional unities. Machine code and assembler.
Bibliography	Prieto, Lloris, Torres. <i>"Introducción a la Informática"</i> . McGraw-Hill, 1995. Patterson, D.; Hennessy, J.L. <i>"Organización y Diseño de Computadores. La Interfaz hardware/software"</i> McGraw-Hill, 1994. Schildt, H.. <i>"C: Manual de Referencia"</i> . 3ª ed. McGraw-Hill. 1997. García, Carretero, Fernández, Calderón. <i>"El Lenguaje de Programación C. Diseño e implementación de programas"</i> . Prentice Hall. 2002.
Lecturer	
	Ana Amelia González López
Teaching Methodology	Lectures, problems and practical work (laboratory).
Evaluation Methodology	Theoretical/practical exam

Subject code	20212
Subject name	Statistical Methods in Engineering
Duration	15 weeks
Hours per week	4
Subject type	Compulsory
Credits	5.5
Description	
Objectives	Application of probability theory and statistics to engineering problems, distribution theory and discussion of particular distributions of interest in engineering, statistical estimation and data analysis. Illustrative statistical applications may include quality control, linear regression, and analysis of engineering data sets.
Contents	<p>The population and the Sample. Probability distributions. Random Sample. Sampling distributions. The Sampling distribution of the mean. Hypothesis tests for comparing two means. Introduction to design experiments. Comparing k samples. Linear Regression and correlation. Introduction to quality statistical control in engineering.</p> <p>PRACTICAL</p> <p>Introduction to SPSS. Statistic Descriptive. Inference in populations. Analysis of variance. Linear Regression and correlation. The control chart in quality.</p>
Bibliography	<p>Probabilidad y estadística para ingenieros. R.E. Walpole, R.H. Myers, S.L. Myers. Prentice Hall, 1998</p> <p>Statistics for the Life Sciences. M.L. Samuels. Ed : Dellen Publ. Co., 1989.</p> <p>Probabilidad y Estadística aplicadas a la Ingeniería. D.C. Montgomery, G.C. Runger. Ed: McGraw-Hill, 1996.</p>
Lecturer	
Lecturer	Francisco Parreño Torres
Teaching Methodology	Lectures, practical classes
Evaluation Methodology	Theoretical/practical exam

Subject code	20213
Subject name	Extension of Mathematics for Mechanical Engineering
Duration	15 weeks
Hours per week	4
Subject type	Compulsory
Credits	5.5
Description	
Objectives	The understanding of the basic techniques of the Infinitesimal Calculus of several real variables, Vector and Fourier Analysis.
Contents	Continuity, differentiability and integration of functions of several variables. Vector fields. Introduction to the integral transforms. Fourier Series.
Bibliography	-Fernández Viña: Análisis Matemático II y III. Ed. Tecnos -Salas – Hille - Etgen: Calculus. Vol 2. Ed. Reverté.
Lecturer	
	Sebastián Lajara López and Aurora Sanchis Puig
Teaching Methodology	Lectures, problems and practical work (laboratory).
Evaluation Methodology	Theoretical/practical exam.

Subject code	20221
Subject name	Alloys for Mechanical Engineering
Duration	15 weeks
Hours per week	6
Subject type	Compulsory
Credits	5.5
Description	
Objectives	This course provides the essential knowledge of metallic alloys. The goal of the course is to study the points of interest for to select the most appropriate alloy.
Contents	Ferrous and non-ferrous alloys. Heat treatments. Mechanical behaviour. Environmental degradation. Surface engineering.
Bibliography	Apraiz, J.: <i>Heat treatments of steels</i> . Dossat, 2000. Hatch, J.E.: <i>Aluminum. Properties and physical metallurgy</i> . A.S.M., 1984.
Lecturer	Antonio Calatayud Colomer
Teaching Methodology	Lectures, problems and practical work (laboratory).
Evaluation Methodology	Theoretical/practical exam and evaluation of practical work (characterization of two alloys)

Subject code	20150
Subject name	Numerical Calculus
Duration	15 weeks
Hours per week	4
Subject type	Optional
Credits	4,5
Description	
Objectives	This course provides the fundamental numerical techniques used in engineering. In each method is given a step by step description, theoretical considerations, implementation and discussion.
Contents	Errors. Solving equations of one variable. Solving systems of linear equations: direct methods and iterative methods (Jacobi and Gauss-Seidel). Polynomial Interpolation. Numerical Differentiation and Integration. Ordinary differential equations.
Bibliography	Mathews, J.H.; Fink, K.D.: <i>Métodos Numéricos con MATLAB</i> . Prentice-Hall, 2000. Burden, R.L.; Faires, J.D. : <i>Análisis Numérico</i> . ITP, 1998
Lecturer	
	Hermenegilda Macià
Teaching Methodology	Lectures, problems and practical work (laboratory).
Evaluation Methodology	Theoretical/practical work.

Subject code	20152
Subject name	Programming of Systems
Duration	15 weeks
Hours per week	4
Subject type	Optional
Credits	4,5
Description	
Objectives	The objective is for students to gain an understanding of windows programming .
Contents	Introduction to C++ Basic Fundamental in C++ Programming in Visual C++
Bibliography	Programación avanzada en Windows. Jeffrey Richter McGrawHill
Lecturer	
	Joaquín Fernández Martínez
Teaching Methodology	Lectures
Evaluation Methodology	Theoretical and practical exam.

Subject code	20154
Subject name	Waves: Applied Acoustics and Optics
Duration	1 semester
Hours per week	4H/w.
Subject type	Optional
Credits	4,5 ECTS credits
Description	
Objectives	Optics and Acoustics bases.
Contents	Properties and propagation of light and sound. Interference and diffraction. Lens and images formation.
Bibliography	<ul style="list-style-type: none"> • Alonso, M. y Finn, E.J. “<i>Física</i>”. Addison Wesley, Iberoamericana, 1995. • Hetch y Zajac, “<i>Óptica</i>”. Addison Wesley Iberoamericana, 1999. • Recuero M. “<i>Ingeniería Acústica</i>”. Paraninfo 2000.
Lecturer	
	J.J. Miralles Canals (Juan.Miralles@uclm.es) M.M. Artigao Castillo(Mariamar.Artigao@uclm.es) E. Hurtado Santón (Emilia.Hurtado@uclm.es)
Teaching Methodology	Theoretical and practical lessons
Evaluation Methodology	Written exam and optional works. Laboratory reports.

Subject code	20232
Subject name	Advanced Materials
Duration	15 weeks
Hours per week	6
Subject type	Optative
Credits	4,5
Description	
Objectives	This course provides the essential knowledge of non-metallic modern materials. The goal of the course is to study the properties and applications of polymers, ceramics and composites, used in mechanical engineering.
Contents	Characteristics crucial to the application of engineering polymers. Manufacturing process. Ceramics and glasses. Composites. Testing and characterization. Failure analysis.
Bibliography	ASM International: <i>Engineering Plastics</i> . Engineered Materials Handbook, Vol. 2. ASM 1988. ASM International: <i>Composites</i> . Engineered Materials Handbook, Vol. 1. ASM 1988. ASM International: <i>Ceramics and Glasses</i> . Engineered Materials Handbook, Vol. 4. ASM 1990.
Lecturer	
	Antonio Calatayud Colomer
Teaching Methodology	Theoretical and practical works (laboratory).
Evaluation Methodology	Evaluation of theoretical and practical works.