Field of Study: Industrial Engineering and Management
Programme of studies: Engineering and Management of Quality

First year of study:

Subject of study: Total Quality Management

CODE: D24IMCL210
NUMBER OF CREDITS: 6
YEAR/SEMESTER: First year/2nd semester
TYPE OF COURSE: thorough discipline
OBJECTIVES: learning key requirements, principles, methods and techniques related to quality assurance. Implementation of total quality management in the company. Possibilities of implementing an integrated management environment.
CONTENT: The concept of quality. Evolution of quality management. Total Quality Management: philosophy and concepts. Basic concepts of total quality management. TQM principles. Implementing TQM in the organization. Human Resources in TQM. Structures and management strategies for implementing TQM. Quantification of TQM criteria. National and international standardization in the field of TQM..
TEACHING LANGUAGE: Romanian
EVALUATION: Written examination
BIBLIOGRAPHY (selective):

Rusu, B., Managementul calităţii totale în firmele mici şi mijlocii. Bucureşti: Economică, 2001.
Ilies, L., Managementul calităţii totale. Cluj-Napoca: Dacia, 2003.
Pruteanu, O., Bohasienici C., Iordachescu, D., Ghita, E., Machado, C.V.A., Managementul calităţii totale. Iaşi: Junimea, 1998.
Ross, J.E., Total quality management. London: Kogan Page Limited, 1994.
Bacivarov, I., Balme, L., Quality Efforts in Europe, Special Issue of the International journal "Quality Engineering, vol.8, no.4 (1995/96).
Ntonescu, V., Constantinescu, D., Managementul calităţii totale, Ed. OID. ICM , 1993

Subject of study:
Quality Management Systems

CODE: D24IMCL102
NUMBER OF CREDITS: 8
YEAR/SEMESTER: 1st year / 1st semester
TYPE OF COURSE: Speciality
OBJECTIVES: The familiarization of the students with quality concepts and the standards used in quality field.
CONTENT: Concept of the management system.
Implementing of a quality management system SMQ.
Presenting the ISO 9001:2000 standard: the principles of the quality management; relations between principles-policies-processes; modeling of a quality management system based on process.
Planning the quality management system:; responsibility and authority; internal communication
Management of the resources.
Planning the product manufacturing: determining the requirements regarding the product; analisys of the requirements regarding the product; communication with the client
Measurement, analyis and improvement. Monitoring and measurement. Data analisys. Improvement
TEACHING LANGUAGE: Romanian
EVALUATION: Written examination
BIBLIOGRAPHY (selective):

Olaru, M. - Managementul calitatii, Ed. Economica, Bucuresti, 1999
Costache Rusu- Manual de |Inginerie Economica- Bazele managementului calitatii, Ed. Dacia, 2001
I. Abrudan, D. Candea – Manual de Inginerie Economica- Ingineria si Managementul Sistemelor de Productie, Ed. Dacia, 2002
Ciurea S. Managementul calităţii totale: Standardele ISO 9004 comentate. Editura Economică. Bucureşti, 1995
Oprean, C., Ţîţu, M. Managementul calităţii în economia şi organizaţia bazate pe cunoştinţe, Editura AGIR, Bucureşti, 2008
Kifor, C., Oprean, C. Ingineria calităţii. Îmbunătăţirea 6 Sigma, Editura ULBS, Sibiu, 2006
Dahlgaard, J.,J., Kristensen, K., Kanji,G., K., Fundamentals of Total Quality Management, Chapman &Hall, London, 1998
Roncea, C., Aspecte practice privind auditul sistemului calităţii, în „Managementul calităţii. Tehnici şi instrumente", editura ASE, Bucureşti, 1999
*** Colecţia de Standarde în Domeniul Asigurării şi Managementului Calităţii

Subject of study: Informatization and optimization of control processes

CODE: D24IMCL103
NUMBER OF CREDITS: 8
YEAR/SEMESTER: 1tn year/1st semester
TYPE OF COURSE: O
OBJECTIVES: The course provides students with basic theoretical and practical concepts related to the main techniques of quality assessment, analysis, improvement and control with emphasis on processes and activities optimization techniques.
CONTENT: Computerization process and its impact. Evolution of the quality concept and of quality control process. The role of computers in automatic control. Informatics systems in processes control. Probabilistic methods and models used in quality control. Techniques and tools for analyzing, evaluating, controlling and improving quality. Elements of optimization. Process optimization in terms of dynamic programming.
TEACHING LANGUAGE: Romanian
EVALUATION: Written/oral examination
BIBLIOGRAPHY (selective):

Niculită L., Palade D. D., etc. Control automat integrat în sistemele de prelucrări mecanice, Ed. Tehnică
Boboc C., Analiză statistică multidimensională- aplicatii în cadrul studiului produselor si serviciilor, Ed. Meteor Press, 2007

Zaharie, D., etc. Sisteme informatice pentru asistarea deciziei, Ed. Dual Tech, 2006.
Stăncioiu I., Cercetări operaționale pentru optimizarea deciziilor economice, Ed. Economică, 2004
Baron T., Calitatea si fiabilitatea produselor, Ed. Did. Ped., Bucresti 1988
Nagy M., Vizental M., Asistarea deciziei folosind mediul Excel, Ed. Albastră, 2011
Victor Andrei, Managementul asigurării calității. Principii, concepte, politici si instrumente, Ed. Infarom,2008
Popovici A. Probabilități, Statistică si Econometrie asistate de programul Excel, Ed. Niculescu 2013.
PopC., Managementul calitătii, Ed. Alfa, 2008

Subject of study: Computational measurement systems

CODE: D24IMCL207
NUMBER OF CREDITS: 8
YEAR/SEMESTER: IMC I/2nd semester
TYPE OF COURSE: speciality
OBJECTIVES: The objectives of the course consist in providing the speciality information in the field of the computatinal measurement systems.
CONTENT: Electrical and non-electrical measurement. Measurement principles. Issues regarding electronic measurement in industrial processes. Sensors: sensors types, sensor liniarization. Traductors: types, liniarization. Technical and functional characteristics of the computational measurement systems. Choosing criteria of the computational measurement for industrial process monitoring. Signals emitted by the sensors systems. Capturing the electrical/non-electrical signals. Conversion of the electrical/non-electrical signals in unified signals. Unified signals and digital conversions. Serial port and communication protocol. Software apps for measured signals. Virual platforms for computational measurement tools. Software design principles and virtual tools development.
TEACHING LANGUAGE: Romanian
EVALUATION: Oral
BIBLIOGRAPHY (selective):
Savu S. – Nanostructured sensors for laser-arc hybrid systems – Politehnica Publishing House, Timisoara, 2008
Alimpie I. – Electrical measurements of the non-electrical parameters, Editura de Vest, Timisoara 1996
Savu, Sorin – Course Notes

Subject of study: Systems of Standards in the Quality Field

CODE: D24IMCL101
NUMBER OF CREDITS: 8
YEAR/SEMESTER: 1st year/1st semester
TYPE OF COURSE: specialty
OBJECTIVES: The course offers the students theoretical concepts concerning the quality and the quality standards
CONTENT: Historic of the quality concept. ISO and standardization. Standard SR EN ISO 9000. Standard SR EN ISO 14000, Standard ISO 17025, OHSAS, SIX Sigma concept
TEACHING LANGUAGE: Romanian
EVALUATION: Written/oral examination
BIBLIOGRAPHY (selective):
Olaru, M. - Managementul calitatii, Ed. Economica, Bucuresti, 1999
Ciurea S. Managementul calităţii totale: Standardele ISO 9004 comentate. Editura Economică. Bucureşti, 1995
Oprean, C., Ţîţu, M. Managementul calităţii în economia şi organizaţia bazate pe cunoştinţe, Editura AGIR, Bucureşti, 2008
Kifor, C., Oprean, C. Ingineria calităţii. Îmbunătăţirea 6 Sigma, Editura ULBS, Sibiu, 2006
Dahlgaard, J.,J., Kristensen, K., Kanji,G., K., Fundamentals of Total Quality Management, Chapman &Hall, London, 1998
Roncea, C., Aspecte practice privind auditul sistemului calităţii, în „Managementul calităţii. Tehnici şi instrumente", editura ASE, Bucureşti, 1999
*** Colecţia de Standarde în Domeniul Asigurării şi Managementului Calităţii.

Subject of study: The bases of research I

CODE: D24MMEDL105
NUMBER OF CREDITS:4
YEAR/SEMESTER: 1st year / 1st semester
TYPE OF COURSE: complementary
OBJECTIVES: Application of the principles of interdisciplinarity and transdisciplinarity in the integration of scientific, technical and socio-economic information in the directions of fundamental scientific research, applied scientific research and technological development. Correct use of quantitative and qualitative research methods - acquiring analytical and integrative skills in defining and solving problems
CONTENT: Types of research activities. Methodology of research. Running the research. Formulation of the problem to be researched. Hypotheses. Running the research. Data collection. Methods of processing experimental data. Similarities and differences between research and development activities and industrial activities
TEACHING LANGUAGE: Romanian
EVALUATION: verification
BIBLIOGRAPHY (selective):
1. Gingu, O., Bazele cercetării, Supot de curs
2. Enăchescu, C., Tratat de teoria cercetării ştiinţifice, Editura Polirom, Iaşi, 2005
3. Manolea, Gh., Bazele cercetării creative, Editura AGIR, Bucureşti, 2006
4. Teseleanu, G., Metodologia cercetării ştiinţifice, Editura Universitas, Petroşani, 2007

Subject of study: The bases of research II

CODE: D24MMEDL206
NUMBER OF CREDITS: 3
YEAR/SEMESTER: 1nd year/2nd semester
TYPE OF COURSE: mandatory
OBJECTIVES: Application of the principles of interdisciplinarity and transdisciplinarity in the integration of scientific, technical and socio-economic information in the directions of fundamental scientific research, applied scientific research and technological development
CONTENT: The concept of innovation. Categories of innovation activities. Conceiving, drafting and

anti-plagiarism protection of the results of scientific research presented in a scientific paper. Conceiving, writing and presenting the results of the scientific research presented in a dissertation. Conceiving, writing and presenting the results of scientific research presented in a doctoral thesis. National and international research funding at doctoral level. Post-doctoral research carried out through scholarships with national and international funding

TEACHING LANGUAGE: Romanian

EVALUATION: verification

BIBLIOGRAPHY (selective):

1. Gingu, O., Bazele cercetării, Supot de curs
2. Chelcea S., Metodologia elaborării unei lucrări ştiinţifice, Ed. Comunicare.ro, Bucureşti, 2003
3. Enăchescu, C., Tratat de teoria cercetării ştiinţifice, Editura Polirom, Iaşi, 2005
4. Manolea, Gh., Bazele cercetării creative, Editura AGIR, Bucureşti, 2006
5. Teseleanu, G., Metodologia cercetării ştiinţifice, Editura Universitas, Petroşani, 2007

Subject of study: Optimizing Material Selection

CODE: D24IMCL104

NUMBER OF CREDITS:7

YEAR/SEMESTER: 2nd year/1st semester

TYPE OF COURSE: of deepening (A)

OBJECTIVES: Training and improvement of engineering and management specialists, namely the development of documentation, design, research, investigation to balance consumption and cost

CONTENT: Metallic materials. Symbolization of metallic materials. Metallic material properties. General considerations on the selection of metallic materials - methods of selection of metallic materials - the steps of selecting a material for the manufacture of the parts. Multi-Criteria Selection of Materials. Design stages in material choice. Formulation of optimization problems. Classification of optimization issues. Matrix differential calculus elements. Conditions of optimality. Conditions of Extreme. Ecoselecting and ecodesign of products. Ecodesign of products. Optimal design in mechanical engineering

TEACHING LANGUAGE: Romanian

EVALUATION: Verification during the semester

BIBLIOGRAPHY (selective):

1. Mitelea Ion – Selectia materialelor în ingineria mecanică, Ed. Politehnica 2008
2. Demian mihai – Optimizarea alegerii materialelor – curs pentru uzul studenţilor
3. Demian mihai – Alegerea si utilizarea materialelor – îndrumar de proiectare
4. Crăciunescu M. C.- Materiale composite. Ed. Sedona, Timisoara 1998
5. Alexandru Domsa Serban Domsa, Materiale Metalice In Constructia De Masini Si Instalatii Ed. Dacia

Subject of study: Energetic resources management

CODE: D24IMCL208

NUMBER OF CREDITS: 6

YEAR/SEMESTER: 1nd year/ 2nd semester

TYPE OF COURSE: mandatory

OBJECTIVES: Training and improvement of specialists in the multidisciplinary field of energy resource management, namely Developing documentation, design, research, investigation to balance the consumption, cost and environmental impact. Appropriate use of the notions specific to the discipline of energy resource management

Using, explaining and interpreting the content of some EU standards, EU directives in the field of energy

Interpretation of the theoretical and practical content of the subject

Empowering optimization methods for reducing energy consumption

CONTENT: Energy and human activity, Energy resources, Improving energy efficiency and promoting renewable energy sources,Energy Conservation Management, Energy audit, Legislative, regulatory and institutional framework for energy, Energy market. European energy market policy

Impact of energy systems on the environment, Classical power transformation and transport installations

Management of Sustainable Development of Energy Systems, Waste management in the field of energy, Energy security

TEACHING LANGUAGE: Romanian

EVALUATION: Written examination

BIBLIOGRAPHY (selective):

1. Note de curs. Managementul resurselor energetice . Demian Gabriela
2. Seminar. Managementul resurselor energetice . Demian Gabriela
3. dr. ing. Stefan GADOLA, C.E.M. ș.a. ,PRINCIPII MODERNE DE MANAGEMENT ENERGETIC, Universitatea Tehnicã din Cluj-Napoca
4. Carabogdan Gh., – Bilanţuri energetice, Editura Tehnica, Bucureşti, 1986.
5. *** - Ghid elaborare bilanţuri, ICEMENERG Bucureşti, 1999.
6. Rotariu M. – Resurse energetice secundare, Note de curs, 2000.
7. Pătrașcu R. – Auditul Energetic, Editura AGIR , București, 2001.
8. Ungureanu M., Pătrașcu R. – Tehnologii curate, Editura AGIR, Bucureşti, 2000.

Subject of study: Evaluation of conformity of products

CODE: D24IMCL209

NUMBER OF CREDITS: 6

YEAR/SEMESTER: 1st year/2nd semester

TYPE OF COURSE: domain

OBJECTIVES: Knowledge, understanding of concepts, theories and basic methods in the field of quality, the development of communication skills and the formation of a creative attitude.

Developing the skills to apply the accumulated knowledge on the quality of products and services by applying the quality standards.

Developing skills and attitudes to act independently in the context of analyzing advanced ideas and

applications as well as being able to propose improvements and to estimate their implications
Developing managerial, communication skills, professional ethics and field-specific legislation.
Responsible execution of professional tasks. Team work ability.
CONTENT: 1. Conformity and conformity assessment.
Definitions; International context (market modernization, European single market). WTO-TBT Treaty; Single European market, free movement of products, regulated fields; Harmonization Directives.
2. Conformity assessment bodies.
Types of organisms and definitions; CABs involved in product conformity assessment; Certification bodies; Quality management system certification bodies; Test laboratories.
Calibration laboratories; Inspection bodies; CABs involved in the conformity assessment of products in the regulated areas. Notified Bodies.
3. Evidence of conformity :.
Supplier's Declaration of Conformity; Testing / Analysis Reports.
Inspection reports; Brands, labels; CE Marking.
4.Certification of products.
References for use in product certification; Certification systems. Components and features cf ISO / IEC Guide 67; Modules A H1;
Certification of organic products; Certification marks; CE Marking.
5. Specific standards for conformity assessment bodies. Presentation.
Presentation: SR EN ISO / CEI 17025; SR EN ISO / CEI 17020; SR EN ISO / CEI 17021; SR EN 45011
6. The stages of the product certification process.
Initiating certification Selection; determination; Analysis and attestation; Supervision.
7. Accreditation of conformity assessment bodies.
Definitions; International and national context; International organizations (ILAC, IAF), European (EA) and national accreditation. Mutual Recognition Agreements: ILAC-MRA; IAF-MLA; EA-MLA RENAR - the accreditation body in Romania; Legislative framework: EC Regulation no. 765/2008; OG 23/2009
LANGUAGE: Romanian
EVALUATION: Written/oral examination
BIBLIOGRAPHY (selective):
1.Abrudan I., ş. a. – Manual de inginerie economică – Ed. Dacia, Cluj – Napoca, 2002;
2.Constantinescu, D., Nistorescu, T., Tumbăr, C. – Economia întreprinderii, Ed. Siteh, Craiova, 2006;
3.Milea, C. – Managementul calităţii totale, Ed. Universitaria, Craiova, 2006
4.Olaru, M. – Managementul calităţii, Ed. Economică, Bucureşti, 1999;
5.Olaru, M., ş.a. -Tehnici şi instrumente utilizate în managementul calităţii, Ed. Economică, Bucureşti, 2000.
6. *** Colecţia de standarde ISO 9000;

Second year of study:

Subject of study: Rehabilitation and recycling of materials and products
CODE: D24IMCL314
NUMBER OF CREDITS: **8**
YEAR/SEMESTER: 2nd year/1st semester
TYPE OF COURSE:
OBJECTIVES: Initiating students graduate in the field of reuse through recovery and remediation of disused or recovering materials components; raising awareness in terms of the role played by reusing all waste resulting from human activities; the formation of correct concepts on the market economy; the formation of a creative way of thinking regarding the production and maintenance of the ecological conditions of the environment.

CONTENT: Efficient management of waste resulting from its removal from use of products. Recovery and recycling of rubber tyres. Recovery and reuse of machinery parts by reconditioning. Recycling of vehicles (end-of life vehicles - ELV)
TEACHING LANGUAGE: Romanian
EVALUATION: Written examination
BIBLIOGRAPHY (selective):
Şontea, S., Mangra M., Didu , M., Văduvoiu, Gh. Ş.a. – Procesarea materialelor refolosibile pentru obţinerea unor materii prime, Editura Universitaria Craiova, 1998.
Prodea, V., Povestea celor 3 R, Editura Albatros, Bucureşti, 1985;
Berinde, V., Recuperarea, recondiţionarea şi refolosirea pieselor, Editura Tehnică Bucureşti, 1986
Ozunu Nichita, Contribuţii aduse tehnologiilor de recuperare prin reşapare a anvelopelor pentru autovehicule grele, Teză de doctorat, Craiova, 2008

Subject of study: Quality and environmental management
CODE: D24IMCL311
NUMBER OF CREDITS: **8**
YEAR/SEMESTER: 2nd year/2nd semester
TYPE OF COURSE:
OBJECTIVES: The course enables students to develop the skills to appreciate the quality of the environment in which their organizations work and to ensure compliance with international standards.

CONTENT: Quality characteristics of air, water and soil. Integrated monitoring of the environment. Environmental management systems. Legal and economic approach to environmental management

TEACHING LANGUAGE: Romanian

EVALUATION: Written examination
BIBLIOGRAPHY (selective):

Bran, F., Rojanschi, V., Protecţia şi ingineria mediului; Editura Economică 1997;
Ionescu, C., Cum să construim şi să implementăm un sistem de management de mediu în conformitate cu ISO 14001, Editura economică, Bucureşti, 2000;
Gavrilescu E., Olteanu I., - Calitatea mediului, Ed. Universitaria, Craiova, 2005
Standarde în vigoare
Ghermec, O. – Chimie aplicată în inginerie, Tipografia Universităţii din Craiova, 2006.

Subject of study: Environmental protection and sustainable development

CODE: D24IMCL312
NUMBER OF CREDITS: 8
YEAR/SEMESTER: Second year /first semester
TYPE OF COURSE: speciality
OBJECTIVES: Discipline "Environment protection and sustainable development" aims is to initiating students on environmental protection and sustainable development and operation of national and international organizations for environmental protection
Emphasis is put on the knowledge and enforcement of environmental protection and sustainable development
The main objective of the course is to provide a knowledge base, systematized and updated master needed to guide young researchers in the field of environmental quality
- Develop the capacity to analyze the overall activities of the organization in order to manage and modernize manufacturing processes in harmony with the environment
- Acquisition of knowledge in the taking, characterization and study of environmental
CONTENT: Environmental pollution - definition, historical and causes
Pollutants Factors air, water, soil
The impact of air pollution on the environment and ways to reduce
The impact of water pollution on the environmental and ways to reduce
The impact of Soil pollution on the environmental and ways to reduce
The concept of sustainable development
Sustainable use of the prime materials
Sustainable use of the energy resources
Waste and recycling - sustainable development objective
Biodiversity conservation and sustainable development
Environmental protection legislation
National programs for sustainable development
TEACHING LANGUAGE: Romanian
EVALUATION: Written
BIBLIOGRAPHY (selective):

Demian Mihai – Protectia mediului si dezvoltare durabila – Notiţe de curs
Bran, F., Rojanschi, V.- Protecţia şi ingineria mediului; Editura Economică 1997;
Gavrilescu E., Olteanu I., - Calitatea mediului, Ed. Universitaria, Craiova, 2005
Legea Apelor nr. 107/1996 (M.Of. nr. 244/08.10.1996) modificată şi completată prin Legea nr. 310/2004;
Legea nr.137/29.12.1995/ 17.02.2005 – Legea protecţiei mediului;
Răducanu, Viorica **-** Economia resurselor naturale, Ed. All Bek , Bucureşti, 2000;
Vădineanu, A. - Dezvoltare durabilă, vol.I, II, Ed. Universităţii din Bucureşti, 1999.
*** Standarde în vigoare

Subject of study:
Audit and certification of management systems

CODE: D24IMCL313
NUMBER OF CREDITS: 6
YEAR/SEMESTER: 2nd year/1st semester
TYPE OF COURSE: mandatory
OBJECTIVES: Knowledge, understanding of basic concepts, theories and methods in the field of auditing and certification of management systems, development of communication skills and creative attitude.
Developing the skills to apply in practice the accumulated knowledge of the audit and certification of management systems according to the quality standards.
Developing skills and attitudes to act independently in the context of analyzing advanced ideas and applications as well as being able to propose improvements and to be able to predict their implications.
Developing managerial, communication skills, professional ethics and field-specific legislation.
Responsible execution of professional tasks. Team work ability..
CONTENT: standard presentation iso 9001: 2008, Definition, importance and functions of iso 9000 standards
Process approach, Compatibility with other management systems. Application
The principles of quality management systems Iso 9001/2000 requirements, Documentation requirements
standard presentation iso 19011: 2002, "guide for auditing quality and / or environmental systems"
Auditing / audit processing principles, audit program management, Objectives and content of the audit program
Responsibilities, resources and procedures for the audit program, Implementation of the audit program
Audit activities, Initiating the audit, Performing document analysis, Preparation for on-site audit activities
Performing on-site audit activities, Preparation, approval and dissemination of the audit report
Concluding the audit. Performing follow-up audit, Competence and evaluation of auditors 10.1. Personal qualities
Knowledge and skills, Education, work experience, auditor training and audit experience
Maintaining and improving competence. Auditor's assessment
TEACHING LANGUAGE: Romanian
EVALUATION: Written/oral examination
BIBLIOGRAPHY (selective):

1. Bernard Froman, *Manualul Calităţii.. Instrument strategic al abordării calităţii*, Editura Tehnică, Bucureşti, 1998,

2. A. Hinescu, Gh. Oneţiu, I.S.Mihon, *Managementul Calităţii*, Editura Aeternitas, Alba Iulia ,2003
3. Juran. *Supremaţia prin calitate. Manualul directorului de firm*ă, Editura Teora, Bucureşti, 2002
4. M. Olaru, Al. Isaic-Maniu, V. Lefter, N. Al. Pop, S. Popescu, N. Drăgulănescu, L. Roncea, C. Roncea, *Tehnici de instrumente utilizate în managementul calităţii*, Editura Economică, Bucureşti, 2000,
5. SR EN ISO 9000:2006: Sisteme de management al calitatii. Principii fundamentale si vocabular. 6. SR EN ISO 9001:2001: Sisteme de management al calitatii. Cerinte.
7. SR EN ISO 9004:2001: Sisteme de management al calitatii. Linii directoare pentru imbunatatirea performantelor.
8. SR EN ISO 19011:2003: Ghid pentru auditarea sistemelor de management al calitatii si/sau de mediu.