



Teaching Guide

| Identifying Data | | | | | 2014/15 |
|----------------------------|---|---------------|-----------------------|----------------|---------|
| Subject (*) | Calidade en Sistemas de Información | | Code | 614G01044 | |
| Study programme | Grao en Enxeñaría Informática | | | | |
| Descriptors | | | | | |
| Cycle | Period | Year | Type | Credits | |
| Graduate | 2nd four-month period | Third | Obligatoria | 6 | |
| Language | SpanishGalicianEnglish | | | | |
| Prerequisites | | | | | |
| Department | Computación | | | | |
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| General description | <p>Nesta materia explicaranse os fundamentos conceptuais e teóricos asociados ao labor dun Auditor Informático. O labor dun Auditor Informático é asegurar que os Sistemas de Información salvagarden os bens da organización, mantéñase a integridade dos datos e alcáncense os obxectivos empresariais dunha forma eficaz e efectiva. As necesidades de control de calidade nos sistemas informáticos determinan o funcionamento das empresas e organizacións e xustifican a tarefa da auditoría de sistemas de información. Nesta materia detallaremos o proceso clásico da Auditoría de Sistemas de Información, as súas implicacións na Gobernanza Tecnolóxica das empresas, as estratexias para a protección de activos en Sistemas de Información, os plans para continuidade do negocio ante situacións de desastre e aspectos regulamentarios e legais sobre a protección de datos en Sistemas de Información. Os coñecementos adquiridos polo alumno nesta materia seguen as recomendacións da Information Systems Audit and Control Association que ofrece a certificación de Certified Information System Auditor. Ao finalizar o curso o alumno debese coñecer os procedementos, controis e informes necesarios para levar a cabo unha Auditoría de Sistemas de Información.</p> | | | | |

Study programme competences

| Code | Study programme competences |
|------|--|
| A7 | Capacidade para deseñar, desenvolver, seleccionar e avaliar aplicacións e sistemas informáticos que aseguren a súa fiabilidade, seguranza e calidade, conforme a principios éticos e á lexislación e normativa vixente. |
| A9 | Capacidade para comprender a importancia da negociación, os hábitos de traballo efectivos, o liderado e as habilidades de comunicación en todos os contornos de desenvolvemento de sóftware |
| A22 | Coñecemento e aplicación dos principios, metodoloxías e ciclos de vida da enxeñaría do sóftware. |
| A24 | Coñecemento da normativa e a regulación da informática nos ámbitos nacional, europeo e internacional. |
| A25 | Capacidade para desenvolver, manter e avaliar servizos e sistemas sóftware que satisfagan todos os requisitos do usuario e se comporten de forma fiable e eficiente, sexan accesibles de desenvolver e manter, e cumpran normas de calidade, aplicando as teorías, principios, métodos e prácticas da enxeñaría do sóftware. |
| A29 | Capacidade de identificar, avaliar e xestionar os riscos potenciais asociados que se puideren presentar. |
| A36 | Capacidade para comprender, aplicar e xestionar a garantía e a seguridade dos sistemas informáticos. |
| A47 | Capacidade para determinar os requisitos dos sistemas de información e comunicación dunha organización de acordo cos aspectos de seguridade e cumprimento da normativa e a lexislación vixente. |
| A49 | Capacidade para comprender e aplicar os principios e as prácticas das organizacións, de forma que poidan exercer como enlace entre as comunidades técnica e de xestión dunha organización, e participar activamente na formación dos usuarios. |
| A50 | Capacidade para comprender e aplicar os principios da avaliación de riscos e aplicalos correctamente na elaboración e execución de plans de actuación. |
| A51 | Capacidade para comprender e aplicar os principios e as técnicas de xestión da calidade e da innovación tecnolóxica nas organizacións. |
| A56 | Capacidade para seleccionar, despreñar, integrar e xestionar sistemas de información que satisfagan as necesidades da organización, cos criterios de custo e calidade identificados. |
| B2 | Traballo en equipo |
| B3 | Capacidade de análise e síntese |
| B4 | Capacidade para organizar e planificar |



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| B5 | Habilidades de xestión da información |
| B6 | Toma de decisións |
| B7 | Preocupación pola calidade |
| B8 | Capacidade de traballar nun equipo interdisciplinar |
| C6 | Valorar criticamente o coñecemento, a tecnoloxía e a información dispoñible para resolver os problemas cos que deben afrontarse. |

| Learning outcomes | | | |
|--|-----------------------------|--|----------------------------|
| Subject competencies (Learning outcomes) | Study programme competences | | |
| | Information Systems Audit | A22 A24 A25 A29 A36 A49 A50 A51 | B3 B4 B5 B7 B8 |
| Information Systems Quality Assurance | A7 A9 A51 A56 | B6 B7 | C6 |
| Information Systems Control | A36 A47 | B2 B3 B6 | |

| Contents | |
|---|--|
| Topic | Sub-topic |
| Unit 1: Introduction to the Quality Assurance Concept in Information Systems. | Concept, needs, requirements. QA Levels and tasks. Quality Management Systems. QA planning and quality reviews |
| Unit 2: IS Auditing process | Concept, needs, functions Risk assessment Internal Controls Audit planning and audit evidences Performing an IS Audit |
| Unit 3: IT Governance | Concept and needs IS strategies vs corporative strategies. Frameworks: COBIT. Auditing IT governance structures. Risk management |
| Unit 4: Protection of Information Assets | Concept and needs IS Protection Logical and applied protection of IS Physical protection of IS infrastructure. Security frameworks auditing. |
| Unit 5: Business continuity plans and recovering after disasters. | General concepts. Business continuity planning and components. Auditing the BCP |



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| Unit 6: Legal aspect in IS | Spanish regulatory framework. Data protection regulation. |
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Planning

| Methodologies / tests | Ordinary class hours | Student's personal work hours | Total hours |
|---------------------------------|----------------------|-------------------------------|-------------|
| Workbook | 2 | 7 | 9 |
| Case study | 10 | 25 | 35 |
| Mixed objective/subjective test | 2 | 0 | 2 |
| Supervised projects | 7 | 21 | 28 |
| Guest lecture / keynote speech | 19 | 57 | 76 |
| Personalized attention | 0 | 0 | 0 |

(*)The information in the planning table is for guidance only and does not take into account the heterogeneity of the students.

Methodologies

| Methodologies | Description |
|---------------------------------|---|
| Workbook | Readings for consolidating and complement the knowledge acquired by the student during the lessons. Topics: techniques, applications and information systems. |
| Case study | Case studies with problem analysis and achieved solutions. |
| Mixed objective/subjective test | In this test the knowledge acquired by the student about the theoretical and operative topics covered during the course will be evaluated. |
| Supervised projects | A set of guided works proposed by the professor will be developed by the students individually or in groups. |
| Guest lecture / keynote speech | Lectures for the exposition of the theoretical aspects of the course using different resources such as blackboard, slides, beamer, demonstrations, and online teaching tools. |

Personalized attention

| Methodologies | Description |
|---------------------|---|
| Supervised projects | Guided works will be proposed by the professor to be solved by the students |

Assessment

| Methodologies | Description | Qualification |
|---------------------------------|---|---------------|
| Case study | Case studies for the independent working of the students and student participation in the lectures. It is mandatory to achieve at least the 40% of the marks in order to pass the course | 40 |
| Mixed objective/subjective test | Questions about the acquired knowledge. Questions involving critical reasoning for solving practical problems of the real world. It is mandatory to achieve at least the 40% of the marks in order to pass the course | 40 |
| Supervised projects | Tracking of the working process and evaluation of the final output from the students. It is mandatory to achieve at least the 40% of the marks in order to pass the course | 20 |

Assessment comments

Para a segunda oportunidade, tanto as prácticas e traballos como a teorías avaliaranse no exame mixto

Sources of information



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|----------------------|--|
| Basic | <ul style="list-style-type: none">- Chris Davis, Mike Schiller, Kevin Wheeler (2006). IT Auditing: Using Controls to Protect Information Assets. McGraw-Hill- ISACA (2012). Cobit 5: A Business Framework for the Governance and Management of Enterprise IT..- ISACA (). http://www.isaca.org.- Sandra Senft y Frederick Gallegos (2008). Information Technology Control and Audit. Auerbach Publishers Inc |
| Complementary | |

Recommendations

Subjects that it is recommended to have taken before

Subjects that are recommended to be taken simultaneously

Subjects that continue the syllabus

Other comments

(*)The teaching guide is the document in which the URV publishes the information about all its courses. It is a public document and cannot be modified. Only in exceptional cases can it be revised by the competent agent or duly revised so that it is in line with current legislation.