

SYLLABUS¹

1. Information about the program

| | |
|--|---|
| 1.1 Higher education institution | University Politehnica Timișoara |
| 1.2 Faculty ² / Department ³ | Automation and Computers/Automation and Applied Informatics |
| 1.3 Chair | — |
| 1.4 Field of study (name/code ⁴) | Systems engineering/60 |
| 1.5 Study cycle | Master |
| 1.6 Study program (name/code/qualification) | Healthcare Information Systems/23 |

2. Information about the discipline

| | | | | | | | |
|---|----------------------------|--------------|---|------------------------|---|------------------------|------------|
| 2.1 Name of discipline | e-Health Applications | | | | | | |
| 2.2 Coordinator (holder) of course activities | Lăcrimioara STOICU-TIVADAR | | | | | | |
| 2.3 Coordinator (holder) of applied activities ⁵ | Mihaela CRIȘAN-VIDA | | | | | | |
| 2.4 Year of study ⁶ | 1 | 2.5 Semester | 2 | 2.6 Type of evaluation | E | 2.7 Type of discipline | compulsory |

3. Total estimated time (hours / semester of didactic activities)

| | | | | | |
|---|----------------|------------|----|---|------------|
| 3.1 No. of hrs. / week | 4 , of which: | 3.2 course | 2 | 3.3 seminar/laboratory/ project/training | 2 |
| 3.4 Total no. of hrs. in the education curricula | 56 , of which: | 3.5 course | 28 | 3.6 applied activities | 28 |
| 3.7 Distribution of time for individual activities related to the discipline | | | | | hrs. |
| Study using a manual, course materials, bibliography and lecture notes | | | | | 52 |
| Additional documentation in the library, on specialized electronic platforms and on the field | | | | | 42 |
| Preparation for seminars / laboratories, homeworks, assignments, portfolios, and essays | | | | | 42 |
| Tutoring | | | | | 2 |
| Examinations | | | | | 6 |
| Other activities | | | | | |
| Total hrs. of individual activities | | | | | 144 |
| 3.8 Total hrs. / semester ⁷ | 200 | | | | |
| 3.9 No. of credits | 8 | | | | |

4. Prerequisites (where applicable)

| | |
|------------------|---|
| 4.1 Curriculum | • |
| 4.2 Competencies | • |

¹ The form corresponds to the Syllabus promoted by OMECTS 5703/18.12.2011 (Annex3).

² The name of the faculty which manages the educational curriculum to which the discipline belongs.

³ The name of the department entrusted with the discipline, and to which the course coordinator / holder belongs.

⁴ Fill in the code provided in GD no. 493/17.07.2013.

⁵ The applied activities refer to: seminar (S) / laboratory (L) / project (P) / practice/training (Pr).

⁶ The year of study to which the discipline is provided in the curriculum.

⁷ It is obtained by summing up the number of hrs. from 3.4 and 3.7.

5. Conditions (where applicable)

| | |
|-------------------------------------|---|
| 5.1 of the course | • |
| 5.2 to conduct practical activities | • |

6. Specific competencies acquired

| | |
|--|--|
| Professional competencies ⁸ | <ul style="list-style-type: none"> Apply knowledge in mathematics, physics, measurement, technical drawing, mechanical engineering, chemistry, electronics and power electronics in systems engineering Managing fundamental concepts from computer science, and information communication and technology . Using fundamental knowledge in automation, modeling, simulation, identification and process analysis, computer-aided design. General and customized systems design, implementation, testing, using, maintaining, including computer networks, for applications in automation and applied informatics Development of applications and implementation of automatic control structures using project management principles, programming environments, microcontroller based environments, signal processing, programmable logic controllers, embedded systems. |
| Transversal competencies | <ul style="list-style-type: none"> Apply (in legal context) intellectual property rights (including through technological transfer), certification methodology and principles, norms and values of professional ethics insider rigorous working strategies, efficiency and responsibility. Identification of roles and responsibilities inside multi-specialized teams, decision making and work assessment, based on efficient team working techniques. Identification of continuous advancement, efficient exploitation of resources and learning techniques for self development |

7. Objectives of the discipline (based on the grid of specific competencies acquired)

| | |
|---|---|
| 7.1 General objective of the discipline | <ul style="list-style-type: none"> Enabling students understanding trends and issues in e-Health Creating the premises to understand how IT evolution determines changes in healthcare services development |
| 7.2 Specific objectives | <ul style="list-style-type: none"> Presenting healthcare systems architectures, standards in communicating and exchanging information in healthcare, information management, data security, AAL |

8. Content

| 8.1 Course | No. of hours | Teaching methods |
|---|--------------|---|
| eHealth – economical and human resources motivation, trends | 2 | Power point presentation, web navigation to current topics, discussions |
| EU dimension of eHealth, EHR status in EU countries | 2 | Power point presentation, EU portal access, discussions |
| Continuity of care, EHR, Interoperability | 4 | Power point and video presentations, |

⁸ The professional competencies and the transversal competencies will be treated according to the Methodology of OMECTS 5703/18.12.2011. The competencies listed in the National Register of Qualifications in Higher Education [Registrul Național al Calificărilor din Învățământul Superior RNCIS] (http://www.rncis.ro/portal/page?_pageid=117,70218&_dad=portal&_schema=PORTAL) will be used for the field of study from 1.4 and the program of study from 1.6 of this form, involving the discipline.

| | | |
|---|---------------------|---|
| | | explanations |
| Standards in healthcare (CEN/TC 251; ISO/TC 215; HL7; DICOM, CT 319/ASRO) | 4 | Power point and video presentations, explanations |
| RFID applied in managing hospital activities | 2 | Power point presentations, web examples, explanations |
| National EHR and health card | 4 | Power point presentation, Direct work on specific portal, critical analysis |
| Ambient Assisted Living | 4 | Power point presentation, presentations EU projects directly on project web site, discussing best practices |
| Mobile technology in healthcare | 4 | Power point presentation, current applications examples, critical analysis |
| Patient empowerment | 2 | Power point presentation, current applications examples, critical analysis |
| | | |
| | | |
| | | |
| | | |
| | | |
| Bibliography ⁹ Lăcrămioara STOICU-TIVADAR. Sisteme informatice aplicate în îngrijirea sănătății (trad), Editura Politehnica, Timișoara, 2005; Christine P. Stone, A Glimpse at EHR Implementation Around the World: The Lessons the US Can Learn, The Health Institute for E-Health Policy, May 2014; Report of the eHealth Stakeholder Group, Patient access to Electronic Health Records, June 2013; Joint Inter-Ministerial Policy Dialogue on eHealth Standardization and Second WHO Forum on eHealth Standardization and Interoperability, 10-11 February 2014, Geneva, Switzerland; mHealth - New horizons for health through mobile technologies, Global Observatory for eHealth series - Volume 3, WHO | | |
| 8.2 Applied activities¹⁰ | No. of hours | Teaching methods |
| Project | | |
| Report based on a last year article with e-Health topic | 6 | Guidance in selecting the article/topics, assessment of written abstract and ppt presentation |

⁹ At least one title must belong to the department staff teaching the discipline, and at least 3 titles must refer to national and international works relevant for the discipline, and which can be found in the Politehnica University Library.

¹⁰ The types of applied activities are those specified in footnote 5. If the discipline contains several types of applied activities, then these will be written consecutively in the lines of the table below. The type of activity will be written in a distinct line, as „Seminar:”, „Laboratory:”, „Project:” and/or „Practice/Training:”.

| | | |
|--|----|---|
| Project based on a specific e-Health task 1. stating the application specifications 2. assessing the need and motivation 3. studying 3 existing applications with related topic 4. creating the HL7 CDA 5. connecting several applications into the cloud, including at least one on mobile support 6. evaluating the developed system using specific methodology | 22 | Guidance, critical analysis, visit to local medical institutions, team work support |
| | | |
| | | |
| | | |
| | | |
| | | |
| Bibliography ¹¹ Lăcrămioara STOICU-TIVADAR. Sisteme informatice aplicate în îngrijirea sănătății (trad), Editura Politehnica, Timișoara, 2005; Christine P. Stone, A Glimpse at EHR Implementation Around the World: The Lessons the US Can Learn, The Health Institute for E-Health Policy, May 2014; Report of the eHealth Stakeholder Group, Patient access to Electronic Health Records, June 2013; Joint Inter-Ministerial Policy Dialogue on eHealth Standardization and Second WHO Forum on eHealth Standardization and Interoperability, 10-11 February 2014, Geneva, Switzerland; mHealth - New horizons for health through mobile technologies, Global Observatory for eHealth series - Volume 3, WHO | | |

9. Corroboration of the content of the discipline with the expectations of the main representatives of the epistemic community, professional associations and employers in the field afferent to the program

| |
|--|
| <ul style="list-style-type: none"> Content is based on EU recent developments and national regulation that are implemented in the national medical system, being in line with the needs of the local and national community |
|--|

10. Evaluation

| Type of activity | 10.1 Evaluation criteria | 10.2 Evaluation methods | 10.3 Share of the final grade |
|---|--|-------------------------|-------------------------------|
| 10.4 Course | Mark over 5 for each of the 4 real-like-life problems related to course topics | Written exam | 60% |
| 10.5 Applied activities | S: | | |
| | L: | | |
| | P: Documentation and presentation in clear, logical, and meaningful manner of the outcomes of the project | Discussions, questions | 40% |
| | Pr: | | |
| 10.6 Minimum performance standard (minimum amount of knowledge necessary to pass the discipline and the way in which this knowledge is verified) | | | |
| <ul style="list-style-type: none"> Finalizing the article report, finalizing the project with meaningful answers to all points, giving correct solutions to the exam problems. | | | |

¹¹ At least one title must belong to the staff teaching the discipline.

Date of completion

10.12.2015

**Course coordinator
(signature)**

.....

**Coordinator of applied activities
(signature)**

.....

**Head of Department
(signature)**

.....

Date of approval in the Faculty Council¹²

**Dean
(signature)**

.....

¹² Avizarea este precedată de discutarea punctului de vedere al board-ului de care aparține programul de studiu cu privire la fișa disciplinei.