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| SUBJECT: Mechanical systems for clinical engineering | | |
| MASTER DEGREE: Master in Bioengineering and Clinical Engineering | ECTS: 3 | QUARTER: 1 |

| TIMETABLE FOR THE SUBJECT | | | | | | | | |
|---------------------------|---------|--|----------------|---|--|--|-----------------|-----------------------|
| WEEK | SESSION | DESCRIPTION OF EACH SESSION | GROUP (X mark) | | Indicate if a different lecture room is needed (computer, audiovisual, etc.) | HOMEWORK PER WEEK | | |
| | | | 1 | 2 | | DESCRIPTION | ATTENDING HOURS | HOMEWORK Max. 7H/WEEK |
| 1 | 1 | SUBJECT 1. INTRODUCTION TO THE SUBJECT | X | | NO | Presentation of the subject and review of general mechanical Eng. concepts applied to the design, assembly and operation of a mechanical system. | 1,5 | 4 |
| 2 | 2 | SUBJECT 2. STRUCTURE AND COMPONENTS OF A MECHANICAL SYSTEM (I) | X | | NO | Systematic study of elementary mechanisms. Description and applications | 1,5 | 2 |
| 3 | 3 | SUBJECT 2. STRUCTURE AND COMPONENTS OF A MECHANICAL SYSTEM (II) | X | | NO | Study of mechanisms and elements: bearings and cams | 1,5 | 3 |
| 4 | 4 | SUBJECT 2. STRUCTURE AND COMPONENTS OF A MECHANICAL SYSTEM (III) | X | | NO | Study of mechanisms and elements: gears | 1,5 | 3 |



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| 5 | 5 | SUBJECT 2. STRUCTURE AND COMPONENTS OF A MECHANICAL SYSTEM (IV) | X | | NO | Study of deformable members and regulation of machines. Special mechanisms. | 1,5 | 3 |
| 6 | 6 | SUBJECT 3. INDUSTRIAL PNEUMATICS (I) | X | | NO | General aspects of a compressed air system. Compressed air generation/distribution | 1,5 | 2 |
| 7 | 7 | SUBJECT 3. INDUSTRIAL PNEUMATICS (I) | X | | NO | Command and control elements (I) | 1,5 | 2 |
| 8 | 8 | EXCERCISES SUBJECT 3 (I) | X | | NO | Resolution of elementary pneumatic circuits. | 1,5 | 4 |
| 9 | 9 | SUBJECT 3. INDUSTRIAL PNEUMATICS (I) | X | | INF | Control elements (II) and circuit design | 1,5 | 2 |
| 10 | 10 | EXCERCISES SUBJECT 3 (II) | X | | NO | Resolution of pneumatic circuits | 1,5 | 5 |
| 10 | 11 | LAB 1 | X | | NO | Pneumatic circuits design | 1,5 | 2 |
| 11 | 12 | SUBJECT 4. INDUSTRIAL HYDRAULICS (I) | X | | NO | Principles and concepts on hydraulic. Design phases of an installation. | 1,5 | 2 |



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| 12 | 13 | SUBJECT 4. INDUSTRIAL HYDRAULICS (II) | X | | NO | Analysis and operation of the passive and active components of a hydraulic installation | 1,5 | 3 |
| 13 | 14 | SUBJECT 4. INDUSTRIAL HYDRAULICS (III) | X | | NO | control and design of hydraulic circuits | 1,5 | 3 |
| 14 | 15 | EXERCISES SUBJECT 4 | X | | NO | resolution of elementary hydraulic circuits | 1,5 | 5 |
| 14 | 16 | LAB 2 | X | | LAB | installation of pneumatic circuits | 1,5 | 2 |
| 15 | 17 | PERSONAL WORK | X | | NO | | 1,5 | 12 |
| 16 | 18 | EXAM | X | | NO | | 1,5 | |
| | | | | | | | | |
| TOTAL HOURS | | | | | | | 28,5 | 59 |