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| CURSO: Integración de sistemas embarcados | | |
| GRADO: Ingeniería Aeroespacial | AÑO: 4th | PERIODO: 1st |

| PLANIFICACIÓN SEMANAL | | | | | | | | | |
|-----------------------|--------|--|-----------------|-----------|--|--|---|----------------|---|
| SEMANA | SESIÓN | DESCRIPCIÓN | GRUPOS (mark X) | | AULA ESPECIAL PARA LA SESIÓN (Clase de Informática, audiovisuales) | Indique SI/NO si necesita 2 profesores | Programa semanal para el estudiante | | |
| | | | TEORÍA | PRÁCTICAS | | | DESCRIPCIÓN | HORAS DE CLASE | HORAS TRABAJO EN CASA (Max. 7h semanales) |
| 1 | 1 | <ul style="list-style-type: none"> Onboard Systems Design Introduction. Avionic Systems Technology Introduction. | X | | | Yes | <ul style="list-style-type: none"> Reading the reference material: <ul style="list-style-type: none"> Subject Slides. Aircraft Systems; chapter 12. The Avionics Handbook, sections I and V. Looking for additional information or performing trade-offs. Study and personal work. | 1,67 | 2 |
| 2 | 2 | <ul style="list-style-type: none"> Avionics Systems Architectures. Integrated Modular Avionics. IMA Application Exercise. | X | X | | No | <ul style="list-style-type: none"> Reading the reference material: <ul style="list-style-type: none"> Subject Slides. Aircraft Systems, chapter 12. The Avionics Handbook, sections I and V. | 1,67 | 2 |

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| | | | | | | | - Looking for additional information or performing trade-offs. - Study and personal work. | | |
| 3 | 3 | <ul style="list-style-type: none"> • Systems Engineering Overview: <ul style="list-style-type: none"> - Systems Engineering Definition. - Systems Engineering Frameworks. - INCOSE Systems Engineering Introduction. • Systems Design Process I: <ul style="list-style-type: none"> - Systems Engineering Technical Processes, Part I. - Application Exercise. | X | X | | No | <ul style="list-style-type: none"> - Reading the reference material: <ul style="list-style-type: none"> o Subject Slides. o INCOSE Handbook. - Looking for additional information or performing trade-offs. - Study and personal work. | 1,67 | 2 |
| 4 | 4 | <ul style="list-style-type: none"> • Systems Design Process II: <ul style="list-style-type: none"> - Systems Engineering Technical Processes, Part II. | X | X | | No | <ul style="list-style-type: none"> - Reading the reference material: <ul style="list-style-type: none"> o Subject Slides. o INCOSE Handbook. - Looking for additional information or performing trade-offs. - Study and personal work. | 1,67 | 2 |
| 5 | 5 | <ul style="list-style-type: none"> • Avionic Systems Technology. <ul style="list-style-type: none"> - Discrete and Analogue Interfaces. - Digital Data Buses: <ul style="list-style-type: none"> o Digital Data Buses introduction. o ARINC 429 introduction. o ARINC 429 Application Exercise | X | X | | No | <ul style="list-style-type: none"> - Reading the reference material: <ul style="list-style-type: none"> o Subject Slides. o Aircraft Systems, chapter 12 and chapter 12.3 for the examples. o The Avionic Handbook, section I. - Looking for additional information or performing trade-offs. - Study and personal work. | 1,67 | 2 |
| 6 | 6 | <ul style="list-style-type: none"> • Avionic Systems Technology. Digital Data Buses: <ul style="list-style-type: none"> - MIL-STD-1553B Introduction. - MIL-STD-1553B Application Exercise. | X | X | | No | <ul style="list-style-type: none"> - Reading the reference material: <ul style="list-style-type: none"> o Subject Slides. o Aircraft Systems, chapter 12 and chapter 12.3 for the examples. o The Avionic Handbook, section I. - Looking for additional information or performing trade-offs. - Study and personal work. | 1,67 | 2 |

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| 7 | 7 | <ul style="list-style-type: none"> • Partial Exam. • Certification Considerations for Onboard System Design: <ul style="list-style-type: none"> - SAE ARP4754/A Introduction. - SAE ARP4761 Introduction. - Application Exercise. | X | X | | No | <ul style="list-style-type: none"> - Reading the reference material: <ul style="list-style-type: none"> o Subject slides. o The Avionics Handbook, chapter 23. o ARP4754/A - Looking for additional information or performing trade-offs. - Study and personal work. | 1,67 | 2 |
| 8 | 8 | <ul style="list-style-type: none"> • Arduino-based Practice I. Introduction to Arduino platform and programming concepts. | | X | Avionics Lab | Yes | <ul style="list-style-type: none"> - Reading the reference material: <ul style="list-style-type: none"> o Practice Description. o Subject Slides. - Study and personal work. | 1,67 | 4 |
| 9 | 9 | <ul style="list-style-type: none"> • Arduino-based Practice II. IMU and Barometer acquisition and PFD representation. | | X | Avionics Lab | Yes | <ul style="list-style-type: none"> - Reading the reference material: <ul style="list-style-type: none"> o Practice Description. o Subject Slides. - Study and personal work. | 1,67 | 4 |
| 10 | 10 | <ul style="list-style-type: none"> • Arduino-based Practice III. IMU and Barometer acquisition and PFD representation. | | X | Avionics Lab | Yes | <ul style="list-style-type: none"> - Reading the reference material: <ul style="list-style-type: none"> o Practice Description. o Subject Slides. - Study and personal work. | 1,67 | 4 |
| 11 | 11 | <ul style="list-style-type: none"> - Arduino-based Practice IV. A429 Implementation. | | X | Avionics Lab | Yes | <ul style="list-style-type: none"> - Reading the reference material: <ul style="list-style-type: none"> o Practice Description. o Subject Slides. - Study and personal work. | 1,67 | 4 |
| 12 | 12 | <ul style="list-style-type: none"> • Development Assurance for Onboard Systems Design: <ul style="list-style-type: none"> - SAE ARP4754A. - RTCA DO-178B/C Introduction. - RTCA DO.254 Introduction. | X | X | | No | <ul style="list-style-type: none"> - Reading the reference material: <ul style="list-style-type: none"> o Subject Slides. o ARP4754/A. o The Avionics Handbook; chapter 23. o DO-178B/C. - Looking for additional information or performing trade-offs. - Study and personal work. | 1,67 | 2 |
| 13 | 13 | <ul style="list-style-type: none"> • Partial Exam • Aircraft Systems Verification and Validation: <ul style="list-style-type: none"> - Verification vs Validation. - Integration Testing. - RIG Testing. - Ground Tests. - Flight Tests. | X | X | | No | <ul style="list-style-type: none"> - Reading the reference material: <ul style="list-style-type: none"> o Subject Slides. o INCOSE Handbook. - Looking for additional information or performing trade-offs. - Study and personal work. | 1,67 | 2 |

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| 14 | 14 | <ul style="list-style-type: none"> • Test Bench Practice: <ul style="list-style-type: none"> - Open System Mission Computer (OSMC) Test Bench Description. - Practice of Onboard System Verification on OSMC Test Bench. | | X | Avionics Lab | Yes | <ul style="list-style-type: none"> - Reading the reference material: <ul style="list-style-type: none"> ○ Practice Description. ○ Subject Slides. - Study and personal work. | 1,67 | 4 |
| Subtotal 1 | | | | | | | | 23,38 | 38 |
| Total 1 (Horas de clase más horas de trabajo en casa del alumno) | | | | | | | | 61,38 | |

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| 8 | | Tutorials, handing in, etc | | | | | | | |
| 9 | | Assessment | | | | | | | |
| 10 | | Ordinary – | | | | | | 3 | 21 |
| 11 | | Extraordinary | | | | | | | |
| Subtotal 2 | | | | | | | | 3 | 21 |
| Total 2 (Horas de clase más horas de trabajo en casa del alumno) | | | | | | | | 24 | |

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| TOTAL (Total 1 + Total 2. Máximo 90 horas) | | | | | | | | 85,38 | |
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() In EPS are given an additional 6 hours of completary teaching along two sessions.*