



People's Democratic Republic of Algeria

Ministry of Higher Education and Scientific Research

National Pedagogical Committee for the Sciences and Technologies Field



HARMONIZATION TRAINING PROGRAM OFFER ACADEMIC MASTER

2016 - 2017

| Field | Stream | Specialization |
|--|---------------------------------|---|
| <i>Science And Technology</i> | <i>Telecommunication</i> | <i>Telecommunication Systems</i> |

Access Conditions

(Indicate the bachelor's degrees that may lead to this Master.)

| Master Stream | Eligible Licenses | Licenses giving access to the master's program | Compatibility Rank | Assigned Coefficient |
|--------------------------|------------------------------|---|-----------------------|-------------------------|
| Telecommunication | Telecommunication Systems | Telecommunication | 1 | 1.00 |
| | | Electronics | 2 | 0.80 |
| | | Biomedical Engineering | 3 | 0.70 |
| | | Automation | 3 | 0.70 |
| | | Other licenses in ST domain | 5 | 0.60 |

Semester course organization sheets
for the specialization

Semester 1 Courses

| Teaching unit | Subject | Credits | Coefficient | Weekly Hours | | | Semester Volume (15 semaines) | Consultation Work (15 semaines) | Assessment method | |
|---|---|-----------|-------------|--------------|-------------|-------------|----------------------------------|---------------------------------|----------------------|------|
| | module | | | Course | TD | TP | | | Continous Assessment | Exam |
| Fundamental UE Code : UEF 1.1.1 Credits: 10 Coefficients: 5 | Advanced Digital Communications | 6 | 3 | 3h00 | 1h30 | | 67h30 | 82h30 | 40% | 60% |
| | Random Signals and Stochastic Processes | 4 | 2 | 1h30 | 1h30 | | 45h00 | 55h00 | 40% | 60% |
| Fundamental UE Code : UEF 1.1.2 Credits: 8 Coefficients : 4 | Radiocommunication | 4 | 2 | 1h30 | 1h30 | | 45h00 | 55h00 | 40% | 60% |
| | Programmable FPGA Circuits | 4 | 2 | 1h30 | 1h30 | | 45h00 | 55h00 | 40% | 60% |
| Methodological UE Code : UEM 1.1 Credits: 9 Coefficients : 5 | Lab : Advanced Digital Communications | 2 | 1 | | | 1h30 | 22h30 | 27h30 | 100% | |
| | Lab : Random Signals and Stochastic Processes | 2 | 1 | | | 1h30 | 22h30 | 27h30 | 100% | |
| | Lab : Programmable FPGA Circuits | 2 | 1 | | | 1h30 | 22h30 | 27h30 | 100% | |
| | Object-Oriented Programming in C++ | 3 | 2 | 1h30 | | 1h00 | 37h30 | 37h30 | 40% | 60% |
| Discovery UE Code : UED 1.1 Credits: 2 Coefficients : 2 | Elective | 1 | 1 | 1h30 | | | 22h30 | 02h30 | | 100% |
| | Elective | 1 | 1 | 1h30 | | | 22h30 | 02h30 | | 100% |
| Transversal UE Code : UET 1.1 Credits: 1 Coefficients : 1 | Technical English and Terminology | 1 | 1 | 1h30 | | | 22h30 | 02h30 | | 100% |
| Semester 1 total | | 30 | 17 | 13h30 | 6h00 | 5h30 | 375h00 | 375h00 | | |

Semester 2 Courses

| Teaching unit | Subject | Credits | Coefficient | Weekly Hours | | | Semester Volume (15 semaines) | Consultation Work (15 semaines) | Assessment method | |
|---|---|-----------|-------------|--------------|-------------|-------------|----------------------------------|---------------------------------|----------------------|------|
| | module | | | Course | TD | TP | | | Continous Assessment | Exam |
| Fundamental UE Code : UEF 1.2.1 Credits: 10 Coefficients : 5 | Digital Signal Processing | 6 | 3 | 3h00 | 1h30 | | 67h30 | 82h30 | 40% | 60% |
| | Antennas | 4 | 2 | 1h30 | 1h30 | | 45h00 | 55h00 | 40% | 60% |
| Fundamental UE Code : UEF 1.2.2 Credits: 8 Coefficients : 4 | Transmission Channels | 4 | 2 | 1h30 | 1h30 | | 45h00 | 55h00 | 40% | 60% |
| | Coding and Compression | 4 | 2 | 1h30 | 1h30 | | 45h00 | 55h00 | 40% | 60% |
| Methodological UE Code : UEM 1.2 Credits: 9 Coefficients : 5 | Lab: Digital Signal Processing | 2 | 1 | | | 1h30 | 22h30 | 27h30 | 100% | |
| | Lab: Antennas and Transmission Channels | 2 | 1 | | | 1h30 | 22h30 | 27h30 | 100% | |
| | Lab: Coding and Compression | 2 | 1 | | | 1h30 | 22h30 | 27h30 | 100% | |
| | Image Processing | 3 | 2 | 1h30 | | 1h00 | 37h30 | 37h30 | 40% | 60% |
| Discovery UE Code : UED 1.2 Credits: 2 Coefficients : 2 | Elective | 1 | 1 | 1h30 | | | 22h30 | 02h30 | | 100% |
| | Elective | 1 | 1 | 1h30 | | | 22h30 | 02h30 | | 100% |
| Transversal UE Code : UET 1.2 Credits: 1 Coefficients : 1 | Ethics, Professional Conduct, and Intellectual Property | 1 | 1 | 1h30 | | | 22h30 | 02h30 | | 100% |
| Semester 2 total | | 30 | 17 | 13h30 | 6h00 | 5h30 | 375h00 | 375h00 | | |

Semester 3 Courses

| Teaching unit | Subject | Credits | Coefficient | Weekly Hours | | | Semester Volume (15 semaines) | Consultation Work (15 semaines) | Assessment method | |
|---|---|-----------|-------------|--------------|-------------|-------------|-------------------------------|---------------------------------|----------------------|------|
| | module | | | Course | TD | TP | | | Continous Assessment | Exam |
| Fundamental UE Code : UEF 2.1.1 Credits: 10 Coefficients : 5 | Wireless and Mobile Networks | 6 | 3 | 3h00 | 1h30 | | 67h30 | 82h30 | 40% | 60% |
| | Optical Communications | 4 | 2 | 1h30 | 1h30 | | 45h00 | 55h00 | 40% | 60% |
| Fundamental UE Code : UEF 2.1.2 Credits: 8 Coefficients : 4 | Multimedia Technology and Protocols | 4 | 2 | 1h30 | 1h30 | | 45h00 | 55h00 | 40% | 60% |
| | RF and Microwave Devices (Passive/Active) | 4 | 2 | 1h30 | 1h30 | | 45h00 | 55h00 | 40% | 60% |
| UE Méthodologique Code : UEM 2.1 Credits: 9 Coefficients : 5 | Lab: Wireless and Mobile Networks | 2 | 1 | | | 1h30 | 22h30 | 27h30 | 100% | |
| | Lab: Optical Communications | 2 | 1 | | | 1h30 | 22h30 | 27h30 | 100% | |
| | Lab: Multimedia Technology and Protocols | 2 | 1 | | | 1h30 | 22h30 | 27h30 | 100% | |
| | Digital Television | 3 | 2 | 1h30 | | 1h00 | 37h30 | 37h30 | 40% | 60% |
| UE Découverte Code : UED 2.1 Credits: 2 Coefficients : 2 | Elective | 1 | 1 | 1h30 | | | 22h30 | 02h30 | | 100% |
| | Elective | 1 | 1 | 1h30 | | | 22h30 | 02h30 | | 100% |
| UE Transversale Code : UET 2.1 Credits: 1 Coefficients : 1 | Literature Review and Thesis Design | 1 | 1 | 1h30 | | | 22h30 | 02h30 | | 100% |
| Semester 3 total | | 30 | 17 | 13h30 | 6h00 | 5h30 | 375h00 | 375h00 | | |

Discovery UE (S1, S2, and S3)**Selected Subjects:**

1. Electromagnetic Compatibility (Subject chosen for Semester 1)
2. Standards and Protocols (Subject chosen for Semester 1)
3. Embedded Systems and Telecommunications (Subject chosen for Semester 2)
4. Radar Techniques (Subject chosen for Semester 2)
5. Space Telecommunications (Subject chosen for Semester 3)
6. Radionavigation Systems (Subject chosen for Semester 3)

Freely Chosen Subjects:

7. Linux Systems
8. Operator Networks
9. Satellite Networks
10. Wireless Sensor Networks
11. Field Networks
12. Emerging Areas of Optical Telecommunications
13. Installation and Maintenance of Optical Fibers
14. Radio Engineering
15. VSAT Technology
16. Propagation of Acoustic Microwaves in Piezoelectric Solids
17. RF and Microwave Measurements
18. Portable Micro-Antennas
19. Emerging Telecommunication Systems
20. Theoretical Physics of Optical and Microwave Analogies
21. Biological Effects of Electromagnetic Waves (Bioelectromagnetism)
22. Routing and Access Networks
23. CAD of Telecom Circuits
24. Characterization of RF Devices
25. Web Programming
26. Others...

Semester 4

Internship at a company, culminating in a thesis and an oral defence.

| | VHS | Coeff | Credits |
|-------------------------|-----|-------|---------|
| Personal Work | 550 | 09 | 18 |
| Internship in a Company | 100 | 04 | 06 |
| Seminars | 50 | 02 | 03 |
| Other (Supervision) | 50 | 02 | 03 |
| Total for Semester 4 | 750 | 17 | 30 |

This table is provided for reference only

Evaluation of the Master's Final Year Project

- Scientific Value (Assessment by the jury) /6
- Thesis Writing (Assessment by the jury) /4
- Presentation and Response to Questions (Assessment by the jury) /4
- Supervisor's Evaluation /3
- Internship Report Presentation (Assessment by the jury) /3