



“Joint Master’s in Advanced Cybersecurity (2 Years/120 ECTS, Master of Science)”

Course Distribution Per Semester

TRACK 1: European University Cyprus (EUC), Cyprus and Brno University of Technology (BUT), Czech Republic

A/A	Course Type	Course Name	Course Code	Periods Per Week	Period Duration in Minutes	Number of Weeks/ Academic Semester	Total Hours/ Academic Semester	Number of ECTS
1st Academic Year/1st Semester – EUC								
1	Compulsory	Introduction to Cybersecurity	EMC111	3	60	14	42	10
2	Compulsory	Communications and Network Security	EMC112	3	60	14	42	10
3	Compulsory	Cybersecurity Policy, Governance, Law and Compliance	EMC113	3	60	14	42	10
1st Academic Year/2nd Semester – EUC								
1	Compulsory	Cybersecurity Architecture and Operations	EMC121	3	60	14	42	10
2	Compulsory	Ethical Hacking and Penetration Testing	EMC122	3	60	14	42	10
3		Elective Course*		3	60	14	42	10

***Elective Courses:**
Students select one (1) course from the list below:

EMC123	Cybersecurity Risk Analysis and Management	10
EMC124	Data Privacy in the Era of Data Mining and AI	10
EMC125	Incident Response and Forensic Analysis	10

- The 1st Semester consists of three (3) Compulsory courses.
- The 2nd Semester consists of two (2) Compulsory courses and one (1) Elective course. Students must take all compulsory courses and choose one (1) elective course to complete the 30 ECTS requirement per semester.

A/A	Course Type	Course Name	Course Code	Periods Per Week	Period Duration in Minutes	Number of Weeks/ Academic Semester	Total Hours/ Academic Semester	Number of ECTS
2nd Academic Year/3rd Semester – BUT								
1	Compulsory	Mobile Network Communication Systems	EMC131	5	60	13	65	6
2	Compulsory	Foundations of Cryptography	EMC132	5	60	13	65	6
3	Compulsory	Modern Cryptography	EMC133	4	60	13	52	6
4	Compulsory	Parallel Data Processing	EMC134	5	60	13	65	6
5	Compulsory	Semestral Thesis	EMC135	1	60	13	13	1

6	Elective Course*	4	60	13	52	5
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***Elective Courses:**

Students select one (1) course from the list below:

EMC136	Data Structures and Algorithms	5
EMC137	Modern Network Technologies	5
EMC138	Optical Networks	5

- The 3rd Semester consists of five (5) Compulsory courses and one (1) Elective course. Students must take all compulsory courses and choose one (1) elective course to complete the 30 ECTS requirement per semester.

A/A	Course Type	Course Name	Course Code	Periods Per Week	Period Duration in Minutes	Number of Weeks/ Academic Semester	Total Hours/ Academic Semester	Number of ECTS
2nd Academic Year/4th Semester – BUT								
1	Compulsory	Master Thesis	EMC141	4	60	13	52	30

TRACK 2: Universidad de Murcia (UMU), Spain and Politecnico di Milano (POLIMI), Italy

A/A	Course Type	Course Name	Course Code	Periods Per Week	Period Duration in Minutes	Number of Weeks/ Academic Semester	Total Hours/ Academic Semester	Number of ECTS
1st Academic Year/1st Semester – UMU								
1	Compulsory	Cyberattack Techniques and Ethical Hacking	EMC211	3	60	14	42	6
2	Compulsory	CyberDefense Techniques	EMC212	3	60	14	42	6
3	Compulsory	Cybersecurity and Network Security	EMC213	3	60	7	21	6
4	Compulsory	Techniques for the Management of the Cybersecurity	EMC214	3	60	14	42	6
5	Compulsory	Cryptography	EMC215	3	60	7	21	3
6	Compulsory	Innovation and Entrepreneurship Seminar	EMC216	3	60	7	21	3

- The 1st Semester consists of six (6) Compulsory courses.

A/A	Course Type	Course Name	Course Code	Periods Per Week	Period Duration in Minutes	Number of Weeks/ Academic Semester	Total Hours/ Academic Semester	Number of ECTS
1st Academic Year/2nd Semester – UMU								
1	Compulsory	Cybersecurity Legal Framework	EMC221	3	60	7	21	3
2	Compulsory	Software Security and Secure Software Lifecycle	EMC222	3	60	7	21	3
3	Compulsory	Authentication and Authorization Infrastructures	EMC223	3	60	7	21	3
4	Compulsory	Malware and Attack Technologies	EMC224	3	60	7	21	3
5	Compulsory	CyberSecurity Lab	EMC225	3	60	14	42	6
6	Elective Courses*							12

***Elective Courses:**

Students select courses that sum up to twelve (12) ECTS from the list below:

EMC226	5G, IoT, and Cyber-Physical Systems Security	6
EMC227	Advanced Techniques in Cyber Intelligence	6
EMC228	Hardware Security	3
EMC229	Reliable Distributed Systems	3

- The 2nd Semester consists of five (5) Compulsory courses and Elective courses to choose from that sum up to twelve (12) ECTS. Students must take all compulsory courses and enough elective courses to complete the 30 ECTS requirement per semester.

A/A	Course Type	Course Name	Course Code	Periods Per Week	Period Duration in Minutes	Number of Weeks/ Academic Semester	Total Hours/ Academic Semester	Number of ECTS
2nd Academic Year/3rd Semester – POLIMI								
1	Compulsory	Offensive and Defensive Cybersecurity	EMC231	4	45	13	52	5
2	Compulsory	Digital Forensics and Cybercrime	EMC232	4	45	13	52	5
3	Elective Courses*							20

***Elective Courses:**

Students select courses that sum up to Twenty (20) ECTS from the list below:

EMC233	Data Science and Security for Mobility	10
EMC234	Resilience of Critical Infrastructures	5
EMC235	Cryptography and Architectures for Computer Security	5
EMC236	Safety in Automation Systems	5
EMC237	Computer Ethics	5
EMC238	Artificial Neural Networks and Deep Learning	5



- The 3rd Semester consists of two (2) Compulsory courses and Elective courses to choose from that sum up to twenty (20) ECTS. Students must take all compulsory courses and enough elective courses to complete the 30 ECTS requirement per semester.

A/A	Course Type	Course Name	Course Code	Periods Per Week	Period Duration in Minutes	Number of Weeks/ Academic Semester	Total Hours/ Academic Semester	Number of ECTS
2nd Academic Year/4th Semester – POLIMI								
1	Compulsory	Master Thesis	EMC241	4	60	14	56	30

TRACK 3: Universidad de Murcia (UMU), Spain and Eötvös Loránd University (ELTE), Hungary

A/A	Course Type	Course Name	Course Code	Periods Per Week	Period Duration in Minutes	Number of Weeks/ Academic Semester	Total Hours/ Academic Semester	Number of ECTS
1st Academic Year/1st Semester – UMU								
1	Compulsory	Cyberattack Techniques and Ethical Hacking	EMC311	3	60	14	42	6
2	Compulsory	CyberDefense Techniques	EMC312	3	60	14	42	6
3	Compulsory	Cybersecurity and Network Security	EMC313	3	60	7	21	6
4	Compulsory	Techniques for the Management of the Cybersecurity	EMC314	3	60	14	42	6
5	Compulsory	Cryptography	EMC315	3	60	7	21	3
6	Compulsory	Innovation and Entrepreneurship Seminar	EMC316	3	60	7	21	3

- The 1st Semester consists of six (6) Compulsory courses.

A/A	Course Type	Course Name	Course Code	Periods Per Week	Period Duration in Minutes	Number of Weeks/ Academic Semester	Total Hours/ Academic Semester	Number of ECTS
1st Academic Year/2nd Semester – UMU								
1	Compulsory	Cybersecurity Legal Framework	EMC321	3	60	7	21	3
2	Compulsory	Software Security and Secure Software Lifecycle	EMC322	3	60	7	21	3
3	Compulsory	Authentication and Authorization Infrastructures	EMC323	3	60	7	21	3
4	Compulsory	Malware and Attack Technologies	EMC324	3	60	7	21	3
5	Compulsory	CyberSecurity Lab	EMC325	3	60	14	42	6
6	Elective Courses*							12

***Elective Courses:**

Students select courses that sum up to Twelve (12) ECTS from the list below:

EMC326	5G, IoT, and Cyber-Physical Systems Security	6
EMC327	Advanced Techniques in Cyber Intelligence	6
EMC328	Human Factors in Security, Privacy and Rights on the Internet	3
EMC329	Advanced Aspects of Cybersecurity Management	3

- The 2nd Semester consists of five (5) Compulsory courses and Elective courses to choose from that sum up to twelve (12) ECTS. Students must take all compulsory courses and enough elective courses to complete the 30 ECTS requirement per semester.

A/A	Course Type	Course Name	Course Code	Periods Per Week	Period Duration in Minutes	Number of Weeks/ Academic Semester	Total Hours/ Academic Semester	Number of ECTS
2nd Academic Year/3rd Semester – ELTE								
1	Compulsory	CyberSecurity Lab II	EMC331	2	60	14	28	6
2	Elective Courses*							24

***Elective Courses:**

Students select four (4) courses from the list below:

EMC332	Advanced Cryptography	6
EMC333	Data Science Lab II	6
EMC335	Introduction to Data Science	6
EMC336	Open-source technologies for Data Science	6
EMC337	Stream Mining	6

- The 3rd Semester consists of one (1) Compulsory course and four (4) Elective course. Students must take the compulsory course and choose four (4) elective courses to complete the 30 ECTS requirement per semester.



A/A	Course Type	Course Name	Course Code	Periods Per Week	Period Duration in Minutes	Number of Weeks/ Academic Semester	Total Hours/ Academic Semester	Number of ECTS
2nd Academic Year/4th Semester – ELTE								
1	Compulsory	Master Thesis	EMC341	4	60	14	56	30

TRACK 4: Universidad de Murcia (UMU), Spain & European University Cyprus (EUC), Cyprus

A/A	Course Type	Course Name	Course Code	Periods Per Week	Period Duration in Minutes	Number of Weeks/ Academic Semester	Total Hours/ Academic Semester	Number of ECTS
1st Academic Year/1st Semester – UMU								
1	Compulsory	Cyberattack Techniques and Ethical Hacking	EMC411	3	60	14	42	6
2	Compulsory	CyberDefense Techniques	EMC412	3	60	14	42	6
3	Compulsory	Cybersecurity and Network Security	EMC413	3	60	7	21	6
4	Compulsory	Techniques for the Management of the Cybersecurity	EMC414	3	60	14	42	6
5	Compulsory	Cryptography	EMC415	3	60	7	21	3
6	Compulsory	Innovation and Entrepreneurship Seminar	EMC416	3	60	7	21	3

- The 1st Semester consists of six (6) Compulsory courses.

A/A	Course Type	Course Name	Course Code	Periods Per Week	Period Duration in Minutes	Number of Weeks/ Academic Semester	Total Hours/ Academic Semester	Number of ECTS	
1st Academic Year/2nd Semester – UMU									
1	Compulsory	Cybersecurity Legal Framework	EMC421	3	60	7	21	3	
2	Compulsory	Software Security & Secure Software Lifecycle	EMC422	3	60	7	21	3	
3	Compulsory	Authentication and Authorization Infrastructures	EMC423	3	60	7	21	3	
4	Compulsory	Malware & Attack Technologies	EMC424	3	60	7	21	3	
5	Compulsory	CyberSecurity Lab	EMC425	3	60	14	42	6	
6	Elective Courses*								12

***Elective Courses:**

Students select courses that sum up to Twelve (12) ECTS from the list below:

EMC426	5G, IoT, and Cyber-Physical Systems Security	6
EMC427	Advanced Techniques for Cyber Intelligence	6
EMC428	Human factors in security, privacy and rights on the Internet	3

EMC429	Hardware Security	3
EMC4210	Reliable Distributed Systems	3
EMC4211	Advanced Aspects of Cybersecurity Management	3

- The 2nd Semester consists of five (5) Compulsory courses and Elective courses to choose from that sum up to twelve (12) ECTS. Students must take all compulsory courses and enough elective courses to complete the 30 ECTS requirement per semester.

A/A	Course Type	Course Name	Course Code	Periods Per Week	Period Duration in Minutes	Number of Weeks/ Academic Semester	Total Hours/ Academic Semester	Number of ECTS
2nd Academic Year/3rd Semester – EUC								
1	Compulsory	Cybersecurity Architecture and Operations	EMC431	3	60	14	42	10
2	Compulsory	Cybersecurity Policy, Governance, Law and Compliance	EMC432	3	60	14	42	10
3	Compulsory	Cybersecurity Risk Analysis and Management	EMC433	3	60	14	42	10

- The 3rd Semester consists of three (3) Compulsory courses.



A/A	Course Type	Course Name	Course Code	Periods Per Week	Period Duration in Minutes	Number of Weeks/ Academic Semester	Total Hours/ Academic Semester	Number of ECTS
2nd Academic Year/4th Semester – EUC								
1	Compulsory	Master Thesis	EMC441	4	60	14	56	30