MCAST PROGRAMMES - PUBLIC INFORMATION TEMPLATE (FULL TIME)

Institute	Institute of Engineering and Transport
Department	Electrical and Electronic Department

Programme Title	Advanced Diploma in Robotics, Drone Technology, Automation and Artificial Intelligence				
Course Code *To be filled in by Admissions Dept.*	EE4-A09-23		**If the programme includes a WBL element, How is it accredited?**	Apprenticeship	
MQF/ EQF Level	Level 4	**Type** *(refer to Appendix 1 for Parameters)*	Qualification	**Awarding Body**	MCAST – Malta College of Arts, Science and Technology
Accreditation Status	Accredited via MCAST's Self Accreditation Process (MCAST holds Self-Accrediting Status as per 1st schedule of Legal Notice 296/2012)				
Mode of Delivery	Face to Face	**Duration***(Academic Years or Semesters)*	2 Years	**Mode of Attendance**	Full-time
Total Number of Credits	120 credits	**Total Learning Hours** *(25 Total Learning Hours for each ECTS)*	3000 hours		
Target Audience	Ages 16 - 65	**Target Group** *(the type of learners that the educational institution anticipates joining this programme)*	-		
Programme Fees	There are no fees applicable to Maltese and other EU Nationals (as will be evidenced by their Identity Document) Fees apply for other International Applicants… for fee information and any related updates it is best to communicate with MG2i International through applyinternational@mcast.edu.mt One may consider checking about possible eligibility or otherwise for any exemption from fees by contacting the relevant section within MEYR (Floriana) – or visit the servizz.gov.mt website here				
Date of Next Student Intake	For further information regarding upcoming student intake and applications time windows for same kindly click here				
Language of Instruction	The official language of instruction at MCAST is English. All notes and textbooks are in English (except for language courses, which will be in the respective language being instructed). International candidates will be requested to meet English language certification requirements for access to the course.				
Application Method	Applications to full-time courses are received online via the College Management Information System. Applicants can log-in using Maltese Electronic ID (eID) in order to access the MCAST Admissions Portal directly and create one's own student account with the identity being verified electronically via this secure service. Non-EID applicants need to request account creation though an online form after that they confirm that their local Identification Document does not come with an EID entitlement. . Once the identity is verified and the account is created on behalf of the				

	applicant, one may proceed with the online application according to the same instructions applicable to all other applicants. For more information about how to apply online for a course at MCAST, please visit: https://mcast.edu.mt/how-to-apply-online-2/
Information for Non-EU Citizens	Non-EU candidates require a study visa in order to travel to Malta and join the course applied for (on a Full Time delivery mode). For further information re study-visa please access https://www.identitymalta.com/unit/central-visa-unit/. Further information International / TCN applicants should take note of before requesting to being considered for a programme of studies at MCAST, can be obtained through the respective FAQ found on https://mcast.edu.mt/important-information/
IMPORTANT note to Non-EU Nationals / TCNs	In instances where a TCN is applying for an MCAST programme of studies which includes Apprenticeship / Placement / Internship, it is the applicant's responsibility to check with the relevant Maltese Authority whether one would be eligible to have the necessary permits to be able to carry out the accredited Apprenticeship / Placement / Internship, success from which is expected in order to be able to successfully complete the selected programme of studies. Further information can also be obtained through the respective FAQ found on: https://mcast.edu.mt/important-information/
Address where the Programme will be Delivered	*MCAST has four campuses as follows:* **MCAST Main Campus** Triq Kordin, Paola, Malta *All courses except for courses delivered by the Institute for the Creative Arts, the Centre of Agriculture, Aquatics and Animal Sciences and the Gozo Campus are offered at the Main Campus address (above).* *Courses delivered by the Institute for the Creative Arts, the Centre of Agriculture, Aquatics and Animal Sciences, or the Gozo Campus, are offered in one of the following addresses as applicable:* **Institute for the Creative Arts** Mosta Campus Misraħ Għonoq Tarġa Gap, Mosta **Institute of Applied Sciences** Centre of Agriculture, Aquatics and Animal Sciences, Luqa Road, Qormi **Gozo Campus** J.F. De Chambray Street MCAST, Għajnsielem Gozo *In the case of courses delivered via Online Learning, students will be following the programme from their preferred location/address.* *Programmes delivered via Blended Learning, and which therefore contain both an online and a face to face component shall be delivered as follows:*

	o Face to Face components – as per above address instructions o Online components – from the student's preferred address.
Course Description *(Refer to Programme Specification)*	This course presents learners with introductory knowledge about artificial intelligence and machine-learning techniques, followed by automation systems, robots and drone functionality. Learners will have the opportunity to use various AI hardware and software tools to control a range of input and output devices, apply various forms of signal conditioning, use embedded systems and apply communication standards. This course is designed in a way that supports learners in understanding the operating characteristics and concepts of drones, automation and robotic systems through hands-on experiments. Additionally, students are guided to develop the skills required to design, install, troubleshoot, maintain and programme such systems.
Deskrizzjoni tal-Kors *(Refer to Programme Specification)*	Dan il-kors jipprovdi lill-istudenti għarfien introduttorju dwar it-teknika tal-intelliġenza artifiċjali u machine learning, kif ukoll dwar sistemi ta' awtomatizzazzjoni, robots u l-użu ta' drones. L-istudenti jkollhom l-opportunità li jużaw apparat u softwer ta' Intelliġenza Artifiċjali biex jikkontrollaw għażla ta' input u output devices, japplikaw diversi tipi ta' signal conditioning, jużaw embedded systems u japplikaw standards ta' komunikazzjoni. Dan il-kors huwa mqassam b'tali mod li, permezz ta' esperimenti prattiċi, jgħin lill-istudenti jifhmu l-karatteristiċi operazzjonali u l-kunċetti tad-drones, l-awtomatizzazzjoni u s-sistemi robotiċi. Barra minn hekk, l-istudenti jiġu megħjuna jiżviluppaw dawk il-ħiliet meħtieġa biex jiddisinjaw, jistallaw, jidentifikaw il-problemi, jagħmlu l-maintenance u jipprogrammaw sistemi bħal dawn.
Career Opportunities:	Automation Technician, Artificial Intelligence Technician, Autonomous Vehicle Technician, Technician in the Manufacturing Industry
Entry Requirements *(Refer to Prospectus / Course Page on MCAST website)*	Internal Progression Route… Any MCAST MQF Level 3 Diploma OR 4 SEC / SSC&P or equivalent with a Pass Grade / Level 3Compulsory: One subject from Engineering Technology OR Design and Technology OR Chemistry OR Computing OR Mathematics OR Physics.
Other Notes related to this Programme, and which are to be taken note of	-
Programme Learning Outcomes *(Refer to Programme Specification)*	At the end of the programme the student is able to: 1. Program an industrial robotic, automation and drone system. 2. Recognise the purpose, functionality and need of a robotic, drone and automation system. 3. Construct and test analogue and digital electronic circuits to the required specification. 4. Apply and use 3D technologies for an engineering system. 5. Identify the basic principles of a mechatronic system.
Teaching, Learning and Assessment Procedures	The programmes offered are vocational in nature and entail both theoretical lectures delivered in classes as well as practical elements that are delivered in laboratories, workshops, salons, simulators as the module requirements dictate. Each module or unit entails a number of in person and/or online contact learning hours that are delivered by the lecturer or tutor directly (See also section 'Total Learning Hours).

	Access to all resources is provided to all registered students. These include study resources in paper or electronic format through the Library and Resource Centre as well as tools, software, equipment and machinery that are provided by the respective institutes depending on the requirements of the course or module. Students may however be required to provide consumable material for use during practical sessions and projects unless these are explicitly provided by the College. All Units of study are assessed throughout the academic year through continuous assessment using a variety of assessment tools. Coursework tasks are exclusively based on the Learning Outcomes and Grading Criteria as prescribed in the course specification. The Learning Outcomes and Grading Criteria are communicated to the Student via the coursework documentation. The method of assessment shall reflect the Level, credit points (ECTS) and the schedule of time-tabled/non-timetabled hours of learning of each study unit. A variety of assessment instruments, not solely Time Constrained Assignments/Exams, are used to gather and interpret evidence of Student competence toward pre-established grading criteria that are aligned to the learning outcomes of each unit of the programme of study. Grading criteria are assessed through a number of tasks, each task being assigned a number of marks. The number of grading criteria is included in the respective Programme Specification. The distribution of marks and assessment mode depends on the nature and objectives of the unit in question. Coursework shall normally be completed during the semester in which the Unit is delivered. Time-constrained assignments may be held between 8 am and 8 pm during the delivery period of a Unit, or at the end of the semester in which the Unit is completed. The dates are notified and published on the Institute notice boards or through other means of communication. Certain circumstances (such as but not limited to the COVID-19 pandemic) may lead Institutes and Centres to hold teaching and assessment remotely (online) as per MCAST QA Policy and Standard for Online Teaching, Learning and Assessment (Doc 020) available via link https://www.mcast.edu.mt/college-documents/ The Programme Regulations pertaining to this Programme's MQF/EQF level available at: link https://www.mcast.edu.mt/college-documents/, apply.
Grading System	All MCAST programmes adopt a Learner-centred approach through the focus on Learning Outcomes. The assessment of MCAST programmes is criterion-referenced and thus assessors are required to assess learners' evidence against a pre-determined set of Learning Outcomes and Assessment Criteria. For a student to be deemed to have successfully passed a unit, a minimum of 50% (grade D) must be achieved. All full time units are individually graded as follows: A* (90-100) A (80-89) B (70-79) C (60-69) D (50-59)

	Unsatisfactory work is graded as 'U'.	
	Work-based learning units (where applicable) are graded on a Pass/Fail basis only.	
	Some units which follow industry standards and regulations may also be graded on a Pass/Fail basis as per programme regulations referred below.	
	Detailed information regarding the grading system may be found in the Programme Regulations pertaining to this programme's MQF/EQF Level available at: https://www.mcast.edu.mt/college-documents/ (Refer to DOC 003, 004 and 005)	
Exit Point (where and as applicable)	Where a student will not make it to the Final Certification achievable from this Programme of Studies (as per Programme Regulations), one might wish to look into Exit Point possibilities as may be applicable to this programme for studies. Further information, is available at https://www.mcast.edu.mt/college-documents/, kindly refer to *DOC 077 Procedure for the processing of Claims for Certificates at Interim Exit Points.*	
Contact details for Further Learning Opportunities	The MCAST Career Guidance Team, offers the service of qualified and experienced Career Advisers who will be very willing to discuss with potential applicants the course which best achieves one's career ambitions, as well as exploring one's education route, or similar. **MCAST Career Guidance** Tel: 2398 7135/6 Email: career.guidance@mcast.edu.mt	
Regulatory Body/ Competent Authority Contact Details *(where applicable - in the case of a programme leading to Regulated Profession)*	Not Applicable	

Programme Structure	Unit Code	Unit Title	ECTS	Year	Semester
	ETRBS-405-2301	Python with Raspberry Pi	5	1	Year
	ETRBS-405-2302	Artificial Intelligence for Robots	5	1	Year
	ETRBS-405-2303	Computer-Aided Design and 3D printing	5	1	Year
	ETRBS-405-2304	Electrical, Mechanical, and Fluid Systems	5	1	Year
	ETRBS-405-2305	Robot Programming	5	1	Year
	ETRBS-405-2306	Sensors and Signal Conditioning	5	1	Year
	ETRBS-404-2002	Robot Mechanisms and Manipulators	4	1	Year
	ETRBS-403-2003	Panel Building	3	1	Year
	ETPRJ-405-2003	Drone and Robot Building - Project Based	5	1	Year

	CDKSK-406-2320	Mathematics	6	1	Year
	CDKSK-406-2319	English	6	1	Year
	CDKSK-406-2014	IT for Robotics	6	1	Year
	ETRBS-405-2307	Industrial Communication Protocols	5	2	Year
	ETRBS-405-2308	PLC Equipment	5	2	Year
	ETH&S-403-1801	Health and Safety	3	2	Year
	ETRBS-403-2006	Troubleshooting, Inspection and Testing	3	2	Year
	ETRBS-405-2309	Motors for Robotic Systems and Drones	5	2	1
	ETRBS-405-2310	C Programming for Microcontrollers	5	2	Year
	ETRBS-405-2311	Industrial Motors and Drives	5	2	2
	ETRBS-405-2312	Feedback Systems	5	2	Year
	ETPRJ-406-2004	Final Year Project	6	2	Year
	CDKSK-404-2325	Entrepreneurship Essentials	4	2	1
	CDKSK-402-2324	Community Social Responsibility	2	2	Year
	ETWBL-412-2309	Work based learning in Engineering	12	2	Year

Allocation of Total Learning Hours (per Unit)	The total learning hours required for each unit or module are determined as follows:			
	Credits (ECTS)	Indicative contact hours[1]	Self-Learning and Assessment Hours[3]	Total Student workload (hrs)[2]
	1	5 – 10 hrs	20 - 15 hrs*	25 hrs
	2	10 – 20 hrs	40 - 30 hrs*	50 hrs
	3	15 – 30 hrs	60 - 45 hrs*	75 hrs
	4	20 – 40 hrs	80 - 60 hrs*	100 hrs
	6	30 – 60 hrs	120 - 90 hrs*	150 Hrs
	9	45 – 90 hrs	180 - 135 hrs*	225 hrs
	12	60 – 120 hrs	240 - 180 hrs*	300 hrs
	Note: The 'Self-Learning and Assessment Hours[3]' amount to the difference between the 'Indicative Contact Hours'[1] and the 'Total Student Workload'[2]			

MINIMUM CREDITS FOR QUALIFICATIONS AT DIFFERENT LEVELS

MQF Level	Minimum ECTS Required for a Qualification*
8	
7	30
6	180
5	30
4	30
3	60
2	60
1	40

*Programmes assigned fewer ECTS than indicated will be classified as Awards.

Reference: Fig.1: p48, Malta Further and Higher Education Authority (MFHEA) (October 2024). Referencing Report, 5th Revised Edition.

APPENDIX 2

EXAMPLES OF QUALIFICATION TYPES AT A SPECIFIC MQF LEVEL

MQF Level	Examples of qualification types at a specific MQF level (The list in this column is not exhaustive)	Number of ECTS *
8	Doctoral Programmes:	
	PhD	N/A
	Professional Doctorate	180
7	Master's Degree	90
	Postgraduate Diploma	60
	Postgraduate Certificate	30
6	Bachelor's Degree	180
	Bachelor's Honours	240
5	Undergraduate Higher Diploma	90
	Undergraduate Diploma	60
	Undergraduate Certificate	30
	VET Level 5	60
4	Advanced Diploma	120
	Pre-Tertiary Certificate	30 - 60
	MATSEC Matriculation Certificate (Advanced and Intermediate)	N/A
	VET Level 4	120
3	Certificate	60
	MATSEC Secondary Education Certificate	N/A
	VET Level 3	60
2	Foundation Certificate	60
	MATSEC Secondary Education Certificate	N/A
	VET Level 2	60
1	Introductory Certificate	40
	VET Level 1	40

*Programmes assigned fewer ECTS than indicated will be classified as Awards.

Reference: Fig.2: p48, Malta Further and Higher Education Authority (MFHEA) (October 2024).
Referencing Report, 5th Revised Edition.