University Of Birmingham 2 + 2 Double Degree Program Overview

Topic	Details
Program Offering	**Assumption University** Vincent Mary School of Engineering ❖ Department of Electrical Engineering ❖ Department of Mechatronics Engineering **Birmingham** **Bachelor** ❖ BEng Electronic and Electrical Engineering ❖ BEng Electronic and Railway Engineering ❖ BEng Mechatronic and Robotic Engineering **Master** ❖ BEng Electronic and Electrical Engineering ❖ BEng Electronic and Railway Engineering ❖ BEng Mechatronic and Robotic Engineering
Location	Birmingham, UK
Tuition Fees	Approximately Baht 750,000 Baht (Tuition fees for 1 year)
Scholarship	20% discount from an annual fees
Duration	2 years
Admission Period	At the End of September
Application Period	At least 4 months before the semester begins *Deposit of 10,000baht for the application fees (It is refundable only in the case of visa or University rejection.)
Accommodation Fees Living Expenses	Approximately Baht 350,000 Baht Per year
Requirement	❖ Complete Year 1 and Year 2 at AU with GPA 3.0 ❖ 60% of subjects must be major specific subjects ❖ Students must have passed all of the AU major specific modules ❖ IELTS 6.0 overall with no less than 5.5 in each band (or) TOEFL 80 overall – 19 Reading, 19 Listening, 21 Speaking, 19 Writing

University of Birmingham and Assumption University
BEng Mechatronic and Robotic Engineering (2+2)

University of Birmingham Mechatronics and Robotics Engineering	**Assumption University Mechatronics Engineering (Automation Engineering concentration)**
Mechatronics and Robotics Engineering (B.Eng.)	Bachelor of Engineering Program in Mechatronics Engineering (International Program)
Year 1	**Year 1 and 2**
Electrical Engineering 1 : **20 credits**	BG 1213 Physics II : 3 credits BG 1214 Physics Laboratory II : 1 credit EE 2201 Electric Circuits : 3 credits EE 2202 Electric Circuits Laboratory : 1 credit EE 2203 Signals and Systems : 3 credits
Engineering Materials : **10 credits**	BG 0008 General Chemistry Laboratory : 1 credit BG 1108 General Chemistry : 3 credits IE 1110 Engineering Materials : 3 credits IE 3100 Manufacturing Processes : 3 credits
Engineering Mathematics 1 : **20 credits**	BG 1204 Calculus I : 3 credits BG 1205 Calculus II : 3 credits BG 2208 Discrete Mathematics : 3 credits
Fluid Mechanics and Energy Transfer : **20 credits**	ME 3311 Pneumatic and Hydraulic Systems : 3 credits ME 3312 Pneumatic and Hydraulic Systems Laboratory : 1 credit
Integrated Design Project 1 : **20 credits**	ME 1113 Engineering Drawing : 3 credits ME 1114 Engineering Workshop : 2 credits
Computing for Engineers : **10 credits**	BG 1221 Computer Programming : 3 credits BG 2212 Applied Statistics : 3 credits
Mechanics 1 : **20 credits**	BG 1211 Physics I : 3 credits BG 1212 Physics Laboratory I : 1 credit ME 2211 Engineering Mechanics I : 3 credits

***The students will have to complete 2 years at Assumption University or all subjects listed above before starting the class at the University of Birmingham.**

Year 2	
Digital Systems and Embedded Computing : **20 credits**	CE 2704 Digital Logic Design : 3 credits CE 2705 Digital Logic Design Laboratory : 3 credits EE 3606 Electrical Instruments and Measurements : 3 credits EE 3705 Microprocessors and Microcontrollers : 3 credits EE 3704 Embedded Systems : 3 credits (as a Major Elective Course)
Engineering Mathematics 2: **20 credits**	BG 2207 Engineering Mathematics : 3 credits
Electronic Circuits and Devices and Electromagnetics : **20 credits**	EE 3402 Electrical Machines : 3 credits EE 3403 Electrical Machines Laboratory : 1 credit EE 3301 Electromagnetic Fields : 3 credits (as a Major Elective Course)
Electrical Energy Systems and Control : **20 credits**	EE 2401 Electromechanical Energy Conversion : 3 credits EE 2402 Electromechanical Energy Conversion Laboratory : 1 credit EE 3406 Control Systems : 3 credits EE 3405 Digital Control Systems : 3 credits
Integrated Design Project 2 : **20 credits**	MCE 2101 Fundamentals of Mechatronics Engineering : 3 credits MCE 2102 Mechatronics Engineering Laboratory I : 1 credit
Mechanics 2 : **20 credits**	ME 2220 Engineering Mechanics II : 3 credits ME 3110 Mechanics of Materials : 3 credits ME 3120 Mechanics of Machinery : 3 credits

Year 3	
Integrated Design Project 3 : **20 credits**	MCE 4101 Introduction to Robotics : 3 credits MCE 4102 Introduction to Industrial Automation : 3 credits CE 4201 Image Processing and Computer Vision : 3 credits
Individual Project : **40 credits**	MCE 4901 Mechatronics Engineering Project I : 1 credit MCE 4902 Mechatronics Engineering Project II : 2 credits 2 Free Elective Courses 6 credits
Mechatronic Design : **20 credits**	MCE 4103 Mechatronics Engineering Laboratory II : 1 credit
Choose 40 credits of 2 Optional modules	
Electronic Engineering : **20 credits**	EE 2605 Engineering Electronics : 3 credits EE 2606 Engineering Electronics Laboratory : 1 credit
Power Electronics and Power Systems: **20 credits**	EE 4705 Power Electronics : 3 credits EE 4706 Power Electronics Laboratory : 1 credit

University of Birmingham and Assumption University

BEng Electronic and Electrical Engineering, BEng Electrical, and Railway Engineering (2+2)

University of Birmingham	Assumption University Electrical (Power)
Year 1	**Year 1 and 2**
Electrical Engineering **20 credits**	EE 2201 Electric Circuits 3 credits EE 2202 Electric Circuits Laboratory 1 credit
Engineering Materials **20 credits**	IE 1110 Engineering Materials 3 credits ME 1113 Engineering Drawing 3 credits ME 1114 Engineering Workshop 2 credits

Engineering Mathematics **20 credits**	BG 1204 Calculus I 3 credits BG 1205 Calculus II 3 credits BG 2208 Discrete Mathematics 3 credits
Fluid Mechanics and Energy Transfer **20 credits**	BG 0008 General Chemistry Laboratory 1 credit BG 1108 General Chemistry 3 credits EE 2401 Electromechanical Energy Conversion 3 credits EE 2402 Electromechanical Energy Conversion Laboratory 1 credit
Integrated Design Project **20 credits** **------UNKNOWN SUBJECTS---------**	
Computing for Engineers **10 credits**	BG 1221 Computer Programming 3 credits CE 2102 Data Structures and Algorithms 3 credits
Mechanics 1 **20 credits**	BG 1211 Physics I 3 credits BG 1212 Physics Laboratory I 1 credit BG 1213 Physics II 3 credits BG 1214 Physics Laboratory II 1 credit ME 2211 Engineering Mechanics I 3 credits

***The students will have to complete 2 years at Assumption University or all subjects listed above before starting the class at the University of Birmingham.**

Birmingham University Electrical (Power)	**Assumption University**
Year 2	
Digital Systems and Embedded Computing **20 credits**	CE 2704 Digital Logic Design 3 credits CE 2705 Digital Logic Design Laboratory 1 credit EE 3705 Microprocessors and Microcontrollers 3 credits EE 3704 Embedded Systems 3 credits
Engineering Mathematics 2 **20 credits**	BG 2207 Engineering Mathematics 3 credits BG 2212 Applied Statistics 3 credits
Electronic Circuits and Devices and Electromagnetic **20 credits**	EE 2605 Engineering Electronics 3 credits EE 2606 EE 2605 Engineering Electronics Laboratory 1 credit EE 3301 Electromagnetic Fields 3 credits

Integrated Design Project 2 **20 credits** **------UNKNOWN SUBJECTS-----**	
Electrical Energy Systems and Control **20 credits**	EE 3402 Electrical Machines 3 credits EE 3403 Electrical Machines Laboratory 1 credit EE 3406 Control Systems 3 credits
Communication System **10 credits**	EE 2203 Signals and Systems 3 credits TE 3000 Principles of Communications 3 credits
Multidisciplinary Software and System Engineering **10 credits**	MCE 4102 Introduction to Industrial Automation 3 credits
	EE 3606 Electrical Instruments and Measurements 3 credits

Birmingham University Electrical (Power)	**Assumption University**
Year 3	
Electronic Engineering **20 credits**	EE 3601 Electronic Circuit Design 3 credits EE 3602 Electronic Circuit Design Laboratory 1 credit
Integrated Design Project 3 **20 credits** **------UNKNOWN SUBJECTS---------**	
Individual Project **40 credits**	EE 4901 Electrical Engineering Project I 1 credit EE 4902 Electrical Engineering Project II 2 credits
	EE 4506 High Voltage Engineering 3 credits EE 4503 Electrical Systems Design 3 credits
Optional 2 subjects	
Engineering Mathematics 2 **20 credits**	
Power Electronics and Power Systems **20 credits**	EE 4705 Power Electronics 3 credits EE 4706 Power Electronics Laboratory 1 credit EE4501 Power Analysis 3 credits EE4518 Power Generation and Distribution System 3 credits EE4505 Power Protection 3 credits
Advanced Communication Systems 2 **20 credits**	

Electrical Engineering (Telecommunication)

Birmingham University	Assumption University
Electrical (Telecommunication)	
Year 1	**Year 1 and 2**
Electrical Engineering **20 credits**	EE 2201 Electric Circuits 3 credits EE 2202 Electric Circuits Laboratory 1 credit
Engineering Materials **20 credits**	IE 1110 Engineering Materials 3 credits ME 1113 Engineering Drawing 3 credits ME 1114 Engineering Workshop 2 credits
Engineering Mathematics **20 credits**	BG 1204 Calculus I 3 credits BG 1205 Calculus II 3 credits BG 2208 Discrete Mathematics 3 credits
Fluid Mechanics and Energy Transfer **20 credits**	BG 0008 General Chemistry Laboratory BG 1108 General Chemistry 3 credits
Integrated Design Project **20 credits** **------UNKNOWN SUBJECTS---------**	
Computing for Engineers **10 credits**	BG 1221 Computer Programming 3 credits CE 2102 Data Structures and Algorithms 3 credits
Mechanics 1 **20 credits**	BG 1211 Physics I 3 credits BG 1212 Physics Laboratory I 1 credit BG 1213 Physics II 3 credits BG 1214 Physics Laboratory II (1) ME 2211 Engineering Mechanics I 1 credit

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Birmingham University	Assumption University
Electrical (Telecommunication)	
Year 2	
Digital Systems and Embedded Computing **20 credits**	CE 2704 Digital Logic Design 3 credits CE 2705 Digital Logic Design Laboratory 1 credit EE 3705 Microprocessors and Microcontrollers 3 credits EE 3704 Embedded Systems 3 credits
Engineering Mathematics 2 **20 credits**	BG 2207 Engineering Mathematics 3 credits BG 2212 Applied Statistics 3 credits
Electronic Circuits and Devices and Electromagnetic **20 credits**	EE 2605 Engineering Electronics 3 credits EE 2606 Engineering Electronics Laboratory 1 credit EE 3301 Electromagnetic Fields 3 credits TE 3301 Radio Wave Propagation
Integrated Design Project 2 **20 credits** **------UNKNOWN SUBJECTS---------**	
Electrical Energy Systems and Control **20 credits**	EE 3406 Control Systems 3 credits
Communication System **10 credits**	EE 2203 Signals and Systems 3 credits TE 3000 Principles of Communications 3 credits TE 3102 Communication Networks and Transmission Lines 1 credit
Multidisciplinary Software and System Engineering **10 credits**	CE 4224 Telecommunication Networks Laboratory 1 credit CE 4207 System and Network Programming 3 credits
	EE 3606 Electrical Instruments and Measurements 3 credits CE 4228 Data Communication and Networking 3 credits

Birmingham University	Assumption University
Electrical (Telecommunication)	
Year 3	
Electronic Engineering **20 credits**	EE 3601 Electronic Circuit Design 3 credits EE 3602 Electronic Circuit Design Laboratory 1 credit
Integrated Design Project 3 **20 credits** **------UNKNOWN SUBJECTS---------**	
Individual Project **40 credits**	EE 4901 Electrical Engineering Project I 1 credit EE 4902 Electrical Engineering Project II 2 credits
	TE 4112 Optical Communications 3 credits TE 4111 Antenna Engineering 3 credits
Optional 2 subjects	
The Internet of Things **20 credits**	CE 4229 Introduction to Cloud Computing
Advanced Communication Systems 2 **20 credits**	TE 4113 Digital Communication 3 credits TE 4201 Communication Electronics 3 credits TE 4202 Communication Electronics Laboratory 1 credit EE 4305 Digital Signal Processing 3 credits
Electronic Engineering **20 credits**	EE 3601 Electronic Circuit Design 3 credits EE 3602 Electronic Circuit Design Laboratory 1 credit