AY2024-25 CURRICULUM FOR BACHELOR OF ENGINEERING (MECHANICAL ENGINEERING - MAINSTREAM)
WITH CN YANG SCHOLARS PROGRAMME
SECOND MAJOR IN DATA ANALYTICS (MEDA)
(FIRST YEAR ADMISSION)

Last updated: 4-Jul-24

SUMMARY OF ACADEMIC UNIT REQUIREMENT							
Year of Study	School Core	CNYSP-Core	MPE	CC	FC	BDE	Total AU
1	11	23	0	5	0	0	39
2	18	10	0	8	0	3	39
3	25	0	6	0	8	3	42
4	15	0	0	0	0	12	27
Total	69	33	6	13	8	18	147

YEAR 1 SEMESTER 1				
Course Code	Course Title	Type	AU	Pre-Requisite/Remarks
CY1001	Cell	CNY-Core	3	CNYSP Courses
CY1101	Molecule	CNY-Core	4	
CY1308	Physics	CNY-Core	3	
CY1500	Introduction to Research	CNY-Core	2	
CY1601	Mathematics I	CNY-Core	4	
EG1001	Engineers In Society	C	2	
CC0005	Healthy Living & Mental Wellbeing in an Aging Society	CC	3	
			21	

YEAR 1 SEMESTER 2				
Course Code	Course Title	Type	AU	Pre-Requisite/Remarks
CY1007	Climate Change	CNY-Core	3	CNYSP Course
MA1001	Dynamics	C	3	**CY1308 + CY1601**
MA2003	Intro to Thermo-fluids	C	3	
MA1008^	Introduction to Computational Thinking	C	3	
CC0002	Navigating the Digital World	CC	2	
			14	

YEAR 1 SPECIAL SEMESTER				
Course Code	Course Title	Type	AU	Pre-Requisite/Remarks
CY2003	Research Attachment 3	CNY-Core	4	CNYSP Course
	Overseas Learning Trip			
			4	

YEAR 2 SEMESTER 1				
Course Code	Course Title	Type	AU	Pre-Requisite/Remarks
CY0001	Writing Across the Disciplines	CNY-Core	3	CNYSP Course
MA2001	Mechanics of Materials	C	3	
MA2002	Theory of Mechanism	C	3	**MA1001**
MA2006^	Engineering Mathematics	C	3	**CY1602**
MA2009	Introduction to Electrical & Electronic Devices	C	3	
SP0061	Science & Technology for Humanity	CC	3	
			18	

YEAR 2 SEMESTER 2				
Course Code	Course Title	Type	AU	Pre-Requisite/Remarks
CY0002	Ethics	CNY-Core	3	CNYSP Course
CY2001	Research Attachment 1	CNY-Core	4	CNYSP Course 2-semester long, course registered only in Sem 2 (similar to URECA)
MA2005	Engineering Graphics	C	3	
MA2079	Engineering Innovation and Design	C	2	**Semester 2 with 1 week in Special Term**
MA2071	Laboratory Experiments	C	1	
MH1403	Algorithms and Computing	BDE	3	**PS0001/ MA1008**
CC0006	Sustainability: Society, Economy & Environment	CC	3	
ML0004	Career and Entrepreneurial Development for the Future World	CC	2	

			21	

YEAR 3 SEMESTER 1				
Course Code	Course Title	Type	AU	Pre-Requisite/Remarks
MA2004	Manufacturing Processes	C	3	
MA2007	Thermodynamics	C	3	**MA2003**
MA3001	Machine Element Design	C	3	**Having read MA2001 and MA2002 and MA2005**
MA3002	Solid Mechanics and Vibration	C	3	**MA2001**
MA3004	Mathematical Methods in Engineering	C	3	**CY1602**
MA4849^	Operations Research	MPE	3	
			18	

YEAR 3 SEMESTER 2				
Course Code	Course Title	Type	AU	Pre-Requisite/Remarks
MA3003	Heat Transfer	C	3	**MA2007**
MA3005	Control Theory	C	3	**Having read MA2006**
MA3006	Fluid Mechanics	C	3	**MA2003**
MA3071	Engineering Experiments (ME)	C	1	
MA0218	Introduction to Data Science and Artificial Intelligence	FC	3	**MA1008**
MA4829^	Machine Intelligence	MPE	3	**DA Elective 1**
SC2207	Introduction to Database	BDE	3	**MH1403**
			19	

YEAR 3 SPECIAL SEMESTER				
Course Code	Course Title	Type	AU	Pre-Requisite/Remarks
MA3910	Professional Attachment	FC	5	
			5	

YEAR 4 SEMESTER 1				
Course Code	Course Title	Type	AU	Pre-Requisite/Remarks
MA4001	Engineering Design	C	4	**Having read MA3001**
MA4002	Fluid Dynamics	C	3	**MA3006**
XXXXX	DA Elective 2	BDE	3	
XXXXX	DA Elective 3	BDE	3	
SC4020	Data Analytics and Mining	BDE	3	**MH1403**
SC4024	Data Visualization	BDE	3	**MA1008 & MA4849**
			19	

YEAR 4 SEMESTER 2				
Course Code	Course Title	Type	AU	Pre-Requisite/Remarks
MA4211	CNYSP Overseas Final Year Project	C	8	
			8	
	Total AU for Graduation:		147	

^ These courses are double-counted towards both ME as well as the Second Major in Data Analytics.

Compulsory Courses for Second Major in Data Analytics					
Course Type	Course Code	Course Title	AU	Offering Sem	Pre-req
MPE	MA4849	Operations Research	3	1	-
Core	MA2006	Engineering Mathematics	3	1 & 2	CY1602
Core	MA1008	Introduction to Computational Thinking	3	2	-
BDE	MH1403	Algorithms and Computing	3	2	MA1008
BDE	SC2207	Introduction to Database	3	1 & 2	MH1403
BDE	SC4020	Data Analytics and Mining	3	1	MH1403
BDE	SC4024	Data Visualization	3	1	MA1008 & MA4849

Suggested Electives for Second Major in Data Analytics					
Course Type	Course Code	Course Title	AU	Offering Sem	Pre-req
MPE	MA4829	Machine Intelligence	3	2	-
BDE	MA4830	Real Time Software for Mechatonics System	3	1	-
BDE	MA4832	Microprocessor System	3	1	-

AY2024-25 CURRICULUM FOR BACHELOR OF ENGINEERING (MECHANICAL ENGINEERING - DESIGN STREAM)
WITH CN YANG SCHOLARS PROGRAMME
SECOND MAJOR IN DATA ANALYTICS (MEDA)
(FIRST YEAR ADMISSION)

Last updated: 4-Jul-24

SUMMARY OF ACADEMIC UNIT REQUIREMENT							
Year of Study	School Core	CNYSP-Core	MPE	CC	FC	BDE	Total AU
1	14	23	0	5	0	0	42
2	18	10	0	8	0	3	39
3	25	0	6	0	8	3	42
4	12	0	0	0	0	12	24
Total	69	33	6	13	8	18	147

YEAR 1 SEMESTER 1				
Course Code	Course Title	Type	AU	Pre-Requisite/Remarks
CY1001	Cell	CNY-Core	3	CNYSP Courses
CY1101	Molecule	CNY-Core	4	
CY1308	Physics	CNY-Core	3	
CY1500	Introduction to Research	CNY-Core	2	
CY1601	Mathematics I	CNY-Core	4	
EG1001	Engineers In Society	C	2	
CC0005	Healthy Living & Mental Wellbeing in an Aging Society	CC	3	
			21	

YEAR 1 SEMESTER 2				
Course Code	Course Title	Type	AU	Pre-Requisite/Remarks
CY1007	Climate Change	CNY-Core	3	CNYSP Course
MA1001	Dynamics	C	3	**CY1308 + CY1601**
MA2003	Intro to Thermo-fluids	C	3	
MA1008^	Introduction to Computational Thinking	C	3	
MA2009	Introduction to Electrical & Electronic Devices	C	3	
CC0002	Navigating the Digital World	CC	2	
			17	

YEAR 1 SPECIAL SEMESTER				
Course Code	Course Title	Type	AU	Pre-Requisite/Remarks
CY2003	Research Attachment 3	CNY-Core	4	CNYSP Course
	Overseas Learning Trip			
			4	

YEAR 2 SEMESTER 1				
Course Code	Course Title	Type	AU	Pre-Requisite/Remarks
CY0001	Writing Across the Disciplines	CNY-Core	3	CNYSP Course
MA2001	Mechanics of Materials	C	3	
MA2002	Theory of Mechanism	C	3	**MA1001**
MA2006^	Engineering Mathematics	C	3	**CY1602**
MA2014	Product Presentation	C	3	
SP0061	Science & Technology for Humanity	CC	3	
			18	

YEAR 2 SEMESTER 2				
Course Code	Course Title	Type	AU	Pre-Requisite/Remarks
CY0002	Ethics	CNY-Core	3	CNYSP Course

CY2001	Research Attachment 1	CNY-Core	4	CNYSP Course 2-semester long, course registered only in Sem 2 (similar to URECA)
MA2013	Creative Thinking and Design	C	3	
MA2079	Engineering Innovation and Design	C	2	**Semester 2 with 1 week in Special Term**
MA2071	Laboratory Experiments	C	1	
MH1403	Algorithms and Computing	BDE	3	**PS0001/ MA1008**
CC0006	Sustainability: Society, Economy & Environment	CC	3	
ML0004	Career and Entrepreneurial Development for the Future World	CC	2	
			21	

YEAR 3 SEMESTER 1				
Course Code	Course Title	Type	AU	Pre-Requisite/Remarks
MA2024	Engineering Materials & Manufacturing Processes	C	3	
MA3001	Machine Element Design	C	3	**Having read MA2001 and MA2002 and MA2005**
MA3002	Solid Mechanics and Vibration	C	3	**MA2001**
MA3004	Mathematical Methods in Engineering	C	3	**CY1602**
MA3010	Thermodynamics and Heat Transfer	C	3	**MA2003**
MA4849^	Operations Research	MPE	3	
			18	

YEAR 3 SEMESTER 2				
Course Code	Course Title	Type	AU	Pre-Requisite/Remarks
MA2005	Engineering Graphics	C	3	
MA3005	Control Theory	C	3	**Having read MA2006**
MA3006	Fluid Mechanics	C	3	**MA2003**
MA3071	Engineering Experiments (ME)	C	1	
MA0218	Introduction to Data Science and Artificial Intelligence	FC	3	**MA1008**
MA4829^	Machine Intelligence	MPE	3	**DA Elective 1**
SC2207	Introduction to Database	BDE	3	**MH1403**
			19	

YEAR 3 SPECIAL SEMESTER				
Course Code	Course Title	Type	AU	Pre-Requisite/Remarks
MA3910	Professional Attachment	FC	5	
			5	

YEAR 4 SEMESTER 1				
Course Code	Course Title	Type	AU	Pre-Requisite/Remarks
MA4011	Engineering Product Design	C	4	**Having read MA3001**
XXXXXX	DA Elective 2	BDE	3	
XXXXXX	DA Elective 3	BDE	3	
SC4020	Data Analytics and Mining	BDE	3	**MH1403**
SC4024	Data Visualization	BDE	3	**MA1008 & MA4849**
			16	

YEAR 4 SEMESTER 2				
Course Code	Course Title	Type	AU	Pre-Requisite/Remarks
MA4211	CNYSP Overseas Final Year Project	C	8	
			8	
	Total AU for Graduation:		**147**	

^ These courses are double-counted towards both ME as well as the Second Major in Data Analytics.

Compulsory Courses for Second Major in Data Analytics					
Course Type	Course Code	Course Title	AU	Offering Sem	Pre-req
MPE	MA4849	Operations Research	3	1	-
Core	MA2006	Engineering Mathematics	3	1 & 2	CY1602
Core	MA1008	Introduction to Computational Thinking	3	2	-
BDE	MH1403	Algorithms and Computing	3	2	MA1008
BDE	SC2207	Introduction to Database	3	1 & 2	MH1403
BDE	SC4020	Data Analytics and Mining	3	1	MH1403
BDE	SC4024	Data Visualization	3	1	MA1008 & MA4849

Suggested Electives for Second Major in Data Analytics					
Course Type	Course Code	Course Title	AU	Offering Sem	Pre-req
MPE	MA4829	Machine Intelligence	3	2	-
BDE	MA4830	Real Time Software for Mechatonics System	3	1	-
BDE	MA4832	Microprocessor System	3	1	-

AY2024-25 CURRICULUM FOR BACHELOR OF ENGINEERING
(MECHANICAL ENGINEERING - ROBOTICS & MECHATRONICS STREAM)
WITH CN YANG SCHOLARS PROGRAMME
SECOND MAJOR IN DATA ANALYTICS (MEDA)
(FIRST YEAR ADMISSION)

Last updated: 4-Jul-24

SUMMARY OF ACADEMIC UNIT REQUIREMENT							
Year of Study	School Core	CNYSP-Core	MPE	CC	FC	BDE	Total AU
1	14	23	0	5	0	0	**42**
2	18	10	0	8	0	3	**39**
3	29	0	6	0	8	0	**43**
4	8	0	0	0	0	15	**23**
Total	**69**	**33**	**6**	**13**	**8**	**18**	**147**

YEAR 1 SEMESTER 1				
Course Code	Course Title	Type	AU	Pre-Requisite/Remarks
CY1001	Cell	CNY-Core	3	CNYSP Courses
CY1101	Molecule	CNY-Core	4	
CY1308	Physics	CNY-Core	3	
CY1500	Introduction to Research	CNY-Core	2	
CY1601	Mathematics I	CNY-Core	4	
EG1001	Engineers In Society	C	2	
CC0005	Healthy Living & Mental Wellbeing in an Aging Society	CC	3	
			21	

YEAR 1 SEMESTER 2				
Course Code	Course Title	Type	AU	Pre-Requisite/Remarks
CY1007	Climate Change	CNY-Core	3	CNYSP Course
MA1001	Dynamics	C	3	**CY1308 + CY1601**
MA2003	Intro to Thermo-fluids	C	3	
MA1008^	Introduction to Computational Thinking	C	3	
MA2009	Introduction to Electrical & Electronic Devices	C	3	
CC0002	Navigating the Digital World	CC	2	
			17	

YEAR 1 SPECIAL SEMESTER				
Course Code	Course Title	Type	AU	Pre-Requisite/Remarks
CY2003	Research Attachment 3	CNY-Core	4	CNYSP Course
	Overseas Learning Trip			
			4	

YEAR 2 SEMESTER 1				
Course Code	Course Title	Type	AU	Pre-Requisite/Remarks
CY0001	Writing Across the Disciplines	CNY-Core	3	CNYSP Course
MA2001	Mechanics of Materials	C	3	
MA2002	Theory of Mechanism	C	3	**MA1001**
MA2006^	Engineering Mathematics	C	3	**CY1602**
MA2012	Introduction to Mechatronics Systems Design	C	3	
SP0061	Science & Technology for Humanity	CC	3	
			18	

YEAR 2 SEMESTER 2				
Course Code	Course Title	Type	AU	Pre-Requisite/Remarks
CY0002	Ethics	CNY-Core	3	CNYSP Course

CY2001	Research Attachment 1	CNY-Core	4	CNYSP Course 2-semester long, course registered only in Sem 2 (similar to URECA)
MA2011	Mechatronics System Interfacing	C	3	
MA2079	Engineering Innovation and Design	C	2	**Semester 2 with 1 week in Special Term**
MA2071	Laboratory Experiments	C	1	
MH1403	Algorithms and Computing	BDE	3	**PS0001/ MA1008**
CC0006	Sustainability: Society, Economy & Environment	CC	3	
ML0004	Career and Entrepreneurial Development for the Future World	CC	2	
			21	

YEAR 3 SEMESTER 1				
Course Code	**Course Title**	**Type**	**AU**	**Pre-Requisite/Remarks**
MA2024	Engineering Materials & Manufacturing Processes	C	3	
MA3001	Machine Element Design	C	3	**Having read MA2001 and MA2002 and MA2005**
MA3002	Solid Mechanics and Vibration	C	3	**MA2001**
MA3004	Mathematical Methods in Engineering	C	3	**CY1602**
MA3005	Control Theory	C	3	**Having read MA2006**
MA3010	Thermodynamics and Heat Transfer	C	3	**MA2003**
MA4849^	Operations Research	MPE	3	
			21	

YEAR 3 SEMESTER 2				
Course Code	**Course Title**	**Type**	**AU**	**Pre-Requisite/Remarks**
MA2005	Engineering Graphics	C	3	
MA3006	Fluid Mechanics	C	3	**MA2003**
MA3071	Engineering Experiments (ME)	C	1	
MA0218	Introduction to Data Science and Artificial Intelligence	FC	3	**MA1008**
MA4012	Mechatronics Engineering Design	C	4	**Having read MA3001**
MA4829^	Machine Intelligence	MPE	3	**DA Elective 1**
			17	

YEAR 3 SPECIAL SEMESTER				
Course Code	**Course Title**	**Type**	**AU**	**Pre-Requisite/Remarks**
MA3910	Professional Attachment	FC	5	
			5	

YEAR 4 SEMESTER 1				
Course Code	**Course Title**	**Type**	**AU**	**Pre-Requisite/Remarks**
XXXXXX	DA Elective 2	BDE	3	
XXXXXX	DA Elective 3	BDE	3	
SC2207	Introduction to Database	BDE	3	**MH1403**
SC4020	Data Analytics and Mining	BDE	3	**MH1403**
SC4024	Data Visualization	BDE	3	**MA1008 & MA4849**
			15	

YEAR 4 SEMESTER 2				
Course Code	**Course Title**	**Type**	**AU**	**Pre-Requisite/Remarks**
MA4211	CNYSP Overseas Final Year Project	C	8	
			8	
		Total AU for Graduation:	147	

^ These courses are double-counted towards both ME as well as the Second Major in Data Analytics.

Compulsory Courses for Second Major in Data Analytics					
Course Type	Course Code	Course Title	AU	Offering Sem	Pre-req
MPE	MA4849	Operations Research	3	1	-
Core	MA2006	Engineering Mathematics	3	1 & 2	CY1602
Core	MA1008	Introduction to Computational Thinking	3	2	-
BDE	MH1403	Algorithms and Computing	3	2	MA1008
BDE	SC2207	Introduction to Database	3	1 & 2	MH1403
BDE	SC4020	Data Analytics and Mining	3	1	MH1403
BDE	SC4024	Data Visualization	3	1	MA1008 & MA4849

Suggested Electives for Second Major in Data Analytics					
Course Type	Course Code	Course Title	AU	Offering Sem	Pre-req
MPE	MA4829	Machine Intelligence	3	2	-
BDE	MA4830	Real Time Software for Mechatonics System	3	1	-
BDE	MA4832	Microprocessor System	3	1	-

AY2024-25 CURRICULUM FOR BACHELOR OF ENGINEERING
(MECHANICAL ENGINEERING - INTELLIGENCE MANUFACTURING STREAM)
WITH CN YANG SCHOLARS PROGRAMME
SECOND MAJOR IN DATA ANALYTICS (MEDA)
(FIRST YEAR ADMISSION)

Last updated:　4-Jul-24

SUMMARY OF ACADEMIC UNIT REQUIREMENT							
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3	29	0	6	0	8	0	43
4	8	0	0	0	0	15	23
Total	69	33	6	13	8	18	147

YEAR 1 SEMESTER 1				
Course Code	Course Title	Type	AU	Pre-Requisite/Remarks
CY1001	Cell	CNY-Core	3	CNYSP Courses
CY1101	Molecule	CNY-Core	4	
CY1308	Physics	CNY-Core	3	
CY1500	Introduction to Research	CNY-Core	2	
CY1601	Mathematics I	CNY-Core	4	
EG1001	Engineers In Society	C	2	
CC0005	Healthy Living & Mental Wellbeing in an Aging Society	CC	3	
			21	

YEAR 1 SEMESTER 2				
Course Code	Course Title	Type	AU	Pre-Requisite/Remarks
CY1007	Climate Change	CNY-Core	3	CNYSP Course
MA1001	Dynamics	C	3	**CY1308 + CY1601**
MA2003	Intro to Thermo-fluids	C	3	
MA1008^	Introduction to Computational Thinking	C	3	
MA2009	Introduction to Electrical & Electronic Devices	C	3	
CC0002	Navigating the Digital World	CC	2	
			17	

YEAR 1 SPECIAL SEMESTER				
Course Code	Course Title	Type	AU	Pre-Requisite/Remarks
CY2003	Research Attachment 3	CNY-Core	4	CNYSP Course
	Overseas Learning Trip			
			4	

YEAR 2 SEMESTER 1				
Course Code	Course Title	Type	AU	Pre-Requisite/Remarks
CY0001	Writing Across the Disciplines	CNY-Core	3	CNYSP Course
MA2001	Mechanics of Materials	C	3	
MA2002	Theory of Mechanism	C	3	**MA1001**
MA2006^	Engineering Mathematics	C	3	**CY1602**
MA2012	Introduction to Mechatronics Systems Design	C	3	
SP0061	Science & Technology for Humanity	CC	3	
			18	

YEAR 2 SEMESTER 2				
Course Code	Course Title	Type	AU	Pre-Requisite/Remarks
CY0002	Ethics	CNY-Core	3	CNYSP Course

				CNYSP Course 2-semester long, course registered only in Sem 2 (similar to URECA)
CY2001	Research Attachment 1	CNY-Core	4	
MA2011	Mechatronics System Interfacing	C	3	
MA2079	Engineering Innovation and Design	C	2	**Semester 2 with 1 week in Special Term**
MA2071	Laboratory Experiments	C	1	
MH1403	Algorithms and Computing	BDE	3	**PS0001/ MA1008**
CC0006	Sustainability: Society, Economy & Environment	CC	3	
ML0004	Career and Entrepreneurial Development for the Future World	CC	2	
			21	

YEAR 3 SEMESTER 1				
Course Code	**Course Title**	**Type**	**AU**	**Pre-Requisite/Remarks**
MA2024	Engineering Materials & Manufacturing Processes	C	3	
MA3001	Machine Element Design	C	3	**Having read MA2001 and MA2002 and MA2005**
MA3002	Solid Mechanics and Vibration	C	3	**MA2001**
MA3004	Mathematical Methods in Engineering	C	3	**CY1602**
MA3005	Control Theory	C	3	**Having read MA2006**
MA3010	Thermodynamics and Heat Transfer	C	3	**MA2003**
MA4849^	Operations Research	MPE	3	
			21	

YEAR 3 SEMESTER 2				
Course Code	**Course Title**	**Type**	**AU**	**Pre-Requisite/Remarks**
MA2005	Engineering Graphics	C	3	
MA3006	Fluid Mechanics	C	3	**MA2003**
MA3071	Engineering Experiments (ME)	C	1	
MA0218	Introduction to Data Science and Artificial Intelligence	FC	3	**MA1008**
MA4013	Manufacturing Engineering Design	C	4	**Having read MA3001**
MA4829^	Machine Intelligence	MPE	3	**DA Elective 1**
			17	

YEAR 3 SPECIAL SEMESTER				
Course Code	**Course Title**	**Type**	**AU**	**Pre-Requisite/Remarks**
MA3910	Professional Attachment	FC	5	
			5	

YEAR 4 SEMESTER 1				
Course Code	**Course Title**	**Type**	**AU**	**Pre-Requisite/Remarks**
XXXXXX	DA Elective 2	BDE	3	
XXXXXX	DA Elective 3	BDE	3	
SC2207	Introduction to Database	BDE	3	**MH1403**
SC4020	Data Analytics and Mining	BDE	3	**MH1403**
SC4024	Data Visualization	BDE	3	**MA1008 & MA4849**
			15	

YEAR 4 SEMESTER 2				
Course Code	**Course Title**	**Type**	**AU**	**Pre-Requisite/Remarks**
MA4211	CNYSP Overseas Final Year Project	C	8	
			8	
Total AU for Graduation:			**147**	

^ These courses are double-counted towards both ME as well as the Second Major in Data Analytics.

Compulsory Courses for Second Major in Data Analytics					
Course Type	Course Code	Course Title	AU	Offering Sem	Pre-req
MPE	MA4849	Operations Research	3	1	-
Core	MA2006	Engineering Mathematics	3	1 & 2	CY1602
Core	MA1008	Introduction to Computational Thinking	3	2	-
BDE	MH1403	Algorithms and Computing	3	2	MA1008
BDE	SC2207	Introduction to Database	3	1 & 2	MH1403
BDE	SC4020	Data Analytics and Mining	3	1	MH1403
BDE	SC4024	Data Visualization	3	1	MA1008 & MA4849

Suggested Electives for Second Major in Data Analytics					
Course Type	Course Code	Course Title	AU	Offering Sem	Pre-req
MPE	MA4829	Machine Intelligence	3	2	-
BDE	MA4830	Real Time Software for Mechatonics System	3	1	-
BDE	MA4832	Microprocessor System	3	1	-