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\ C J) «7- X#q0; J 1yN¶ þ »8 Ø F3+5 ,´ 6 À ÃAîAÑÃ 0 ÃF >| ú 1Ñ*61y é M' Œ´ Q 3P CXÄ+X» 0; ° _ ê } Ä

" J 5 ¤ >,´ –+OÖ

(1) § 9 ~ Î ,´ *6Aê* .p È § 7F2Ä8 Ø F 0; ° _ …ú 6| J ..M0r ,´ 7- Ë È7- O5, 8F +X – 1y8 'f 0 – ÃC J. Aöú Ô ù – 0 . AöÈ6 À8 Ø F ú-(£N¶] ,´ = r 0; L NÈ¦ Ë3+5 W@ ã é x ×

(2) 7- OF +X)à §*6@ ¼@ ã = r #q0; J E÷0; 8 Ø × f 3+5 ,´ 6 À ÃAîAÑÃLö @¼= Ñ1y Î Lu 0; L NÈ×

(3) § 9Q Ö,´ /n J CS+ O Ã • ~ ,´ ê I Ã8Ÿ- ,´ ê · 0 – 3P« Ã ¼B@5 é ,´ LQ2î/Ž Ã 9 x ,´ "Ï FJ >>˜Eî7- Ë ¼ 0; N© 1Ñ*67- Ë È X 0; Î D%¦ 7-5, 863<•# » Ã)ß ³ > 15 W ..1y 3PÈ § 9 Š 1 œG Y,ú H x ,´ 3PCX×

(4) § 9 ¯LQ´ - Lu?öGþÈ k ØF2Ä = Ý F,´ - µ F ' ï ¼)ß ³ È7- OFJE÷J /ý – • $PFƒ $ à. AöÈ ' @4ø+O– • ,´ • Ä

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" J 7- Ë?±"r	7 7&é
" J ?±"r 1 Ö 0;. AöÖ¼ – Ã8 'f 0 – Ã 0; * .p ½8 Ø F C J. AöÈ7- OF +X¦ *6Aê¼é# @ ã#q0; J Ÿ F Ã8 Ø F-(£,´ = r 0; L NÈÄ	1-1.7- 6 – Ã8 'f 0 – Ã 0; * .p ¼C J. AöF +X` = r 0; L NÈ´ ƒ >˜F] Ä
	1-2.7- J¸) 0 Z3+5 FE÷0; * 0û 8F2´ – Q » È ¦ Y+X ƒ ,´ é# F >|"r @ Ä
	1-3.7- 6 0; * .p ¼C J. Aö+X¾#q0; J E÷0; ,´ T [¼6 À Ä
	1-4.7- 6 0; * .p ¼C J. Aö+X¾#q0; J E÷0; ,´ AîAÑÃ × f ¼i F Ä
" J ?±"r 2 Ö L NÈ6 À Ö7- O Ä+X – Ã8 'f 0 – ¼ 0; 0 –,´ * \ Ï *6 ÈAö[Ã>˜Eî Ã¦ FJE÷·)^.D0¦ 6 À#q0; J Ÿ F Ã8 Ø F-(£,´ = r 0; L NÈÈ 9ç Ç 9 x 5 AêÄ	2-1.7- F +X – Ã8 'f 0 – ¼ 0; 0 –,´ * \ Ï *6 ÈAö[#q0; J Ÿ F Ã8 Ø F-(£,´ = r 0; L NÈ] ,´ £K^)ß8² Ä
	2-2.7- FJE÷* 0û – Q » Ã0c Ê W6 À Ã3+5 Lö @6 À Ã * ¾ 8ª ¼Aî 7F >| ý Œ7 7 6 À 1y é# !" .ž>˜Eî#q0; J Ÿ F Ã8 Ø F-(£,´ = r 0; L NÈÄ
	2-3.7- FJE÷·)^.D0¦ • 6 À#q0; J Ÿ F Ã8 Ø F-(£,´ = r 0; L NÈÈ 9ç Ç 9 x 5 AêÄ
" J ?±"r 3 Ö AîAÑ 0 @ ã é x Ö X5, 863<•/n J Ã • ç Ã ¹ ˜ Ã# » Ã · F ú)ß ³ 1y 3P,´ } ; È7- OJ¸) #q0; J Ÿ F Ã8 Ø F-(£,´ = r 0; L NÈÂî AÑ@ ã é x ÈAîAÑ%Cã(© ÊM0r ,´ 3+5 Ã …s ÄG & Å È ¦ 7- O XAîAÑß8²] ƒ)à K à ? AöÄ	3-1.7- O i ž +Xg M0r .ž ÊAîAÑ 7 È ¦ 7- O X ¹ ˜ Ã)ß ³ Ã# »1y)à Î 4Ö• ' & ; È) Aî AÑé x ,´ >| WF >|.D0¦ Ä
	3-2.7- OFJE÷* QF >| 8ªAÑ1ÇÈLö @…s E÷0; F >| #q0; × f AîAÑÈ¦) #q0; E÷0; AîAÑé x F >| HF9È ƒ)à K à ? AöÄ
	3-3. ¼ …s Ã3+5 1y8 Ø F 0; AîAÑ AöÈ7- O Ä+X¦ J¸) #q0; J Ÿ F Ã8 Ø F-(£ ,´ = r 0; L NÈÂîAÑ@ ã é x Ä

" J?±"r 4 Ö .D0¦ Ø- O * ¾0 – Ï *6 ¦ G÷X0 – é#) #q0; J Ÿ F Ã8 Ø F-(£,´ = r 0;L NÈF >|.D0¦ È 5 AîAÑÎ P½Ã6 À >@Gú ž Ã¦ FJE÷ Ÿ5, 8 Ç ` 8*6 9 x,´ 5 AêÄ	4-1.7- O * ¾C J *6AêÈ i ž) B'(© WÈF9 .D0¦ D 4ï Ä
	4-2.7- O * ¾xF × f é# ÃE÷0;- × é# 1y) #q0; J Ÿ F Ã8 Ø F-(£,´ = r 0;L NÈÀîAÑÎ P½é x È 0 …Î P½È 6 À >@Gú ž Ä
	4-3.7- OJ¸) #q0; J Ÿ F Ã8 Ø F-(£,´ = r 0;L NÈF >| × f 3+5 Ä+XD0¦ È¦ FJE÷ Ÿ5, 8 Ç ` 8*6 9 x,´ 5 AêÄ
" J?±"r 5 Ö ¯+X)à § Ö¼ ·)^ ð3RÃCt É B úF +X)à Ÿ ° _9ç -(£ Ÿ,´ * \ é# È?- OJ¸) #q0; J Ÿ F Ã8 Ø F-(£,´ = r 0;L NÈÈ0 ÃF9 > ¯+X ƒ,´ ° _ ÃCt$ÀÃ)à 0; § ¼ Ÿ ° _ § È5) #q0; J Ÿ F Ã8 Ø F -(£,´ = r 0;L NÈ; N´#{ > Q È¦ 7- O*6@¦ pL€WÄ	5-1. ¼ ·)^ ð3RÃCt É B úF +X)à Ÿ ° _9ç -(£ Ÿ,´ * \ é# Ä
	5-2.7-!" .ž 0 ÃF9 > ¯+X/ -O § Ã ê j +|M'Lö@ §1y ° _ ÃCt$ÀÈ) #q0; J Ÿ F Ã8 Ø F-(£,´ = r 0;L NÈF >|N´#{ > Q Ä
	5-3. X@ ã #q0; J Ÿ F Ã8 Ø F-(£,´ = r 0;L NÈÎ D%¦ Q)à §,´ Ä+X7- Ë È ¦ 7- O*6@¦ pL€WÄ
" J?±"r 6 Ö 0; >/n J Ø7- O * ¾#q0; J Ÿ F Ã8 Ø F-(£,´ 6ü Ÿ. AöF >| 8*6 6 À ÈÂô' C J 0; Î D%¼ = r 0;L NÈ@ ã é x) /n J Ã• ç Ã¹ ~ Ã# » ú · F,´ ¡ ý È¦ *6@ Ä ¯ õ,´ CS+ Ä	6-1. ¼ /n J Ã• ç Ã¹ ~ Ã# » ú · F1y é M',´ -(£. AöÈ7- O * ¾#q0; J Ÿ F Ã 8 Ø F-(£,´ 6ü Ÿ. AöF >| 8*6 6 À Ä
	6-2. âDÛƒ P½¦ Aô' 0; Î D%¼ 0; é x) /n J Ã• ç Ã¹ ~ Ã# » ú · F,´ ¡ ý È*6@ X#q0; J Ÿ F Ã8 Ø F-(£ 0; Î D%¦ Ä ¯ õ,´ CS+ Ä
" J?±"r 7 Ö)ß³ ¼ 15 …Ø- O*6@ ¼Aô' J¸) #q0; J Ÿ F Ã8 Ø F-(£,´ = r 0;L NÈ; 0; Î D%))ß³ Ã/n J 15 ..,´ ¡ ý Ä	7-1.*6@ ¼âDÛƒ P½¸) #q0; J Ÿ F Ã8 Ø F-(£,´ = r 0;L NÈ; 0; Î D%))ß³ Ã /n J 15 ..,´ ¡ ý Ä
	7-2.F +X)ß³ > 15 ..1y-(£# »# ?ô6 À ÃAô' J¸) #q0; J Ÿ F Ã8 Ø F-(£,´ = r 0;L NÈ; 0; Î D%))ß³ Ã/n J 15 ..,´ ¡ ý Ä
" J?±"r 8 Ö 6| J?ô93 Ö § 9 ê · /n J 0 –3P« Ã/n J CS+ O È 7- O X#q0; J Ÿ F Ã8 Ø F,´ 0; Î D%¦ *6@ ¦ F¥¸ 0;6| J Fƒ ç ¼?ô93 È • >|CS+ Ä	8-1.) «8Ÿ- ,´ F+|?òÃ ê +O?ò × ¶@ - æ>/n J …Ä
	8-2. § 98Ÿ- ,´ ê · /n J 0 –3P« Ã/n J CS+ O Ä
	8-3.*6@ 0; 8,´ 6| J WCX¼CS+ × X#q0; J Ÿ F Ã8 Ø F,´ 0; Î D%¦ F¥¸ 0;6| J Fƒ ç ¼?ô93 È¦ • >|CS+ Ä
" J?±"r 9 Ö Z ê ¼ LOØ- O X J –0 6ü Ÿ ; ,´ LO] ¯ õ Z ƒ Ã LO@^ úCŒCSê,´ @8¢Ä	9-1.7- O X J –0 6ü Ÿ ; ,´ LO] ¯ õ Z ƒ @8¢¦ U Z ƒ H ï Ä
	9-2.7- O X J –0 6ü Ÿ ; ,´ LO] ¯ õ LO@^ @8¢¦ U LO• Œ2î/Ž Ä
	9-3.7- O X J –0 6ü Ÿ ; ,´ LO] ¯ õ LOŒCŒSê@8¢¦ U1Ñ†67- Ë Ä
" J?±"r 10 Ö "Ï FJØ7- O a#q0; J Ÿ F Ã8 Ø F-(£,´ = r 0;L NÈ> J+| <>| ú/n J œGF >| 9 x "Ï FJ¼ Ô#q È5 à É Õ z ¼AîAÑ· 0oÃLxF @ÕÃ$5 >˜Eî F Ä 7 È¦ § 7 0 Ê,´ - Lu?öGþÈ7- O X D · F6ü Ÿ ; F >|"Ï FJ¼Ô#q Ä	10-1. § 7 FB Ô#q7- Ë È § 9 0 Ê,´ - Lu?öGþÈ7- O XD · F6ü Ÿ ; F >|"Ï FJ¼Ô#q Ä
	10-2.7- O"Ï 4óL5B+C J FB ·)^ Ct É È a#q0; J Ÿ F Ã8 Ø F-(£,´ = r 0;L NÈ> J+| <>| ú/n J œG 9 x ` F >| d ¼–M',´ Ÿ Ô#q Ä
" J?±"r 11 Ö N© 1Ñ†6 Ö6@¦ ¼ 0;1Ñ†6 Ï *6 >4ÿ#~ã 1† é # È¦ 7- X J –0)ß³] Ä+XÄ	11-1.*6@¦ ¼ 0 Ê,´ 0;1Ñ†6 Ï *6 >4ÿ#~ã 1† é# Ä
	11-2.7- O Ä+X 0;1Ñ†6 Ï *6 >4ÿ#~ã 1† é#) #q0; J Ÿ F Ã8 Ø F-(£,´ = r 0;L NÈF >| 9 x 6 À ½5, 8 Aô' Ä
" J?±"r 12 Ö4øÐÛ– • Ö § 98 k – • ¼4øÐÛ– • ,´ ?AöÈ 9 = Ý – • ¼F2Ä ..,´ 7- Ë Ä	12-1. ¼ 4øÐÛ– • ,´ B @0 § ¼AÑ1Çj § È§ 98 k – • 7- Ë È7- OFJE÷8 k L5Ct É È 9ç @ãL NÈ; . Aö¼é# Ä
	12-2. u 6AÔÀö` #q0; J Ÿ F Ã8 Ø F-(£,´ 0;N¶ ,´ FO … ú8 k – • Ã4øÐÛ – • ,´ Gÿ?± WÈ § 9 • ç8Ÿ- ,´ ó*6 ÃDÛƒ 3PCXÈ F2Ä Œ] ,´ 4/ý + Ñ Ä

CJ" J?±"r ÄB 7- O _ Á) «- 7,´ Eî @Ä * 0û\ CJ" J?±"r _ Á) «- 7 Î)à,´ £3+. LeÄ

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" J?±"r	) «- 7			
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1 Ö 0;. Aö	√			√
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5 Ö¯+X)à §		√		√
6 Ö 0; >/n J		√	√	
7 Ö)ß³ ¼ 15 …			√	
8 Ö6| J?ô93			√	
9 Ö Z ê ¼ LO			√	
10 Ö"Ï FJ			√	√
11 ÖN© 1Ñ¶6			√	
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+eD 6 À * .p Ã ‡+e€ ° _ Ã Q +e€ ° _ Ã Þ j Ï *6 ú Ä+XÃ8 Ø × f Ï *6 Ã)à × f *6AêÃE÷ 0; ð#{ ° _ > P O˜ ÃE÷0; * Q ° _ ÃE÷0; × f 0; ÃAÑ1Çj × f ° _ Ä

£ = $ P ª L†

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–+OÄ8#A % 170 – 6 é " J Ä1V8É",Lc F W– \ 0 " J+O– – } ¸ ¸ Œ9 £?ôÊ(2017 ¤ 3 8 AÒ)Ê – } ¸ ¸ ‘ &65È ¸ ¸ – – – } Ä 9'—' @WAô' ?ô93ÃEî ` ê }) « é x?ôÊEµ ?±"r ,´ –+OÈ9ç",Lc F W–8 Ø F C J à 0 Ä Î P¼ ÅEµ Añ– Ä

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B.0;2«[	B.0; Q‡		B.0; WCX	– 6?±"r	?AÑ	" » Ä% Å
FJAö‰6âB.	FJAö‰6â õ B.	Mo2«	õ	18	42.5	24.85
		FB 2«		12		
		AÑ1Çj 2«		2.5		
		Ë » ¹ ˜ 2«		2		
		ã Ø ƒ 6â2«		5		
		K à K J 2«		2		
		ó*6 • ç 2«		1		
	FJAö‰6âF9 B.	5¾6â2«(400)	F9	2	8	4.68
		] - > F+|(500)		2		
		"(600)		1		
		4ÿ#~1Ñ†62«(700)		1		
		P5 · F(900)		2		
	FJAö‰6âÎ D%B.	ËAÝ	Î D%	2	2	1.17
–0 £ B.	–0 *.pB.0;	œ¡ *.p2«	õ	56.5	62	69.30
		CJ *.p2«				
	–0 Î D%B.0;	-	Î D%	5.5		
CJ ‰6âB.	CJ hóB.0;	-	õ	16.5	48.5	
	CJF9 B.0;	-	F9	3		
	CJ Î D%B.0;	-	Î D%	29		
7-Ë ..B.	CJ(©8¢B.0;	-	õ ÄF Î D%Å	8	8	
B. F)ß8²	B. FFJAöÎ D%	ê · /n J Î D%	B. F Î D%	4		
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$XWRPDWLRQ0DMRU 8QGHUJUDGXDWH(GXFDWLRQ3URJUDP

Þ (GXFDWLRQDO2EMHFWLYHV

This major trains high-quality applied engineering and technical personnel who can be engaged in the analysis, design, development, operation and management of automation systems in process industries and other fields.

Students 5 years after graduation:

(1) Having a solid theoretical foundation, and the ability to adapt to the development of automation engineering technology and career development needs: being able to use mathematics and other natural science, professional knowledge and interdisciplinary knowledge to analyze complex engineering problems in automation and related fields and provide systematic solutions;

(2) Being able to use modern tools to understand and solve practical engineering problems such as analysis, design, integration and service of complex process of industrial process and automatic control system;

(3) Having a high sense of social responsibility, sound personality, good humanity literacy, harmonious and inclusive team spirit, effective communication and expression ability and project management ability. In engineering practice, graduates can comprehensively consider factors such as law, environment and sustainable development, and have the quality of giving priority to public interests;

(4) Having a broad international vision: actively adapting to the changing situation and environment at home and abroad: being able to update knowledge through a variety of learning channels to form the habit of lifelong learning.

ß 0DMRUGLUHFWLRQ

Process control

à *UDGXDWLRQ5HTXLUHPHQWV

According to the talent training objectives of this major and the many years of talent training experience of Automation Discipline in our university, starting from the needs of social development, it is clear that the graduation requirements and indexes of this stage È which are as follows:

*UDGXDWLRQ5HTXLUHPHQWV	,QGLFHV
Requirement 1 Ömaster the professional knowledge of mathematics, natural science, engineering foundation and automation, and be able to use its theories and methods to solve complex engineering problems related to informationization and automation of process industry.	1.1 Be able to apply mathematics, natural science, engineering foundation and professional knowledge to the proper expression of complex engineering problems.
	1.2 Be able to establish appropriate mathematical model for a system or process and solve it with appropriate methods.
	1.3 Be able to apply engineering foundation and professional knowledge to the process of identification and analysis in process industry.
	1.4 Be able to apply engineering foundation and professional knowledge to the design, control and improvement of process industry.

Requirement 2 ÖThe basic principles of mathematics, natural science and engineering science can be applied to identify, express and analyze complex engineering problems related to informationization and automation of process industry through literature research, so as to obtain effective conclusions.	2.1 Be able to use the basic principles of mathematics, natural science and engineering science to identify the key links in complex engineering problems related to process industry informatization and automation. 2.2 Be able to correctly express complex engineering problems related to informatization and automation of process industry by establishing mathematical model, stability analysis, system integration analysis, technical process and equipmental operation index analysis, etc. 2.3 Be able to analyze complex engineering problems related to informatization and automation of process industry through literature research, so as to obtain effective conclusions.
Requirement 3 ÖOn the premise of comprehensive consideration of social, health, safety, legal, cultural and environmental factors, we can design solutions for complex engineering problems related to informationization and automation of process industry, design systems and units (components) that meet specific needs, and embody innovative consciousness in the design process.	3.1 Be able to determine the design objectives according to the needs of users, and be able to study the feasibility of the design scheme under the realistic constraints of safety, environment and law. 3.2 Be able to carry out process calculation through modeling, integrate unit process to make process control design, and optimize process design scheme to reflect innovative consciousness. 3.3 Master the knowledge of unit and system automation engineering design, and be able to apply it to design solutions for complex engineering problems related to process industry informatization and automation.
Requirement 4 ÖBased on scientific principles and scientific methods, we can study complex engineering problems related to informationization and automation of process industry, including designing experiments, analyzing and interpreting data, and obtaining reasonable and effective conclusions through information synthesis.	4.1 Be able to choose research routes based on professional theory and object characteristics. 4.2 Be able to design experimental schemes, carry out experiments, analyze and interpret data for complex engineering problems related to process industry informatization and automation based on advanced control methods and process monitoring methods. 4.3 Be able to study the application of control system for complex engineering problems related to process industry informatization and automation, and get reasonable and effective conclusions through information synthesis.
Requirement 5 Ömaster the basic methods of document retrieval, data query and using modern information technology to obtain relevant information, and be able to develop, select and use appropriate technologies, resources, modern engineering tools and information technology tools for complex engineering problems related to informationization and automation of process industry, including forecasting and simulating complex engineering problems related to informationization and automation of process industry, and be able to understand their limitations.	5.1 Master the basic methods of document retrieval, data inquiry and by the use of modern information technology obtain relevant information. 5.2 Be able to correctly develop, select and use simulation tools, human-computer interface integration tools and other technologies and resources, and predict and simulate complex engineering problems related to process industry informatization and automation.

B.0; 2« [Course Type	B.0; WCX Course Nature		B.0; ' Course Code	B.0; =0 Course Name	– 6 Cre.	k – & T. C.H	– & 6G} Credit Hour Distribution				4 – O˜ – & 6G} Weekly Hours Per Semester								7# Notes
							AâB. Lec.	Î P¼ Exp.	: j Pro.	B. F Î D% Pra.	0 1st	¼ 2nd	9 3rd	4th	Ä 5th	• 6th	3 7th	› 8th	
B. F)ß8² Extracurricular	B. F Î D% Extracurricular practice	FB °7- Î D% 2« Foreign Language Proficiency Training and Practice	0210010011	FB °7- Î D%Ä M4×Å ‖Foreign Language Proficiency Training Practice Äelementary Å	2.0	48				48				2					6 “ Ä ¼F9 0 Å
			0210020011	FB °7- Î D%ÄQ 4×Å ‖Foreign Language Proficiency Training and Practice Äadvanced Å		48				48				2					
		7- Ë > K à Î D% Capability and Innovation Practice	1511712022	W– +Œ3PCX …> K à Î D% ‖Quality Development and Innovation Practice for College Students	4.0	96				96	1 8 – OÍ ž É", Lc F W– K à K J Î D%- 6 AÔÊ Î # Ê+aK à K J –L' AÔÊ								6 “
		@K¯?ô B2« Growth Planning Courses	1510271312	6| J ?ô B > a J 7 , ‖Career Planning and Employment Guidance	1.0	40	40				1					1			
		? AÑ Subtotal			9	232	40	0	0	192	0	0.5	4	2	1	0	1.5	0	9

6AêB. 1 – 6 16 – & È Î P½B.0; Ã : j 1y 1 – 6 24 – & È ƒ 6âB. 1 – 6 36 – & ÈLö] Î D%ß8² 1 Z ‰– ˜ AÑI – 6 È – 6 0 ? …} j 0.5 ÈB.0; =0] +k j 63B B. Ä

Note: “Cre. (Credits)”, “T.C.H. (Total Credit Hours)”, “Lec. (Lecture)”, “Exp. (Experiment)”, “Pro. (Programming)”, “Pra. (Practice)”.

			1511802 002	B3 > Î P¼AîAÑé# || The Method of Investigation and Experiment Design	2.0	44	8	36		4					
			1511812 002	˜ à M5$ || A Whole New Mind	2.0	44	8	36				4			
			1511822 002	j ˜ – • || Machine Learning	2.0	44	8	36					4		
			1511832 022	õ v 2.0 Î H || Emotional Intelligence 2.0 Practice	2.0	44	8	36			4				
			1511842 002	N¶, Ë 2.0 Î H || Leadership 2.0 Practice	2.0	44	8	36			4				
			1511852 002	à × f 0; 8 || Creativity and Innovation for control Engineers	2.0	44	8	36				4			
Eµ B.0; Minor course	õ	Compulsory	1511862 002	0 ¤ f N© || Year-long project teams	2.0	44	8	36					4	4	
			1511872 002	)à8 ØF{ õ || Discover the Journey of Automation	2.0	44	8	36							