#### 加速器光源科技與應用碩士學位學程

105 學年度

			105 学年度					
最低修業年限	一年	_						
應修學分數	廿四學分							
應修 (應選)	<b>(一)</b> ,	本學位學程學	學生須選修同步輻射相關課程六學分(課程)	另列).	且符合各組對應			
	之研究所修業規定。							
業資格之修課		組別 對應系所						
相關規定		材料科學	碩:材料科學與工程學系碩士班、應用化學系碩士班					
		材析杆字	博:材料科學與工程學系博士班、應用化學	糸博士	-班			
		電子工程	碩:電子研究所碩士班、電子物理系碩士班、物理研究所碩士班					
			博:電子研究所博士班、電子物理系博士班	E、物理	即研究所博士班			
			碩:光電工程學系研究所碩士班(光電所)、	電子物	理系碩士班、			
		光電工程	物理研究所碩士班					
		兀电工程	博:光電工程學系研究所博士班、電子物理	2系博士	班、物理研究			
			所博士班					
			碩:生物科技學系暨研究所、生物資訊及系	統生物	<b>动研究所、分子</b>			
		生物科技	醫學與生物工程研究所					
		生物杆权	博:生物科技學系暨研究所、生物資訊及系	統生物	7研究所、分子			
			醫學與生物工程研究所					
		環境工程	碩:環境工程研究所碩士班、					
		<b>垛</b> 塊工柱	博:環境工程研究所博士班、					
	(二) 本學程學生修業須按各組修課規定,且必須於「加速器光源科技與應用學							
	位學	:程核心課程	」中選擇六學分之課程(或經學位學程核定	之類似	(課程)。			
備註		加	速器光源科技與應用學位學程核	心課	程			
	103.3.13 102 學年度第五次學程會議修正							
		類型	課程名稱	學分	備註			
	I	必修課程	目 同步加速器光源應用	3	擇一必修			
			加速器工程	3				
			加速器科技	3				
	II	專業課程		3				
			同步加速器光源在生命科學之應用	3	_			
			加速器物理 (I)	3	_			
			加速器物理 (II)	3	_			
			加速器應用電子學	3	-			
			先進影像顯微分析及奈米微影技術	3	_			
			X光繞射與奈米影像學	3	-			
			X光光學與光束線設計	3	-			
			同步加速器光源能譜學	3				
			同步輻射之X光散射	3	-			
			X 光繞射與應用	3	-			
			分子光譜	3	-			
			分子光化學 > 2	3	-			
			X 光繞射特論		-			
			新型同步輻射及中子設施之發展及科學	3				

		相對論光電子學 — 自由電子雷射	3	
		同步輻射 X 光散射研究(專題)	3	
		磁性物理與X光能譜	3	
		加速器光源技術在生物醫學之應用(專	3	
		同步輻射與凝態物理研究(專題)	3	
*「同	步加速器光》	原在材料科學之應用」為材料組學生必修		

# Graduate Program for Science and Technology of Accelerator Light Source Course Requirements for Master Students

Academic year 2016

	T	Academic year 2010					
Minimum Term	One year.						
of Study Minimum	24 credists.						
Credits	24 creaists.						
Credits	(A) Students	who are enrolled in this degree program are required to select six credits					
		rotron radiation courses (courses are listed elsewhere) and meet the course					
	_	nents of the corresponding departments and institutes of the different					
	divisions						
	Division	Corresponding departments					
		Master's programs at the Departments of Materials Science and					
	Materials	Engineering and Applied Chemistry					
	Science and	Doctoral programs at the Departments of Materials Science and					
	Engineering	Engineering and Applied Chemistry					
		Master's programs at the Graduate Institute of Electronics, the					
	Electronics	Department of Electrophysics, and the Graduate Institute of Physics					
		Doctoral programs at the Graduate Institute of Electronics, the					
		Department of Electrophysics, and the Graduate Institute of Physics					
	Electro-	Master's programs at the Institute of Electro-Optical Engineering, the					
Curriculum and		Department of Electrophysics, and the Graduate Institute of Physics					
Regulations		Doctoral programs at the Institute of Electro-Optical Engineering, the					
		Department of Electrophysics, and the Graduate Institute of Physics					
		Master's Program at the Graduate Institute of Bioinformatics and Systems					
	Biological	Biology, the Department of Biological Science and Technology, the					
	Science and	Graduate Institute of Molecular Medicine and Bioengineering					
	Technology	Doctoral Program at the Graduate Institute of Bioinformatics and Systems					
		Biology, the Department of Biological Science and Technology, the					
		Graduate Institute of Molecular Medicine and Bioengineering					
		Master's Program at the Graduate Institute of Environmental Engineering					
	Engineering	Doctoral Program at the Graduate Institute of Environmental Engineering					
		e selection by students enrolled in this program must conform to the					
	\ /	nt regulations of the different divisions and students are required to select					
		edits of core courses offered by the Graduate Program for Science and					
	Techno	ology of Accelerator Light Source (or similar courses approved by the					
	degree	e program)					
	Core	Courses of Graduate Program for Science and					
	Technology of Accelerator Light Source						
Notes	Amended by the fifth session of the Program Committee in the Academic Year 2013 on March						
	_	13, 2014					

Co	urse Type	Course Title	Credi	Note
I	Required	Applications of Synchrotron	3	Choose one of
	Courses	Accelerator Light Source		the three to
		Accelerator Engineering	3	fulfill the
				requirement.
		Accelerator Technology	3	The other two
				can be elective
				professional
	T-1 .:	A.1. 11.1.0 ' M ' 1	2	courses.
II	Elective	Advanced Light Source in Materials	3	
	Profession	Science Research (*)		
	al	Advanced Light Source in Life	3	
	Courses.	Science Research	_	
		Accelerator Physics (I)	3	
		Accelerator Physics (II)	3	
		Applied Electronics of Accelerator	3	
		Advanced Image Analysis and Nano	3	
		Lithography		
		X-ray Diffraction and Nano-Imaging	3	
		X-ray Optics and Beamline Design	3	
		Spectroscopy of Synchrotron	3	
		Accelerator Light Source	_	
		Synchrotron X-Ray Scattering	3	
		X-Ray Diffraction and Application	3	
		Molecular Spectroscopy	3	
		Molecular Photochemistry	3	
		Special Topics on X-ray Diffraction	3	
		Special Topics in Advanced X-Ray	3	
		and Neutron Facilities and Sciences	_	
		Relativistic Photonics with emphasis	3	
		on free-electron laser		
		Special Topics in Synchrotron X-Ray	3	
		Scattering		
		Magnetism and X-ray Spectroscopy	3	
		Synchrotron Techniques in	3	
		Biomedical Research		
		Synchrotron Radiation Research in	3	
<u></u>	11'1'	Condensed Matter Physics Source in Materials Science Research		: 1

<sup>\* 「</sup>Advanced Light Source in Materials Science Research」 is a required course for the Students of Materials Science and Engineering Division

#### 加速器光源科技與應用博士學位學程

105 學年度

				105 學年度					
最低修業年限	二年								
應修學分數	符合各組對應之研究所修業規定學分數。								
應修(應選)課程	(一)本學位學程學生須選修同步輻射相關課程六學分(課程另列)且符合各組								
及符合畢業資格之	對應之研究所修業規定。								
修課相關規定	*	且別		對應系所					
	1.1.4	され関	碩:	碩:材料科學與工程學系碩士班、應用化學系碩士班					
	材料	材料科學		博:材料科學與工程學系博士班、應用化學系博士班					
				碩:電子研究所碩士班、電子物理系碩士班、物理研究所碩士班					
	電子工程		博:電子研究所博士班、電子物理系博士班、物理研究所博士班						
			+	: 光電工程學系研究所碩士班(光電所)、電		<u> </u>			
		_		里研究所碩士班	, , ,,,-	- A. A = 3			
	光電	電工程	-	:光電工程學系研究所博士班、電子物理系	<b>美博士</b>				
			1	事士班	1111 5	,— 1/4· <b>—</b> /1/5·			
			+	· <b>生物科技學系暨研究所、</b> 生物資訊及系統	充生物石	开究所、分			
				<del>当中央大学、大学、大学、大学、大学、大学、大学、大学、大学、大学、大学、大学、大学、大</del>	0 17	. 1 2 C A 1 2 C			
	生 生 生	<b></b>	<b>                                    </b>						
			子醫學與生物工程研究所 子醫學與生物工程研究所						
				: 環境工程研究所碩士班、					
	環境	竟工程	博:環境工程研究所博士班、						
			1.0	一					
備註	` ′	學程核心	ン課利	生修業須按各組修課規定,且必須於「加達 望」中選擇六學分之課程(或經學位學程 包器光源科技與應用學位學程核。	核定之	類似課程)。			
		.1		103.3.13 102 學年度	1 .	1			
	т	類型	m 4-	課程名稱	學分	備註			
	I	必修訂	课程	同步加速器光源應用	3	擇一必修			
				加速器工程	3				
	TT	士业、	m 4	加速器科技	3				
	II	專業言	果程		3				
				同步加速器光源在生命科學之應用	3				
				加速器物理 (I)	3	<u> </u>			
				加速器物理 (II)	3				
				加速器應用電子學	3				
				先進影像顯微分析及奈米微影技術	3				
				X光繞射與奈米影像學	3				
				X光光學與光束線設計	3	_			
				同步加速器光源能譜學	3	1			
				同步輻射之X光散射	3	1			
				X光繞射與應用	3	_			
				分子光譜	3	_			
				分子光化學	3	_			
				X光繞射特論	3				
				新型同步輻射及中子設施之發展及科學	3				

		應用(專題討論)		
		相對論光電子學 — 自由電子雷射	3	
		同步輻射 X 光散射研究(專題)	3	
		磁性物理與 X 光能譜	3	
		加速器光源技術在生物醫學之應用(專	3	
		題)		
		同步輻射與凝態物理研究(專題)	3	
*「同	步加速器光	源在材料科學之應用」為材料組學生必修		

## Graduate Program for Science and Technology of Accelerator Light Source Course Requirements for Doctoral Students

Academic year 2016

	_	Academic year 2010				
Minimum Term	Two years					
of Study						
		e requirements of the corresponding departments/institutes of the different				
Credits	divisions					
		who are enrolled in this degree program are required to select six credits				
		otron radiation courses (courses are listed elsewhere) and meet the course				
	•	ents of the corresponding departments and institutes of the different				
	divisions.					
	Division	Corresponding departments				
	3.6	Master's programs at the Departments of Materials Science and				
	Materials	Engineering and Applied Chemistry				
	Science and	Doctoral programs at the Departments of Materials Science and				
	Engineering	Engineering and Applied Chemistry				
		Master's programs at the Graduate Institute of Electronics, the				
	Electronics	Department of Electrophysics, and the Graduate Institute of Physics				
		Doctoral programs at the Graduate Institute of Electronics, the				
		Department of Electrophysics, and the Graduate Institute of Physics				
	Electro	Master's programs at the Institute of Electro-Optical Engineering, the				
		Department of Electrophysics, and the Graduate Institute of Physics				
Curriculum and	Optical	Doctoral programs at the Institute of Electro-Optical Engineering, the				
Regulations	Engineering	Department of Electrophysics, and the Graduate Institute of Physics				
		Master's Program at the Graduate Institute of Bioinformatics and Systems				
		Biology, the Department of Biological Science and Technology, the Graduate				
	Biological	Institute of Molecular Medicine and Bioengineering				
	Science and	Doctoral Program at the Graduate Institute of Bioinformatics and Systems				
	Technology	Biology, the Department of Biological Science and Technology, the				
		Graduate Institute of Molecular Medicine and Bioengineering				
		Master's Program at the Graduate Institute of Environmental				
	Environmenta					
		Doctoral Program at the Graduate Institute of Environmental				
		Engineering				
	(B) Course	selection by students enrolled in this program must conform to the				
		t regulations of the different divisions and students are required to select				
		its of core courses offered by the Graduate Program for Science and				
	Technology of Accelerator Light Source (or similar courses approved by the					
		orogram).				
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### Core Courses of Graduate Program for Science and Technology of Accelerator Light Source

Amended by the fifth session of the Program Committee in the Academic Year 2013 on March 13, 2014

Course Ty	/pe	Course Title	Cred	Note
I Requ Cour		Applications of Synchrotron Accelerator Light Source	3	Choose one of the three
		Accelerator Engineering	3	to fulfill the requirement
		Accelerator Technology	3	The other two can be
				elective professiona
				courses.
II Elec Profes		Advanced Light Source in Materials Science Research (*)	3	
a		Advanced Light Source in Life Science	3	
Cour	rses.	Accelerator Physics (I)	3	
		Accelerator Physics (II)	3	
		Applied Electronics of Accelerator	3	
		Advanced Image Analysis and Nano	3	
		X-ray Diffraction and Nano-Imaging	3	
		X-ray Optics and Beamline Design	3	
		Spectroscopy of Synchrotron Accelerator Light Source	3	
		Synchrotron X-Ray Scattering	3	
		X-Ray Diffraction and Application	3	
		Molecular Spectroscopy	3	
		Molecular Photochemistry	3	
		Special Topics on X-ray Diffraction	3	
		Special Topics in Advanced X-Ray and Neutron Facilities and Sciences	3	
		Relativistic Photonics with emphasis on free-electron laser	3	
		Special Topics in Synchrotron X-Ray	3	
		Magnetism and X-ray Spectroscopy	3	
		Synchrotron Techniques in Biomedical	3	
	F	Synchrotron Radiation Research in	3	

Notes

<sup>\*</sup> Advanced Light Source in Materials Science Research is a required course for the Students of Materials Science and Engineering Division