

# PPRE Curriculum

Valid from Winter Term 2020/21

Start 1<sup>st</sup> Semester:  
Every Winter Term

Mandatory Module	Elective Module
Mandatory Course	Elective Course



For navigation in StudIP:  
pre017 to pre132  
05.06.M101 ...

Module Code Number  
Lecture Code Number

## 1<sup>st</sup> Semester - Winter Term

pre017 Physical Principles of Renewable Energy Converters Holtorf (Agert) 6 CP		pre014 Fundamentals for Renewable Energy Torio (Agert) 6 CP		phy641 Energy Resources and Systems Torio (Heinemann) 6 CP		pre022 Solar Energy Torio (Agert) 6 CP		pre025 Wind Energy & Storage Holtorf (Agert) 6 CP	
Introductory Laboratory 5.06.M101 (1 CP) (Jimenez, Torio)	Lab: Energy Storage 5.06.M107(1 CP) (Jimenez)	Primers 5.06.M113 (Knecht)	Renewable Energy Management 2.02.320 Seminar (Hoppmann)	Energy Meteorology 5.06.M117 (Heinemann)	Energy Systems 5.06.M119 (Heinemann)	Photovoltaics 5.06.M121 (Knecht)	Solar Thermal Energy 5.06.M123 (Torio)	Basics of Wind Energy 5.06.M125 (Hölling)	Energy Storage 5.06.M127 (Steinberger-Wilkens, Holtorf)
Scientific Writing 5.06.M103 (1 CP) (Knecht)	Lab: Fluids 5.06.M109 (1 CP) (Holtorf)								
Lab: Radiation and Matter 5.06.M105(1 CP) (Knecht)	Lab: Heat Transfer 5.06.M111 (1 CP) (Günther)								

## 2<sup>nd</sup> Semester - Summer Term

pre041 Sustainability of Renewable Energy Torio (Agert) 6 CP	pre051 Renewable Energy Systems Laboratory and Modelling Günther (Peinke) 6 CP	Specialisation Choose one of the specialisations below including two of the respective modules 12 CP				pre064 Renewable Energy Complementary Topics and Transferable Skills Holtorf (Agert) 6 CP			
Sustainability of Renewable Energy 5.06.M201 (Torio)	Simulation of Renewable Energy Systems 5.06.M203 (Torio, Knecht)	Laboratory: Performance of Renewable Energy Systems 5.06.M205 (Günther, Holtorf, Jimenez)	Specialisation: Solar Energy				Renewable Energy Complementary Topics  Here you select a set of courses which make up for 6CP from the Specialization Courses (left) you did not opt for. However, mind the preconditions for those courses. Additional options in the "Complementary Topics" are for example:  Praktikum Energieinformatik 2.01.513 (Lehnhoff)  Ecological Economics 2.12.042 (Siebenhüner)  International Environmental Governance 2.12.133 (Siebenhüner)  Advanced CFD and wind turbine aerodynamics 5.04.4079 (Stoesesandt)  Transferable Skills  Here you select courses totalling a workload of 6CP. Agree with module coordinator if a course is eligible. Some exemplary options are:  Deutsch: Kreatives Schreiben (B1+)  Deutsch für Naturwissenschaftler (B1+)  Wissenschaftliches Arbeiten (Deutsch): Lesen und Schreiben (B2+)  Wissenschaftliches Arbeiten (Deutsch): Sprechen und Referieren (B2+)  Developing and Presenting a Conference Poster  Academic Writing: Writing and Publishing a Research Paper		
			phy609 Photovoltaic Physics Holtorf (Kühn) 6 CP	pre114 Solar Energy Meteorology Holtorf (Agert) 6 CP	Introduction to Photovoltaics Lecture 5.04.4063 (Gütay)	Introduction to Photovoltaics Exercises 5.04.4063 (Gütay)		Advanced Solar Energy Meteorology 5.04.4064 (Heinemann)	Solar Energy Meteorology Applications 5.04.M211 (Lorenz)
			pre113 Photovoltaic Systems Holtorf (Agert) 6 CP	Photovoltaic Systems Lecture 5.06.M207 (Holtorf)					
			Specialisation: Wind Energy					phy616 Computational Fluid Dynamics Holtorf (Kühn) 6 CP	phy648 Wind Resources and its Applications Holtorf (Heinemann) 6 CP
			Computational Fluid Dynamics I 5.04.4072 (Lukassen)	Computational Fluid Dynamics II 5.04.4074 (Lukassen)	Advanced Wind Energy Meteorology 5.04.065 (Kühn, Heinemann, Peinke, Schmidt)	Wind Energy Applications - from Wind Resource to Wind Farm Operations 5.06.M213 (Waldl)			
			phy649 Design of Wind Energy Systems Holtorf (Kühn) 6CP	phy987 Control of Wind Turbines and Wind Farms Holtorf (Kühn) 6 CP	Design of Wind Energy Systems Lecture + Project 5.04.4235 (Kühn)			Control of Wind Turbines and Wind Farms Lecture + Exercise 5.04.4246 (Petrovic)	
			Specialisation: System Integration of Renewable Energy						
			phy647 Future Power Supply Systems Torio (Agert) 6 CP	inf511 Smart Grid Management Torio (Lehnhoff) 6 CP	Future Power Supply Systems Lecture 5.06.M215 (Agert)	Future Power Supply Systems Seminar 5.06.M216 (Agert)		Smart Grid Management Lecture 2.01.511 (Lehnhoff)	Smart Grid Management Seminar 2.01.511 (Lehnhoff)

## 3<sup>rd</sup> Semester - Winter Term

pre081 Renewable Energy Project Holtorf (Heinemann) 9 CP	pre071 Internship Günther (Agert) 9 CP	pre152 Resilient Energy Systems Torio (Agert) 6 CP	pre042 Water & Biomass Energy Holtorf (Agert) 6 CP
Case Study 5.06.M301 (Holtorf)	Excursion 5.06.M303 (Holtorf)	External Internship 5.06.M305 (Local Supervisor)	Internship Seminar 5.06.M307 (Knecht)
Resilient Energy Systems Lecture & Seminar 5.06.M308 & 5.06.M309 (Torio, Jimenez)		Hydro & Marine Power 5.06.M311 (Holtorf)	Biomass Energy 5.06.M313 (Wark, Pehlken)

## 4<sup>th</sup> Semester - Summer Term

Master Thesis 30 CP	
Master Thesis (supervising professor and PPRE staff member and/or local supervisor)	Master Thesis Colloquium

Neue Veranstaltungsnummern  
5.06.MXYYY

5 - Fakultät  
06 - PPRE  
M - Master

X - Semester  
YYY - Veranstaltungs Nr.