

# Modulhandbuch



**Blended Learning**  
**Master's Programme**  
**Lighting Design -**  
**Architectural Lighting and Design Management**

Stand: 22-08-2024



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## PM 1 Design Criteria

Module responsibility	Prof. Dr. Harald Hofmann
Contents	<p>Students will become familiar with the historical background of architectural lighting and contemporary influences on design. Criteria for successful designs will be developed and contrasted with related areas like event lighting.</p> <p>Fundamentals of visual perception and consequences for architectural lighting will be presented. The visual process will also be studied in order to develop a standardised system for light and colour. Metrics for the physical properties of light and luminaires and the relationships between light, colour and space, which are important for architectural lighting design, will be studied. An appreciation for the physical differences between daylight and artificial light will be gained besides the importance of these sources in influencing the interpretation of architecture. Finally, a comprehensive overview of the technical and visual properties of lamp types will be demonstrated.</p>
Objectives	<ul style="list-style-type: none"> <li>• Articulate the important characteristics of architectural lighting including evaluating lighting systems using architecturally relevant criteria.</li> <li>• Understand the differences between the physical properties of light and the effects of human perception.</li> <li>• Familiarity with the vocabulary describing the physical properties of lighting systems as well as the recommendations and regulations concerning appropriate designs.</li> <li>• Describe the qualitative and quantitative differences between daylight and artificial light including effects on architecture during the day and night.</li> </ul>
Language	English
Format	Presence Seminars (SU) Self-study
Prerequisites	None
Application	Required module for the Distance Master's Programme Lighting Design - Architectural Lighting and Design Management
Examination	Assessment, Written Examination 90 min
Work Estimate	150 h <ul style="list-style-type: none"> <li>• 124 h Self-study</li> <li>• 10 h Live Online Seminar</li> <li>• 16 h Presence Seminar</li> </ul>
Credits	6
Frequency	Yearly

Duration	2 Semester
Literature	Rüdiger Ganslandt, Harald Hofmann Handbuch der Lichtplanung, pdf

## PM 2 Daylighting

Module responsibility	Prof. Dr. Thomas Römhild
Contents	By using examples fundamentals of lighting with daylight will be presented. After understanding the sun's pathway an application of shading systems to minimize the negative impacts of heat gain and glare will be developed. The concept of a daylight quotient will be introduced and calculated to assist with evaluating the quality of daylight in indoor spaces. Additionally, the relationship between daylight and artificial light will be considered including the effects on energy use and design. Relevant thermodynamic properties of buildings will be covered together with the possibilities for the integration of lighting into building control systems.
Objectives	<ul style="list-style-type: none"> <li>• Design a space giving consideration to the influences of daylight and artificial light.</li> <li>• Evaluate lighting designs using the criteria developed considering daylight and artificial light.</li> </ul>
Language	English
Format	Presence Seminars (SU) Self-study
Prerequisites	None
Application	Required module for the Distance Master's Programme Lighting Design - Architectural Lighting and Design Management
Examination	Assessment, Alternative Examination
Work Estimate	225 h <ul style="list-style-type: none"> <li>• 183 h Self-study</li> <li>• 22 h Live Online Seminar</li> <li>• 20 h Presence Seminar</li> </ul>
Credits	9
Frequency	Yearly
Duration	2 Semester
Literature	Required literature will be announced at the start of the semester.

## PM 3 Artificial Lighting

Module responsibility	Prof. Dr. Harald Hofmann
Contents	The optical systems for the control of daylight and artificial light will be presented together with their application in luminaire and daylight system designs. The characteristics of luminaires and lamps will be considered as well as their impacts on mounting and geometry. Guidelines for the use of various lamps will be developed for application as general, orientation, media and focal accent lighting. Indoor and exterior lighting concepts will be evaluated and recommendations developed for layout using focussed small projects. Methods for measuring light as well as calculating intensity of point sources and room systems will be discussed and used in practical exercises.
Objectives	<ul style="list-style-type: none"> <li>• Define and describe the requirements for a light system given a desired light distribution.</li> <li>• Select and specify appropriate lamps and luminaires for use in a designed lighting system.</li> <li>• Develop appropriate interior and exterior lighting design for given usage scenarios</li> <li>• Correctly identify lamp types</li> <li>• Measure and interpret light intensity and luminaire distribution</li> <li>• Evaluate a given lighting system using relevant lighting criteria</li> </ul>
Language	English
Format	Presence Seminars (SU) Self-study
Prerequisites	None
Application	Required module for the Distance Master's Programme Lighting Design - Architectural Lighting and Design Management
Examination	Assessment, Alternative Examination
Work Estimate	225 h <ul style="list-style-type: none"> <li>• 201 h Self-study</li> <li>• 8 h Live Online Seminar</li> <li>• 16 h Presence Seminar</li> </ul>
Credits	9
Frequency	Yearly
Duration	2 Semester
Literature	Rüdiger Ganslandt, Harald Hofmann Handbuch der Lichtplanung, pdf

## PM 4 Design Project I: Conceptual Design

Module responsibility	Prof. Jan Blieske
Contents	Students will design and develop lighting concepts for given spaces and usages including lamp and luminaire selection, geometry and distribution. The light and luminaire distributions will be displayed graphically and the associated concept described and visualised. Requirements for electrical connections in various situations will be estimated.
Objectives	<ul style="list-style-type: none"> <li>• Design and present appropriate exterior and interior lighting concepts for given usages.</li> <li>• Demonstrate suitable knowledge of lamp classification</li> <li>• Measure and verify light intensity and distribution of a lighting system</li> </ul>
Language	English
Format	Presence Seminars Self-study
Prerequisites	None
Application	Required module for the Distance Master's Programme Lighting Design - Architectural Lighting and Design Management - <b>Part of the specialisation Contemporary Lighting / Heritage Lighting</b>
Examination	Assessment Examination1: design draft + Examination2: design draft
Work Estimate	225 h <ul style="list-style-type: none"> <li>• 183 h Self-study</li> <li>• 22 h Live Online Seminar</li> <li>• 20 h Presence Seminar</li> </ul>
Credits	9
Frequency	Summer semester
Duration	2 Semester
Literature	Required literature will be announced at the start of the semester.

## PM 5 Design Methods I: Basics

Module responsibility	Prof. Dr. Thomas Römheld
Contents	Three specific tasks will be given to the students to enable them to learn strategies for starting a design. Students will be encouraged to discover different possible ways to solve design problems. The design exercise for the Projects 2 and 3 will be introduced.
Objectives	<ul style="list-style-type: none"> <li>• The students will learn to develop an independent design process.</li> <li>• They will be able to develop and structure the design brief and organise the design process to meet time schedules.</li> </ul>
Language	English
Format	Presence Seminars Self-study
Prerequisites	None
Application	Required module for the Distance Master's Programme Lighting Design - Architectural Lighting and Design Management
Examination	Assessment, Alternative Examination
Work Estimate	150 h <ul style="list-style-type: none"> <li>• 130 h Self-study</li> <li>• 6 h Live Online Seminar</li> <li>• 14 h Presence Seminar</li> </ul>
Credits	6
Frequency	Yearly
Duration	2 Semester
Literature	Required literature will be announced at the start of the semester.



## PM 6 Lighting Applications and Sustainability

Module responsibility	Paul Traynor
Contents	Typologies of lighting requirements with respect to technical, perception and cultural considerations will be developed through analysis and design. An understanding for the relationship between lighting design and Building Climate will be gained. In particular, consideration for the energy usage of a sustainable lighting design and the integration with the concept for energy usage in the building will be acquired.
Objectives	<ul style="list-style-type: none"> <li>• Demonstrate an understanding for the relationship between usage typologies and criteria for lighting through application in a specific lighting design.</li> <li>• Develop solutions in detail and present visually.</li> <li>• Understand the impact of lighting on Climate and design accordingly Of Buildings</li> </ul>
Language	English
Format	Presence Seminars Self-study
Prerequisites	None
Application	Required module for the Distance Master's Programme Lighting Design - Architectural Lighting and Design Management
Examination	Assessment, Alternative Examination
Work Estimate	150 h <ul style="list-style-type: none"> <li>• 130 h Self-study</li> <li>• 8 h Live Online Seminar</li> <li>• 12 h Presence Seminar</li> </ul>
Credits	6
Frequency	Yearly
Duration	2 Semester
Literature	Required literature will be announced at the start of the semester.

## PM 7 Strategic Management

Module responsibility	Prof. Dr. Marcus Hackel
Contents	<p>Using proven methodologies, a strategic concept for an architectural lighting office will be developed and presented in the form of a business plan. The following stages will be demonstrated:</p> <ul style="list-style-type: none"> <li>• Analysis of economic conditions affecting lighting design offices</li> <li>• Customer needs analysis</li> <li>• Development of office philosophy</li> <li>• Strategic development based on analysis</li> <li>• Forming implementation strategies</li> </ul>
Objectives	Ability to autonomously and independently apply knowledge in the practice of strategic management.
Language	English
Format	Presence Seminars Self-study
Prerequisites	None
Application	Required module for the Distance Master's Programme Lighting Design - Architectural Lighting and Design Management
Examination	Design project/ Project work
Work Estimate	<p>150 h</p> <ul style="list-style-type: none"> <li>• 132 h Self-study</li> <li>• 2 h Live Online Seminar</li> <li>• 16 h Presence Seminar</li> </ul>
Credits	6
Frequency	Yearly
Duration	1 Semester
Literature	<p>Petty, Palich, Hoy, Longenecker Managing Small Business – An Entrepreneurial Emphasis South Western</p> <p>Used edition will be announced at the start of the semester.</p>

## PM 8 Design Project II: Detailed Lighting Design

Module responsibility	Prof. Michael Rohde
Contents	Students will learn about design possibilities with light through a specific planning task that incorporates their own creative goals. Typology will be the starting point for the development of the design. The design will be evaluated for technical feasibility using theoretical, mathematical and experimental methods.
Objectives	<ul style="list-style-type: none"> <li>• Identify and apply discrete steps in the process for lighting design</li> <li>• Develop individualised design methodology and practice</li> </ul>
Language	English
Format	Presence Seminar Self-study
Prerequisites	None
Application	Required module for the Distance Master's Programme Lighting Design - Architectural Lighting and Design Management
Examination	Assessment, Design Project / Project work
Work Estimate	225 h <ul style="list-style-type: none"> <li>• 199 h Self-study</li> <li>• 14 h Live Online Seminar</li> <li>• 12 h Presence Seminar</li> </ul>
Credits	9
Frequency	yearly
Duration	2 Semester
Literature	Required literature will be announced at the start of the semester.

## PM 9 Design Methods II: Visualisation and Calculation

Module responsibility	Prof. Dr. Thomas Römhild
Contents	The design task should be classified typologically and the associated design parameters developed. The skill of presentation with visualisation programs and calculations for various lighting parameters will be demonstrated with concrete examples.
Objectives	<ul style="list-style-type: none"> <li>• Prepare the fundamentals of an independent approach to design work</li> <li>• Evaluate lighting designs using mathematical concepts</li> <li>• Demonstrate design results visually</li> </ul>
Language	English
Format	Lecture
Prerequisites	None
Application	Required module for the Distance Master's Programme Lighting Design - Architectural Lighting and Design Management
Examination	Alternative Examination
Work Estimate	150 h <ul style="list-style-type: none"> <li>• 134 h Self-study</li> <li>• 4 h Live Online Seminar</li> <li>• 12 h Presence Seminar</li> </ul>
Credits	6
Frequency	Yearly
Duration	1 Semester
Literature	Required literature will be announced at the start of the semester.

## PM 10 Design and Economics

Module responsibility	Prof. Dr. Marcus Hackel
Contents	<p>Using a case study, students will learn to apply relevant scientific and business analysis to the consideration of an architectural lighting design office. The criteria applied will include:</p> <ul style="list-style-type: none"> <li>• Teamwork and networking as a component of management</li> <li>• Customer relation management</li> <li>• Brand management and product design management</li> <li>• Accounting</li> <li>• Managerial accounting</li> </ul>
Objectives	<ul style="list-style-type: none"> <li>• Ability to autonomously and independently apply knowledge concerning strategic team composition, product design, customer relationship management and financial management in practice.</li> </ul>
Language	English
Format	Presence Seminar Self-study
Prerequisites	None
Application	Required module for the Distance Master's Programme Lighting Design - Architectural Lighting and Design Management
Examination	Design project/Project work
Work Estimate	<p>150 h</p> <ul style="list-style-type: none"> <li>• 136 h Self-study</li> <li>• 2 h Live Online Seminar</li> <li>• 12 h Presence Seminar</li> </ul>
Credits	6
Frequency	Yearly
Duration	1 Semester
Literature	<p>Petty, Palich, Hoy, Longenecker Managing Small Business – An Entrepreneurial Emphasis South Western</p> <p>Used edition will be announced at the start of the semester.</p>

## PM 11 Project Management

Module responsibility	Prof. Dr. Marcus Hackel
Contents	<p>The following relevant skills for successful national and international project management will be developed and applied:</p> <ul style="list-style-type: none"> <li>• International project management</li> <li>• Intercultural communication Project implementation</li> <li>• Project coordination</li> <li>• Flow chart analysis</li> </ul>
Objectives	<ul style="list-style-type: none"> <li>• Apply knowledge on international project management</li> </ul>
Language	English
Format	Presence Seminar Self-study
Prerequisites	None
Application	Required module for the Distance Master's Programme Lighting Design - Architectural Lighting and Design Management - <b>Part of the specialisation Contemporary Lighting / Heritage Lighting</b>
Examination	Assessment, Project Work
Work Estimate	<p>225 h</p> <ul style="list-style-type: none"> <li>• 203 h Self-study</li> <li>• 6 h Live Online Seminar</li> <li>• 16 h Presence Seminar</li> </ul>
Credits	9
Frequency	Yearly
Duration	2 Semester
Literature	<p>Petty, Palich, Hoy, Longenecker Managing Small Business – An Entrepreneurial Emphasis South Western</p> <p>Used edition will be announced at the start of the semester.</p>

## PM 12 Design Project III: Selected Lighting Design Principles

Module responsibility	Prof. Dr. Thomas Römhild
Contents	<p>This design project will enable students to use light in support of the architectural character and socio-cultural backdrop of a building.</p> <p>The nature of light and the skill to methodically manipulate its use in design will be reinforced. An ability to realise specific design goals will be learned using a creative analogy as a starting point. The feasibility of the design should be evaluated using theoretical, mathematical or experimental methods</p>
Objectives	<ul style="list-style-type: none"> <li>• Mastery of the keys skills of lighting design</li> <li>• Strong command of design methods, design techniques and presentation skills</li> </ul>
Language	English
Format	Presence Seminar Self-study
Prerequisites	None
Application	Required module for the Distance Master's Programme Lighting Design - Architectural Lighting and Design Management - <b>Part of the specialisation Contemporary Lighting / Heritage Lighting</b>
Examination	Oral Presentation, Design Project/ Project Work E6
Work Estimate	<p>300 h</p> <ul style="list-style-type: none"> <li>• 248 h Self-study</li> <li>• 16 h Live Online Seminar</li> <li>• 36 h Presence Seminar</li> </ul>
Credits	12
Frequency	Yearly
Duration	2 Semester
Literature	Required literature will be announced at the start of the semester.

## PM 13 Design Methods III: Branding and Marketing

Module responsibility	Prof. Dr. Thomas Römhild/ Prof. Dr. Marcus Hackel
Contents	Several topics with significance for resolution in the design process will be covered. Additionally, the cultural backgrounds of the students will assist in understanding cultural influence on design more generally. The importance of lighting as a marketing tool will also be considered.
Objectives	<ul style="list-style-type: none"> <li>• Gain awareness of light and symbolism</li> <li>• Appreciate the influence of different forms of lighting on particular environments</li> <li>• Create distinctive scenarios which serve to form a brand image</li> </ul>
Language	English
Format	Presence Seminar Self-study
Prerequisites	None
Application	Required module for the Distance Master's Programme Lighting Design - Architectural Lighting and Design Management - <b>Part of the specialisation Contemporary Lighting / Heritage Lighting</b>
Examination	Alternative Examination
Work Estimate	75 h <ul style="list-style-type: none"> <li>• 57 h Self-study</li> <li>• 4 h Live Online Seminar</li> <li>• 14 h Presence Seminar</li> </ul>
Credits	3
Frequency	Yearly, winter semester
Duration	1 Semester
Literature	Required literature will be announced at the start of the semester.



## PM 14 Thesis Seminar

Module responsibility	Prof. Dr. Thomas Römheld
Contents	<p>The focus of this seminar involves the preparation of each student's individual topic for presentation in the form of a master's thesis.</p> <p>The content will, therefore, be governed by the topics chosen. Principles of scientific work including methods and presentation will also be introduced</p>
Objectives	<ul style="list-style-type: none"> <li>• Thematic preparation and presentation of the master's thesis</li> </ul>
Language	English
Format	Presence Seminar Self-study
Prerequisites	None
Application	Required module for the Distance Master's Programme Lighting Design - Architectural Lighting and Design Management
Examination	Alternative Examination
Work Estimate	75 h <ul style="list-style-type: none"> <li>• 66 h Self-study</li> <li>• 1 h Live Online Seminar</li> <li>• 8 h Presence Seminar</li> </ul>
Credits	3
Frequency	Yearly, summer semester
Duration	1 Semester
Literature	Required literature will be announced at the start of the semester.

## PM 15 Master-Thesis and Colloquium

Module responsibility	Prof. Dr. Thomas Römhild
Contents	Editing of the final thesis to obtain the title <b>Master of Arts</b>
Objectives	The students are able to apply the methods of scientific work; to independently work on a problem with scientific methods and on the basis of scientific theories and to present the results appropriately.
Language	English
Format	Presence Seminar Self-study
Prerequisites	<ul style="list-style-type: none"> <li>• Registration of the thesis: 72 CR</li> <li>• Invitation to colloquium: 99 CR</li> </ul>
Application	Required module for the Distance Master's Programme Lighting Design - Architectural Lighting and Design Management
Examination	Master-Thesis: 24 weeks Colloquium 20min
Work Estimate	525 h <ul style="list-style-type: none"> <li>• 524 h Self-study</li> <li>• 1 h Presence Seminar</li> </ul>
Credits	21
Frequency	On-going
Duration	20 weeks
Literature	The literature necessary for a Master-Thesis must be researched and acquired by the students themselves.