

COURSE DESCRIPTION

- Course name: **Large Assembly Halls Design – Architectural Acoustics**

<i>Form of course</i>	<i>Lecture</i>	<i>Tutorial</i>	<i>Laboratory</i>	<i>Project</i>	<i>Seminar</i>
<i>Total number of hours</i>	16	-	-	30	14
<i>Form of completion</i>	Multimedia presentation	-	-	Project in Studio Desing	Multimedia presentation

- Initial requirements: course is designated for students of II level studies majoring in Architecture
- Name, surname, title of teacher: Dr Eng. (Arch) Joanna Jablonska [lectures, seminar and Studio Desing], Prof. Eng. Romuald Tarczewski [structure lectures], Dr Eng. (Arch) Paweł Amałowicz [detail design lectures]
- Aims of course and educational outcomes:

The idea of the course ‘Large Assembly Halls Design – Architectural Acoustics’ is to present theoretical knowledge and teach practical skills, in shaping architecture for its’ optimal acoustical performance. The combination of studio design workshop form, with suitable topics of lectures and seminars, allow participants to gain usable and thorough knowledge on sound properties in a room planning. Broad review connected with projects of diversified assembly spaces of public use, meant for: speech, music, art performance or religious celebrations, are aiming at enriching and expanding knowledge on architectural acoustics of students majoring in architecture.

- Form of teaching (traditional / e-learning): traditional
- Short description of the course content:
- Lecture – content:

Form of classes - lecture		Number of hours
Lec1	Introduction to classes; literature, graduation terms; assessment form.	1
Lec2	Nature of sound; acoustical wave in a room – general issues. Architectural acoustics – definitions, notions, fields of research.	2
Lec3	Large Assembly Halls – concert spaces.	3
Lec4	Large Assembly Halls – auditoria.	2
Lec5	Large Assembly Halls – theaters.	1
Lec6	Large Assembly Halls – sacral space.	1
Lec7	Large Assembly Halls – conference rooms.	1
Lec8	Large Assembly Halls – historical venues of Wroclaw.	1
Lec9	Large span structures for Large Assembly Halls	4
Total hours		16

- Project - content:

Form of classes - project		Number of hours
Proj1	Workshop: Experiments in Architectural Acoustics, brainstorming the ideas.	4
Proj2	Research & Work & Consultations:	10

	on the acoustical–architectural concept of the large assembly hall, including: - plans of main floor – 1:50 or 1:100 scale, - characteristic section – 1:50 or 1:100 scale, - model of acoustics – 1:50 or 1:100 scale, - model of visibility lines – 1:50 or 1:00 scale.	
Proj3	Work review of projects, discussion, brainstorming.	2
	Research & Work & Consultations: on technical, visual and material solutions and graphic presentation of the project: - views of main floor 1:50 or 1:100 scale, - characteristic sections (min. 2) – 1:50 or 1:100 scale, - architecture-acoustical detail – 1:20 or 1:10 scale - perspective drawings of the structure, visualizations of the interiors, graphical presentation of the project.	12
Proj4	Submission of final project, assessment of the project	2
	Total hours	30

- Basic literature:
 - Ahnert W., Steffen F. Sound reinforcement engineering: fundamentals and practice, London 1999.
 - Auditoria Magazine – yearly, UKiP Media & Events Ltd, Abinger House, Church Street, <http://www.ukimediaevents.com/>,
 - ArAc-Multibook – International Partnership ArAc-Multibook, 2015, www.arac-multibook.com
 - Beranek L., Concert halls and opera houses: music, acoustics and architecture, 2004
 - Beranek L. Concert and Opera House. How they sound, Acoustical Society of America, (b.m.) 1996
 - Barron M., Auditorium Acoustics and Architectural Design, London 1993
 - Boulet M.-L., Moissinac Ch., Soullignac F. Auditoriums, Editions du Moniteur, Paris 1990.
 - Breton G. *Theater*, Paris 1990
 - Carnegie P., *Wagner and the Art of the Theatre: The Operas in Stage Performance*, Yale University Press, New Haven and London 2006
 - Hammond M., Performing architecture: opera houses, theatres and concert halls for the twenty- first century, 2006
 - Heathcote E., Cinema builders, 2001
 - Izenour G.C., Theater design, 1996
 - Jodidio Ph., *Architecture Now!*, Taschen (newest editions)
 - Jordan V., L. Acoustical Design of Concert Halls and Theatres. A personal Account, Applied Science Publishers LTD, London 1980.
 - Long M. *Architectural acoustics*, Elsevier Academic Press, (b.m.) 2006.
 - Lord P., Templeton D. *The Architecture of Sound. Design Places of Assembly*, Architectural Press, London 1986.
 - Neufert E., Neufert P., *Neufert Architects' Data*, Wiley-Blackwell 2012
 - Rattenbury K., Bevan R., Long K., *Architects Today*, Laurens King Publishing 2004
 - Steele J. *Theatre builders*, Chichester 1996.
- Additional literature:
 - The architectural platforms, i.e.: ArchDaily | Broadcasting Architecture Worldwide, Dezeen | architecture and design magazine,
 - McCandless D., Concert Halls. Specifying Sound for Performance, przedruk: „The Construction Specyfier”, publikacja 04.1999, źródło Internetowe:

www.jeacoustics.com/library/pdf/ConSpec_Apr90_Concert_Halls.pdf, dostęp z dn. 25.04.2013

- Bradley J., S., Madaras G., Jaffe Ch. *Acoustical characteristics of a 360-degree surround hall*, „The Journal of the Acoustical Society of America”, 1997, nr 5 (101), s. 3135.
- Cavanaugh W., J., Wilkes J., A. *Architectural acoustics :principles and practice*, Nowy Jork 1999.
- Leonard G. *Symphony in Steel: Walt Disney Concert Hall Goes Up*, Angel City Press, (b.m.) 2003
- *Springer handbook of acoustics*, red. Rossing Th.,D., Nowy Jork 2007.
- Wisniewski E. *Die Berliner Philharmonie und Ihr Kammermusiksaal. Der Konzertsaal als Zentralraum*, Gebr. Mann Verlag, Berlin 1993.
- Completion rules:
 - For lecture: Assessment of multimedia presentation + Class participation assessment (min. 50% of classes)
 - For seminar: Assessment of multimedia presentation + Class participation assessment (min. 50% of classes)
 - Assessment of the content quality of the Studio Design project + Class participation assessment (min. 50% of classes and all reviews)