



AYDIN ADNAN MENDERES UNIVERSITY
GRADUATE SCHOOL OF NATURAL AND APPLIED SCIENCES
LANDSCAPE ARCHITECTURE
LANDSCAPE ARCHITECTURE
LANDSCAPE ARCHITECTURE MASTER
COURSE INFORMATION FORM

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|--------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------|-------------|--------|--------------------------------|----------|---|------------|---|
| Course Title | Climate Change and Landscape Planning | | | | | | | | |
| Course Code | ZPM539 | Course Level | | | Second Cycle (Master's Degree) | | | | |
| ECTS Credit | 8 | Workload | 200 (Hours) | Theory | 3 | Practice | 0 | Laboratory | 0 |
| Objectives of the Course | The aim of this course is to understand the importance of the problem of climate change; to introduce the factors and responsibilities of landscape architecture profession discipline to reduce global climate change by introducing the factors related to energy efficiency and climate comfort in the field of landscape planning, introducing methods and analyzes and new developments related to increasing energy efficiency and climate comfort; To gain a more sensitive planner perspective to the climate. | | | | | | | | |
| Course Content | Climate, energy and energy resources; Natural and artificial environmental factors that can cause changes in the effectiveness of climatic data (solar radiation, wind, air temperature, air humidity, etc.); Interaction between landscape elements and microclimate; Urban heat island phenomenon and measurement methods; The role and use of plants in energy efficient landscape design and planning; Management of energy and microclimate components in landscape. | | | | | | | | |
| Work Placement | N/A | | | | | | | | |
| Planned Learning Activities and Teaching Methods | Explanation (Presentation), Demonstration, Project Based Study, Individual Study | | | | | | | | |
| Name of Lecturer(s) | Lec. Birsen KESGİN ATAĞ | | | | | | | | |

Assessment Methods and Criteria

| Method | Quantity | Percentage (%) |
|---------------------|----------|----------------|
| Midterm Examination | 1 | 40 |
| Final Examination | 1 | 30 |
| Practice | 1 | 30 |

Recommended or Required Reading

| | |
|---|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 1 | Droege, P. (2010). Climate Design: Design And Planning For The Age Of Climate Change |
| 2 | Oke, T. R. (1973). City size and the urban heat island. Atmospheric Environment (1967), 7(8), 769-779. |
| 3 | Akbari, H. & Kolokots, D. (2016). Three decades of urban heat islands and mitigation technologies research. Energy and Buildings, 133, 834-842. |
| 4 | Huang, L., Zhao, D., Wang, J., Zhu, J. & Li, J. (2008). Scale impacts of land cover and vegetation corridors on urban thermal behavior in Nanjing, China. Theoretical and Applied Climatology, 94(3-4), 241-257. |
| 5 | Tonyaloğlu, E. E. (2019). Kentleşmenin kentsel termal çevre üzerindeki etkisinin değerlendirilmesi, efeler ve İncirliova (Aydın) örneği. Türkiye Peyzaj Araştırmaları Dergisi, 2(1), 1-13. |
| 6 | Weng, Q., Lub, D. & Schubringa, L. (2004). Estimation of land surface temperature-vegetation abundance relationship for urban heat island studies. Remote Sensing of Environment, 89, 467-483. |

| Week | Weekly Detailed Course Contents | |
|------|---------------------------------|---------------------------------------------------------------------------------------------|
| 1 | Theoretical | Introduction to course: content, reason, importance, process method and needs |
| 2 | Theoretical | Landscape Planning, Global warming and carbon storage |
| 3 | Theoretical | The reasons of climate change problem |
| 4 | Theoretical | Global and national greenhouse gas statistics, relevant international and national policies |
| 5 | Theoretical | Current planning practice and climate |
| 6 | Theoretical | Management of energy and microclimate components in landscape |
| 7 | Theoretical | Role and use of plants in energy efficient landscape design |
| 8 | Intermediate Exam | Midterm exam |
| 9 | Theoretical | The effect of urbanization on the atmosphere and the concept of urban heat island |
| 10 | Theoretical | Urban heat island measurement techniques 1 |
| 11 | Theoretical | Urban heat island measurement techniques 2 |
| 12 | Theoretical | Urban heat island measurement techniques 3 |
| 13 | Theoretical | Adaptation to climate change in landscape planning process |
| 14 | Theoretical | Adaptation to climate change in landscape planning process |
| 15 | Theoretical | Interpretation of examples from all over the world and Turkey |



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|----|------------|------------|
| 16 | Final Exam | Final exam |
|----|------------|------------|

| Workload Calculation | | | | |
|---------------------------------------|----------|-------------|----------|----------------|
| Activity | Quantity | Preparation | Duration | Total Workload |
| Lecture - Theory | 14 | 4 | 2 | 84 |
| Lecture - Practice | 14 | 4 | 2 | 84 |
| Assignment | 2 | 4 | 1 | 10 |
| Midterm Examination | 1 | 10 | 1 | 11 |
| Final Examination | 1 | 10 | 1 | 11 |
| Total Workload (Hours) | | | | 200 |
| [Total Workload (Hours) / 25*] = ECTS | | | | 8 |

*25 hour workload is accepted as 1 ECTS

| Learning Outcomes | |
|-------------------|------------------------------------------------------------------------------------------------------------------------|
| 1 | To be able to comprehend problems related to climate change |
| 2 | To be able to understand issues of climate dynamics, energy and the use of renewable energy sources |
| 3 | To be able to understand the role of the landscape planning process on microclimate and increase the comfort of living |
| 4 | To be able to learn the new approaches to planning and technology to mitigating climate change |
| 5 | To be able to know how to manage a landscape in terms of climate and energy efficiency |

| Programme Outcomes (Landscape Architecture Master) | |
|----------------------------------------------------|---|
| 1 | e |
| 2 | e |
| 3 | e |
| 4 | e |
| 5 | e |

| Contribution of Learning Outcomes to Programme Outcomes 1:Very Low, 2:Low, 3:Medium, 4:High, 5:Very High | | | | | |
|----------------------------------------------------------------------------------------------------------|----|----|----|----|----|
| | L1 | L2 | L3 | L4 | L5 |
| P1 | 5 | 5 | 5 | 5 | 5 |
| P2 | 5 | 5 | 5 | 5 | 5 |
| P3 | 5 | 5 | 5 | 5 | 5 |
| P4 | 5 | 5 | 5 | 5 | 5 |
| P5 | 1 | 1 | 1 | 1 | 1 |

