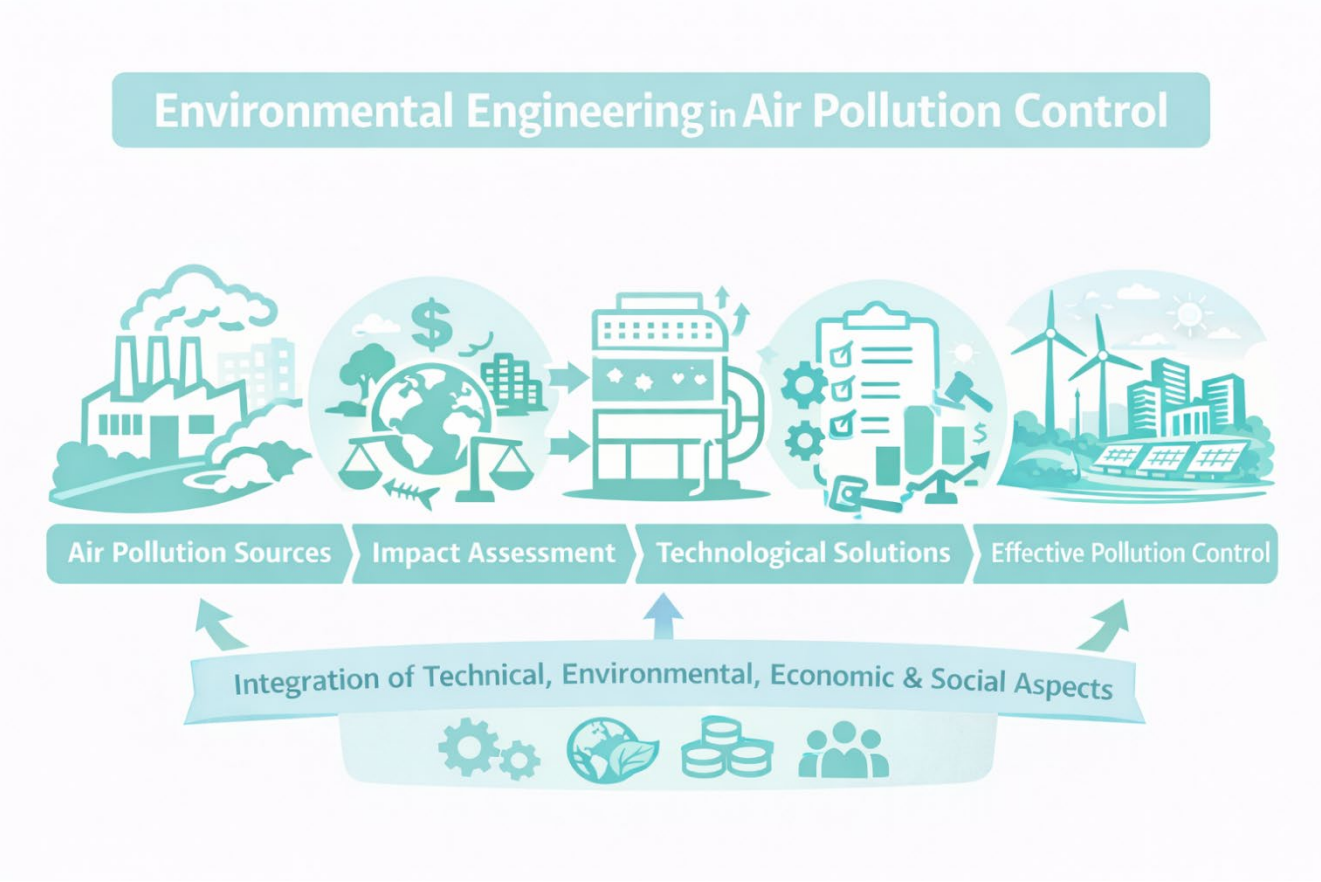

Prof. Dr. Sascha Nehr

4 semester hours

Kick-off, discussion & presentation meetings:
Monday | 09:00-11:45 | 05.E.008

Performance of exposure measurements:
in the afternoons | 16:00-18:00 | City of Düsseldorf

Start: 13.04.2026

60 h contact time | 90 h self-study

5 CP

15-minute oral presentation plus written homework assignment

Fachbereich Maschinenbau und Verfahrenstechnik
Faculty of Mechanical and Process Engineering

Why to choose the elective „Environmental Engineering Project Studies“?

- Be part of the prestudy „**HARP** — *Healthy Air Routing Paths*”
- Conduct your own air pollution exposure assessment by walking trough the City of Düsseldorf
- Use state-of-the-art measurement equipment in groups of 2 students in your own measurement campaign
- Apply sophisticated data analysis tools like QGIS, Origin Pro & Python

Contents

- **Planning and design of air pollution control measures**
- **Selection and specification of real-world air pollution control measures (e.g., in urban areas)**
- **Data collection, standards research, and literature review**
- **Insights into pollution sources, dispersion and the urban microclimate**
- **Development your own measurement route, considering, e.g., building structures, road conditions**
- **Learn how to assess dispersion conditions to choose a healthier pathway through the city**

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Real-world applications of „Environmental Engineering Project Studies“!

- Support the development of Düsseldorf’s clean air plans
- Gain insights in future regulatory requirements launched by the European Union
- Explore the perspectives of different stakeholders involved in urban air quality management

Learning outcomes

- **Understand fundamental principles of air pollution control**
- **Analyze technical, environmental, economic, and social factors in air pollution projects**
- **Apply air pollution control technologies to real engineering problems**
- **Evaluate solutions based on feasibility, impact, cost, and regulation**
- **Develop and present innovative air pollution control strategies**