

# 2019 Nagaoka Summer School for Young Engineers (NASSYE)

## List of Research Topics

### Civil and Environmental Engineering

Department website: <http://globe.nagaokaut.ac.jp/en/>

<b>Research Topic</b>	Water and Wastewater treatment technology for domestic-, industrial-, and aquaculture-fields, to make a solution for Sustainable Development Goals 17(SDGs17).
<b>Instructor</b>	YAMAGUCHI, Takashi
<b>Assistant Instructor</b>	HATAMOTO, Masashi / WATARI, Takahiro
<b>Contents</b>	1) Sharing the water/food related situation in each attendance country. 2) Laboratory tour of aqua and soil environmental laboratory and some water/food related laboratories in NagaokaUT. 3-1) Experimental course as main: Joining to lab's experiments: water quality analysis for water treatment process and/or microbial analysis of microbes by molecular technics. 3-2) Promotion course of SDGs related water/food: Making some PR video of Aqua and soil environmental laboratory or Nagaoka city, including attending yang engineer's activities. 4) Presentation of the progress.
<b>Required skills/ Remarks</b>	

<b>Research Topic</b>	Evaluation of transportation policy by micro traffic simulation
<b>Instructor</b>	SANO, Kazushi
<b>Assistant Instructor</b>	HATOYAMA, Kiichiro
<b>Contents</b>	Students can learn fundamentals about statistics and traffic-related theories and develop transportation network on the micro traffic simulators, PARAMICS and AIMSUN, and evaluate transportation policy such as signal control by using traffic data.
<b>Required skills/ Remarks</b>	

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<b>Research Topic</b>	Mix design procedure and mechanical property evaluation of hot mix asphalt mixtures for Japanese road pavements
<b>Instructor</b>	TAKAHASHI, Osamu
<b>Assistant Instructor</b>	
<b>Contents</b>	<p>The surface of roads is constructed with asphalt pavements. Hot mix asphalt (HMA) mixtures constituting the asphalt pavements are one of general civil engineering materials, but are not well known about types and physical properties. Even a student of civil engineering doesn't have an opportunity to study HMA mixtures in a university and a technical college. On this training theme, we learn constituent materials and design procedures of a HMA mixture and understand relationships between those and physical properties of the HMA concrete through some experimental works. We also experience that the physical properties of HMA concrete considerably depend on the characteristics and the percentage of each material. As the result, we can study fundamental knowledge on HMA mixtures and asphalt pavements.</p>
<b>Required skills/ Remarks</b>	<ul style="list-style-type: none"><li>• Students are required to be patient with hot due to handle hot mix asphalt mixtures in summer season.</li><li>• Students need to wear outfits and shoes, which may get dirty at experiments.</li></ul>