

Area: Hydraulic, Water Resources and Environmental Engineering
Level: Undergraduate (BSc)
Course title: River Hydraulics, Morphology and Training Works
Lecturer: M. Spasojevic
<p>Course objective: Gain theoretical background and practical experience in river hydraulics, sedimentation processes, river-bed morphological changes, river-training works, flood protection, etc.</p>
<p>Course outline:</p> <p><i>Course topics</i> Geomorphological characteristics of natural watercourses Velocity distributions, bed-shear and turbulent stresses, surface resistance Surface resistance – non-moving bed Sediment formations and alluvial-form resistance Steady flow in natural watercourses Unsteady flow in natural watercourses Origine and physical characteristics of river sediments The treshhold of movement Bedload transport Suspended-sediment transport Total sediment transport River-training works River-training structures Flood protection structures Living with floods – new EU strategy and concept</p> <p><i>Assignments and term projects</i> Course topics are accompanied by assignments and term projects, requiring individual work under teacher’s guidance and supervision.</p>
<p>Recommended literature:</p> <ol style="list-style-type: none"> 1. M. Jovanovic: <i>River Hydraulics and Mophology</i>, Civil Engineering Faculty Belgrade, 2002, in Serbian. 2. D. Muskatirovic: <i>River Training Works</i>, Civil Engineering Faculty Belgrade, 1979, in Serbian. 3. M. S. Yalin: <i>Mechanics of Sediment Transport</i>, Pergamon Press Ltd., 1977. 4. W. H. Graf: <i>Hydraulics of Sediment Transport</i>, McGraw-Hill, Inc., 1971. 5. Manual 54: <i>Sedimentation Engineering</i>, Vanoni, V. A., Editor, ASCE, 1975. 6. F. M. Henderson: <i>Open Channel Flow</i>, Macmillan Publishing Co., Inc., 1966. 7. S. C. Jain: <i>Open-Channel Flow</i>, John Wiley & Sons, Inc., 2001.