

D – Study course characteristics				
Study course name	Power Systems Dynamics and Reliability			
Course type	optional		recommended year / semester	2/W
Study course range	2p+2s	hours per week	4	credits 5
Other range description				
Way of finishing	assessment + exam		Education form	lecture + seminar
Other requirements for students				
Course tutor				
Josef Tlustý, Zdeněk Müller				
Brief course summary				
<p>The course introduces electric power systems elements modelling for the purposes of dynamic and transient events simulations. There are explained phenomena concerning system quantities control, system operation stability and extraordinary states in ES. Students get also knowledge about grids reliability and maintenance.</p> <ol style="list-style-type: none">1. ES elements modelling2. System modelling3. States and parameters estimation4. Basic control algorithms in ES5. P-f dynamics and control6. Q-U dynamics and control7. Load prediction and Unit commitment8. System stability9. WAMPaC systems10. System automatics and protections11. Emergency states and their solution, emergency electricity supply12. Reliability of elements in electric power systems13. System reliability and maintenance14. Reserve				
Study literature				
<p>Tůma, J. a kol.: Security, quality and reliability of electrical energy. Praha, 2007, ISBN 978-80-239-9056-0.</p> <p>Machowski, J., Bialek, J.W., Rumby, J.R.: Power system dynamics. Wiley, 2008, ISBN 978-0-470-72558-0.</p>				