

<b>COURSE TITLE</b>	<b>TE142443: Cooperative Network and Communication Systems</b> Credits: 2 ELECTIVE COURSE
<b>LEARNING OBJECTIVES</b>	To study modulation, coding and signal processing techniques for cooperative communication and networking using relay.
<b>COMPETENCY</b>	The students are expected to understand: <ul style="list-style-type: none"> <li>• Problems in cooperative communications and networking, as well as limits from information theoretical point of view</li> <li>• Coding and modulation scheme for cooperative communications for various configuration</li> <li>• Cooperative multiple access techniques in networking</li> </ul>
<b>SUBJECTS</b>	<ul style="list-style-type: none"> <li>• Space-time diversity and coding</li> <li>• Space-time-frequency diversity and coding</li> <li>• Relay channels and protocols</li> <li>• Information theoretical limits of cooperation</li> <li>• Cooperative communications with single relay</li> <li>• Multi-node cooperative communications</li> <li>• Distributed space-time and space-frequency coding</li> <li>• Relay selection</li> <li>• Cognitive multiple access via cooperation</li> <li>• Content-aware cooperative multiple access</li> <li>• Distributed cooperative routing</li> <li>• Source-channel coding with cooperation</li> </ul>
<b>MAIN REFERENCES</b>	<ul style="list-style-type: none"> <li>• K.J. Ray Liu, Ahmed K. Sadek, Weifeng Su &amp; Andres Kwasinski, Cooperative Communications and Networking, Cambridge University Press, 2009.</li> </ul>
<b>OPTIONAL REFERENCES</b>	<ul style="list-style-type: none"> <li>• IEEE Trans. on Communications</li> <li>• IEEE Trans. on Wireless Communications</li> <li>• IEEE Trans. on Information Theory</li> <li>• IEEE J. on Selected Areas in Communications</li> </ul>
<b>PREREQUISITE</b>	-