iNARTE Spectrum Management Program Examination Subjects and Skill-Sets

Topic	SM ENGINEER	SM TECHNICIAN
Basic Theory		
Electromagnetic Field Theory	X	-
Basic EMC Theory	X	X
Vector Mathematics	X	-
Spectrum Analysis	X	X
Communication Theory	X	X
Radio Wave Propagation and Multipath	X	X
Transmission Lines and Waveguides	X	X
Terminology	X	X
Spectrum Management, and Engineering		
Spectrum Management	X	-
Spectrum Allocation	X	X
Frequency Licensing and Assignment	X	X
Spectrum Policy (Rules and Regulations)	X	-
Radio Technology		
Basic Spectrum Electronic Principles	X	X
Transmitters, Receivers and Antennae Characteristics	X	X
Signals & Transforms	X	X
Amplifiers & Attenuators	X	X
Radars	X	X
Cellular 3/4/5G Technology	X	X
Spread spectrum, Direct Sequence and Frequency Hopping	X	X
Adaptive Antennae and Techniques	X	X
Diversity Techniques	X	X
EMC Design		
Enclosure and Cable Shielding	X	X
Filters	X	X

Topic	SM ENGINEER	SM TECHNICIAN
Electromagnetic Radiation Hazards (EMRadHaz)		
RF Safety	X	X
Prediction and Analysis		
Link Budgets	X	X
Inter-system and Intra-system Collocation Analysis & Prediction	X	X
Radio Propagation and Collocation Simulations	X	X
Interference Resolution	X	X
Testing, Measurement and Validation		
Spectrum Monitoring and Compliance	X	X
Spectrum Site Surveys	X	X
Test Facilities and Instrumentation	X	X
Specifications and Standards	X	X
Testing and Measurements	X	X
Test Plans & Procedures	X	X
Test Reports	X	X
Program Management		
SM Program Procedures	X	-
Design Reviews	X	-
Engineering Ethics	X	X
Team Leadership	X	-
"Soft Skills"	X	X