

# GEOSPATIAL ENGINEERING COMPETENCIES

## Land Surveying

The measurement, definition and portrayal, either digitally or graphically in the form of maps or plans, of the physical features of, and the structures on the earth's surface. The ability to understand engineering design information and from this, provide dimensional control for all stages of construction work.

GELS01		Competency	The Ability to carry out topographic surveys				
			Date of assessment				
	Optimum Standard		Activity Details	A	K	E	B
ITEM	TECHNICAL MEMBER	MEMBER					
A	K	B	Site reconnaissance				
B	E	B	Use of appropriate survey control stations and measurements				
C	E	B	Height control – different methods of establishing				
D	E	B	A variety of methods of capturing topographic survey information. Radial obs, RTK GPS, Tachymetry, Tape/offset etc				
E	E	B	Use of appropriate equipment, Total Station, GPS, Tape, reflectorless EDM				
F	E	B	Data capture and feature coding. Recording of survey information				
G	A	A	Laser scanners				

GELS01 continued		Competency	The Ability to carry out topographic surveys				
			Date of assessment				
	Optimum Standard		Activity Details	A	K	E	B
ITEM	TECHNICAL MEMBER	MEMBER					
H	K	K	Electronic tapes/handheld measuring devices				
I	E	B	Appropriate on-going checking procedures				

GELS01: The ability to carry out topographic surveys

Name of Supervisor	Name of Applicant
Supervisor's signature	Date

<b>GELS02</b>		<b>Competency</b>	<b>The ability to use and understanding of surveying instruments</b>				
			<b>Date of assessment</b>				
	<b>Optimum Standard</b>		<b>Activity Details</b>	A	K	E	B
<b>ITEM</b>	<b>TECHNICAL MEMBER</b>	<b>MEMBER</b>					
A	E	B	Total Stations – conventional				
B	E	B	Total Stations – reflectorless				
C	E	B	Other methods of measuring distance				
D	E	B	GPS – Static - RTK				
E	A	K	Theodolites				
F	E	B	Levels				
G	K	E	Levels – precise				
H	E	B	Instrument checking				

GELS02 continued		Competency	The ability to use and understanding of surveying instruments				
			Date of assessment				
	Optimum Standard		Activity Details	A	K	E	B
ITEM	TECHNICAL MEMBER	MEMBER					
I	E	B	Instrument calibration				
J	E	B	Instrument adjustment				
K	E	B	Accessories checking and adjustment				

GELS02: The ability to use and understanding of surveying instruments

Name of Supervisor	Name of Applicant
Supervisor's signature	Date

GELS03		Competency	Application of geometric principles			
			Date of assessment			
Optimum Standard		Activity Details	A	K	E	B
ITEM	TECHNICAL MEMBER	MEMBER				
A	E	B				
B	E	B				
C	E	B				
D	E	B				
E	E	B				
F	E	B				
G	E	B				

GELS03: Application of geometric principles

Name of Supervisor	Name of Applicant
Supervisor's signature	Date

GELS04		Competency	The ability to use ICT in surveying				
			Date of assessment				
	Optimum Standard		Activity Details	A	K	E	B
ITEM	TECHNICAL MEMBER	MEMBER					
A	E	B	Transfer of survey data between instrument and computer				
B	E	B	Electronic processing of co-ordinate geometry data including geometric networks				
C	E	B	Use and manipulation of digital ground models				
D	E	B	CAD - general principles, structure, layering				
E	E	B	CAD – various formats – Autocad, MOSS, Microstation and others				
F	E	B	Digital data transfer – dxf, Genio etc				

GELS04: The ability to use ICT in surveying

Name of Supervisor	Name of Applicant
Supervisor's signature	Date