



M E M O

Department of Geography and The Environment

RE: Software (and associated hardware) requirements of select Department of Geography and the Environment courses, Academic Year 20/21

Based on planned online course delivery in Academic Year 20/21 (as of August 18th, 2020), there will be a need for students to access various software packages for certain Department of Geography courses. The means for gaining access to the software varies by package, dependent upon whether it's used exclusively online (through supported browsers) vs. installed locally, but also upon licensing (open-source vs. proprietary), and on the existing TSC resources and infrastructure.

Update: as of August 2020, Lakehead University has secured 'desktop-as-a-service' (DaaS) virtual machine infrastructure (VMI), Nutanix Xi Frame®. VMI will allow those students without the software installed on their own machine, either because of software licensing restrictions or incompatible/insufficient hardware, to run the software via cloud computing. To be clear, **those students using a Mac operating system, can indeed use the VMI to access ArcGIS (Desktop) and ArcPRO, which run natively on only Windows operating systems. They do not need to purchase a Windows PC just for the purpose of these courses!**

GEOG/ENST 1150/70; The Environment; F20

Coursework in GEOG/ENST 1150/70 will include use of ArcGIS Online and Google Earth Online. ArcGIS Online account credentials with instructions for sign-on will be sent to registered students at the beginning of the course. Please see table below for associated system and browser requirements to operate these packages. Please direct any questions or concerns about these requirements to Jason Freeburn, jason.freeburn@lakeheadu.ca.

GEOG 2215; Introduction to Earth Observation and Analysis; W21

Coursework in GEOG 2215 will include use of ArcGIS Online, ArcGIS 10.7 and ArcPRO 2.5. ArcGIS Online account credentials with instructions for sign-on will be sent to registered students at the beginning of the course. Instructions to request a one-year student-copy of ArcGIS 10.7 through the Technological Services Centre will be sent to registered students at the beginning of the course. Download for ArcPRO will be available to designated users through their ArcGIS Online account. Please see table below for associated system and browser requirements to operate these packages. Please direct any questions or concerns about these requirements to Jason Freeburn, jason.freeburn@lakeheadu.ca

GEOG 2232; Introduction to Geomatics and GIS; F20

Coursework in GEOG 2232 will include use of ArcGIS Online and ArcGIS 10.7. ArcGIS Online account credentials with instructions for sign-on will be sent to registered students at the beginning of the course. Instructions to request a one-year student-copy of ArcGIS 10.7 through the Technological Services Centre will be sent to registered students at the beginning of the course. Please see table below for associated system and browser requirements to operate these packages. Please direct any questions or concerns about these requirements to Jason Freeburn, jason.freeburn@lakeheadu.ca.

GEOG/ENST 2331; Climatology; W21

Coursework in GEOG/ENST 2331 will include use of ArcGIS Online and Google Earth PRO. ArcGIS Online account credentials with instructions for sign-on will be sent to registered students at the beginning of the course. Please see table below for associated system and browser requirements to operate these packages. Please direct any questions or concerns about these requirements to Jason Freeburn, jason.freeburn@lakeheadu.ca.

GEOG/ENST 2351; Geomorphology; F20

Coursework in GEOG/ENST 2351 will include use of ArcGIS Online and Google Earth PRO. ArcGIS Online account credentials with instructions for sign-on will be sent to registered students at the beginning of the course. Please see table below for associated system and browser requirements to operate these packages. Please direct any questions or concerns about these requirements to Jason Freeburn, jason.freeburn@lakeheadu.ca.

GEOG 4211; Advanced GIS and Spatial Analysis; W21

Coursework in GEOG 4211 will include use of ArcGIS Online and ArcPRO 2.5. ArcGIS Online account credentials with instructions for sign-on will be sent to registered students at the beginning of the course. Download for ArcPRO will be available to designated users through their ArcGIS Online account. Please see table below for associated system and browser requirements to operate these packages. Please direct any questions or concerns about these requirements to Jason Freeburn, jason.freeburn@lakeheadu.ca

GEOG 4231; Remote Sensing; F20

Coursework in GEOG 4231 will include use of ArcGIS Online and ENVI. ArcGIS Online account credentials with instructions for sign-on will be sent to registered students at the beginning of the course. Instructions to access ENVI, which will be provided through virtual desktop infrastructure, will be sent to registered students at the beginning of the course. Please see table below for associated system and browser requirements to operate these packages. Please direct any questions or concerns about these requirements to Jason Freeburn, jason.freeburn@lakeheadu.ca

Prepared by: J. Freeburn, June 1st, 2020

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Software Package	Operating System**	Supported Browsers (for online)**	CPU (Processor) Speed**		Memory/RAM**		Video RAM**	
			Minimum	Recommended	Minimum	Recommended	Minimum	Recommended
ArcGIS 10.7.x	Windows 10 (all editions, 64-bit), 8.1 (all editions, 32-bit or 64-bit), Windows Server 2012/2016/ 2019 (64-bit)		2.2GHz	multi-core	4GB	8GB	64MB	256MB
ArcPRO 2.5	Windows 10 (all editions, 64-bit), 8.1 (Pro and Enterprise edition, 64-bit), Windows Server 2012/2016/ 2019 (64-bit)		dual-core	quad-core	4GB	8GB	256MB	512MB
ENVI 5.5.x	Windows 10 (all editions, 64-bit), Macintosh OSX 10.14 or later (64-bit)		dual-core	quad-core	4GB	8GB	512MB	1GB
QGIS	Windows 10 (all editions, 64-bit), 8.1 (all editions, 32-bit or 64-bit), Macintosh OSX, Linux		2.0GHz	multi-core	4GB	8GB	64MB	256MB
Google Earth Pro	Windows 10 (all editions, 64-bit), 8.1 (all editions, 32-bit or 64-bit), Macintosh OSX		1.0GHz	multi-core	2GB	4GB	64MB	256MB
Google Earth Online	Windows 10 (all editions, 64-bit), 8.1 (all editions, 32-bit or 64-bit), Macintosh OSX	Google Chrome, Mozilla Firefox, Microsoft Edge, Opera	1.0GHz	multi-core	1GB	2GB	32MB	256MB
ArcGIS Online	Windows 10 (all editions, 64-bit), 8.1 (all editions, 32-bit or 64-bit), Windows Server 2016 (64-bit), Macintosh OSX 10.13 or later	Google Chrome, Mozilla Firefox, Microsoft Edge, Safari	2.2GHz	multi-core	2GB	4GB	64MB	256MB

**Note: For those packages not online, students with insufficient hardware or incompatible operating system (e.g., ArcGIS and ArcPRO cannot run natively on a Mac OSX) can use Lakehead University's virtual desktop infrastructure to gain access and complete coursework remotely.