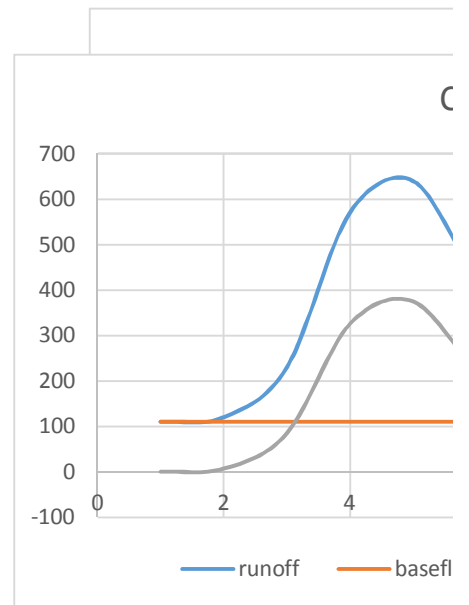
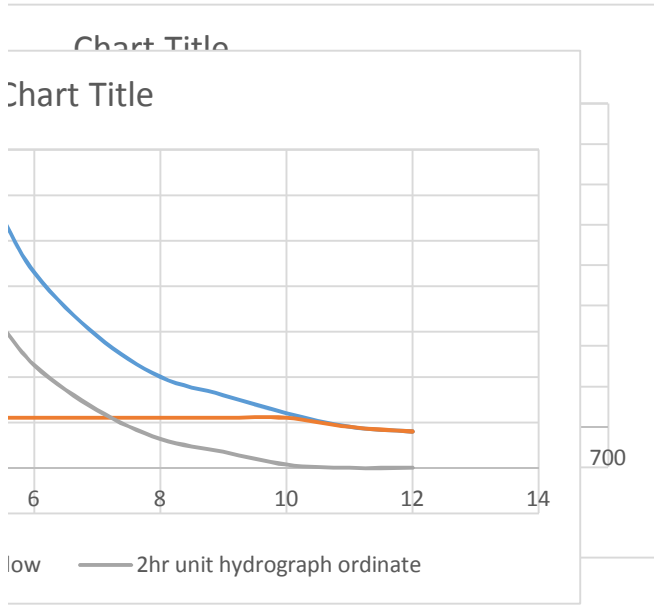


time	runoff	baseflow	direct runc	depth of di	2hr unit hydrograph	ordinate
1	110	110	0	1.415	0	
2	120	110	10	1.415	7.067138	
3	230	110	120	1.415	84.80565	
4	570	110	460	1.415	325.0883	
5	640	110	530	1.415	374.5583	
6	430	110	320	1.415	226.1484	
7	290	110	180	1.415	127.2085	
8	200	110	90	1.415	63.60424	
9	160	110	50	1.415	35.33569	
10	120	110	10	1.415	7.067138	
11	90	90	0	1.415	0	
12	80	80	0	1.415	0	





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CIVIL ENGINEERING
17/ENGG03/015

CVE 302 (Basic Hydrology)

ASSIGNMENT

1 QGIS

(a) QGIS is the most popular GIS tool with an impressive trajectory and a vibrant community. It also even has a particular ecosystem of complements called "plugins". QGIS is a completely open source alternative that reduces the cost barriers since it does not need a paid license and can be executed in any operative system.

(b) HEC-RAS

The numerical model HEC-RAS is developed by the US Army Corps of Engineers. This model uses the gradient and topography to evaluate the flow depth, velocities and flooded zones. It is also useful temperature.

(c) HEC-HMS

The hydrologic modeling system (HEC-HMS) is designed to simulate the hydrologic processes in basins. The software includes traditional procedures of hydrologic analysis, such as infiltration events, unit hydrograms and routing. HEC-HMS also includes modules for evapotranspiration, snow melting and calculation of soil humidity.

(d) SWAT

SWAT is a tool to evaluate soil and water at a basin scale. It is focused in precipitation-runoff modeling and transport of water and solutes through surface flow. It predicts the impacts of soil management practices in water resources and sediments.

(Q2) SAGA GIS

SAGA GIS is a GIS Platform oriented to spatial analysis. SAGA GIS is a simple but powerful tool, with a big library focused on spatial analysis and characterization of basins. The interpolation options in SAGA GIS are better implemented than in other free and commercial software.