

MEMORANDUM

FROM: Geology Transfer Working Group
TO: Counselors & Advisors at Two-Year Colleges in Illinois
RE: Advising geology majors planning to transfer

Given the broad range of disciplines that the typical counselor at two-year colleges (2YC) have to be proficient in, it is nearly impossible to provide accurate and helpful advice for them all. To that end, we have prepared this document to enable the successful transfer of geoscience students from a 2YC to a four-year college / university (4YCU) in Illinois.

This document is the result of discussions at a SAGE 2YC (Supporting and Advancing Geoscience Education at Two-Year Colleges) local workshop held at Illinois Valley Community College, in Oglesby, IL in March of 2015. SAGE 2YC is supported by the National Science Foundation, Division of Undergraduate Education. Although this document is only the collective opinions of geology Professors from 3 2YC's and 3 4YCU's, it should be used as a general advisement tool, as these Professors represent a reasonable cross section of geology education in Illinois. In addition, the final draft was presented to representatives from other 2YC and 4YCU geology in Illinois for review and comment.

Transfer recommendations for geology students in Illinois

This document refers primarily to the geology major. Specific recommendations for students interested in majoring in oceanography, meteorology, astronomy, earth science, environmental science, or geography would likely be slightly different and 4YCU departments may include all of these majors or may be limited to geology. Note that within the geosciences, departments have a wide range of names, as shown in the Directory below.

First and foremost, the best advice to give to a geology major is that student should directly contact the transfer representative at the specific 4YCU department of the student's choosing. It is that person who will ultimately approve or deny the transferability of classes. Contact information for most of these representatives can be found at the end of this document. If it is not possible to contact a representative at the chosen 4YCU, please have the student contact the geology professor / instructor in your institution, or one of the authors of this document.

General Education requirements

As with any transfer, completion of the A.S. degree granted by your Institution would be the best overall advice, as well as to complete all requirements for a geology major / concentration before leaving the 2YC. There is a higher likelihood of all of the general education courses transferring with a completed A.S. degree. Should a student be unable to complete the A.S. degree because of a missing course or two, it is possible that the student can 'reverse transfer' those missing classes from the 4YCU to the 2YC, thereby completing their A.S. degree. The courses approved by the Illinois Articulation Initiative (IAI) should be the first choice, unless other guidance is provided from the receiving 4YCU's geology department.

Geology is becoming an increasingly technical discipline, as well as one that will continue to be very broad in nature. To that end, it is strongly recommended that classes in several cognate subjects be completed: a year of chemistry, a semester (or year) of non-majors physics, and math through calculus II. In most cases, the chemistry and biology courses should be of the higher level / majors for them to satisfy the geology major requirements at the 4YCU. Should a lower level of these sciences be taken, although satisfying requirements of the A.S., the 4YCU may require re-taking those same classes at the higher level to satisfy the geology requirements. These additional courses will jeopardize the students' ability to complete their degree in four years. Although not typically required in many 4YCU, courses in statistics, computer science or technical writing can be very helpful as well. As with most STEM careers, geology usually involves presentations of some sort, so a course in communications can be very helpful as well.

Specific geology course requirements

Courses in Physical Geology and Historical Geology (both currently have the same IAI approval code, P1 907 and P1 907L) are strongly recommended, as they are typically the first two major courses a geology student must complete. It is imperative that the associated lab course for each are taken, if they are separate classes, because the 4YCU will not count those classes towards the major course distribution without them. With these classes, the student will be exposed to the wide variety of sub-disciplines in geology, and can also demonstrate their aptitude for the subject. If the classes are not available in your Institution, substitution with an Earth Science course (P1 905 and P1 905L) may demonstrate the students aptitude, but may or may not count as general education credits, and not be counted towards the geology major course requirements. Other available geology courses at your institution, such as Environmental Geology (P1 908 and P1 908L) and Oceanography (P1 905 and P1 905L), although demonstrating the student's geologic aptitude, may or may not count towards the geology major course requirements at the chosen transfer institution.

As most geological careers involve field-work and research, these opportunities should be identified in your institution, and the student should be encouraged to become involved in them. Many 2YC's have Honors programs, and these Honors programs may be able to support projects that provide research experiences, which can be transformative in the development of successful geoscientists. Field experiences are an integral part of a geology education. As such, classes with field trips should be encouraged, despite the often overly-committed schedule of the 2YC student. The opportunity to apply class-based knowledge with a group of peers is often a corner stone in a students' geology education. If there are no classes at your institution with geologic field trips, the Illinois State Geological Survey sponsors field trips for the public in the fall and / or spring (<https://www.isgs.illinois.edu/content/public-field-trips>). There are frequently fall field trips sponsored by the Great Lakes section of the Society for Sedimentary Geology that are designed specifically for students (<http://isgs.illinois.edu/sepm>). Finally, the student may contact the closest 4YCU with a geology department, and ask to participate in their field trips.

Many 4YCU have articulation tables that match their classes with equivalent classes at your 2YC. For example, Northern Illinois University has articulation tables for most of the 2YC in Illinois (<http://www.niu.edu/admissions/transfer/plan/credits/index.shtml>), which would be appropriate for General Education credits. However, as stated above, it is the opinion of the transfer coordinator in the Geology Department that will make the ultimate decision on whether or not a course transfers toward the departmental degree requirements for the major.

If a student is able to identify the geologic discipline in which they are specifically interested in, then further basic sciences can be recommended. For example, if a student is interested in paleontology (the

study of fossils and life through geologic time), then they would benefit by having a year of majors Biology course work. If a student is interested in seismology (study of earthquakes), then they would benefit by having a year of calculus and a year of majors (calculus based) Physics. If a student is interested in hydrology or groundwater, then they would benefit by having an organic chemistry class, a year of calculus, and a year of physics. For other discipline-related advice, please contact one of the authors of this document or a representative at the transfer Institution.

We hope that this document is helpful. If you have questions or suggestions, please contact us.

Thank you.

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Web resources

Why Earth Science?
<https://www.youtube.com/watch?v=jxbIJH4fTYo>

The Earth is calling
<https://www.youtube.com/watch?v=naMxvhPdi5g>

Why geology?
https://mymedia.waubonsee.edu/media/DAVE+WE+TALK/1_j1khh1q3

General information about careers from American Geological Institute
<http://www.americangeosciences.org/workforce/career-resources>

Geoscience careers and employers, descriptions and testimonials
<http://www.agiweb.org/guides/employer/>

Careers that change the world
<http://www.americangeosciences.org/workforce/geoscience-careers-brochure>

Geological Society of America Career pathways
<http://www.geosociety.org/careers/>

Timely data snapshots related to the geologic profession: hiring, salaries, etc
<http://www.americangeosciences.org/workforce/currents>

Directory of Geology Departments in IL, AGI 2013

4YCU	Augustana College Department of Geology 639 38 th St Rock Island, IL 61201	309.794.7318	Jeffrey Strasser jeffreystrasser@augustana.edu www.augustana.edu/geology
2YC	Black Hawk College Dept of Natural Science & Engineering 6600 34 th Ave Moline, IL 61265	309.796.5000	Richard Harwood harwoodr@bhc.edu facweb.bhc.edu/academics/science/in dex.htm
2YC	College of Lake County Earth Science Department 19351 W Washington St Grayslake, IL 60030-1198	847.543.2504	Xiaoming Zhai Eng499@clcillinois.edu www.clcillinois.edu/programs/esc/in dex.asp
	Columbia College Dept of Science & Mathematics 600 South Michigan Ave Chicago, IL 60605	312.344.7396	crasinariu@popmail.colum.edu www.colum.edu
4YCU	Concordia University Dept of Natural Science & Geography 7400 Augustana River Forest, IL 60305	708.771.8300	Anita.briedis@cuchicago.edu www.cuchicago.edu/academics/colleg e_of_arts_and_sciences/departments /natural_sciences-and- geography/index.asp
4YCU	Eastern Illinois University Dept of Geology/Geography 600 Lincoln Ave Charleston, IL 61920-3099	217.581.2626	geoscience@eiu.edu www.eiu.edu/~geoscience
2YC	Elgin Community College Dept of Math, Science, Tech & Health Professions 1700 Spartan Dr Elgin, IL 60123	847.214.7359	mkuntz@elgin.edu
2YC	Harold Washington College Physical Sciences Dept 30 E Lake St, Room 903 Chicago, IL 60601	312.553.5785	Phillip Vargas faculty.ccc.edu/colleges/hwashington/ physicalscience
2YC	Heartland Community College Math and Science Division	309.268.8640	www.heartland.edu/ms/easc

	2400 Instructional Commons Building 1500 W Raab Rd Normal, IL 61761		
2YC	Illinois Central College Math/Science/Engineering Dept One College Drive East Peoria, IL 61611	309.694.5364	Sdunham@icc.edu
4YCU	Illinois State University Dept Geography-Geology 206 Felmley Hall of Science Campus Box 4400 Normal, IL 61790-4400	309.438.7649	geo@ilstu.edu www.geo.ilstu.edu/contactus
2YC	Illinois Valley Community College Dept of Geology Natural Sciences & Business Division 815 North Orlando Smith Ave Oglesby, IL 61348-9692	815.224.0394	Mike Phillips Mike_Phillips@ivcc.edu www.ivcc.edu/geology.aspx?id=534
2YC	Joliet Junior College 1215 Houbolt Road Joliet, IL 60431	815.280.2420	Tom Feldman tfeldman@jjc.edu Jon Laratta jlaratta@jjc.edu
2YC	Kaskaskia College Life and Physical Sciences Dept 27210 College Rd Centralia, IL 62801		www.kaskaskia.edu/LPDept/Default.aspx
2YC	Lincoln Land Community College Math and Sciences Springfield, IL 62794-9256	217.786.4923	Dean Butzow Dean.butzow@llcc.edu www.llcc.edu/mtsc/Sciences/tabid/3280
2YC	McHenry County College Geography, Geology, and Earth Science 8900 US Hwy 14 Crystal Lake, IL 60012	815.455.3700	www.mchenry.edu/EarthScience/index.asp
2YC	Moraine Valley Community College Dept of Physical Sciences 9000 W College Pkwy Palos Hills, IL 60465-2478	708.974.5246	

4YCU	Northeastern Illinois University Dept of Earth Science 5500 N St Louis Ave Chicago, IL 60625	773.442.6050	Kenneth Voglesonger K-voglesonger@neiu.edu www.neiu.edu/academics/college%20of%20Arts_Sciences/Departments_Programs/Earth%20Science/Earth_Science.html
4YCU	Northern Illinois University Dept of Geology and Environmental Geosciences Davis Hall 312, Normal Rd DeKalb, IL 60115-2854	815.753.1943	Mark Frank askgeology@niu.edu www.niu.edu/geology
4YCU	Northwestern University Earth and Planetary Sciences 2145 Sheridan Technological Institute Evanston, IL 60208-3130	847.491.3238	eps@earth.northwestern.edu www.earth.northwestern.edu
2YC	Oakton Community College Earth Science 1600 E Golf Rd Des Plaines, IL 60016	847.376.7042	jcarzoli@oakton.edu www.oakton.edu/academics/academic_departments/earth_science/index.php
4YCU	Olivet Nazarene University Dept of Physical Sciences One University Ave Bourbonnais, IL 60914	815.939.5394	mreams@olivet.edu geology.olivet.edu
2YC	Prairie State College 202 S Halstead St Chicago Heights, IL 60411	708.709.3674	Lee Anne Burrough lburrough@prairiestate.edu
4YCU	Principia College Dept of Geology 1 Maybeck Place Elsah, IL 62028	618.374.5294	Principia.edu/mammoth
2YC	Richard J. Daley Community College Physical Sciences 7500 South Pulaski Rd Chicago, IL 60652	773.838.7636	Daley.ccc.edu
2YC	Richland Community College One College Park Decatur, IL 62521	217.875.7211	www.richland.edu

2YC	Rock Valley College 3301 North Mulford Rd Rockford, IL 61114		Ednet.rockvalleycollege.edu
2YC	Sauk Valley Community College 173 IL Rt 2 Dixon, IL 61201		www.svcc.edu
2YC	South Suburban College 15800 South State St South Holland, IL 60473		www.ssc.edu
4YCU	Southern Illinois University Carbondale Dept of Geology 1259 Lincoln Dr, Mailcode 4324 Parkinson 102 Carbondale, IL 62901	618.453.3351	geology@geo.siu.edu www.geology.siu.edu
2YC	Southwestern Illinois College – Belleville 2500 Carlyle Ave Belleville, IL 62221	618.235.2700	www.swic.edu
2YC	Southwestern Illinois College – Sam Wolf Physical Science 4950 Maryville Rd Granite City, IL 62040	618.235.2700	www.swic.edu
2YC	Triton College 2000 Fifth Ave River Grove, IL 60171		www.triton.edu
4YCU	University of Chicago Dept of the Geophysical Sciences 5734 S Ellis Ave Chicago, IL 60637	773.702.8101	info@geosci.uchicago.edu geosci.uchicago.edu
4YCU	University of Illinois, Chicago Dept of Earth and Environmental Sciences 845 W Taylor St 2440 SES MC186 Chicago, IL 60607-7059	312.996.3155	klnagy@uic.edu www.uic.edu/depts./geos
4YCU	University of Illinois, Urbana- Champaign	217.333.3542	mkt@illinois.edu www.geology.illinois.edu

	Dept of Geology 1301 West Green St 208 Natural History Building Urbana, IL 61801		
2YC	Waubonsee Community College Earth Sciences Rt 47 @ Waubonsee Dr Sugar Grove, IL 60554	630.466.2783	Dave Voorhees dvoorhees@waubonsee.edu www.waubonsee.edu/learning/academics/disciplines/tech/earth/index.php
4YCU	Western Illinois University Dept of Geology 1 University Circle Macomb, IL 61455	309.298.1151	Peter Calengas Pl-calengas@wiu.edu www.wiu.edu/cas/geology
4YCU	Wheaton College Dept of Geology & Environmental Science 501 E College Ave Wheaton, IL 60187	630.752.5063	geology@wheaton.edu www.wheaton.edu
2YC	William Rainey Harper College Mathematics & Science Div 1200 Algonquin Rd Palatine, IL 60067-7398	847.925.6374	Brenna Lorenz Blorenz@harpercollege.edu