

STEM TRANSFER RECOMMENDATIONS

More details can be found at www.oakton.edu/cp-stem/concentrations

Associate in Science (A.S.) - Biology

Code	Title	Hours
General Education Requirements		
<i>Area A - Communications</i>		
EGL 101	Composition I	3
EGL 102	Composition II	3
SPE 103	Effective Speech	3
<i>Area B - Mathematics</i>		
MAT 250	Calculus I	5
MAT 251	Calculus II	4
<i>Area C - Science</i>		
BIO 121	General College Biology I	4
BIO 122	General College Biology II	4
CHM 121	General College Chemistry I	4
<i>Area D - Social and Behavioral Science</i>		
Select two courses from two different social or behavioral science disciplines ¹		6
<i>Area E - Humanities/Fine Arts</i>		
Select two courses; one must be from Fine Arts and one must be from Humanities ¹		6
<i>Area F - Global Studies</i>		
One course that satisfies the Global Studies requirement ²		0-3
<i>Area G - U.S. Diversity Studies</i>		
One course that satisfies U.S. Diversity Studies requirement ²		0-3
Required Courses		
CHM 122	General College Chemistry II	4
MAT 131	Elementary Statistics	4
PHY 131	College Physics I	4
or PHY 221	General Physics I	
Elective Courses		
Select eight credit hours from the following:		8
BIO 104	Human Genetics (non-laboratory course)	
BIO 231	Human Anatomy and Physiology I	
BIO 232	Human Anatomy and Physiology II	
CHM 207	Elementary Organic Chemistry	
CHM 223 & CHM 224	Organic Chemistry I and Organic Chemistry II	
MAT 149	Precalculus	
PHY 132	College Physics II	
or PHY 222	General Physics II	
Total Hours		62

¹ Courses must be selected from the list of IAI General Education Courses.

² Course can also satisfy another Area requirement.

Associate in Science (A.S.) - Chemistry

Code	Title	Hours
General Education Requirements		
<i>Area A - Communications</i>		
EGL 101	Composition I	3
EGL 102	Composition II	3
SPE 103	Effective Speech	3
<i>Area B - Mathematics</i>		
MAT 250	Calculus I	5
MAT 251	Calculus II	4
<i>Area C - Science</i>		
BIO 121	General College Biology I	4
BIO 122	General College Biology II	4
CHM 121	General College Chemistry I	4
<i>Area D - Social and Behavioral Science</i>		
Select two courses from two different social or behavioral science disciplines ¹		6
<i>Area E - Humanities/Fine Arts</i>		
Select two courses; one must be from Fine Arts and one must be from Humanities ¹		6
<i>Area F - Global Studies</i>		
One course that satisfies the Global Studies requirement ²		0-3
<i>Area G - U.S. Diversity Studies</i>		
One course that satisfies U.S. Diversity Studies requirement ²		0-3
Required Courses		
CHM 223	Organic Chemistry I	4-5
or CHM 221	Organic Chemistry I	
CHM 224	Organic Chemistry II	4-5
or CHM 222	Organic Chemistry II	
PHY 221	General Physics I	5
Elective Courses		
Select six credit hours from the following:		6
CHM 229	Biochemistry	
CHM 240	Interdisciplinary Undergraduate Laboratory Research	
PHY 222	General Physics II	
MAT 252	Calculus III	
MAT 260	Linear Algebra	
MAT 262	Ordinary Differential Equations	
CSC 170	Introduction To Numerical Methods ³	
BIO 122	General College Biology II	
Total Hours		61

¹ Courses must be selected from the list of IAI General Education Courses.

² Course can also satisfy another Area requirement.

³ Course must be taken concurrently with one of the following: CSC 171, CSC 172 or CSC 173.

Associate in Science (A.S.) - Computer Science

Code	Title	Hours
General Education Requirements		
<i>Area A - Communications</i>		
EGL 101	Composition I	3
EGL 102	Composition II	3
SPE 103	Effective Speech	3
<i>Area B - Mathematics</i>		
MAT 250	Calculus I	5
MAT 251	Calculus II	4
<i>Area C - Science</i>		
Select three courses: at least one course from Life Sciences and at least one course from Physical Sciences, at least one of these courses must be a lab course ¹		10
<i>Area D - Social and Behavioral Science</i>		
Select two courses from two different social or behavioral science disciplines ¹		6
<i>Area E - Humanities/Fine Arts</i>		
Select two courses; one must be from Fine Arts and one must be from Humanities ¹		6
<i>Area F - Global Studies</i>		
One course that satisfies the Global Studies requirement ²		0-3
<i>Area G - U.S. Diversity Studies</i>		
One course that satisfies U.S. Diversity Studies requirement ²		0-3
Required Courses		
MAT 144	Discrete Mathematics	3
CSC 255	Objects and Algorithms	3
Select one of the following:		3
CSC 180	Introduction to Artificial Intelligence	
CSC 204	Computer Architecture And Organization	
CSC 206	Software Cybersecurity	
Select one of the following:		3
CSC 155	C++ Computer Science I	
CSC 156	Java Computer Science I	
CSC 157	Python Computer Science I	
Select one of the following:		3
CSC 240	C++ Data Structures	
CSC 241	Java Data Structures	
CSC 242	Python Data Structures	
Elective Courses		
Select six credit hours from the following:		6
CSC 170	Introduction To Numerical Methods ³	
CSC 204	Computer Architecture And Organization	
MAT 252	Calculus III	
or MAT 260 Linear Algebra		
or MAT 262 Ordinary Differential Equations		
Total Hours		61

- ¹ Courses must be selected from the list of IAI General Education Courses.
- ² Course can also satisfy another Area requirement.
- ³ Course must be taken concurrently with one of the following: CSC 171, CSC 172 or CSC 173.

Associate in Arts (A.A.) - Computer Science

Code	Title	Hours
General Education Requirements		
<i>Area A - Communications</i>		
EGL 101	Composition I	3
EGL 102	Composition II	3
SPE 103	Effective Speech	3
<i>Area B - Mathematics</i>		
MAT 180	Calculus For Business And Social Science	4
<i>Area C - Science</i>		
Select one course from Life Sciences and one course from Physical Sciences; at least one of these courses must be a lab course ¹		7
<i>Area D - Social and Behavioral Science</i>		
Select three courses from at least two different social or behavioral science disciplines ¹		9
<i>Area E - Humanities/Fine Arts</i>		
Select three courses; at least one course must be from Fine Arts and one must be from Humanities ¹		9
<i>Area F - Global Studies</i>		
One course that satisfies the Global Studies requirement ²		0-3
<i>Area G - U.S. Diversity Studies</i>		
One course that satisfies U.S. Diversity Studies requirement ²		0-3
Required Courses		
CIS 101	Introduction To Computer Information Systems	3
MAT 144	Discrete Mathematics	3
Select one of the following:		3
CSC 155	C++ Computer Science I	
CSC 156	Java Computer Science I	
CSC 157	Python Computer Science I	
Select one of the following:		3
CSC 240	C++ Data Structures	
CSC 241	Java Data Structures	
CSC 242	Python Data Structures	
Elective Courses		
Select nine credit hours from the following:		9
CIS 131	Web Page Development	
CIS 201	Information Systems for Business	
CNS 105	Networking Essentials	
CSC 180	Introduction to Artificial Intelligence	
CSC 204	Computer Architecture And Organization	
CSC 206	Software Cybersecurity	
CSC 255	Objects and Algorithms	
MAT 143	Finite Mathematics	
MAT 190	Business Statistics	
Total Hours		62

¹ Courses must be selected from the list of IAI General Education Courses.

² Course can also satisfy another Area requirement.

Associate in Science (A.S.) - Mathematics

Code	Title	Hours
General Education Requirements		
<i>Area A - Communications</i>		
EGL 101	Composition I	3
EGL 102	Composition II	3
SPE 103	Effective Speech	3
<i>Area B - Mathematics</i>		
MAT 250	Calculus I	5
MAT 251	Calculus II	4
<i>Area C - Science</i>		
Select three courses: at least one course from Life Sciences and at least one course from Physical Sciences; at least one of these courses must be a lab course ¹		10
<i>Area D - Social and Behavioral Science</i>		
Select two courses from two different social or behavioral science disciplines ¹		6
<i>Area E - Humanities/Fine Arts</i>		
Select two courses; one must be from Fine Arts and one must be from Humanities ¹		6
<i>Area F - Global Studies</i>		
One course that satisfies the Global Studies requirement ²		0-3
<i>Area G - U.S. Diversity Studies</i>		
One course that satisfies U.S. Diversity Studies requirement ²		0-3
Required Courses		
MAT 252	Calculus III	4
MAT 260	Linear Algebra	3
MAT 262	Ordinary Differential Equations	3
Elective Courses		
Select twelve credit hours from the following:		12
CHM 121	General College Chemistry I	
CHM 122	General College Chemistry II	
CSC 155	C++ Computer Science I	
	or CSC 156 Java Computer Science I	
	or CSC 157 Python Computer Science I	
CSC 170	Introduction To Numerical Methods ³	
PHY 222	General Physics II	
Total Hours		62

¹ Courses must be selected from the list of IAI General Education Courses.

² Course can also satisfy another Area requirement.

³ Course must be taken concurrently with one of the following: CSC 171, CSC 172 or CSC 173.

Associate in Science (A.S.) - Physics

Code	Title	Hours
General Education Requirements		
<i>Area A - Communications</i>		
EGL 101	Composition I	3

EGL 102	Composition II	3
SPE 103	Effective Speech	3
<i>Area B - Mathematics</i>		
MAT 250	Calculus I	5
MAT 251	Calculus II	4
<i>Area C - Science</i>		
BIO 121	General College Biology I	4
PHY 221	General Physics I	5
PHY 222	General Physics II	5
<i>Area D - Social and Behavioral Science</i>		
Select two courses from two different social or behavioral science disciplines ¹		6
<i>Area E - Humanities/Fine Arts</i>		
Select two courses; one must be from Fine Arts and one must be from Humanities ¹		6
<i>Area F - Global Studies</i>		
One course that satisfies the Global Studies requirement ²		0-3
<i>Area G - U.S. Diversity Studies</i>		
One course that satisfies U.S. Diversity Studies requirement ²		0-3
Required Courses		
MAT 252	Calculus III	4
PHY 223	Modern Physics	4
Elective Courses		
Select six credit hours from the following: ³		6
Any PHY courses ³		
MAT 260	Linear Algebra	
MAT 262	Ordinary Differential Equations	
CHM 121	General College Chemistry I	
CHM 122	General College Chemistry II	
CSC 170	Introduction To Numerical Methods ⁴	
Total Hours		61

¹ Courses must be selected from the list of IAI General Education Courses.

² Course can also satisfy another Area requirement.

³ Excluding PHY 101, PHY 131, PHY 132.

⁴ Course must be taken concurrently with one of the following: CSC 171, CSC 172 or CSC 173.