Facilitating Transfer Student Pathways to Success

National Student Success Conference

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The Transfer Challenge

- 41.9 million Americans have “Some college, no credential”.
- More than 8.8 million students attended Community Colleges in 2020-21, representing over 43% of undergraduates nationwide.

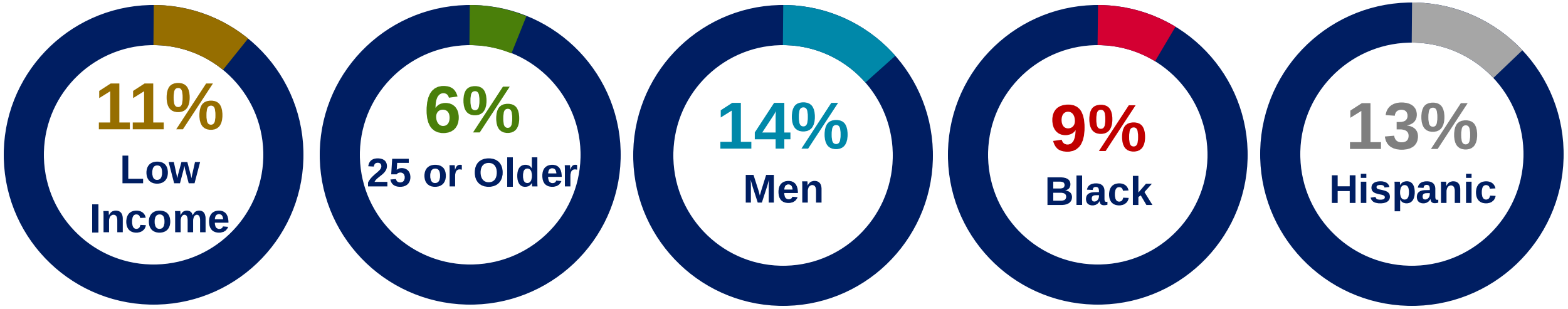
About 80% of CC students aspire to transfer to four-year institutions.

33% of students enrolled in CCs transfer to four-year institutions.

16% of CC students attain a bachelor’s degree within six years.

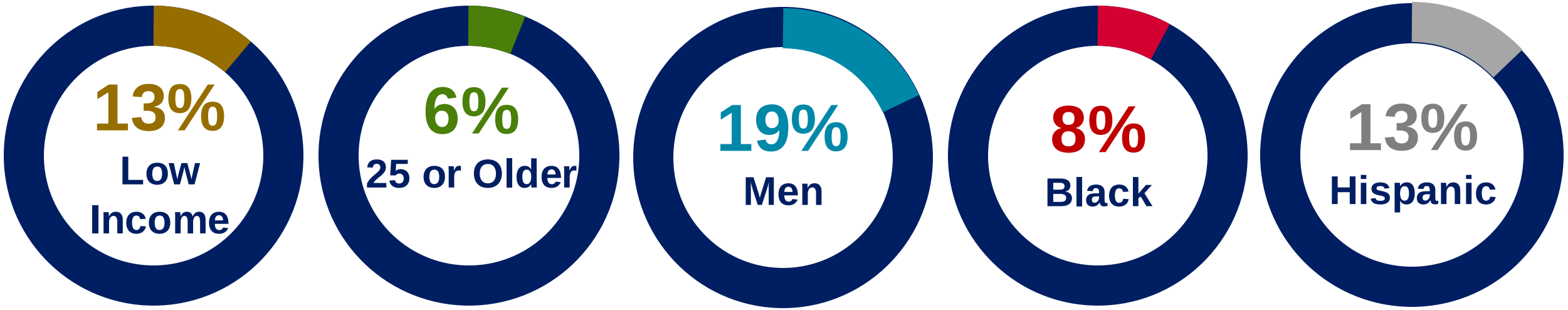
Transfer Student Bachelor's Completion Rates: National

Lower bachelor's completion rates among CC students for low-income, male, older, Black, and Hispanic students.



Transfer Student Bachelor's Completion Rates: Illinois

- **35%** of students enrolled in IL CCs transfer to four-year institutions
- **20%** of IL CC students attain a bachelor's degree within six years



Barriers to Transfer Student Success

- Credit loss when transferring
- Degree programs without room for electives or general transfer credits
- Lack of coordinated advising
- Lack of degree planning to understand requirements
- Lack of transfer admission guarantees or degree pathway programs
- No opportunities to catch up on required courses
- Reduced financial aid and wraparound support programs

Pathways to Excellence: A Plan for Transfer Student Success in Illinois

Break down institutional silos and address cross-institutional challenges to help students move to and through college and into careers

Increase bachelor's degree attainment rates for students starting at Chicago Public Schools, enrolling at City Colleges of Chicago, and transferring to UIC

Expand the program to students at high schools and community colleges throughout Illinois

Chicago Public Schools – City Colleges of Chicago – University of Illinois Chicago

Chicago Public Schools

- 4th largest public K-12 district in U.S.
- Serves over 320,000 students across 634 schools in Chicago
- Primarily serves racially underrepresented students
- 46% identify as Hispanic
- 35% identify as African American

CITY COLLEGES® OF CHICAGO

- One of the largest CC districts in U.S.
- Hosts 7 campuses that serve over 60,000 students annually
- Federally designated Minority-Serving Institution (MSI)
- 5 campuses identified as HSIs
- 3 campuses identified as Predominantly Black Institutions
- 1 campus identified as an AANAPISI

UIC UNIVERSITY OF ILLINOIS CHICAGO

- Chicago's only public R-1 university
- Serves over 33,000 students, including 14,000 Latinx, Black, Asian, and Indigenous undergraduates
- 50% of undergraduates receive Pell
- 52% first-generation students
- Federally designated MSI
- Asian American and Native American Pacific Islander-Serving Institution (AANAPISI)
- Hispanic-Serving Institution (HSI)

Chicago Roadmap 2.0: Key Activities

Collaborative Agreements

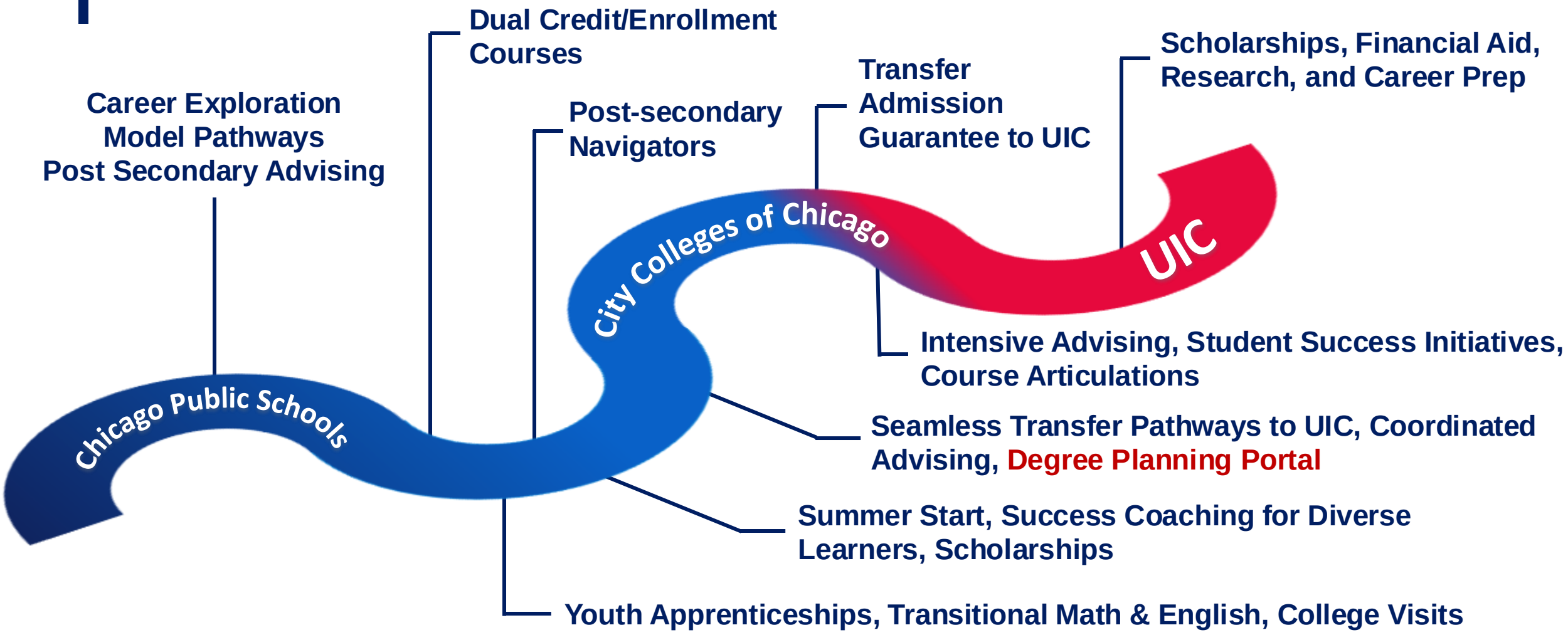
Innovative Degree Planning Portal

Transfer Pathways

Coordinated Advising

Enhanced Student Success Programs

Chicago Roadmap 2.0: CPS→CCC→UIC



Roadmap 1.0: CPS → CCC
Launched on June 30, 2020

Activity 1: Collaborative Agreements

Chicago Roadmap 2.0:
CPS → CCC → UIC

Transfer Admission Guarantee Program (TAG)

U of I System Transfer Guarantee Program

TAG:
Admission at the program level with required major prep. courses and GPA > 3.0

Activity 2: Transfer Pathways

Chicago Roadmap 2.0:
CPS → CCC → UIC

Term-by-Term Transfer Degree Plans across Institutions

Credit Loss Reduction

Course Equivalency Articulation

Chicago Roadmap 2.0: Transfer Pathways

Sample Plan

Transfer Degree Plan

CPS Healthcare Model Pathway
Associate in Science, Biology Pathway
Bachelor of Science in Liberal Arts & Sciences, Major in Biological Sciences

Starting Schools
Chicago Public Schools (CPS)
City Colleges of Chicago (CCC)

Starting Programs
Health Sciences Model Pathway (CPS)
Associate in Science Degree, Biology Pathway (CCC)

Destination School
University of Illinois Chicago (UIC)

Destination Program
Bachelor of Science in Liberal Arts and Sciences with a Major in Biological Sciences

Career Opportunities

Post Baccalaureate Education Opportunities

Recommended Plan of Study

Chicago Roadmap 2.0: Transfer Pathways

CCC – Associate in Science Degree/Biology Pathway

Each course in the degree pathway has been mapped to course equivalents in CPS, CCC, and UIC.

Term 1

	Course	Credit Hours	Associate of Science Requirement satisfied	Course Notes / Commonly applied Test Based Credit	UIC Equivalency
☐	ENGLISH 101	3	Composition	ACT English subscore 27; SAT EBRW score 630; AP Engl Lang/Comp score 3-5; IB English Language A: Language and Literature-Standard or Higher Level score 6-7	ENGL 160
☐	BIOLOGY 116 or other BIOLOGY Elective	4	AS Pathway Elective	*Healthcare Model Pathway Course*	ANAT & PHYS elective
☐	BIOLOGY 120 or other Elective	3	AS Pathway Elective	*Healthcare Model Pathway course*	Alt Med Term elective
☐	Mathematics	3	Mathematics	e.g. MATH143: prerequisite for MATH 207	Elective/QR
Total credits for Term 1		**13**			

Term 2

☐	ENGLISH 102	3	Composition		ENGL 161
☐	BIOLOGY 121	5	Life Science	AP Biology score 3-5; IB Biology–Standard or Higher Level score 5-7	BIOS 110/ Analyzing the Natural World GE
☐	Social and Behavioral Sciences Selective	3	Social and Behavioral Sciences GE	See test-based credit policy for potential exams.	Choose U.S. Society GE Equivalent
☐	MATH 207	5	Mathematics	AP Calculus AB score 4-5, AP Calculus BC score 4-5 with any sub score for Calculus AB; IB Mathematics: Analysis and Approaches-Higher Level score 6-7	MATH 180/QR
Total credits for Term 2		**16**			

Term 3

☐	CHEM 201	5	Physical Science	AP Chemistry score 4-5; IB Chemistry-Standard Level score 6-7, Higher Level score 5-7	CHEM 122 + CHEM 123/ Additional GE
☐	SPEECH 101	3	Oral Communication		COMM 100/ Individual Society GE
☐	Foreign Language 103 or Humanities Selective	4	Humanities	See test-based credit policy for specific language and scores.	FL Requirement or choose Understanding The Past GE Equivalent
☐	Fine Arts Selective	3	Fine Arts GE	See test-based credit policy for potential exams.	Choose Creative Arts GE Equivalent
Total credits for Term 3		**15**			

Term 4

☐	BIOLOGY 122	5	Life Science Elective	AP Biology score 3-5; IB Biology-Standard or Higher Level score 5-7	BIOS 120/ Analyzing the Natural World GE
☐	CHEM 203	5	Physical Sci Pathway Elective	AP Chemistry score 4-5; IB Chemistry-Standard Level score 7, Higher Level score 6-7	CHEM 124 + CHEM 125/ Additional GE
☐	Social and Behavioral Sciences Selective /HD	3	Social Behavioral Science- Human Diversity	See test-based credit policy for potential exams.	Choose World Cultures GE Equivalent
☐	Foreign Language 104 / Humanities Selective	3-4	Elective	See test-based credit policy for specific language and scores.	FL Requirement or Choose Understanding the Past GE Equivalent
Total credits for Term 4		**16-17**			

Total Credits for AS degree/Biology pathway: 60-61credit hours

Chicago Roadmap 2.0: Transfer Pathways

UIC - BS Degree in Liberal Arts & Science, Major in Biological Sciences

Term 5

Course Name	Credit	UIC Requirement Satisfied
BIOS 220 Genetics	3	Major Requirement
BIOS Experimental Tech/Data Analysis	3	Concentration Requirement
Advanced Elective	3	College ADV Hours
BIOS 222 Cell Biology	3	Major Requirement
PHYS 131 Physics for Life Sci I	4	Major Prerequisite/Collateral
Total credits for Term 5	**16**	

Term 6

BIOS Experimental Tech/Data Analysis	2	Concentration Requirement
BIOS Experimental Tech/Data Analysis	2	Concentration Requirement
PHYS 132 Physics for Life Sci II	4	Major Prerequisite/Collateral
BIOS 230 Evolution and Ecology	3	Major Requirement
CHEM 230 Org Chem/Biol Syst	4	Major Prerequisite/Collateral
Total Credits for Term 6	**15**	

Term 7

BIOS Experimental Tech/Data Analysis	3	Concentration Requirement
BIOS Elective	3	Major Requirement
CHEM 233 Synthesis Tech Lab	2	Major Prerequisite/Collateral
BIOS Elective	3	Major Requirement
Advanced Elective	3	College ADV Hours
Total credits for Term 7	**14**	

Term 8

BIOS Elective	3	Major Requirement
BIOS Elective	3	Major Requirement
BIOS Elective	3	Major Requirement
Advanced Elective	3	College ADV Hours
Advanced Elective	3	College ADV Hours
Total credits for Term 8	**15**	

Total UIC Credits: 60

The degree pathway mapping extends to the UIC courses required to earn a BS degree without credit loss in transfer.

Transfer Plan Credit Summary:

CCC earned credits: 60-61 for AS program

UIC earned credits: 60 additional for BS program

Total Transfer credits:

60-61 credit hours transfer; **zero credit loss!**

Total Degree Hours:

60-61 credit hours CCC + 60 credit hours UIC

= **120-121 Total Credit Hours**

Activity 3: Coordination in Advising

Chicago Roadmap 2.0: CPS → CCC → UIC

- Training Led by UIC Pathways Developers
- CPS Early College Navigators
- CCC Transfer Specialists

Activity 4: Student Success Programs

Chicago Roadmap 2.0: CPS → CCC → UIC

- Summer Programs
- Cultivate Research Skills
- Academic, Financial, and Socio-emotional Support

Activity 5: Degree Planning Portal

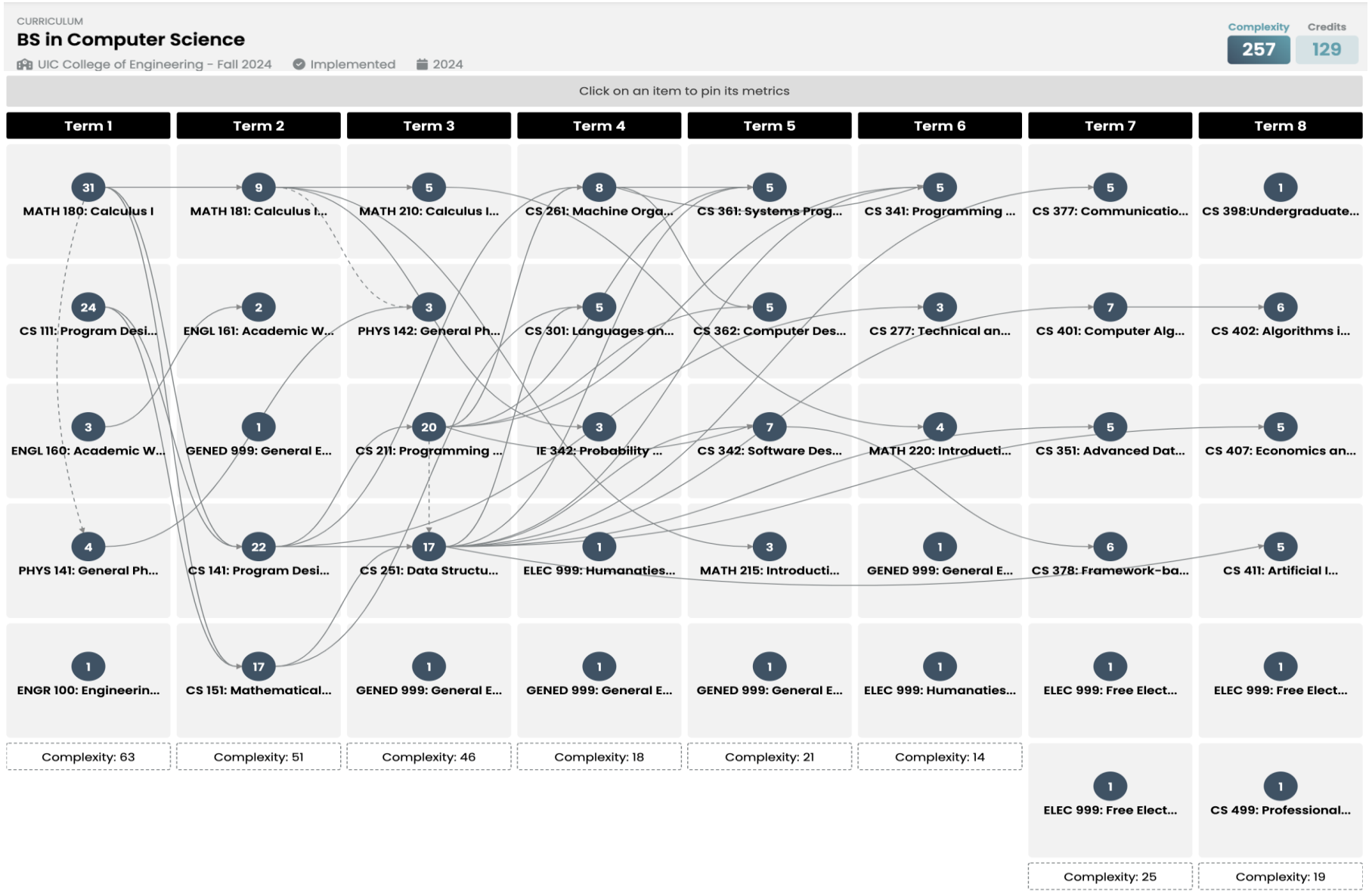
Chicago Roadmap 2.0: CPS → CCC → UIC

- Curricular Analytics Collaboration
- Dynamic Term-by-Term Degree Plans
- Expanded Access through Interactive Portal

Curricular Analytics

- **Curricular Analytics** is an open-source data analysis and visualization toolkit of degree plans that facilitates:
  - Identification of curricular bottlenecks and structural complexities
  - Data-informed curriculum reform/revision efforts – faculty engagement
  - Comparison of curricula within and across institutions
  - Relationship between curricular structure and equitable student outcomes
- UIC is one of 30 research universities participating in this project
- Project is led by the Association for Undergraduate Education at Research Universities (UERU)
  - Supported by a $2M 4-year grant from the Ascendium Education Group

Curricular Analytics: An Example from UIC



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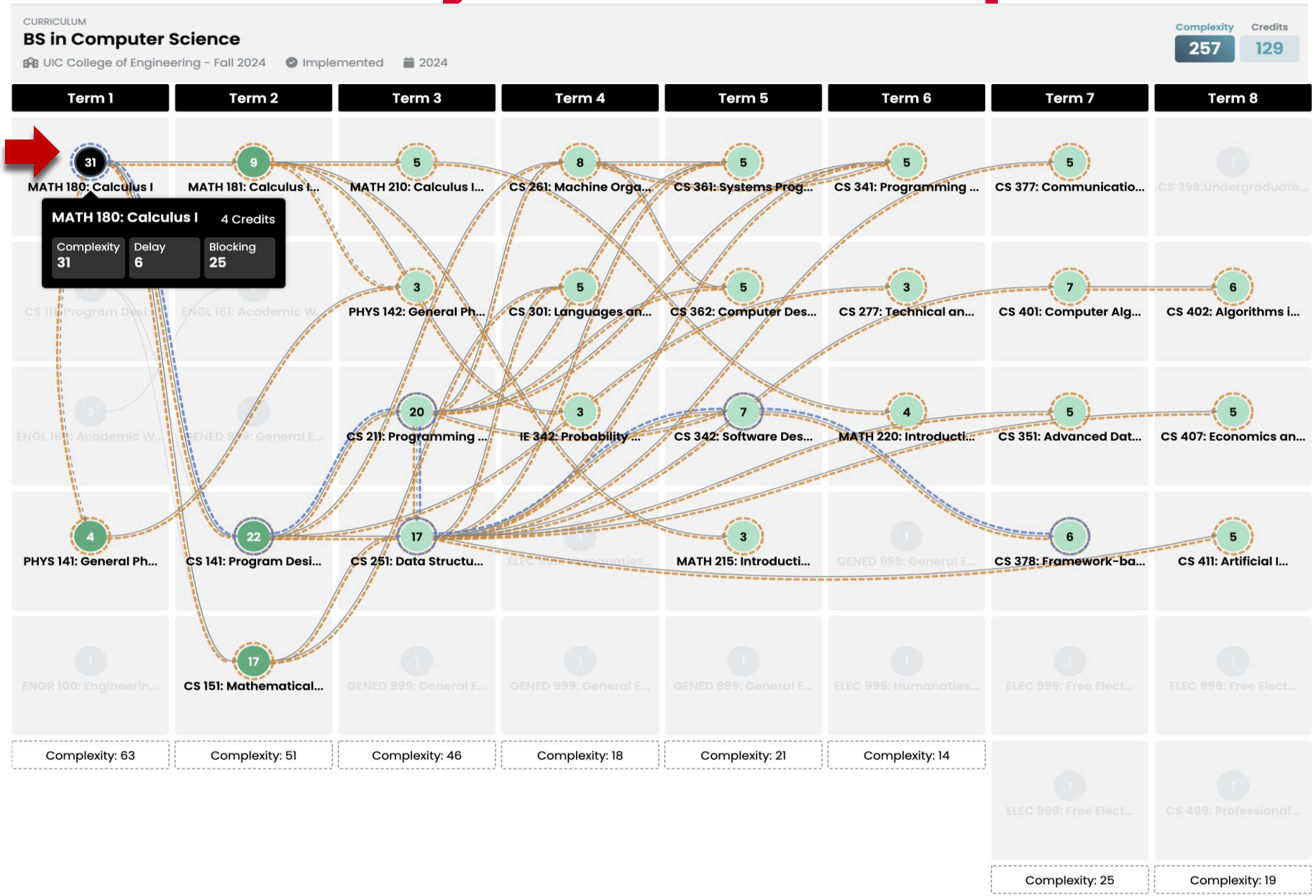
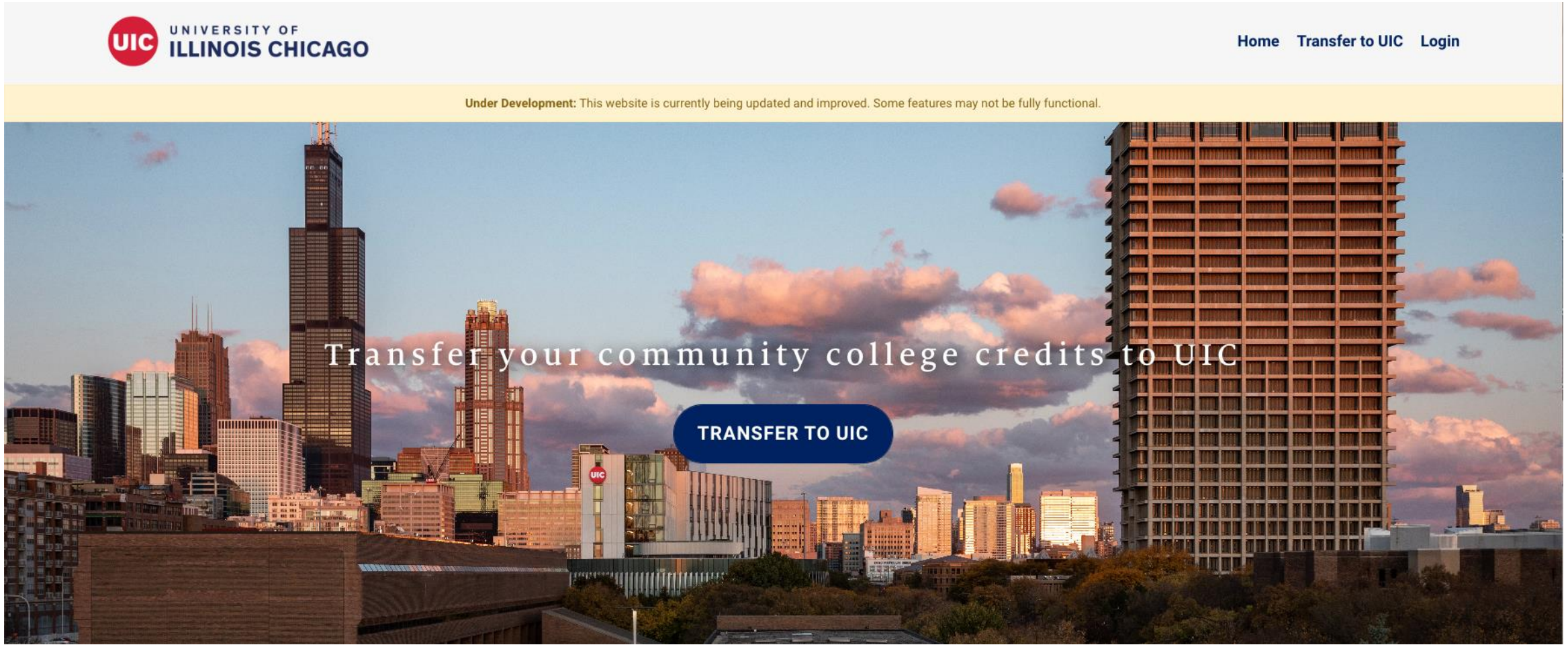
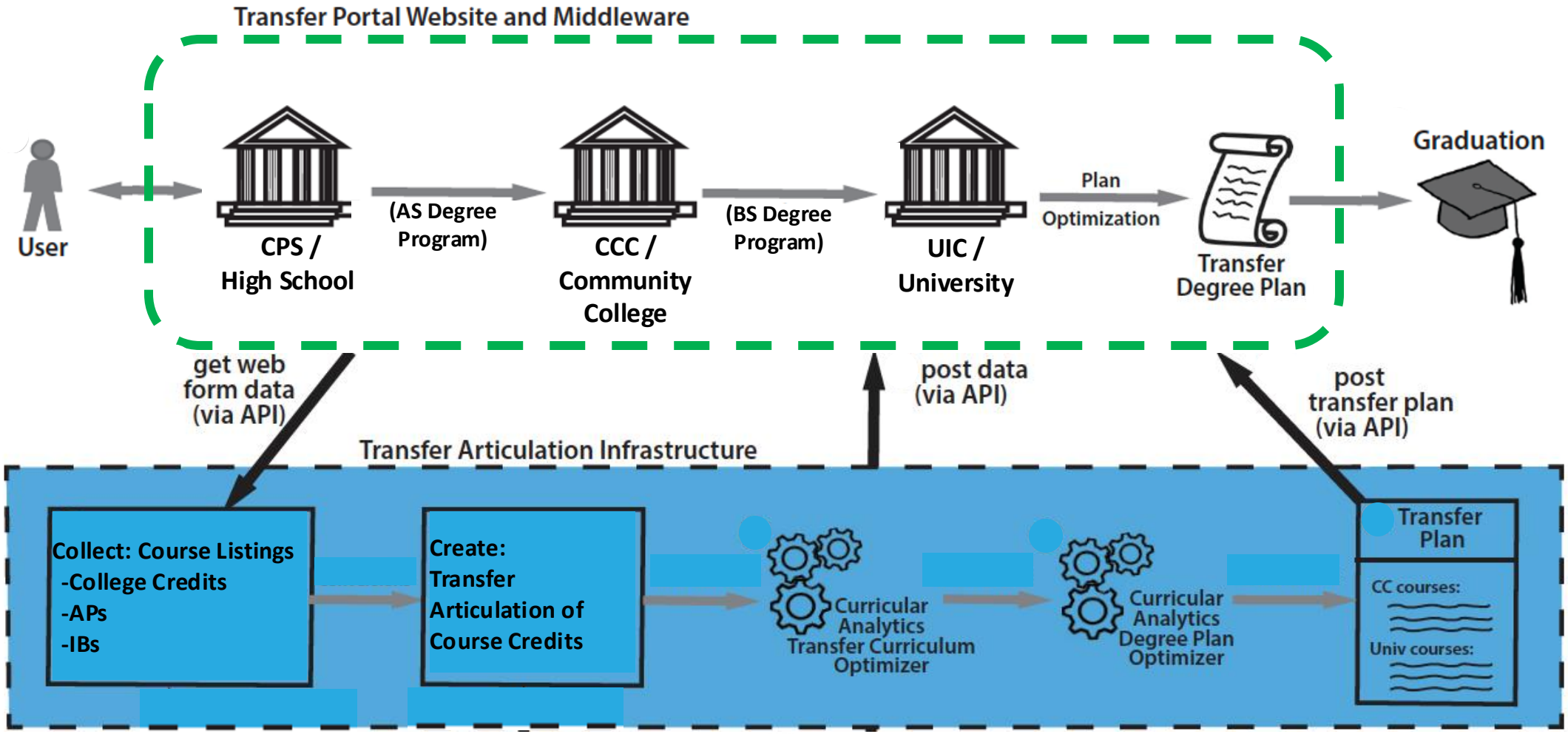


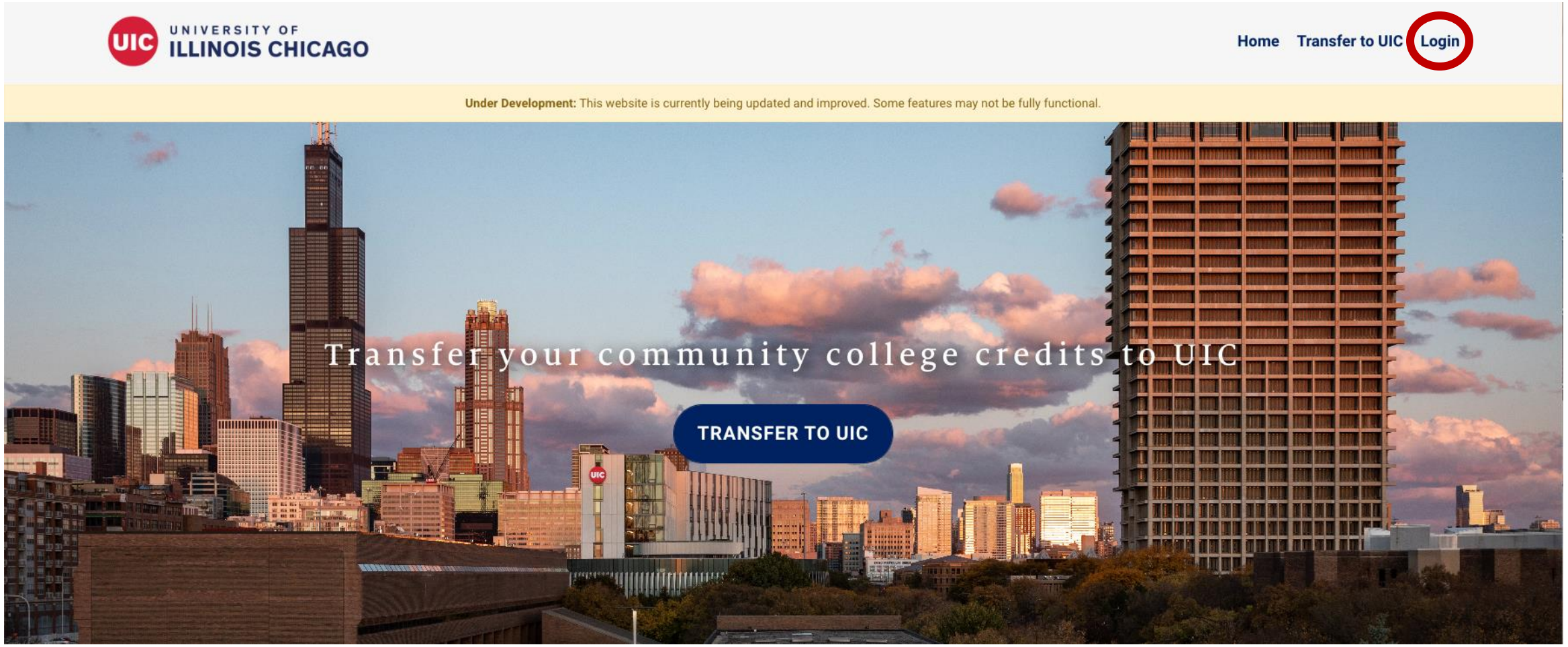
Degree Planning Portal: Prototype



Portal Prototype: Functional Description



Degree Planning Portal: Prototype



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Home Transfer to UIC Login

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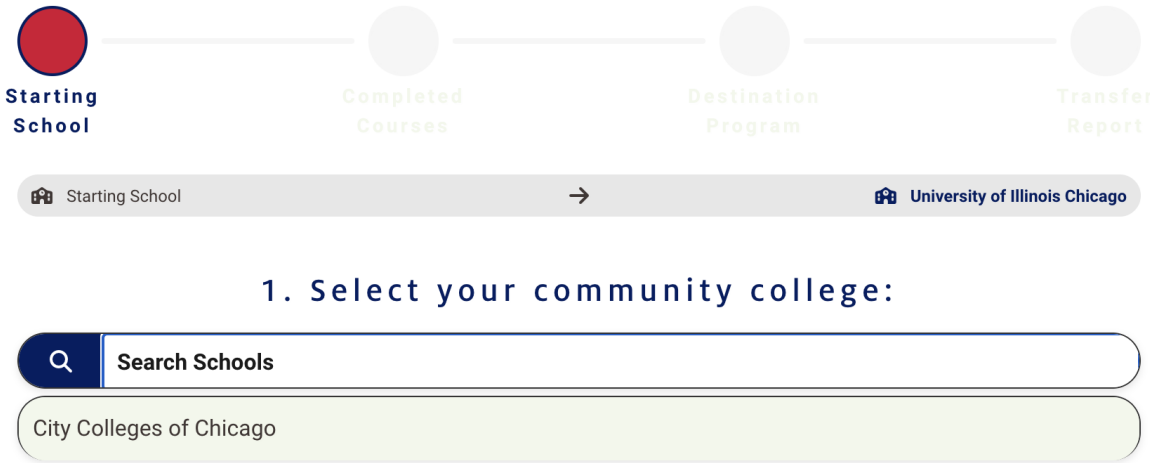

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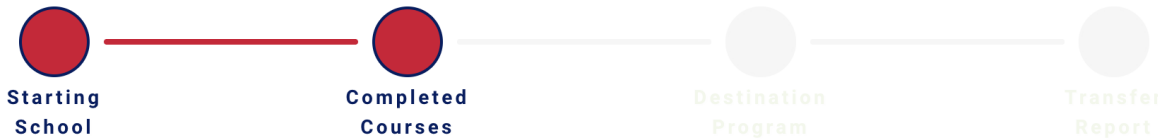

City Colleges of Chicago → University of Illinois Chicago

2. Select courses completed at City Colleges of Chicago:

Completed Course

- AFRO AM 101 - Introduction to African-American Studies
- AFRO AM 102 - Contemporary Conversations in Africana Studies
- AFRO AM 190 - Black Women in the African Diaspora
- AFRO AM 210 - Black Chicago
- AFRO AM 214 - Hip Hop: Culture and Politics
- AIR CON 101 - Intro Air Conditioning I
- AIR CON 102 - Intro Air Conditioning II

UNIVERSITY OF ILLINOIS CHICAGO

Home Transfer to UIC Login

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Starting School — Completed Courses — Destination Program — Transfer Report

City Colleges of Chicago → University of Illinois Chicago

2. Select courses completed at City Colleges of Chicago:

Completed Course

CIS 242	✕ Remove
ENGLISH 101	✕ Remove
ENGLISH 102	✕ Remove
HISTORY 142	✕ Remove
MATH 207	✕ Remove
PSYCH 201	✕ Remove
SOC 201	✕ Remove

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Home Transfer to UIC Login

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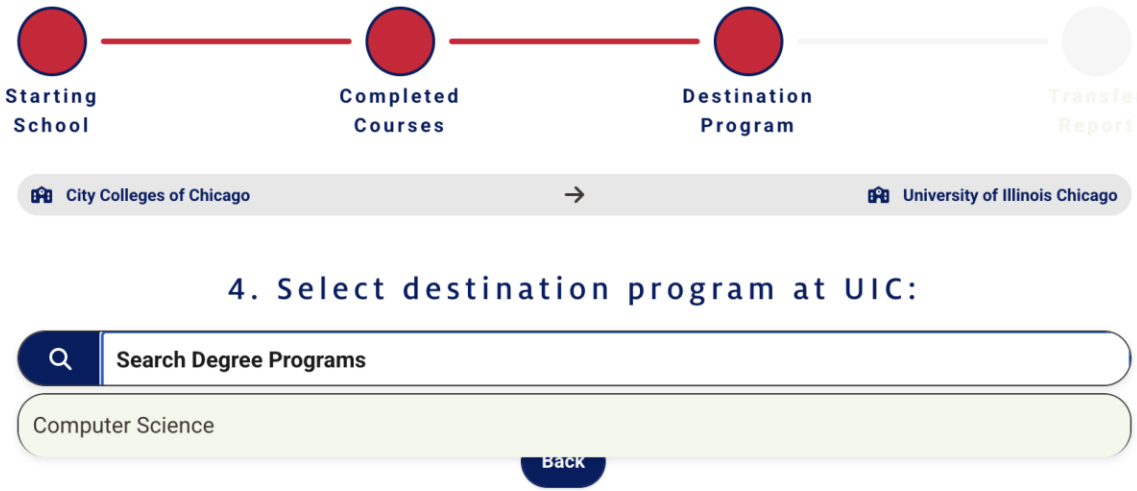

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Home Transfer to UIC Login

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4. Select destination program at UIC:

Computer Science

Selected Program: Computer Science

Back Generate Transfer Report

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ANALYZE TRANSFER PLAN

Plan | Grid | Graph

Term 1

16 Credit Hours

MATH 181 - Calculus II	Credit Hours: 4
CS 141 - Program Design II	Credit Hours: 3
CS 151 - Foundations of Computing	Credit Hours: 3
Understanding The Creative Arts	Credit Hours: 3
Humanities/Social Sciences/Art Elective	Credit Hours: 3

UNIVERSITY OF ILLINOIS CHICAGO

ANALYZE TRANSFER PLAN

Plan

Term 1

- MATH 181 - Calculus II
- CS 141 - Program Design II
- CS 151 - Foundations of Computing
- Understanding The Creative Arts
- Humanities/Social Sciences/Art Elective

Transfer Plan Summary Report

Transfer Analysis: City Colleges of Chicago → University of Illinois Chicago Computer Science Program

Credit Summary

City Colleges of Chicago credits	23 credits have been earned at City Colleges of Chicago
Transfer credits	23 credit hours transfer
University of Illinois Chicago credits	107 additional credits for a 128 credit hour program

The following courses have been taken at City Colleges of Chicago:

Total credit hours = 23

COURSE AT THE CITY COLLEGES OF CHICAGO	CREDITS AT THE CITY COLLEGES OF CHICAGO	TRANSFER STATUS
CIS 242 C++ Object Oriented Programming II	3	Transferrable
ENGLISH 101 Composition	3	Transferrable
ENGLISH 102 Composition	3	Transferrable
HISTORY 142 Hist World Civiliz Frm 1500	3	Transferrable
MATH 207 Calculus & Analytic Geometry I	5	Transferrable
PSYCH 201 General Psychology	3	Transferrable
SOC 201 Intro To the Study Of Society	3	Transferrable

The above courses transfer to University of Illinois Chicago as follows, satisfying the following degree requirements in the Computer Science program:

Total credit hours = 23

COURSE AT THE CITY COLLEGES OF CHICAGO	COURSE AT THE UNIVERSITY OF ILLINOIS CHICAGO	CREDITS AT THE UNIVERSITY OF ILLINOIS CHICAGO	SATISFIED REQUIREMENTS AT THE UNIVERSITY OF ILLINOIS CHICAGO
CIS 242	CS 111 Program Design I	3	CS 111
ENGLISH 101	ENGL 160 Academic Writing I	3	University Writing Courses
ENGLISH 102	ENGL 161 Academic Writing II	3	University Writing Courses
HISTORY 142	HIST 101 Western Civ Since 1648	3	Understanding the Past
MATH 207	MATH 180 Calculus I	4	Mathematics Courses
PSYCH 201	PSCH 100 Introductory Psychology	4	Understanding the Individual and Society
SOC 201	SOC 100 Introduction to Sociology	3	Understanding U.S. Society

These additional courses satisfy the requirements to complete the Computer Science program at University of Illinois Chicago. Please note that for many requirements these courses are one of many possible selections. Refer to the Undergraduate Catalog for a comprehensive list of degree requirements and course offerings.

Total credit hours = 107

COURSE AT THE UNIVERSITY OF ILLINOIS CHICAGO	CREDITS AT THE UNIVERSITY OF ILLINOIS CHICAGO	SATISFIED REQUIREMENTS AT THE UNIVERSITY OF ILLINOIS CHICAGO
AH 100 Intro to Art &Art History	3	Understanding the Creative Arts
CS 141 Program Design II	3	Courses Required in The College of Engineering
CS 151 Foundations of Computing	3	Courses Required in The College of Engineering
CS 211 Programming Practicum	3	Courses Required in The College of Engineering
CS 251 Data Structures	4	Courses Required in The College of Engineering
CS 261 Machine Organization	4	Courses Required in The College of Engineering
CS 277 Technical Comm in Comp Sci	3	Courses Required in The College of Engineering
CS 301 Languages and Automata	3	Courses Required in The College of Engineering
CS 341 Programming Language Concepts	3	Courses Required in The College of Engineering
CS 342 Software Design	3	Courses Required in The College of Engineering
Technical Electives	3	Technical Electives
CS 361 Systems Programming	4	Courses Required in The College of Engineering
CS 362 Computer Design	4	Courses Required in The College of Engineering
CS 377 Ethical Issues in Computing	3	Courses Required in The College of Engineering
Technical Electives	3	Technical Electives
CS 401 Computer Algorithms I	3	Courses Required in The College of Engineering
Technical Electives	3	Technical Electives
Technical Electives	3	Technical Electives
Technical Electives	3	Technical Electives
Science Electives	4	Science Electives
Science Electives	4	Science Electives
GLAS 100 Intro to Global Asian Studies	3	Exploring World Cultures
Humanities/Social Sciences/Art Electives	3	Humanities/Social Sciences/Art Electives
Free Electives	1	Free Electives
Free Electives	4	Free Electives
Free Electives	5	Free Electives
MATH 181 Calculus II	4	Mathematics Courses
MATH 210 Calculus III	3	Mathematics Courses
MATH 220 Differential Equations I	3	Required Math Courses
MATH 310 Applied Linear Algebra	3	Required Math Courses
Humanities/Social Sciences/Art Electives	3	Humanities/Social Sciences/Art Electives
STAT 381 Applied Statistical Methods I	3	IE 342 or STAT 381
Technical Electives	3	Technical Electives

ANALYZE TRANSFER PLAN

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Term 1

16 Credit Hours

MATH 181 - Calculus II	Credit Hours: 4
CS 141 - Program Design II	Credit Hours: 3
CS 151 - Foundations of Computing	Credit Hours: 3
Understanding The Creative Arts	Credit Hours: 3
Humanities/Social Sciences/Art Elective	Credit Hours: 3

Term 2

18 Credit Hours

MATH 210 - Calculus III	Credit Hours: 3
CS 211 - Programming Practicum	Credit Hours: 3
CS 251 - Data Structures	Credit Hours: 4
CS 261 - Machine Organization	Credit Hours: 4
Science Elective	Credit Hours: 4

Term 3

18 Credit Hours

Required Math Courses	Credit Hours: 3
CS 277 - Technical Comm in Comp Sci	Credit Hours: 3
CS 301 - Languages and Automata	Credit Hours: 3
Technical Elective	Credit Hours: 3
Free Elective	Credit Hours: 5
Free Elective	Credit Hours: 1

ANALYZE TRANSFER PLAN

Plan | Grid

Term 1

- MATH 181 - Calculus II
- CS 141 - Program Design II
- CS 151 - Foundations of Computing
- Understanding The Creative Arts
- Humanities/Social Sciences/Art Elective

Term 2

- MATH 210 - Calculus III
- CS 211 - Programming Practicum
- CS 251 - Data Structures
- CS 261 - Machine Organization
- Science Elective

Term 3

- Required Math Courses
- CS 277 - Technical Comm in Comp Sci
- CS 301 - Languages and Automata
- Technical Elective
- Free Elective
- Free Elective

Term 4

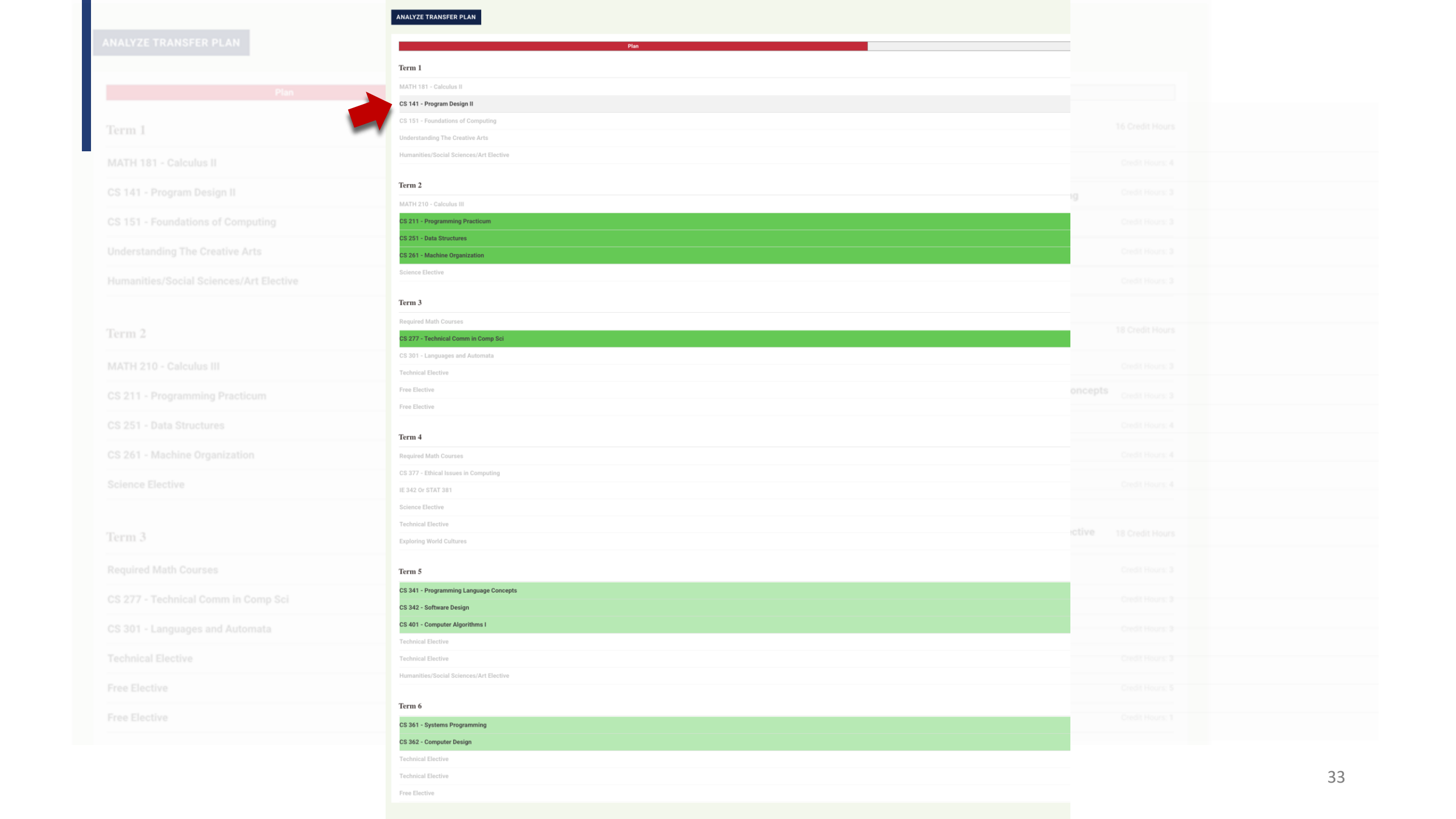
- Required Math Courses
- CS 377 - Ethical Issues in Computing
- IE 342 Or STAT 381
- Science Elective
- Technical Elective
- Exploring World Cultures

Term 5

- CS 341 - Programming Language Concepts
- CS 342 - Software Design
- CS 401 - Computer Algorithms I
- Technical Elective
- Technical Elective
- Humanities/Social Sciences/Art Elective

Term 6

- CS 361 - Systems Programming
- CS 362 - Computer Design
- Technical Elective
- Technical Elective
- Free Elective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Term 3
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Free Elective
Term 4
Required Math Courses
CS 377 - Ethical Issues in Computing
IE 342 Or STAT 381
Science Elective
Technical Elective
Exploring World Cultures
Term 5
CS 341 - Programming Language Concepts
CS 342 - Software Design
CS 401 - Computer Algorithms I
Technical Elective
Technical Elective
Humanities/Social Sciences/Art Elective
Term 6
CS 361 - Systems Programming
CS 362 - Computer Design
Technical Elective
Technical Elective
Free Elective

ANALYZE TRANSFER PLAN

Plan | Grid | Graph

Term 1	Term 2	Term 3	Term 4	Term 5	Term 6
MATH 181 Calculus II 4Credits	**MATH 210** Calculus III 3Credits	Required Math Courses 3Credits	Required Math Courses 3Credits	**CS 341** Programming Language Concepts 3Credits	**CS 361** Systems Programming 4Credits
CS 141 Program Design II 3Credits	**CS 211** Programming Practicum 3Credits	**CS 277** Technical Comm in Comp Sci 3Credits	**CS 377** Ethical Issues in Computing 3Credits	**CS 342** Software Design 3Credits	**CS 362** Computer Design 4Credits
CS 151 Foundations of Computing 3Credits	**CS 251** Data Structures 4Credits	**CS 301** Languages and Automata 3Credits	IE 342 Or STAT 381 3Credits	**CS 401** Computer Algorithms I 3Credits	Technical Elective 3Credits
Understanding The Creative Arts 3Credits	**CS 261** Machine Organization 4Credits	Technical Elective 3Credits	Science Elective 4Credits	Technical Elective 3Credits	Technical Elective 3Credits
Humanities/Social Sciences/Art Elective 3Credits	Science Elective 4Credits	Free Elective 5Credits	Technical Elective 3Credits	Technical Elective 3Credits	Free Elective 4Credits
16 Credits	18 Credits	Free Elective 1Credits	Exploring World Cultures 3Credits	Humanities/Social Sciences/Art Elective 3Credits	18 Credits
		18 Credits	19 Credits	18 Credits	

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Term 1	Term 2	Term 3	Term 4	Term 5	Term 6
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Humanities/Social Sciences/Art Elective 3Credits	Science Elective 4Credits	Free Elective 5Credits	Technical Elective 3Credits	Technical Elective 3Credits	Free Elective 4Credits
16 Credits	18 Credits	Free Elective 1Credits	Exploring World Cultures 3Credits	Humanities/Social Sciences/Art Elective 3Credits	18 Credits
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Understanding The Creative Arts 3Credits	CS 261 Machine Organization 4Credits	Technical Elective 3Credits	Science Elective 4Credits	Technical Elective 3Credits	Technical Elective 3Credits
Humanities/Social Sciences/Art Elective 3Credits	Science Elective 4Credits	Free Elective 5Credits	Technical Elective 3Credits	Technical Elective 3Credits	Free Elective 4Credits
16 Credits	18 Credits	Free Elective 1Credits	Exploring World Cultures 3Credits	Humanities/Social Sciences/Art Elective 3Credits	18 Credits
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ANALYZE TRANSFER PLAN

Plan | Grid | Graph

Term 1	Term 2	Term 3	Term 4	Term 5	Term 6
4 MATH 181	3 MATH 210	3 Required	3 Required	3 CS 341	4 CS 361
3 CS 141	3 CS 211	3 CS 277	3 CS 377	3 CS 342	4 CS 362
3 CS 151	4 CS 251	3 CS 301	3 IE 342 Or	3 CS 401	3 Technical
3 Understan	4 CS 261	3 Technical	4 Science E	3 Technical	3 Technical
3 Humanitie	4 Science E	5 Free Elec	3 Technical	3 Technical	4 Free Elec
16 Credits	18 Credits	1 Free Elec	3 Exploring	3 Humanitie	18 Credits
		18 Credits	19 Credits	18 Credits	

NOTE: An arrow represents a corequisite/prerequisite relationship between courses within a degree plan. See legend for more details.

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UNIVERSITY OF ILLINOIS CHICAGO

Home Transfer to UIC Login

Under Development: This website is currently being updated and improved. Some features may not be fully functional.

ANALYZE TRANSFER PLAN

COMPLETED COURSEWORK THROUGH TRANSFER - CITY COLLEGES OF CHICAGO

Course name	Credit	Equivalency
HISTORY 142 Hist World Civiliz Frm 1500	3.0	HIST 101
ART 150 Crafts Workshop	2.0	
CIS 242 C++ Object Oriented Programming II	3.0	CS 111
ART 196-4 Ceramics	3.0	
ENGLISH 102 Composition	3.0	ENGL 161
ENGLISH 101 Composition	3.0	ENGL 160

ANALYZE TRANSFER PLAN

Plan

Term 1

MATH 180 - Calculus I

CS 141 - Program Design II

CS 151 - Foundations of Computing

Understanding The Creative Arts

Humanities/Social Sciences/Art Elective

Term 2

MATH 181 - Calculus II

CS 251 - Data Structures

CS 261 - Machine Organization

CS 211 - Programming Practicum

Science Elective

Term 3

MATH 210 - Calculus III

CS 277 - Technical Comm in Comp Sci

CS 301 - Languages and Automata

Graph

16 Credit Hours

Credit Hours: 4

Credit Hours: 3

Credit Hours: 3

Credit Hours: 3

Credit Hours: 3

19 Credit Hours

Credit Hours: 4

Credit Hours: 4

Credit Hours: 4

Credit Hours: 3

Credit Hours: 4

18 Credit Hours

Credit Hours: 3

Credit Hours: 3

Credit Hours: 3

Transfer Plan Summary Report

Transfer Analysis: City Colleges of Chicago → University of Illinois Chicago Computer Science Program

Credit Summary

City Colleges of Chicago credits	17 credits have been earned at City Colleges of Chicago
Transfer credits	12 credit hours transfer
University of Illinois Chicago credits	117 additional credits for a 128 credit hour program

The following courses have been taken at City Colleges of Chicago:

Total credit hours = 17

COURSE AT THE CITY COLLEGES OF CHICAGO	CREDITS AT THE CITY COLLEGES OF CHICAGO	TRANSFER STATUS
ART 150 Crafts Workshop	2	Not Transferrable
ART 196-4 Ceramics	3	Not Transferrable
CIS 242 C++ Object Oriented Programming II	3	Transferrable
ENGLISH 101 Composition	3	Transferrable
ENGLISH 102 Composition	3	Transferrable
HISTORY 142 Hist World Civiliz Frm 1500	3	Transferrable

The above courses transfer to University of Illinois Chicago as follows, satisfying the following degree requirements in the Computer Science program:

Total credit hours = 12

COURSE AT THE CITY COLLEGES OF CHICAGO	COURSE AT THE UNIVERSITY OF ILLINOIS CHICAGO	CREDITS AT THE UNIVERSITY OF ILLINOIS CHICAGO	SATISFIED REQUIREMENTS AT THE UNIVERSITY OF ILLINOIS CHICAGO
CIS 242	CS 111 Program Design I	3	CS 111
ENGLISH 101	ENGL 160 Academic Writing I	3	University Writing Courses
ENGLISH 102	ENGL 161 Academic Writing II	3	University Writing Courses
HISTORY 142	HIST 101 Western Civ Since 1648	3	Understanding the Past

These additional courses satisfy the requirements to complete the Computer Science program at University of Illinois Chicago. Please note that for many requirements these courses are one of many possible selections. Refer to the Undergraduate Catalog for a comprehensive list of degree requirements and course offerings.

Total credit hours = 117

COURSE AT THE UNIVERSITY OF ILLINOIS CHICAGO	CREDITS AT THE UNIVERSITY OF ILLINOIS CHICAGO	SATISFIED REQUIREMENTS AT THE UNIVERSITY OF ILLINOIS CHICAGO

Takeaways

- Create statewide seamless transfer pathways linked to careers
- Curricular Analytics framework can strengthen curricula planning and advance equitable outcomes
- Engage departments and faculty to assess curriculum effectiveness
- Develop dynamic, personalized transfer degree plans using technological innovations
- Facilitate collaborative advising between 2-year and 4-year institutions
- Offer opportunities for transfer students to take required courses at 4-year institutions over summer
- Develop student success initiatives to support transfer students and foster a sense of belonging

Thank You!

Curricular Analytics: Additional Information

- UERU is a Boyer-inspired consortium of 120+ research universities, networking leaders with expertise in the theory and practice of undergraduate education
- The APLU Powered by Publics Western Land-Grant and Big Ten Clusters use CA, as do groups of universities in Kentucky and Arizona and those organized by The Gardner Institute for Excellence in Undergraduate Education
- An excellent source on CA is Beth McMurtrie's July 28, 2021 article in *The Chronicle of Higher Education*, "Is Your Degree Program Too Complicated?"
- Scholarly CA studies include Heileman, Abdallah, Slim, and Hickman (2018) and Slim, Yusuf, Abbas, Abdallah, and Heileman (2021).

Curricular Analytics Metrics

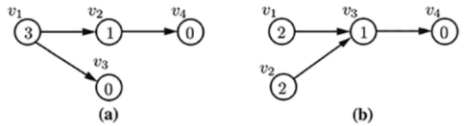
Curricular Metrics

Curriculum-based metrics are based upon the graph structure of a curriculum. Specifically, assume curriculum c consists of n courses $\{c_1, \ldots, c_n\}$, and that there are m requisite (prerequisite or co-requisitie) relationships between these courses. A curriculum graph $G_c = (V, E)$ is formed by creating a vertex set $V = \{v_1, \ldots, v_n\}$, i.e., one vertex for each course, along with an edge set $E = \{e_1, \ldots, e_m\}$, where a directed edge from vertex v_i to v_j is in E if course c_i is a requisite for course c_j.

Blocking Factor

The blocking factor is an important curriculum-based metric because it measures the extent to which one course blocks the ability to take other courses in the curriculum. That is, a course with a high blocking factor acts as a gateway to many other courses in the curriculum. Students who are unable to pass the gateway course will be blocked from taking many other courses in the curriculum.

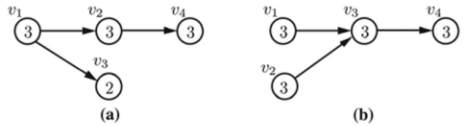
We define the blocking factor of a course c_i as the number of courses in the corresponding curriculum graph that are reachable from v_i. As examples of the blocking factor metric, conisder the two four-course curricula graphs, with course vertices v_1, v_2, v_3 and v_4, shown below. In part (a) of this figure, v_1 is a prerequisite for courses v_2 and v_3, and v_2 is a prerequisite for course v_4, while in part (b), courses v_1 and v_2 are prerequisites for course v_3, and v_3 is a prerequisite for course v_4. The blocking factor of each course are shown inside of the course vertices in this figure.



Delay Factor

Many curricula, particularly those in science, technology engineering and math (STEM) fields, contain a set of courses that must be completed in sequential order. The ability to successfully navigate these long pathways without delay is critical for student success and on-time graduation. If any course on the pathway is not completed on time, the student will then be delayed in completing the entire pathway by one term. The delay factor metric allows us to quanity this effect.

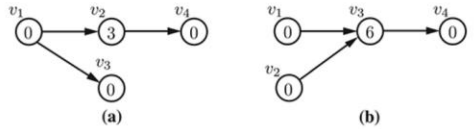
We define the delay factor of course vertex c_i to be the length of the longest path in the corresponding curriculum graph that contains v_i. As an example of the delay factor metric, consider the same four-course curricula shown above. The delay factor of each course are shown inside of the course vertices in the figure below.



Centrality

A course can be thought of as being central to a curriculum if it requires a number of foundational courses as prerequisites, and the course itself serves as a prerequisite to many additional discipline-specific courses in the curriculum. The centrality metric is meant to capture this notion.

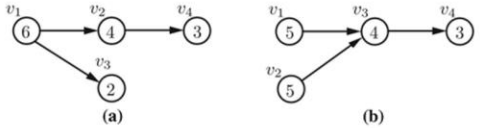
We define the centrality of source and sink vertices to be 0. For all other course vertices, consider all of the long paths (i.e., unique paths from a source to a sink) containing course vertex v_i. The centrality of v_i is given by the sum of these path lengths. As an example of the centrality metric, consider the same four-course curricula shown above. The centrality factor of each course are shown inside of the vertices in the figure below. In the case of the curriculum in part (a), there is one long path of length three that includes course v_2, hence its centrality is 3, while in part (b), there are two long paths of length three that include course v_2, hence its centrality is 6.



Structural Complexity

The curricular complexity of a course is meant to capture the impact of curricular structure on student progression. Through experimentation, we have found that a simple linear combination of the delay and blocking factors described above provides a good measure for quantifying the structural complexity of a curriculum. Specifically, we have found a high correlation between increased structural complexity and decreased graduation rates.

As an example of the structural complexity metric, consider the same four-course curricula shown above. The compleixty factor of each course, which is simply the sum of the course's delay and blocking factors, are shown inside of the course vertices in this figure.



Degree Plan Metrics

The aforementioned curricular complexity metrics are independent of how a curriculum is layed out as a degree plan. That is, the curricular metrics will not change as different degree plans are created. Degree plan metrics are related to the manner in which courses in the curriculum are laid out across the terms in the degree plan. These metrics are used in the creation of optimal degree plans as described in Optimized Degree Plans.