

MINNESOTA STATE COLLEGES AND  
UNIVERSITIES\*  
ARTICULATION AGREEMENT  
BETWEEN

SAINT PAUL COLLEGE  
AND  
METROPOLITAN STATE UNIVERSITY

\*The Board of Trustees of the Minnesota State Colleges and Universities is authorized by Minnesota Statutes, Chapter 136F to enter into Agreements and has delegated this authority to colleges and universities.

This Agreement is entered into between **Saint Paul College, 235 Marshall Avenue, Saint Paul, MN 55102** (hereinafter sending institution), and **Metropolitan State University, 700 East Seventh Street, Saint Paul, MN 55106** (hereinafter receiving institution). This Agreement and any amendments and supplements, shall be interpreted pursuant to the laws of the State of Minnesota.

The sending institution has established a **Science Technician AS (Physics Concentration)** (hereinafter sending program), and the receiving institution has established a **BS, Chemistry** (hereinafter receiving program), and will facilitate credit transfer and provide a smooth transition from one related program to another. It is mutually agreed:

**Admission and Graduation Requirements**

- A. The receiving institution's admission and program admission requirements apply to both direct entry students and to students who transfer under this agreement.
- B. Students must fulfill the graduation requirements at both institutions.
- C. Students must complete the entire sending program and meet the receiving institution's admission requirements for the agreement to apply.

**Transfer of Credits**

- A. The receiving institution will accept **60** credits from the sending program. A total of **60 credits** remain to complete the receiving program.
- B. Courses will transfer as described in the attached Program Articulation Table. For system institutions, once the courses are encoded, they will transfer as described in the Transferology Audit.

**Implementation and Review**

- A. The Chief Academic Officers or designees of the parties to this agreement will implement the terms of this agreement, including identifying and incorporating any changes into subsequent agreements, assuring compliance with system policy, procedure and guidelines, and conducting a periodic review of this agreement.
- B. This Articulation Agreement is effective on **10/01/2015** and shall remain in effect until the end date of **10/31/2020** or for five years, whichever occurs first, unless terminated or amended by either party with 90 days prior written notice.
- C. The college and university shall work with students to resolve the transfer of courses should changes to either program occur while the agreement is in effect.
- D. This Articulation Agreement will be reviewed by both parties beginning **04/01/2020** (within six months of the end date).
- E. When a student notifies the receiving institution of their intent to follow this agreement, the receiving institution will encode course waivers and substitutions.

## PROGRAM ARTICULATION TABLE

	<b>Saint Paul College (sending)</b>	<b>Metropolitan State University (receiving)</b>
Institution	Saint Paul College	Metropolitan State University
Program name	Science Technician (Physics Concentration)	Chemistry
Award Type (e.g., AS)	AS	BS
Credit Length	60	120
CIP code (6-digit)	40.0000	40.0501
Describe program admission requirements (if any)	Reading: Score of 78+ or grade of "C" or better in READ 0722 Writing: Score of 78+ on Reading Comprehension or grade of "C" or better in ENGL 1415 Arithmetic: Score of 52+	

### Instructions

- List all required courses in both academic programs.
- MnTC goal areas transfer to the receiving institution according to the goal areas designated by the sending institution.
- Do not indicate a goal area for general education courses that are not part of the MnTC.
- For restricted or unrestricted electives, list number of credits.
- Credits applied: the receiving institution course credit amount may be more or less than the sending institution credit amount. Enter the number of credits that the receiving institution will apply toward degree completion.
- Show equivalent university-college courses on the same row to ensure accurate DARS encoding.
- Equiv/Sub/Wav column: If a course is to be encoded as equivalent, enter Equiv. If a course is to be accepted by the university as a "substitution" only for the purposes of this agreement, enter Sub. If a course requirement is waived by the receiving institution, enter Wav. If a course is to be accepted by the university as a MnTC goal area, restricted elective or unrestricted elective, leave the cell blank.

(To add rows, place cursor outside of the end of a row and press enter.)

### SECTION A - Minnesota Transfer Curriculum-General Education

Saint Paul College (sending)			Metropolitan State University (receiving)			
course prefix, number and name	Goal(s) <sup>1</sup>	Credits	course prefix, number and name	Goal(s) <sup>1</sup>	Credits Applied	Equiv Sub Wav
<b>Minnesota Transfer Curriculum-General Education*</b>						
MnTC Goal 1 – ENGL 1711 Composition 1	1	4	WRIT131-Writing I (3)	1	4	Equiv
MnTC Goal 1 – SPCH 17XX Elective	1	3	MnTC Goal 1 Elective ORAL VIS COMM	1	3	
MnTC Goal 3 – CHEM 1711 Principles of Chem 1	3	4	CHEM 111—General Chemistry I (5)	3	4	Sub
MnTC Goal 4 – MATH 2749 Calculus 1	4	4	MATH 210—Calculus I	4	4	Equiv
MnTC Goal 4 – Math 2750 Calculus 2	4	4	MATH 211-Calculus II	4	4	Equiv
MnTC Goal 5—History, Social Science, and Behavior Sciences	5	3	MnTC Goal 5 Elective	5	3	
MnTC Goal 6—Humanities and Fine Arts	6	3	MnTC Goal 6 Elective	6	3	
MnTC Goal 1-10 select a minimum of 5 additional credits such that courses from at least six (6) goal areas of the Minnesota Transfer Curriculum are met.	1-10	5	MnTC Electives	1-10	5	
<b>MnTC/General Education Total</b>		<b>30</b>				

<sup>1</sup> MnTC goal areas transfer to the receiving college/university according to the goal areas designated by the sending college/university

MATH 2749—Calculus I must be passed with a grade of C- or better.

MnTC Goals 1-10 will include MATH 1730—College Algebra I and MATH 1760—PreCalculus. These courses must be passed with a grade of C- or better.

Work with an advisor to choose courses that meet all 10 goal areas.

Whenever possible, select courses that meet more than one goal area.

### SECTION B – Saint Paul College Major, Emphasis, Restricted and Unrestricted Electives or Other

(pre-requisite courses, required core courses, required courses in an emphasis, or electives (restricted or general) within the major). Restricted electives (in Major) fulfill a specific requirement within a major. Example A: “Chose two of the following three courses;” Example B: A Biology degree may require 40 science credits (20 credits of required courses + 20 credits of listed related courses, such as botany, genetics, sociobiology, etc. which students can select).

Major, Emphasis, Restricted, Unrestricted Electives or Other Courses				
BIOC 1730—Bioc Laboratory Exploration	4	Elective	4	
CHEM 2730—Instrumental Analysis	4	Elective	4	
CHEM 1712—Principles of Chemistry 2 (Goal 3)	4	CHEM 112-General Chemistry II (5)	4	Sub
ENGR 1706—Principles of Engineering	2	Elective	2	
Science Capstone Course	3	Elective	3	
Physics Focus Area				
• PHYS 2700—General Physics 2 (5)	8	PHYS 211—Calc-based Physics I (5)	8	Equiv
• Science or Engineering Elective (3)		Elective (3)		
Science or Engineering Elective	5	Elective	5	
College’s unrestricted elective credits (if none enter 0)	0	College’s unrestricted elective credits accepted in transfer (if none enter 0)	0	
<b>Major, Emphasis, Unrestricted Electives Total</b>	<b>30</b>	<b>Total College Credits Applied (sum of sections A and B)</b>	<b>60</b>	

**Special Note, if any**

CHEM 2720 Organic Chemistry will not receive upper division credits at Metropolitan State. The credits will transfer in as lower-division. Students should work with the Metro State advisor to select appropriate upper division credits.

### SECTION C - Remaining Metropolitan State University (receiving) Requirements (based on students taking the recommended courses above)

	course prefix, number and name	Credits
	Complete MnTC* and Liberal Studies Requirement**	10
	Primary Set of Required Courses***	
	• CHEM 231—Organic Chemistry I (5)	10
	• CHEM 332—Organic Chemistry II (5)	
	Secondary Set of Required Courses	10
	• CHEM 341—Quantitative Analysis (5)	
	• CHEM 351—Thermodynamics (5)	
	Elective Courses.	16
	• At least 5 credits must be from Category 1	
	• At least 5 credits must be from Category 2	
	• At least 6 credits total must be specified as lab credits.	
	• Research and internship combined cannot exceed 5 credits for the chemistry major credits.	
	Category 1—Biochemistry, Medicinal, and Organic Chemistry	
	• CHEM 301—Biochemistry (includes 2 lab credits) (5)	
	• CHEM 406—Adv. Tech. Biochem Lab (2)	
	• CHEM 421—Medicinal Chemistry (3)	
	• CHEM 433—Advanced Organic Chemistry (3)	
	• CHEM 435—Advanced Organic Chemistry Lab (2)	
	Category 2—Analytical, Environmental, and Inorganic Chemistry	
	• CHEM 311—Environmental Chemistry (3)	
	• CHEM 361—Inorganic Chemistry Lecture and Lab (5).	
	Category 3—Other Course Offerings	
	• CHEM 479—Special Topics (2-3)	
	• CHEM 350i—Internship in Chemistry (1-5)	

	<ul style="list-style-type: none"> <li>• CHEM 469—Seminars in Chemistry (1). This course may be repeated for a total of three semesters.</li> <li>• CHEM 489—Research in Chemistry (1-5)</li> </ul>	
	Unrestricted Electives	14
	<b>Total Remaining University Credits</b>	<b>60</b>

**Special Notes, if any:**

All courses transferring from community and technical colleges are lower division coursework. Student must choose appropriate coursework within remaining university requirements to meet the graduation requirement of 40 upper division credits.

Some courses have prerequisites. It is up to the student to check for, and complete, prerequisites before registering for courses. Not all prerequisite courses are included in this agreement.

\*The actual number of credits needed to complete the MnTC depends upon:


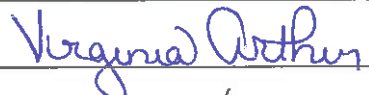
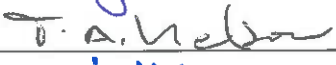


- The number of required General Education/MnTC credits in your program at the community/technical college (listed in Section A)
- A college's distribution requirements within the MnTC—all MnSCU institutions require 40 credits in 10 Goal Areas, but colleges have different requirements as to how the credits are distributed within the goal areas—e.g., Metro State requires two writing courses for Goal 1 (6 credits), the sending institution may require two writing courses plus a communications course (9 credits) in Goal 1.
- When MnTC electives are listed (i.e., no specific course is named), the number of goal areas a course meets will determine the number of courses you may need to take to fulfill MnTC requirements—i.e., it's better to choose courses meeting more than one goal area.
- May need to include upper-division credits in order to fulfill the 40 credit upper-division requirement for graduation (see footnote).

Consult an academic advisor (at either the sending or receiving institution) to plan the completion of the MnTC requirement.

\*\*Liberal Studies Requirement: Eight (8) upper-division credits. An upper-division course number begins with a 3, 4, or 5. With good planning (consult an academic advisor), this requirement may be met by courses chosen to fulfill MnTC requirements.

\*\*\*The Primary Set of courses must be completed prior to admittance to the major

<b>SECTION D - Summary of Total Program Credits</b>			
<b>Saint Paul College (sending) Credits</b>		<b>Metropolitan State University (receiving) Requirements</b>	
<b>MnTC/General Education</b>	30		
<b>Major, Emphasis, Unrestricted Electives or Other</b>	30		
<b>Total College Credits</b>	<b>60</b>	<b>Total College Credits Applied</b>	<b>60</b>
		<b>Remaining credit to be taken at the university (receiving institution)</b>	<b>60</b>
		<b>Total Program Credits</b>	<b>120</b>
<b>Special Notes, if any:</b>			

<b>Saint Paul College</b>	<b>Name</b>	<b>Signature</b>	<b>Date</b>
Chief Academic Officer	Kelly Murtaugh		2/11/2016
<b>Metropolitan State University</b>	<b>Name</b>	<b>Signature</b>	<b>Date</b>
Chief Academic Officer	Virginia Arthur		2/4/16
Dean, College of Arts and Sciences	Thomas Nelson		1/7/16
Department Chair/Faculty	Ramin Daghigh		12/1/2015
DARS Encoder	Amber Eisen-Ramgren		12/31/15
Date when equivalencies were encoded in DARS by the receiving MnSCU institution.			

MINNESOTA STATE COLLEGES AND  
UNIVERSITIES\*  
ARTICULATION AGREEMENT  
BETWEEN

SAINT PAUL COLLEGE  
AND  
METROPOLITAN STATE UNIVERSITY

\*The Board of Trustees of the Minnesota State Colleges and Universities is authorized by Minnesota Statutes, Chapter 136F to enter into Agreements and has delegated this authority to colleges and universities.

This Agreement is entered into between **Saint Paul College, 235 Marshall Avenue, Saint Paul, MN 55102** (hereinafter sending institution), and **Metropolitan State University, 700 East Seventh Street, Saint Paul, MN 55106** (hereinafter receiving institution). This Agreement and any amendments and supplements, shall be interpreted pursuant to the laws of the State of Minnesota.

The sending institution has established a **Science Technician AS (Chemistry Concentration)** (hereinafter sending program), and the receiving institution has established a **BS, Chemistry** (hereinafter receiving program), and will facilitate credit transfer and provide a smooth transition from one related program to another. It is mutually agreed:

**Admission and Graduation Requirements**

- A. The receiving institution's admission and program admission requirements apply to both direct entry students and to students who transfer under this agreement.
- B. Students must fulfill the graduation requirements at both institutions.
- C. Students must complete the entire sending program and meet the receiving institution's admission requirements for the agreement to apply.

**Transfer of Credits**

- A. The receiving institution will accept **60** credits from the sending program. A total of **60 credits** remain to complete the receiving program.
- B. Courses will transfer as described in the attached Program Articulation Table. For system institutions, once the courses are encoded, they will transfer as described in the Transferology Audit.

**Implementation and Review**

- A. The Chief Academic Officers or designees of the parties to this agreement will implement the terms of this agreement, including identifying and incorporating any changes into subsequent agreements, assuring compliance with system policy, procedure and guidelines, and conducting a periodic review of this agreement.
- B. This Articulation Agreement is effective on **10/01/2015** and shall remain in effect until the end date of **10/01/2020** or for five years, whichever occurs first, unless terminated or amended by either party with 90 days prior written notice.
- C. The college and university shall work with students to resolve the transfer of courses should changes to either program occur while the agreement is in effect.
- D. This Articulation Agreement will be reviewed by both parties beginning **04/01/2020** (within six months of the end date).
- E. When a student notifies the receiving institution of their intent to follow this agreement, the receiving institution will encode course waivers and substitutions.

## PROGRAM ARTICULATION TABLE

	<b>Saint Paul College (sending)</b>	<b>Metropolitan State University (receiving)</b>
Institution	Saint Paul College	Metropolitan State University
Program name	Science Technician (Chemistry Concentration)	Chemistry
Award Type (e.g., AS)	AS	BS
Credit Length	60	120
CIP code (6-digit)	40.0000	40.0501
Describe program admission requirements (if any)	Reading: Score of 78+ or grade of "C" or better in READ 0722 Writing: Score of 78+ on Reading Comprehension or grade of "C" or better in ENGL 1415 Arithmetic: Score of 52+	

### Instructions

- List all required courses in both academic programs.
- MnTC goal areas transfer to the receiving institution according to the goal areas designated by the sending institution.
- Do not indicate a goal area for general education courses that are not part of the MnTC.
- For restricted or unrestricted electives, list number of credits.
- Credits applied: the receiving institution course credit amount may be more or less than the sending institution credit amount. Enter the number of credits that the receiving institution will apply toward degree completion.
- Show equivalent university-college courses on the same row to ensure accurate DARS encoding.
- Equiv/Sub/Wav column: If a course is to be encoded as equivalent, enter Equiv. If a course is to be accepted by the university as a "substitution" only for the purposes of this agreement, enter Sub. If a course requirement is waived by the receiving institution, enter Wav. If a course is to be accepted by the university as a MnTC goal area, restricted elective or unrestricted elective, leave the cell blank.

(To add rows, place cursor outside of the end of a row and press enter.)

### SECTION A - Minnesota Transfer Curriculum-General Education

Saint Paul College (sending)			Metropolitan State University (receiving)			
course prefix, number and name	Goal(s) <sup>1</sup>	Credits	course prefix, number and name	Goal(s) <sup>1</sup>	Credits Applied	Equiv Sub Wav
Minnesota Transfer Curriculum-General Education*						
MnTC Goal 1—ENGL 1711 Composition 1	1	4	WRIT131—Writing I (3)	1	4	Equiv
MnTC Goal 1—SPCH 17XX Elective	1	3	MnTC Goal 1 Elective ORAL VIS COMM	1	3	
MnTC Goal 3—CHEM 1711 Principles of Chem 1	3	4	CHEM 111—General Chemistry I (5)	3	4	Sub
MnTC Goal 4—MATH 2749 Calculus 1	4	4	MATH 210—Calculus I	4	4	Equiv
MnTC Goal 4—Math 2750 Calculus 2	4	4	MATH 211—Calculus II	4	4	Equiv
MnTC Goal 5—History, Social Science, and Behavior Sciences	5	3	MnTC Goal 5 Elective	5	3	
MnTC Goal 6—Humanities and Fine Arts	6	3	MnTC Goal 6 Elective	6	3	
MnTC Goal 1-10—Students must select a minimum of 5 additional credits such that courses from at least six (6) goal areas of the MnTC are met.	1-10	5	MnTC Electives	1-10	5	
<b>MnTC/General Education Total</b>		<b>30</b>				

<sup>1</sup> MnTC goal areas transfer to the receiving college/university according to the goal areas designated by the sending college/university

**Special Notes, if any:**

MATH 2749—Calculus I must be passed with a grade of C- or better.

MnTC Goals 1-10 will include MATH 1730—College Algebra I and MATH 1760—PreCalculus. These courses must be passed with a grade of C- or better.

Work with an advisor to choose courses that meet all 10 goal areas.

Whenever possible, select courses that meet more than one goal area.

### SECTION B – Saint Paul College Major, Emphasis, Restricted and Unrestricted Electives or Other

(pre-requisite courses, required core courses, required courses in an emphasis, or electives (restricted or general) within the major). Restricted electives (in Major) fulfill a specific requirement within a major. Example A: “Chose two of the following three courses;” Example B: A Biology degree may require 40 science credits (20 credits of required courses + 20 credits of listed related courses, such as botany, genetics, sociobiology, etc. which students can select).

Major, Emphasis, Restricted, Unrestricted Electives or Other Courses				
BIOC 1730—BIOC Laboratory Exploration	4	Elective	4	
CHEM 2730—Instrumental Analysis	4	Elective	4	
CHEM 1712—Principles of Chemistry 2 (Goal 3)	4	CHEM 112—General Chemistry II (5)	4	Sub
ENGR 1706—Principles of Engineering	2	Elective	2	
Science Capstone Course	3	Elective	3	
Chemistry Focus Area				
• CHEM 2721—Organic Chemistry 2 – 5 cr (Goal 3)	8	CHEM 231—Organic Chemistry I (5)	8	Sub
• Science or Engineering Elective (3)		Elective		
Science or Engineering Electives	5	Elective	5	
College's unrestricted elective credits (if none enter 0)	0	College's unrestricted elective credits accepted in transfer (if none enter 0)		
<b>Major, Emphasis, Unrestricted Electives Total</b>	<b>30</b>	<b>Total College Credits Applied (sum of sections A and B)</b>	<b>60</b>	

**Special Note, if any**

CHEM 2720 Organic Chemistry will not receive upper division credits at Metropolitan State. The credits will transfer in as lower-division. Students should work with the Metro State advisor to select appropriate upper division credits.

### SECTION C - Remaining Metropolitan State University (receiving) Requirements (based on students taking the recommended courses above)

course prefix, number and name	Credits
Complete MnTC* and Liberal Studies Requirement**	10
Primary Set of Required Courses***	10
• CHEM 332—Organic Chemistry II (5)	
• PHYS 211—Calculus-based Physics I (5)	
Secondary Set of Required Courses	15
• PHYS 212—Calculus-based Physics II (5)	
• CHEM 341—Quantitative Analysis (5)	
• CHEM 351—Thermodynamics (5)	
Elective Courses.	16
• At least 5 credits must be from Category 1	
• At least 5 credits must be from Category 2	
• At least 6 credits total must be specified as lab credits.	
• Research and internship combined cannot exceed 5 credits for the chemistry major credits.	
Category 1—Biochemistry, Medicinal, and Organic Chemistry	
• CHEM 301—Biochemistry (includes 2 lab credits) (5)	
• CHEM 406—Adv. Tech. Biochem Lab (2)	
• CHEM 421—Medicinal Chemistry (3)	
• CHEM 433—Advanced Organic Chemistry (3)	
• CHEM 435—Advanced Organic Chemistry Lab (20)	
Category 2—Analytical, Environmental, and Inorganic Chemistry	
• CHEM 311—Environmental Chemistry (3)	
• CHEM 361—Inorganic Chemistry Lecture and Lab (5)	
Category 3—Other Course Offerings	



	<ul style="list-style-type: none"> <li>• CHEM 479—Special Topics (2-3)</li> <li>• CHEM 350i—Internship in Chemistry (1-5)</li> <li>• CHEM 469—Seminars in Chemistry (1). This course may be repeated for a total of three semesters.</li> <li>• CHEM 489—Research in Chemistry (1-5)</li> </ul>	
	Unrestricted Electives	9
	<b>Total Remaining University Credits</b>	<b>60</b>

**Special Notes, if any:**

All courses transferring from community and technical colleges are lower division coursework. Student must choose appropriate coursework within remaining university requirements to meet the graduation requirement of 40 upper division credits.

Some courses have prerequisites. It is up to the student to check for, and complete, prerequisites before registering for courses. Not all prerequisite courses are included in this agreement.

\*The actual number of credits needed to complete the MnTC depends upon:


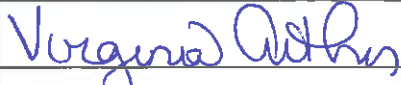


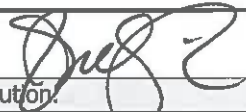
- The number of required General Education/MnTC credits in your program at the community/technical college (listed in Section A)
- A college's distribution requirements within the MnTC—all MnSCU institutions require 40 credits in 10 Goal Areas, but colleges have different requirements as to how the credits are distributed within the goal areas—e.g., Metro State requires two writing courses for Goal 1 (6 credits), the sending institution may require two writing courses plus a communications course (9 credits) in Goal 1.
- When MnTC electives are listed (i.e., no specific course is named), the number of goal areas a course meets will determine the number of courses you may need to take to fulfill MnTC requirements—i.e., it's better to choose courses meeting more than one goal area.
- May need to include upper-division credits in order to fulfill the 40 credit upper-division requirement for graduation (see footnote).

Consult an academic advisor (at either the sending or receiving institution) to plan the completion of the MnTC requirement.

\*\*Liberal Studies Requirement: Eight (8) upper-division credits. An upper-division course number begins with a 3, 4, or 5. With good planning (consult an academic advisor), this requirement may be met by courses chosen to fulfill MnTC requirements.

\*\*\*The Primary Set of courses must be completed prior to admittance to the major

<b>SECTION D - Summary of Total Program Credits</b>			
<b>Saint Paul College (sending) Credits</b>		<b>Metropolitan State University (receiving) Requirements</b>	
<b>MnTC/General Education</b>	25		
<b>Major, Emphasis, Unrestricted Electives or Other</b>	35		
<b>Total College Credits</b>	<b>60</b>	<b>Total College Credits Applied</b>	<b>60</b>
		<b>Remaining credit to be taken at the university (receiving institution)</b>	<b>60</b>
		<b>Total Program Credits</b>	<b>120</b>
<b>Special Notes, if any:</b>			

Saint Paul College		Name	Signature	Date
Chief Academic Officer		Kelly Murtaugh		2/11/2016
Metropolitan State University		Name	Signature	Date
Chief Academic Officer		Virginia Arthur		2/4/16
Dean, College of Arts and Sciences		Thomas Nelson		1/6/16
Department Chair/Faculty		Ramin Daghigh		12/1/2015
DARS Encoder		Amber Eisen-Ramgren		12/31/15
Date when equivalencies were encoded in DARS by the receiving MnSCU institution.				