

**Articulation Agreement between  
Century Community and Technical College,  
White Bear Lake, Minnesota**

**and**

**The Institute of Technology, The University of Minnesota,  
Minneapolis, Minnesota**

**Statement of Purpose**

This agreement has been entered into by Century College and The Institute of Technology, University of Minnesota, for the benefit of students and prospective students at the two institutions. The purpose of this agreement is to ensure programs of high academic quality, to encourage student achievement, and to facilitate credit transfer and a smooth transition from one related degree program to another. The attached appendices (A-J) detail the required engineering programs of study at Century College, for admission eligibility to The Institute of Technology, The University of Minnesota. This agreement identifies all required and equivalent courses at each institution.

**Terms and Conditions of Credit Transfer**

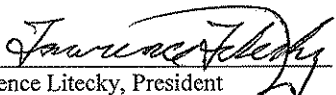
Students who complete the Associate of Science in Engineering at Century College may apply a minimum of 64 semester credits towards a degree in engineering in The Institute of Technology at the University of Minnesota, Minneapolis, Minnesota. This coursework includes science and mathematics requirements common to all engineering degrees. Century students who also complete the Minnesota Transfer Curriculum will satisfy the lower-division general education courses (except writing intensive courses).

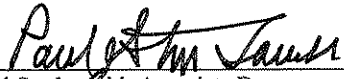
**Articulation Implementation and Agreement Review**


The Chief Academic Officer, or designee of the collaborating institutions, shall be responsible for implementing this agreement, for identifying and incorporating any changes into subsequent agreement, and for conducting a periodic review of this agreement. The appendices may be updated as necessary, without re-negotiation of the articulation agreement in its entirety. This agreement becomes effective on June 1, 2008, and remains in effect unless terminated or amended by either party with prior written notice.


**Century Community and Technical College**

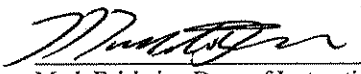
**The Institute of Technology,  
University of Minnesota**

  
\_\_\_\_\_  
Lawrence Litecky, President      4/8/08  
Date

  
\_\_\_\_\_  
Paul Strykowski, Associate Dean  
for Student Affairs      5-13-08  
Date

  
\_\_\_\_\_  
John O'Brien, Vice President  
for Academic Affairs      4-1-08  
Date

  
\_\_\_\_\_  
Benjamin Sharpe, Director  
of Admissions      5/13/08  
Date

  
\_\_\_\_\_  
Mark Felsheim, Dean of Instructional  
Support, Services and Technology      4-1-08  
Date

## Appendix A: Century Curriculum for Transfer to Aerospace Engineering

- **Engineering Core Courses**

Century College Courses	credits	IT Requirements Satisfied by Century Courses	credits
Math 1081: Single Variable Calculus I	5	Math 1271: Calculus I	4
Math 1082: Single Variable Calculus II	5	Math 1272: Calculus II	4
Math 2081: Multivariable Calculus	5	Math 2263: Multivariable Calculus	4
Math 2082: Linear Algebra and Differential Equations	5	Math 2243: Linear Algebra and Differential Equations	4
Phys 1081: Introductory Physics I	5	Phys 1301: Introductory Physics I	4
Phys 1082: Introductory Physics II	5	Phys 1302: Introductory Physics II	4

- **Additional technical courses for transfer to Aerospace Engineering**

Century College Courses	credits	IT Requirements Satisfied by Century Courses	credits
Chem 1041: Principles of Chemistry I	5	Chem 1021: Chemical Principles I	4
CSCI 1081: Programming Fundamentals or CSCI 2020 Java	3	CSCI 1113: Introduction to C/C++	4
Engr 1080: Statics	3	AEM 2011: Statics	3
Engr 2080: Dynamics	3	AEM 2012: Dynamics	3
Engr 2085: Deformable Body Mechanics	3	AEM 3031: Deformable Body Mechanics	3
Engr 2091: Circuits I <b>and</b> Engr 2094: Digital Fundamentals	6	EE 3005/3006: Fundamentals of Electrical Engineering (including lab)	5
Phys 2081: Modern Physics	4	Phys 2503: Physics III: Modern Physics	4

- **MNTC courses**

In addition to the above courses, Century students will take courses to satisfy Minnesota Transfer Curriculum requirements.

## Appendix B: Century Curriculum for Transfer to Bioproducts and Biosystems Engineering

- Engineering Core Courses**

Century College Courses	credits	IT Requirements Satisfied by Century Courses	credits
Math 1081: Single Variable Calculus I	5	Math 1271: Calculus I	4
Math 1082: Single Variable Calculus II	5	Math 1272: Calculus II	4
Math 2081: Multivariable Calculus	5	Math 2263: Multivariable Calculus	4
Math 2082: Linear Algebra and Differential Equations	5	Math 2243: Linear Algebra and Differential Equations	4
Phys 1081: Introductory Physics I	5	Phys 1301: Introductory Physics I	4
Phys 1082: Introductory Physics II	5	Phys 1302: Introductory Physics II	4

- Additional technical courses for transfer to Bioproducts Engineering Emphasis**

Century College Courses	credits	IT Requirements Satisfied by Century Courses	credits
Biol 1041: Introductory Biology I	5	Biol 1009: General Biology	4
Chem 1041: Principles of Chemistry I	5	Chem 1021: Chemistry Principles I	4
Chem 1042: Principles of Chemistry II	5	Chem 1022: Chemistry Principles II	4
Chem 2041: Organic Chemistry I	5	Chem 2301: Organic Chemistry I	3
Chem 2042: Organic Chemistry II	5	Chem 2302: Organic Chemistry II and Chem 2311: Organic Lab	3 4
Engr 2080: Dynamics <b>and</b> Engr 2085: Deformable Body Mechanics	6	{AEM 2011: Statics and AEM 2012: Dynamics} in lieu of BBE 3001: Statics, Dynamics and Structural Design	4

- Additional technical courses for transfer to Bioprocessing & Food Engineering Emphasis**

Century College Courses	credits	IT Requirements Satisfied by Century Courses	credits
Biol 1041: Introductory Biology I	5	Biol 1009: General Biology	4
Chem 1041: Principles of Chemistry I	5	Chem 1021: Chemistry Principles I	4
Chem 1042: Principles of Chemistry II	5	Chem 1022: Chemistry Principles II	4
Chem 2041: Organic Chemistry I	5	Chem 2301: Organic Chemistry I	3
Chem 2042: Organic Chemistry II	5	Chem 2302: Organic Chemistry II and Chem 2311: Organic Lab	3 4
Engr 2080: Dynamics <b>and</b> Engr 2085: Deformable Body Mechanics	6	{AEM 2011: Statics and AEM 2012: Dynamics} in lieu of BBE 3001: Statics, Dynamics and Structural Design	4
Engr 2091: Circuits I <b>and</b> Engr 2094: Digital Fundamentals	6	EE 3005/3006: Fundamentals of Electrical Engineering/ Lab	5
Math 2025: Probability and Statistics	4	Stat 3021: Introduction to Probability and Statistics	3

- **Additional technical courses for transfer to Environmental & Ecological Engineering Emphasis**

<b>Century College Courses</b>	<b>credits</b>	<b>IT Requirements Satisfied by Century Courses</b>	<b>credits</b>
Biol 1041: Introductory Biology I	5	Biol 1009: General Biology	4
Chem 1041: Principles of Chemistry I	5	Chem 1021: Chemistry Principles I	4
Chem 1042: Principles of Chemistry II	5	Chem 1022: Chemistry Principles II	4
Engr 2080: Dynamics <b>and</b> Engr 2085: Deformable Body Mechanics	6	{AEM 2011: Statics and AEM 2012: Dynamics} in lieu of BBE 3001: Statics, Dynamics and Structural Design	4
Engr 2091: Circuits I <b>and</b> Engr 2094: Digital Fundamentals	6	EE 3005/3006: Fundamentals of Electrical Engineering/ Lab	5
Math 2025: Probability and Statistics	4	Stat 3021: Introduction to Probability and Statistics	3

- **MNTC courses**

In addition to the above courses, Century students will take courses to satisfy Minnesota Transfer Curriculum requirements.

## Appendix C: Century Curriculum for Transfer to Biomedical Engineering

- **Engineering Core Courses**

Century College Courses	credits	IT Requirements Satisfied by Century Courses	credits
Math 1081: Single Variable Calculus I	5	Math 1271: Calculus I	4
Math 1082: Single Variable Calculus II	5	Math 1272: Calculus II	4
Math 2081: Multivariable Calculus	5	Math 2263: Multivariable Calculus	4
Math 2082: Linear Algebra and Differential Equations	5	Math 2243: Linear Algebra and Differential Equations	4
Phys 1081: Introductory Physics I	5	Phys 1301: Introductory Physics I	4
Phys 1082: Introductory Physics II	5	Phys 1302: Introductory Physics II	4

- **Additional technical courses for transfer to Biomedical Engineering**

Century College Courses	credits	IT Requirements Satisfied by Century Courses	credits
CSCI 1081: Programming Fundamentals	3	BMEN 2401: Programming for Biomedical Engineers	2
Math 2025: Probability and Statistics	4	Stat 3021: Intro to Probability and Statistics	3
Chem 1041: Principles of Chemistry I	5	Chem 1021: Chemical Principles I	4
Chem 1042: Principles of Chemistry II	5	Chem 1022: Chemical Principles II	4
Chem 2041: Organic Chemistry I	5	Chem 2301: Organic Chemistry I	3

- **MNTC courses**

In addition to the above courses, Century students will take courses to satisfy Minnesota Transfer Curriculum requirements.

- **Special Note**

It is strongly recommended that students take Introductory Biology (Biol 1041) at Century.

## Appendix D: Century Curriculum for Transfer to Chemical Engineering

- **Engineering Core Courses**

Century College Courses	credits	IT Requirements Satisfied by Century Courses	credits
Math 1081: Single Variable Calculus I	5	Math 1271: Calculus I	4
Math 1082: Single Variable Calculus II	5	Math 1272: Calculus II	4
Math 2081: Multivariable Calculus	5	Math 2263: Multivariable Calculus	4
Math 2082: Linear Algebra and Differential Equations	5	Math 2243: Linear Algebra and Differential Equations	4
Phys 1081: Introductory Physics I	5	Phys 1301: Introductory Physics I	4
Phys 1082: Introductory Physics II	5	Phys 1302: Introductory Physics II	4

- **Additional technical courses for transfer to Chemical Engineering**

Century College Courses	credits	IT Requirements Satisfied by Century Courses	credits
Chem 1041: Principles of Chemistry I	5	Chem 1021: Chemical Principles I	4
Chem 1042: Principles of Chemistry II	5	Chem 1022: Chemical Principles II	4
Chem 2041: Organic Chemistry I	5	Chem 2301: Organic Chemistry I	3
Chem 2042: Organic Chemistry II	5	Chem 2302: Organic Chemistry II <b>and</b> Chem 2311: Organic Lab	3 4

- **MNTC courses**

In addition to the above courses, Century students will take courses to satisfy Minnesota Transfer Curriculum requirements.

- **Special Note**

CHEN 2001 – Material and Energy Balances is now a fall semester class (no longer offered in the summer) and it is a prerequisite class for the junior sequence.

- If a student transfers to the U of M after the freshman year, they will take the same classes as sophomores in Chemical Engineering and the students should graduate in three years.
- A student transferring after two years will take Physical Chemistry, CHEN 4001, and perhaps a few other classes. It will take the student three years to graduate.

## Appendix E: Century Curriculum for Transfer to Civil Engineering

- **Engineering Core Courses**

<b>Century College Courses</b>	<b>credits</b>	<b>IT Requirements Satisfied by Century Courses</b>	<b>credits</b>
Math 1081: Single Variable Calculus I	5	Math 1271: Calculus I	4
Math 1082: Single Variable Calculus II	5	Math 1272: Calculus II	4
Math 2081: Multivariable Calculus	5	Math 2263: Multivariable Calculus	4
Math 2082: Linear Algebra and Differential Equations	5	Math 2243: Linear Algebra and Differential Equations	4
Phys 1081: Introductory Physics I	5	Phys 1301: Introductory Physics I	4
Phys 1082: Introductory Physics II	5	Phys 1302: Introductory Physics II	4

- **Additional technical courses for transfer to Civil Engineering**

<b>Century College Courses</b>	<b>credits</b>	<b>IT Requirements Satisfied by Century Courses</b>	<b>credits</b>
Chem 1041: Principles of Chemistry I	5	Chem 1021: Chemical Principles I	4
Chem 1042: Principles of Chemistry II	5	Chem 1022: Chemical Principles II	4
Engr 1020: Introduction to Engineering	4	ME 2011: Introduction to Engineering	4
Engr 1080: Statics	3	AEM 2011: Statics	3
Engr 2080: Dynamics	3	AEM 2012: Dynamics	3
Engr 2085: Deformable Body Mechanics	3	AEM 3031: Deformable Body Mechanics	3
Math 2025: Probability and Statistics	4	Stat 3021: Intro to Probability and Statistics	3

- **MNTC courses**

In addition to the above courses, Century students will take courses to satisfy Minnesota Transfer Curriculum requirements.

## Appendix F: Century Curriculum for Transfer to Computer Engineering

- **Engineering Core Courses**

Century College Courses	credits	IT Requirements Satisfied by Century Courses	credits
Math 1081: Single Variable Calculus I	5	Math 1271: Calculus I	4
Math 1082: Single Variable Calculus II	5	Math 1272: Calculus II	4
Math 2081: Multivariable Calculus	5	Math 2263: Multivariable Calculus	4
Math 2082: Linear Algebra and Differential Equations	5	Math 2243: Linear Algebra and Differential Equations	4
Phys 1081: Introductory Physics I	5	Phys 1301: Introductory Physics I	4
Phys 1082: Introductory Physics II	5	Phys 1302: Introductory Physics II	4

- **Additional technical courses for transfer to Computer Engineering**

Century College Courses	credits	IT Requirements Satisfied by Century Courses	credits
CSCI 1081, Programming Fundamentals CSCI 1082, Object-Oriented Programming CSCI 2082, Data Structures and Algorithms CSCI 2090, Introduction to Functional Programming	10	CSCI 1901: Structure of Programming I CSCI 1902: Structure of Computer Programming II	8
CSCI 2014: Discrete Structures of Computer Science	4	CSCI 2011: Discrete Structures of Computer Science	4
CSCI 2060: Operating Systems	3	CSCI 4061: Intro to Operating Systems	4
Engr 2091: Circuits I	4	EE 2001/2002: Introduction to Electronic and Electrical Circuits (including lab)	4
Engr 2092: Circuits II	4	EE 2011: Linear Systems and Circuits	3
Engr 2095: Digital Design	4	EE 2301: Introduction to Digital System Design	4

Note: Students must take \*all\* of CSCI 1081,1082,2082,2090 at Century to transfer for CSCI1901 and CSCI1902 at the University. This is a “package” articulation (10 credits for 8 credits).

- **MNTC courses**

In addition to the above courses, Century students will take courses to satisfy Minnesota Transfer Curriculum requirements.

## Appendix G: Century Curriculum for Transfer to Electrical Engineering

- **Engineering Core Courses**

Century College Courses	credits	IT Requirements Satisfied by Century Courses	credits
Math 1081: Single Variable Calculus I	5	Math 1271: Calculus I	4
Math 1082: Single Variable Calculus II	5	Math 1272: Calculus II	4
Math 2081: Multivariable Calculus	5	Math 2263: Multivariable Calculus	4
Math 2082: Linear Algebra and Differential Equations	5	Math 2243: Linear Algebra and Differential Equations	4
Phys 1081: Introductory Physics I	5	Phys 1301: Introductory Physics I	4
Phys 1082: Introductory Physics II	5	Phys 1302: Introductory Physics II	4

- **Additional technical courses for transfer to Electrical Engineering**

Century College Courses	credits	IT Requirements Satisfied by Century Courses	credits
Chem 1041: Principles of Chemistry I	5	Chem 1021: Chemical Principles I	4
CSCI 1081: Programming Fundamentals	3	EE 1301: Introduction to Computing Systems	4
Engr 2091: Circuits I	4	EE 2001/2002: Introduction to Electronic and Electrical Circuits (including lab)	4
Engr 2092: Circuits II	4	EE 2011: Linear Systems and Circuits	3
Engr 2095: Digital Design	4	EE 2301: Introduction to Digital System Design	4
Phys 2081: Modern Physics <b>or</b> Chem 1042: Principles of Chemistry II	4 or 5	Phys 2303: Physics III: Physics of Matter <b>or</b> Chem 1022: Chemical Principles II	4 or 4

- **MNTC courses**

In addition to the above courses, Century students will take courses to satisfy Minnesota Transfer Curriculum requirements.

## Appendix H: Century Curriculum for Transfer to Geological Engineering

- **Engineering Core Courses**

Century College Courses	credits	IT Requirements Satisfied by Century Courses	credits
Math 1081: Single Variable Calculus I	5	Math 1271: Calculus I	4
Math 1082: Single Variable Calculus II	5	Math 1272: Calculus II	4
Math 2081: Multivariable Calculus	5	Math 2263: Multivariable Calculus	4
Math 2082: Linear Algebra and Differential Equations	5	Math 2243: Linear Algebra and Differential Equations	4
Phys 1081: Introductory Physics I	5	Phys 1301: Introductory Physics I	4
Phys 1082: Introductory Physics II	5	Phys 1302: Introductory Physics II	4

- **Additional technical courses for transfer to Geological Engineering**

Century College Courses	credits	IT Requirements Satisfied by Century Courses	credits
Chem 1041: Principles of Chemistry I	5	Chem 1021: Chemical Principles I	4
Chem 1042: Principles of Chemistry II	5	Chem 1022: Chemical Principles II	4
Engr 1080: Statics	3	AEM 2011: Statics	3
Engr 2080: Dynamics	3	AEM 2012: Dynamics	3
Engr 2085: Deformable Body Mechanics	3	AEM 3031: Deformable Body Mechanics	3
Math 2025: Probability and Statistics	4	Stat 3021: Intro to Probability and Statistics	3
NatS 1030: Physical Geology	4	Geo 1001: The Dynamic Earth: An Introduction to Geology	4

- **MNTC courses**

In addition to the above courses, Century students will take courses to satisfy Minnesota Transfer Curriculum requirements.

## Appendix I: Century Curriculum for Transfer to Material Science Engineering

- **Engineering Core Courses**

Century College Courses	credits	IT Requirements Satisfied by Century Courses	credits
Math 1081: Single Variable Calculus I	5	Math 1271: Calculus I	4
Math 1082: Single Variable Calculus II	5	Math 1272: Calculus II	4
Math 2081: Multivariable Calculus	5	Math 2263: Multivariable Calculus	4
Math 2082: Linear Algebra and Differential Equations	5	Math 2243: Linear Algebra and Differential Equations	4
Phys 1081: Introductory Physics I	5	Phys 1301: Introductory Physics I	4
Phys 1082: Introductory Physics II	5	Phys 1302: Introductory Physics II	4

- **Additional technical courses for transfer to Material Science Engineering**

Century College Courses	credits	IT Requirements Satisfied by Century Courses	credits
Chem 1041: Principles of Chemistry I	5	Chem 1021: Chemical Principles I	4
Chem 1042: Principles of Chemistry II	5	Chem 1022: Chemical Principles II	4
Chem 2041: Organic Chemistry I	5	Chem 2301: Organic Chemistry I	3
Engr 1080: Statics	3	AEM 2011: Statics	3
Engr 2085: Deformable Body Mechanics	3	AEM 3031: Deformable Body Mechanics	3
Phys 2081: Modern Physics	4	Phys 2303: Physics III: Physics of Matter	4

- **MNTC courses**

In addition to the above courses, Century students will take courses to satisfy Minnesota Transfer Curriculum requirements.

## Appendix J: Century Curriculum for Transfer to Mechanical Engineering

- **Engineering Core Courses**

Century College Courses	credits	IT Requirements Satisfied by Century Courses	credits
Math 1081: Single Variable Calculus I	5	Math 1271: Calculus I	4
Math 1082: Single Variable Calculus II	5	Math 1272: Calculus II	4
Math 2081: Multivariable Calculus	5	Math 2263: Multivariable Calculus	4
Math 2082: Linear Algebra and Differential Equations	5	Math 2243: Linear Algebra and Differential Equations	4
Phys 1081: Introductory Physics I	5	Phys 1301: Introductory Physics I	4
Phys 1082: Introductory Physics II	5	Phys 1302: Introductory Physics II	4

- **Additional technical courses for transfer to Mechanical Engineering**

Century College Courses	credits	IT Requirements Satisfied by Century Courses	credits
Chem 1041: Principles of Chemistry I	5	Chem 1021: Chemical Principles I	4
CSCI 1081: Programming Fundamentals	3	CSCI 1113: Introduction to C/C++	4
Engr 1020: Introduction to Engineering	4	ME 2011: Introduction to Engineering	4
Engr 1080: Statics	3	AEM 2011: Statics	3
Engr 2080: Dynamics	3	AEM 2012: Dynamics	3
Engr 2085: Deformable Body Mechanics	3	AEM 3031: Deformable Body Mechanics	3
Engr 2091: Circuits I <b>and</b> Engr 2094: Digital Fundamentals	6	EE 3005/3006: Fundamentals of Electrical Engineering (including lab)	5

- **Special Note**

Students should consider taking either Thermodynamics or Material Science at the University of Minnesota during the summer term after completing the above coursework at Century. This will allow students to enter their junior year on track to graduate after completing two years at the University of Minnesota.

- **MNTC courses**

In addition to the above courses, Century students will take courses to satisfy Minnesota Transfer Curriculum requirements.