

# Wayne State College

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## Preprofessional Studies in Engineering

### Program and Advising Guide



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Physical Sciences and Mathematics Department  
Carhart Science Building  
Wayne State College  
Wayne, Nebraska 68787  
Phone: 1-402-375-7329 or 1-800-228-9972  
Email: [preeng@wsc.edu](mailto:preeng@wsc.edu)  
Website: [www.wsc.edu/eng](http://www.wsc.edu/eng)

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# Preprofessional Studies in Engineering

**Program Description:** Pre-engineering studies at Wayne State College consist of an inter-disciplinary core of course-work in the humanities and social sciences, communications, mathematics, physics, chemistry, and engineering sciences. This core is common of most engineering disciplines and provides a solid foundation that can lead to a career in engineering. Most of the course work in this core is to be provided by Wayne State College with the possibility of additional courses being delivered by other schools via distance education. Three options are available for the student to complete an engineering degree:

- (1) Cooperative 2+ programs are available with the three area engineering schools, UNL, SDSU, and SDSM&T, as well as others. At present there is an agreement with SDSM&T and SDSU. An agreement is also being developed with Iowa State University. Although there is a common core, each discipline is enough different, that individual programs of study should be created. Once a student decides on a discipline and/or school, the student will be provided with a more complete description of a program of study.
- (2) Students intending to pursue a graduate degree in engineering may first earn a four-year applied mathematics or science degree from WSC, then (at another school) pursue graduate work in engineering. The University of Nebraska offers a master degree in general engineering that is an option for the student. In addition, several of the employers that hire engineers will also hire applied mathematicians and scientists. These individuals are wanted for their analytical skills and problem solving abilities.
- (3) Students who struggle with calculus may choose to pursue a degree in engineering technology at either SDSU or the University of Nebraska/Omaha (UNO).

**WSC General Objectives:** To prepare students to accept the privileges, duties, and responsibilities of citizens in a democracy; to develop moral and ethical values; to encourage a well-integrated personality and behavior practices which are consistent, tolerant, cooperative, and stable; to encourage creative ability; to develop aesthetic judgments; to promote the competence in and understanding of fields of knowledge which are required of educated people, especially of teachers.

**Objectives for Pre-Professional Programs:** To provide competent and appropriate preparatory education for those students who intend to pursue a degree program in a specialized professional area not offered for completion at Wayne State College; to make available for students who do not desire to complete a Wayne State College degree program, a competent educational basis for limited vocational pursuits; and to incorporate within the pre-professional preparation, areas of study which tend to extend the professional person's general knowledge and appreciation.

**Objectives for Pre-Engineering:** The fundamental goal of the Pre-Engineering program is to deliver a well-articulated program of study allowing students to transfer to an engineering school. To this end, pre-engineering studies consist of an inter-disciplinary core of course work in the humanities and social sciences, communications, mathematics, physics, chemistry, and applied sciences.

**Framework Option 1:** The basis for this option is an inter-disciplinary core of coursework in the humanities and social sciences, communications, mathematics, physics, chemistry, and engineering sciences. This core is for students wishing to pursue studies in aerospace, agricultural, architectural, bio-systems, chemical, civil, computer, construction, electrical, industrial, materials, mechanical, or metallurgical engineering. This list is not meant to preclude other disciplines. Due to the variations in needs within these disciplines, the time spent at WSC by one student may vary from the time spent by another. Detailed programs of study will be created for each student participating in this option of the pre-engineering program. Table 1 describes a possible course of study for General Engineering. Refer to attachments for suggested programs of study by discipline and engineering college.

**Framework Option 2:** Under this option students would pursue a WSC degree in applied mathematics, chemistry, or interdisciplinary studies (mathematics and physics). The program of study incorporates the two years of pre-engineering studies from Option 1 and additional courses selected from chemistry, mathematics, and physics. Table 2 and Table 3 show pre-engineering studies incorporated with applied mathematics.

**Framework Option 3:** This option leads to a degree in engineering technology and is intended for students who struggle with Option 1. The mathematics and physics requirements would be lessened. Close communications between the student and receiving institution is mandatory. Both SDSU and UNO, have good engineering technology programs.

## Possible Program of Study for General Engineering

<b>Semester 1</b>		<b>Semester 2</b>	
PHY 115 Professionalism in Science	2	MAT 240 Calculus II	5
MAT 140 Calculus I	5	CHE 107 General Chemistry II	4
CHE 106 General Chemistry I	4	PHY 301 & 321 University Physics I & Lab (Calc-Based)	5
ENG 102 Composition Skills I	3	CNA 100 Principles of Human Comm	3
Social Science Elective <sup>1</sup>	3		
<b>Total</b>	<b>17</b>	<b>Total</b>	<b>17</b>
<b>Semester 3</b>		<b>Semester 4</b>	
MAT 250 Differential Equations	3	MAT 340 Calculus III	4
PHY 302 & 322 University Physics II & Lab (Calc-Based)	5	PHY 215 Applied Dynamics	3
PHY 214 Applied Statics	3	Humanities/Social Science Elective	3
CSC 150 Programming Fundamentals I	3	ENGL 2070 <sup>2</sup> Technical Communications	3
Humanities/Social Science Elective	3	Science Elective	3
PED 103 Lifestyles Assessment	2	PED 203 Lifestyles Management	1
<b>Total</b>	<b>19</b>	<b>Total</b>	<b>17</b>

Table 1

<sup>1</sup> Studies in the humanities and social sciences serve not only to meet the objectives of a broad education but also to meet the objectives of the engineering profession. Therefore, studies in the humanities and social sciences must be planned to reflect a rationale or fulfill an objective appropriate to the engineering profession as well as Wayne State Colleges and the receiving engineering college's objectives. To satisfy this requirement, the courses must provide both breadth and depth, and not limited to a selection of unrelated introductory courses. Such course work must meet the generally accepted definitions that humanities are the branches of knowledge concerned with man and his culture, while social sciences are the studies of individual relationships in and to society. Examples of qualifying subjects are, philosophy, religion, history, literature, fine arts, sociology, psychology, political science, anthropology, economics, and foreign languages other than English or the student's native language. Subjects such as accounting, management, finance, personnel administration, personal economics, and military training do not fulfill the desired objectives of the humanities and social sciences.

<sup>2</sup> ENGL 2070 Technical Communication is offered through Northeast Community College by distance education.

## Possible Program of Study for General Engineering/Applied Mathematics

Plan A<sup>3</sup>

<b>Semester 1</b> PHY 115 Professionalism in Science 2 MAT 140 Calculus I 5 CHE 106 General Chemistry I 4 ENG 102 Composition Skills I 3 Social Science Elective <sup>4</sup> 3 <b>Total</b> <b>17</b>	<b>Semester 2</b> MAT 240 Calculus II 5 MAT 270 Foundations of Mathematics 3 CHE 107 General Chemistry II 4 PHY 301 & 321 University Physics I & Lab (Calc-Based) 5 <b>Total</b> <b>17</b>
<b>Semester 3</b> MAT 250 Differential Equations 3 PHY 302 & 322 University Physics II & Lab (Calc-Based) 5 PHY 214 Applied Statics 3 CSC 150 Programming Fundamentals I 3 Humanities/Social Science Elective 3 PED 103 Lifestyles Assessment 2 <b>Total</b> <b>19</b>	<b>Semester 4</b> MAT 340 Calculus III 4 PHY 215 Applied Dynamics 3 Humanities/Social Science Elective 3 ENGL 2070 <sup>5</sup> Technical Communications 3 MAT 305 Discrete Mathematics 3 PED 203 Lifestyles Management 1 <b>Total</b> <b>17</b>
<b>Semester 5</b> MAT 400 Real Analysis I 3	<b>Semester 6</b> MAT 405 Mathematical Physics 3 CNA 100 Principles of Human Comm 3
<b>Semester 7</b> MAT 350 Linear Algebra 3 MAT 410 Probability & Statistics I 3	<b>Semester 8</b> MAT 415 Probability & Statistics II 3 MAT 440 Numerical Analysis 3 MAT 460 Senior Seminar 3

Table 2

<sup>3</sup> Upper level mathematics courses are on a two-year cycle. Plan A refers to the cycle that began Fall 2005

<sup>4</sup> Studies in the humanities and social sciences serve not only to meet the objectives of a broad education but also to meet the objectives of the engineering profession. Therefore, studies in the humanities and social sciences must be planned to reflect a rationale or fulfill an objective appropriate to the engineering profession as well as Wayne State Colleges and the receiving engineering college's objectives. To satisfy this requirement, the courses must provide both breadth and depth, and not limited to a selection of unrelated introductory courses. Such course work must meet the generally accepted definitions that humanities are the branches of knowledge concerned with man and his culture, while social sciences are the studies of individual relationships in and to society. Examples of qualifying subjects are, philosophy, religion, history, literature, fine arts, sociology, psychology, political science, anthropology, economics, and foreign languages other than English or the student's native language. Subjects such as accounting, management, finance, personnel administration, personal economics, and military training do not fulfill the desired objectives of the humanities and social sciences.

<sup>5</sup> ENGL 2070 Technical Communication is offered through Northeast Community College by distance education.

## Possible Program of Study for General Engineering/Applied Mathematics

Plan B<sup>6</sup>

<b>Semester 1</b> PHY 115 Professionalism in Science 2 MAT 140 Calculus I 5 CHE 106 General Chemistry I 4 ENG 102 Composition Skills I 3 Social Science Elective <sup>7</sup> 3 <b>Total</b> <b>17</b>	<b>Semester 2</b> MAT 240 Calculus II 5 MAT 270 Foundations of Mathematics 3 CHE 107 General Chemistry II 4 PHY 301 & 321 University Physics I & Lab (Calc-Based) 5 <b>Total</b> <b>17</b>
<b>Semester 3</b> MAT 250 Differential Equations 3 PHY 302 & 322 University Physics II & Lab (Calc-Based) 5 PHY 214 Applied Statics 3 CSC 150 Programming Fundamentals I 3 Humanities/Social Science Elective 3 PED 103 Lifestyles Assessment 2 <b>Total</b> <b>19</b>	<b>Semester 4</b> MAT 340 Calculus III 4 PHY 215 Applied Dynamics 3 Humanities/Social Science Elective 3 ENGL 2070 <sup>8</sup> Technical Communications 3 Science Elective 3 PED 203 Lifestyles Management 1 <b>Total</b> <b>17</b>
<b>Semester 5</b> MAT 350 Linear Algebra 3 MAT 410 Probability & Statistics I 3	<b>Semester 6</b> CNA 100 Principles of Human Comm 3 MAT 305 Discrete Mathematics 3 MAT 415 Probability & Statistics II 3 MAT 440 Numerical Analysis 3
<b>Semester 7</b> MAT 400 Real Analysis I 3	<b>Semester 8</b> MAT 405 Mathematical Physics 3 MAT 460 Senior Seminar 3

Table 3

<sup>6</sup> Upper level mathematics courses are on a two-year cycle. Plan B refers to the cycle that began Fall 2006

<sup>7</sup> Studies in the humanities and social sciences serve not only to meet the objectives of a broad education but also to meet the objectives of the engineering profession. Therefore, studies in the humanities and social sciences must be planned to reflect a rationale or fulfill an objective appropriate to the engineering profession as well as Wayne State Colleges and the receiving engineering college's objectives. To satisfy this requirement, the courses must provide both breadth and depth, and not limited to a selection of unrelated introductory courses. Such course work must meet the generally accepted definitions that humanities are the branches of knowledge concerned with man and his culture, while social sciences are the studies of individual relationships in and to society. Examples of qualifying subjects are, philosophy, religion, history, literature, fine arts, sociology, psychology, political science, anthropology, economics, and foreign languages other than English or the student's native language. Subjects such as accounting, management, finance, personnel administration, personal economics, and military training do not fulfill the desired objectives of the humanities and social sciences.

<sup>8</sup> ENGL 2070 Technical Communication is offered through Northeast Community College by distance education.

**Accreditation:** Students wishing to receive a professional engineering license within the United States must graduate from a program of study accredited by the Accreditation Board for Engineering and Technology (ABET). ABET does not accredit two year programs or pre-professional programs, but it does suggest that schools with four-year programs work closely with and articulate with schools that have such programs.

WSC shall adhere to ABET's *Criteria for Accrediting Engineering Programs* (effective for evaluations during the 2006-2007 accreditation cycle). Visit [www.abet.org](http://www.abet.org) for more information.

## South Dakota School of Mines and Technology (SDSM&T)

WSC has a formal written articulation agreement with South Dakota School of Mines and Technology (SDSM&T). The SDSM&T contact for this program is Karen Whitehead. This agreement currently includes program descriptions for chemical, civil, computer, electrical, industrial, mechanical, and metallurgical engineering. The number of areas may be expanded in the future. Upon successful completion<sup>9</sup> of his/her program, the student will be academically prepared to start a third year at SDSM&T.

Each participating student will be paired with a mentor from SDSM&T as well as a WSC advisor. Each participant will also be required to take the South Dakota Regents Exam during his/her first semester at SDSM&T. At present this exam is the CAAP test by ACT.

Studies in the Humanities and Social Sciences serve not only to meet the objectives of a broad education but also to meet the objectives of the engineering profession. Therefore, studies in the Humanities and Social Sciences must be planned to reflect a rationale or fulfill an objective appropriate to the engineering profession as well as Wayne State College and SDSM&T's objectives. To satisfy this requirement, the courses must provide both breadth and depth, and not be limited to a selection of unrelated introductory courses. Such course work must meet the generally accepted definitions that humanities are the branches of knowledge concerned with man and his culture, while social sciences are the studies of individual relationships in and to society. Examples of qualifying subjects are, philosophy, religion, history, literature, fine arts, sociology, psychology, political science, anthropology, economics, and foreign languages other than English or the student's native language. Subjects such as accounting, management, finance, personnel administration, personal economics, and military training do not fulfill the desired objectives of the humanities and social sciences.

SDSM&T programs must meet the goals determined by the South Dakota Board of Regents. Students must take courses that meet the purpose of the goals. These goals are:

- 1) Students will write effectively and responsibly and understand and interpret the written expression of others. ENG 100 and/or Technical Communication will meet this goal.
- 2) Students will communicate effectively and responsibly through speaking and listening. An Oral Communication course will meet this goal.

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<sup>9</sup> Successful completion is defined by SDSM&T.

3) Students will understand the structures and possibilities of the human community through the study of the Social Sciences. Students are required to take a minimum of six credit hours and cover at least two of the following disciplines: \*Anthropology, Economics, Geography, History, Political Science, Psychology, and Sociology. Courses are to collectively require students to:

- ◆ apply the basic concepts, terminology, and theories of the social sciences;
- ◆ examine the origin and evolution of human institutions;
- ◆ examine human behavior in different spatial, temporal, cultural, and/or institutional contexts;
- ◆ examine the allocation of human or natural resources within societies; and
- ◆ apply social science concepts and theories to contemporary issues in a responsible manner.

WSC Qualifying courses include:

*SOC 110 Introduction to Anthropology	*HIS 180/181 The American Experience I & II
ECO 202/302 Principles of the National Economic System/Intermediate Macroeconomics	POS 100 American National Government
ECO 203/303 Principles of the Market System/Intermediate Microeconomics	POS 300 State and Local Politics
*GEO 120 World Regional Geography	PSY 101 General Psychology
*GEO 300 Human Geography	PSY 316 Social Psychology
	SOC 101 Introduction to Sociology
	SOC 220 Social Problems
	SOC 415 The Family

\* Courses also meet the cultural diversity requirements of Goal 7.

4) Students will understand and appreciate the human experience through the Arts and the Humanities. Students are required to take a minimum of six credit hours and cover at least two of the following disciplines: History, Literature, Philosophy, Religion, non-English Languages, Art, Music, and Theatre. Courses are to collectively require students to:

- ◆ develop knowledge of the range of values, beliefs, and ideas embodied in the human experience;
- ◆ understand and interpret basic concepts and theories of the Humanities and the Arts; and
- ◆ develop creative sensitivity and aesthetics understanding.

Or

- ◆ understand and interpret formal and stylistic elements of the Literary or Fine Arts.

Or

- ◆ demonstrate foundational competency in reading, writing, and speaking a non-English language.

WSC Qualifying courses include:

ART 110 Drawing Fundamentals	*GER 110/120 Elem. German I/II
ART 271 Sculpture I	*SPA 110/120 Elementary Spanish I/II
ART 330 Graphic Design I	HIS 120 World History
ART 344/345 Art History I/II	HIS 170/171 World Civilization I/II
*ENG 150 Topics in Literature	MUS 100 Introduction to Music
*ENG 361/362 Amer.Literature I/II	PHI 101 Introduction to Philosophy
*ENG 371/372 British Literature I/II	PHI 130 Philosophy of Religion
*FRE 110/120 Elementary French I/II	

\* Courses also meet the cultural diversity requirements of Goal 7.

- Students will understand and apply fundamental mathematical processes and reasoning. Courses will collectively require students to:
  - ◆ use mathematical symbolism and mathematical structure to model and solve problems;
  - ◆ communicate in mathematical terms; and
  - ◆ order and analyze quantitative information to make judgments of real world situations.
- Students will understand the fundamental principles of the natural sciences and apply scientific methods of inquiry to investigate the natural world. Courses will collectively require students to:
  - ◆ participate in scientific inquiry in a laboratory experience;
  - ◆ gather and critically evaluate data;
  - ◆ demonstrate an understanding of the fundamental principles of the natural sciences;
  - ◆ explore the development of ideas through time; and
  - ◆ understand the implications science has for the modern world.
- Students will understand and be sensitive to cultural diversity so that they are prepared to live and work in an international and multicultural environment. Courses will collectively require students to:

- ◆ explore global issues and/or diverse philosophical, ethical, and religious views;
- ◆ explore social and aesthetic values of different cultures; and
- ◆ examine the contributions of different cultures from a historical perspective.

Six credit hours are to be selected from WSC courses listed with an \*, in the Social Sciences and Humanities (Goals 3 and 4).

<b>SDSM&amp;T Chemical Engineering</b>		
<b>Course #</b>	<b>Course Names</b>	<b>Credits</b>
	Program Total	69
PHY 115	Professionalism in Science	2
MAT 140	Calculus I	5
CHE 106	General Chemistry I (Includes Lab)	4
ENG 102	Composition Skills I	3
	Humanities/Social Science Elective <sup>10</sup>	3
Semester I	Total	17
MAT 240	Calculus II	5
PHY 301	University Physics I	4
PHY 321	and Lab	1
CHE 107	General Chemistry II (Includes Lab)	4
	Humanities/Social Science Elective	3
Semester II	Total	17
MAT 250	Differential Equations	3
PHY 302	University Physics II	4
PHY 322	and Lab	1
CHE 314	Organic Chemistry I (Includes Lab)	4
PED 103	Lifestyle Assessment (PE)	2
	Humanities/Social Science Elective	3
Semester III	Total	17
MAT 340	Calculus III	4
CHE 315	Organic Chemistry II (Includes Lab)	4
PHY 345	Thermodynamics	3
ENGL 2070	Technical Communication <sup>11</sup>	3
PED 203	Lifestyles Management (PE)	1
	Humanities/Social Science Elective	3
Semester IV	Total	18

<sup>10</sup> Studies in the humanities and social sciences serve not only to meet the objectives of a broad education but also to meet the objectives of the engineering profession. Therefore, studies in the humanities and social sciences must be planned to reflect a rationale or fulfill an objective appropriate to the engineering profession as well as Wayne State Colleges and the receiving engineering college's objectives. To satisfy this requirement, the courses must provide both breadth and depth, and not limited to a selection of unrelated introductory courses. Such course work must meet the generally accepted definitions that humanities are the branches of knowledge concerned with man and his culture, while social sciences are the studies of individual relationships in and to society. Examples of qualifying subjects are, philosophy, religion, history, literature, fine arts, sociology, psychology, political science, anthropology, economics, and foreign languages other than English or the student's native language. Subjects such as accounting, management, finance, personnel administration, personal economics, and military training do not fulfill the desired objectives of the humanities and social sciences.

<sup>11</sup> ENGL 2070 Technical Communication is offered through Northeast Community College by distance education.

<b>SDSM&amp;T Civil Engineering</b>		
<b>Course #</b>	<b>Course Names</b>	<b>Credits</b>
	Program Total	70
PHY 115	Professionalism in Science	2
MAT 140	Calculus I	5
CHE 106	General Chemistry I (Includes Lab)	4
ENG 102	Composition Skills I	3
	Humanities/Social Science Elective <sup>12</sup>	3
Semester I	Total	17
MAT 240	Calculus II	5
PHY 301	University Physics I	4
PHY 321	and Lab	1
CNA 100	Principles of Human Communication	3
CHE 107	General Chemistry II (Includes Lab)	4
Semester II	Total	17
MAT 250	Differential Equations	3
PHY 302	University Physics II	4
PHY 322	and Lab	1
CSC 150	Programming Fundamentals I	3
PHY 214	Applied Statics	3
PED 103	Lifestyle Assessment	2
	Humanities/Social Science Elective	3
Semester III	Total	19
MAT 340	Calculus III	4
PHY 215	Applied Dynamics	3
PHY 311	Thermodynamics	3
ENGL 2070	Technical Communication <sup>13</sup>	3
PED 203	Lifestyles Management (PE)	1
	Humanities/Social Science Elective	3
Semester IV	Total	17

<sup>12</sup> Studies in the humanities and social sciences serve not only to meet the objectives of a broad education but also to meet the objectives of the engineering profession. Therefore, studies in the humanities and social sciences must be planned to reflect a rationale or fulfill an objective appropriate to the engineering profession as well as Wayne State Colleges and the receiving engineering college's objectives. To satisfy this requirement, the courses must provide both breadth and depth, and not limited to a selection of unrelated introductory courses. Such course work must meet the generally accepted definitions that humanities are the branches of knowledge concerned with man and his culture, while social sciences are the studies of individual relationships in and to society. Examples of qualifying subjects are, philosophy, religion, history, literature, fine arts, sociology, psychology, political science, anthropology, economics, and foreign languages other than English or the student's native language. Subjects such as accounting, management, finance, personnel administration, personal economics, and military training do not fulfill the desired objectives of the humanities and social sciences.

<sup>13</sup> ENGL 2070 Technical Communication is offered through Northeast Community College by distance education.

<b>SDSM&amp;T Computer Engineering</b>		
<b>Course #</b>	<b>Course Names</b>	<b>Credits</b>
	Program Total	69
PHY 115	Professionalism in Science	2
MAT 140	Calculus I	5
CHE 106	General Chemistry I (Includes Lab)	4
ENG 102	Composition Skills I	3
	Humanities/Social Science Elective <sup>14</sup>	3
Semester I	Total	17
MAT 240	Calculus II	5
PHY 301	University Physics I	4
PHY321	and Lab	1
CSC 150	Programming Fundamentals I	3
	Humanities/Social Science Elective	3
Semester II	Total	16
MAT 250	Differential Equations	3
MAT 410	Probability & Statistics I	3
PHY 214	Applied Statics	3
PHY 302	University Physics II	4
PHY 322	and Lab	1
CSC 160	Fundamentals of Programming II	3
Semester III	Total	17
MAT 305	Discrete Mathematics	3
MAT 340	Calculus III	4
PHY 215	Applied Dynamics	3
PHY 326	Electronics	3
ENGL 2070	Technical Communication <sup>15</sup>	3
PED 103	Lifestyle Assessment (PE)	1
PED 203	Lifestyles Management (PE)	2
Semester IV	Total	19

<sup>14</sup> Studies in the humanities and social sciences serve not only to meet the objectives of a broad education but also to meet the objectives of the engineering profession. Therefore, studies in the humanities and social sciences must be planned to reflect a rationale or fulfill an objective appropriate to the engineering profession as well as Wayne State Colleges and the receiving engineering college's objectives. To satisfy this requirement, the courses must provide both breadth and depth, and not limited to a selection of unrelated introductory courses. Such course work must meet the generally accepted definitions that humanities are the branches of knowledge concerned with man and his culture, while social sciences are the studies of individual relationships in and to society. Examples of qualifying subjects are, philosophy, religion, history, literature, fine arts, sociology, psychology, political science, anthropology, economics, and foreign languages other than English or the student's native language. Subjects such as accounting, management, finance, personnel administration, personal economics, and military training do not fulfill the desired objectives of the humanities and social sciences.

<sup>15</sup> ENGL 2070 Technical Communication is offered through Northeast Community College by distance education.

<b>SDSM&amp;T Electrical Engineering</b>		
<b>Course #</b>	<b>Course Names</b>	<b>Credits</b>
	Program Total	69
PHY 115	Professionalism in Science	2
MAT 140	Calculus I	5
CHE 106	General Chemistry I (Includes Lab)	4
ENG 102	Composition Skills I	3
	Humanities/Social Science Elective <sup>16</sup>	3
Semester I	Total	17
MAT 240	Calculus II	5
PHY 301	University Physics I	4
PHY 321	and Lab	1
CNA 100	Principles of Human Communication	3
	Humanities/Social Science Elective	3
Semester II	Total	16
MAT 250	Differential Equations	3
PHY 302	University Physics II	4
PHY 322	and Lab	1
CSC 150	Programming Fundamentals I	3
PHY 214	Applied Statics	3
PED 103	Lifestyle Assessment	2
	Humanities/Social Science Elective	3
Semester III	Total	19
MAT 340	Calculus III	4
PHY 215	Applied Dynamics	3
PHY 326	Electronics	3
ENGL 2070	Technical Communication <sup>17</sup>	3
PED 203	Lifestyles Management (PE)	1
	Humanities/Social Science Elective	3
Semester IV	Total	17

<sup>16</sup> Studies in the humanities and social sciences serve not only to meet the objectives of a broad education but also to meet the objectives of the engineering profession. Therefore, studies in the humanities and social sciences must be planned to reflect a rationale or fulfill an objective appropriate to the engineering profession as well as Wayne State Colleges and the receiving engineering college's objectives. To satisfy this requirement, the courses must provide both breadth and depth, and not limited to a selection of unrelated introductory courses. Such course work must meet the generally accepted definitions that humanities are the branches of knowledge concerned with man and his culture, while social sciences are the studies of individual relationships in and to society. Examples of qualifying subjects are, philosophy, religion, history, literature, fine arts, sociology, psychology, political science, anthropology, economics, and foreign languages other than English or the student's native language. Subjects such as accounting, management, finance, personnel administration, personal economics, and military training do not fulfill the desired objectives of the humanities and social sciences.

<sup>17</sup> ENGL 2070 Technical Communication is offered through Northeast Community College by distance education.

<b>SDSM&amp;T Industrial Engineering</b>		
<b>Course #</b>	<b>Course Names</b>	<b>Credits</b>
	Program Total	69
PHY 115	Professionalism in Science	2
MAT 140	Calculus I	5
CHE 106	General Chemistry I (Includes Lab)	4
ENG 102	Composition Skills I	3
	Humanities/Social Science Elective <sup>18</sup>	3
Semester I	Total	17
MAT 240	Calculus II	5
PHY 301	University Physics I	4
PHY 321	and Lab	1
PSY 101	General Psychology	3
	Humanities/Social Science Elective	3
Semester II	Total	16
MAT 250	Differential Equations	3
MAT 410	Probabilities & Statistics I	3
PHY 302	University Physics II	4
PHY 322	and Lab	1
PHY 214	Applied Statics	3
PED 103	Lifestyle Assessment	2
	Mathematics/Science Elective	3
Semester III	Total	19
MAT 340	Calculus III	4
PHY 215	Applied Dynamics	3
BUS 240	Accounting I	3
ECO 202	Principles of National Economic System	3
ENGL 2070	Technical Communication <sup>19</sup>	3
PED 203	Lifestyles Management (PE)	1
Semester IV	Total	17

<sup>18</sup> Studies in the humanities and social sciences serve not only to meet the objectives of a broad education but also to meet the objectives of the engineering profession. Therefore, studies in the humanities and social sciences must be planned to reflect a rationale or fulfill an objective appropriate to the engineering profession as well as Wayne State Colleges and the receiving engineering college's objectives. To satisfy this requirement, the courses must provide both breadth and depth, and not limited to a selection of unrelated introductory courses. Such course work must meet the generally accepted definitions that humanities are the branches of knowledge concerned with man and his culture, while social sciences are the studies of individual relationships in and to society. Examples of qualifying subjects are, philosophy, religion, history, literature, fine arts, sociology, psychology, political science, anthropology, economics, and foreign languages other than English or the student's native language. Subjects such as accounting, management, finance, personnel administration, personal economics, and military training do not fulfill the desired objectives of the humanities and social sciences.

<sup>19</sup> ENGL 2070 Technical Communication is offered through Northeast Community College by distance education.

<b>SDSM&amp;T Mechanical Engineering</b>		
<b>Course #</b>	<b>Course Names</b>	<b>Credits</b>
	Program Total	69
PHY 115	Professionalism in Science	2
MAT 140	Calculus I	5
CHE 106	General Chemistry I (Includes Lab)	4
ENG 102	Composition Skills I	3
	Humanities/Social Science Elective <sup>20</sup>	3
Semester I	Total	17
MAT 240	Calculus II	5
PHY 301	University Physics I	4
PHY 321	and Lab	1
CNA 100	Principles of Human Communication	3
	Humanities/Social Science Elective	3
Semester II	Total	16
MAT 250	Differential Equations	3
PHY 302	University Physics II	4
PHY 322	and Lab	1
CSC 150	Programming Fundamentals I	3
PHY 214	Applied Statics	3
PED 103	Lifestyle Assessment	2
	Humanities/Social Science Elective	3
Semester III	Total	19
MAT 340	Calculus III	4
PHY 215	Applied Dynamics	3
PHY 345	Thermodynamics	3
ENGL 2070	Technical Communication <sup>21</sup>	3
PED 203	Lifestyles Management (PE)	1
	Humanities/Social Science Elective	3
Semester IV	Total	17

<sup>20</sup> Studies in the humanities and social sciences serve not only to meet the objectives of a broad education but also to meet the objectives of the engineering profession. Therefore, studies in the humanities and social sciences must be planned to reflect a rationale or fulfill an objective appropriate to the engineering profession as well as Wayne State Colleges and the receiving engineering college's objectives. To satisfy this requirement, the courses must provide both breadth and depth, and not limited to a selection of unrelated introductory courses. Such course work must meet the generally accepted definitions that humanities are the branches of knowledge concerned with man and his culture, while social sciences are the studies of individual relationships in and to society. Examples of qualifying subjects are, philosophy, religion, history, literature, fine arts, sociology, psychology, political science, anthropology, economics, and foreign languages other than English or the student's native language. Subjects such as accounting, management, finance, personnel administration, personal economics, and military training do not fulfill the desired objectives of the humanities and social sciences.

<sup>21</sup> ENGL 2070 Technical Communication is offered through Northeast Community College by distance education.

<b>SDSM&amp;T Metallurgical Engineering</b>		
<b>Course #</b>	<b>Course Names</b>	<b>Credits</b>
	Program Total	70
PHY 115	Professionalism in Science	2
MAT 140	Calculus I	5
CHE 106	General Chemistry I (Includes Lab)	4
ENG 102	Composition Skills I	3
	Humanities/Social Science Elective <sup>22</sup>	3
Semester I	Total	17
MAT 240	Calculus II	5
PHY 301	University Physics I	4
PHY 321	and Lab	1
CHE 107	General Chemistry II (Includes Lab)	4
CNA 100	Principles of Human Communication	3
Semester II	Total	17
MAT 250	Differential Equations	3
PHY 302	University Physics II	4
PHY 322	and Lab	1
CSC 150	Programming Fundamentals I	3
PHY 214	Applied Statics	3
PED 103	Lifestyle Assessment	2
	Humanities/Social Science Elective	3
Semester III	Total	19
MAT 340	Calculus III	4
PHY 215	Applied Dynamics	3
PHY 345	Thermodynamics	3
ENGL 2070	Technical Communication <sup>23</sup>	3
PED 203	Lifestyles Management (PE)	1
	Humanities/Social Science Elective	3
Semester IV	Total	17

<sup>22</sup> Studies in the humanities and social sciences serve not only to meet the objectives of a broad education but also to meet the objectives of the engineering profession. Therefore, studies in the humanities and social sciences must be planned to reflect a rationale or fulfill an objective appropriate to the engineering profession as well as Wayne State Colleges and the receiving engineering college's objectives. To satisfy this requirement, the courses must provide both breadth and depth, and not limited to a selection of unrelated introductory courses. Such course work must meet the generally accepted definitions that humanities are the branches of knowledge concerned with man and his culture, while social sciences are the studies of individual relationships in and to society. Examples of qualifying subjects are, philosophy, religion, history, literature, fine arts, sociology, psychology, political science, anthropology, economics, and foreign languages other than English or the student's native language. Subjects such as accounting, management, finance, personnel administration, personal economics, and military training do not fulfill the desired objectives of the humanities and social sciences.

<sup>23</sup> ENGL 2070 Technical Communication is offered through Northeast Community College by distance education.

## South Dakota State University (SDSU)

WSC has a formal written articulation agreement with South Dakota State University (SDSU). The SDSU contact person is Rich Reid. This agreement includes program descriptions for agricultural and bio-systems, civil and environmental, construction management, electrical, and mechanical engineering. Upon successful completion<sup>24</sup> of his/her program, the student will be academically prepared to start a third year at SDSU.

Each participating student will be paired with a mentor from SDSU as well as a WSC advisor. Each participant will also be required to take the South Dakota Regents Exam during his/her first semester at SDSU. At present this exam is the CAAP test by ACT.

Studies in the humanities and social sciences serve not only to meet the objectives of a broad education but also to meet the objectives of the engineering profession. Therefore, studies in the humanities and social sciences must be planned to reflect a rationale or fulfill an objective appropriate to the engineering profession as well as Wayne State College and SDSU's objectives. To satisfy this requirement, the courses must provide both breadth and depth, and not be limited to a selection of unrelated introductory courses. Such course work must meet the generally accepted definitions that humanities are the branches of knowledge concerned with man and his culture, while social sciences are the studies of individual relationships in and to society. Examples of qualifying subjects are, philosophy, religion, history, literature, fine arts, sociology, psychology, political science, anthropology, economics, and foreign languages other than English or the student's native language. Subjects such as accounting, management, finance, personnel administration, personal economics, and military training do not fulfill the desired objectives of the humanities and social sciences.

SDSU programs must meet the goals determined by the South Dakota Board of Regents. Students must take courses that meet the purpose of the goals. These goals are:

- 1) Students will write effectively and responsibly and understand and interpret the written expression of others. ENG 100 and/or Technical Communication will meet this goal.
- 2) Students will communicate effectively and responsibly through speaking and listening. An Oral Communication course will meet this goal.
- 3) Students will understand the structures and possibilities of the human community through the study of the Social Sciences. Students are

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<sup>24</sup> Successful completion is to be defined by SDSU.

required to take a minimum of six credit hours and cover at least two of the following disciplines: \*Anthropology, Economics, Geography, History, Political Science, Psychology, and Sociology. Courses are to collectively require students to:

- ◆ apply the basic concepts, terminology, and theories of the social sciences;
- ◆ examine the origin and evolution of human institutions;
- ◆ examine human behavior in different spatial, temporal, cultural, and/or institutional contexts;
- ◆ examine the allocation of human or natural resources within societies; and
- ◆ apply social science concepts and theories to contemporary issues in a responsible manner.

WSC Qualifying courses include:

(SDSU has a broader course offering than SDSM&T. Additional courses will be added to the following list in the future.)

*SOC 110 Introduction to Anthropology	*HIS 180/181 The American Experience I & II
ECO 202/302 Principles of the National Economic System/ Intermediate Macroeconomics	POS 100 American National Government
ECO 203/303 Principles of the Market System/Intermediate Microeconomics	POS 300 State and Local Politics
*GEO 120 World Regional Geography	PSY 101 General Psychology
*GEO 300 Human Geography	PSY 316 Social Psychology
	SOC 101 Introduction to Sociology
	SOC 220 Social Problems
	SOC 415 The Family

\* Courses also meet the cultural diversity requirements of Goal 7.

- 4) Students will understand and appreciate the human experience through the Arts and the Humanities. Students are required to take a minimum of six credit hours and cover at least two of the following disciplines: History, Literature, Philosophy, Religion, non-English Languages, Art, Music, and Theatre. Courses are to collectively require students to:

- ◆ develop knowledge of the range of values, beliefs, and ideas embodied in the human experience;

- ◆ understand and interpret basic concepts and theories of the Humanities and the Arts; and
- ◆ develop creative sensitivity and aesthetics understanding.

Or

- ◆ understand and interpret formal and stylistic elements of the Literary or Fine Arts.

Or

- ◆ demonstrate foundational competency in reading, writing, and speaking a non-English language.

WSC Qualifying courses include:

ART 110 Drawing Fundamentals	*GER 110/120 Elem. German I/II
ART 271 Sculpture I	*SPA 110/120 Elementary Spanish I/II
ART 330 Graphic Design I	HIS 120 World History
ART 344/345 Art History I/II	HIS 170/171 World Civilization I/II
*ENG 150 Topics in Literature	MUS 100 Introduction to Music
*ENG 361/362 Amer.Literature I/II	PHI 101 Introduction to Philosophy
*ENG 371/372 British Literature I/II	PHI 130 Philosophy of Religion
*FRE 110/120 Elementary French I/II	

\* Courses also meet the cultural diversity requirements of Goal 7.

- 5) Students will understand and apply fundamental mathematical processes and reasoning. Courses will collectively require students to:
  - ◆ use mathematical symbolism and mathematical structure to model and solve problems;
  - ◆ communicate in mathematical terms; and
  - ◆ order and analyze quantitative information to make judgments of real world situations.
- 6) Students will understand the fundamental principles of the natural sciences and apply scientific methods of inquiry to investigate the natural world. Courses will collectively require students to:
  - ◆ participate in scientific inquiry in a laboratory experience;
  - ◆ gather and critically evaluate data;
  - ◆ demonstrate an understanding of the fundamental principles of the natural sciences;

- ◆ explore the development of ideas through time; and
  - ◆ understand the implications science has for the modern world.
- 7) Students will understand and be sensitive to cultural diversity so that they are prepared to live and work in an international and multicultural environment. Courses will collectively require students to:
- ◆ explore global issues and/or diverse philosophical, ethical, and religious views;
  - ◆ explore social and aesthetic values of different cultures; and
  - ◆ examine the contributions of different cultures from a historical perspective.

Six credit hours are to be selected from WSC courses listed with an \*, in the Social Sciences and Humanities (Goals 3 and 4).

<b>SDSU Agricultural &amp; Biosystems Engineering</b>		
<b>Course #</b>	<b>Course Names</b>	<b>Credits</b>
	Program Total	70
PHY 115	Professionalism in Science	2
MAT 140	Calculus I	5
CHE 106	General Chemistry I (Includes Lab)	4
ENG 102	Composition Skills I	3
	Humanities/Social Science Elective <sup>25</sup>	3
Semester I	Total	17
MAT 240	Calculus II	5
PHY 301	University Physics I	4
PHY 321	and Lab	1
CNA 100	Principles of Human Communication	3
CHE 107	General Chemistry II (Includes Lab)	4
CHE 208	or Intro to Organic Chem (Includes Lab)	4
Semester II	Total	17
MAT 250	Differential Equations	3
PHY 302	University Physics II	4
PHY 322	and Lab	1
CSC 150	Programming Fundamentals I	3
PHY 214	Applied Statics	3
PED 103	Lifestyle Assessment	2
	Humanities/Social Science Elective	3
Semester III	Total	19
MAT 340	Calculus III	4
PHY 215	Applied Dynamics	3
PHY 326	Electronics	3
ENGL 2070	Technical Communication <sup>26</sup>	3
PED 203	Lifestyles Management (PE)	1
	Humanities/Social Science Elective	3
Semester IV	Total	17

<sup>25</sup> Studies in the humanities and social sciences serve not only to meet the objectives of a broad education but also to meet the objectives of the engineering profession. Therefore, studies in the humanities and social sciences must be planned to reflect a rationale or fulfill an objective appropriate to the engineering profession as well as Wayne State Colleges and the receiving engineering college's objectives. To satisfy this requirement, the courses must provide both breadth and depth, and not limited to a selection of unrelated introductory courses. Such course work must meet the generally accepted definitions that humanities are the branches of knowledge concerned with man and his culture, while social sciences are the studies of individual relationships in and to society. Examples of qualifying subjects are, philosophy, religion, history, literature, fine arts, sociology, psychology, political science, anthropology, economics, and foreign languages other than English or the student's native language. Subjects such as accounting, management, finance, personnel administration, personal economics, and military training do not fulfill the desired objectives of the humanities and social sciences.

<sup>26</sup> ENGL 2070 Technical Communication is offered through Northeast Community College by distance education.

<b>SDSU Civil Engineering</b>		
<b>Course #</b>	<b>Course Names</b>	<b>Credits</b>
	Program Total	70
PHY 115	Professionalism in Science	2
MAT 140	Calculus I	5
CHE 106	General Chemistry I (Includes Lab)	4
ENG 102	Composition Skills I	3
	Humanities/Social Science Elective <sup>27</sup>	3
Semester I	Total	17
MAT 240	Calculus II	5
PHY 301	University Physics I	4
PHY 321	and Lab	1
CNA 100	Principles of Human Communication	3
CHE 107	General Chemistry II (Includes Lab)	4
CHE 208	or Intro to Organic Chem (Includes Lab)	4
Semester II	Total	17
MAT 250	Differential Equations	3
PHY 302	University Physics II	4
PHY 322	and Lab	1
CSC 150	Programming Fundamentals I	3
PHY 214	Applied Statics	3
PED 103	Lifestyle Assessment	2
	Humanities/Social Science Elective	3
Semester III	Total	19
MAT 340	Calculus III	4
PHY 215	Applied Dynamics	3
PHY 345	Thermodynamics	3
ENGL 2070	Technical Communication <sup>28</sup>	3
PED 203	Lifestyles Management (PE)	1
	Humanities/Social Science Elective	3
Semester IV	Total	17

<sup>27</sup> Studies in the humanities and social sciences serve not only to meet the objectives of a broad education but also to meet the objectives of the engineering profession. Therefore, studies in the humanities and social sciences must be planned to reflect a rationale or fulfill an objective appropriate to the engineering profession as well as Wayne State Colleges and the receiving engineering college's objectives. To satisfy this requirement, the courses must provide both breadth and depth, and not limited to a selection of unrelated introductory courses. Such course work must meet the generally accepted definitions that humanities are the branches of knowledge concerned with man and his culture, while social sciences are the studies of individual relationships in and to society. Examples of qualifying subjects are, philosophy, religion, history, literature, fine arts, sociology, psychology, political science, anthropology, economics, and foreign languages other than English or the student's native language. Subjects such as accounting, management, finance, personnel administration, personal economics, and military training do not fulfill the desired objectives of the humanities and social sciences.

<sup>28</sup> ENGL 2070 Technical Communication is offered through Northeast Community College by distance education.

<b>SDSU Computer Science</b>		
<b>Course #</b>	<b>Course Names</b>	<b>Credits</b>
	Program Total	69
PHY 115	Professionalism in Science	2
MAT 140	Calculus I	5
CSC 150	Programming Fundamentals I	3
ENG 102	Composition Skills I	3
	Humanities/Social Science Elective <sup>29</sup>	3
Semester I	Total	16
MAT 240	Calculus II	5
CSC 160	Programming Fundamentals II	3
CNA 100	Principles of Human Communication	3
	Natural Science Elective	3
	Humanities/Social Science Elective	3
Semester II	Total	17
MAT 180	Applied Probability & Statistics	3
CSC 310	Data Structures	3
CSC 340	Modern Programming Methods	3
PED 103	Lifestyle Assessment	2
	Natural Science Elective	3
	Humanities/Social Science Elective	3
Semester III	Total	17
MAT 305	Discrete Mathematics	3
CSC 320	Computer Organization	3
CSC 380	Advanced Operating Systems	3
ENGL 2070	Technical Communication <sup>30</sup>	3
PED 203	Lifestyles Management (PE)	1
	Humanities/Social Science Elective	3
	Natural Science Elective	3
Semester IV	Total	19

<sup>29</sup> Studies in the humanities and social sciences serve not only to meet the objectives of a broad education but also to meet the objectives of the engineering profession. Therefore, studies in the humanities and social sciences must be planned to reflect a rationale or fulfill an objective appropriate to the engineering profession as well as Wayne State Colleges and the receiving engineering college's objectives. To satisfy this requirement, the courses must provide both breadth and depth, and not limited to a selection of unrelated introductory courses. Such course work must meet the generally accepted definitions that humanities are the branches of knowledge concerned with man and his culture, while social sciences are the studies of individual relationships in and to society. Examples of qualifying subjects are, philosophy, religion, history, literature, fine arts, sociology, psychology, political science, anthropology, economics, and foreign languages other than English or the student's native language. Subjects such as accounting, management, finance, personnel administration, personal economics, and military training do not fulfill the desired objectives of the humanities and social sciences.

<sup>30</sup> ENGL 2070 Technical Communication is offered through Northeast Community College by distance education.

<b>SDSU Electrical Engineering</b>		
<b>Course #</b>	<b>Course Names</b>	<b>Credits</b>
	Program Total	70
PHY 115	Professionalism in Science	2
MAT 140	Calculus I	5
CHE 106	General Chemistry I (Includes Lab)	4
ENG 102	Composition Skills I	3
	Humanities/Social Science Elective <sup>31</sup>	3
Semester I	Total	17
MAT 240	Calculus II	5
PHY 301	University Physics I	4
PHY 321	and Lab	1
CNA 100	Principles of Human Communication	3
CHE 107	General Chemistry II (Includes Lab)	4
Semester II	Total	17
MAT 250	Differential Equations	3
PHY 302	University Physics II	4
PHY 322	and Lab	1
CSC 150	Programming Fundamentals I	3
PHY 214	Applied Statics	3
PED 103	Lifestyle Assessment	2
	Humanities/Social Science Elective	3
Semester III	Total	19
MAT 340	Calculus III	4
PHY 215	Applied Dynamics	3
PHY 326	Electronics	3
ENGL 2070	Technical Communication <sup>32</sup>	3
PED 203	Lifestyles Management (PE)	1
	Humanities/Social Science Elective	3
Semester IV	Total	17

<sup>31</sup> Studies in the humanities and social sciences serve not only to meet the objectives of a broad education but also to meet the objectives of the engineering profession. Therefore, studies in the humanities and social sciences must be planned to reflect a rationale or fulfill an objective appropriate to the engineering profession as well as Wayne State Colleges and the receiving engineering college's objectives. To satisfy this requirement, the courses must provide both breadth and depth, and not limited to a selection of unrelated introductory courses. Such course work must meet the generally accepted definitions that humanities are the branches of knowledge concerned with man and his culture, while social sciences are the studies of individual relationships in and to society. Examples of qualifying subjects are, philosophy, religion, history, literature, fine arts, sociology, psychology, political science, anthropology, economics, and foreign languages other than English or the student's native language. Subjects such as accounting, management, finance, personnel administration, personal economics, and military training do not fulfill the desired objectives of the humanities and social sciences.

<sup>32</sup> ENGL 2070 Technical Communication is offered through Northeast Community College by distance education.

<b>SDSU Engineering Physics</b>		
<b>Course #</b>	<b>Course Names</b>	<b>Credits</b>
	Program Total	70
PHY 115	Professionalism in Science	2
MAT 140	Calculus I	5
CHE 106	General Chemistry I (Includes Lab)	4
ENG 102	Composition Skills I	3
	Humanities/Social Science Elective <sup>33</sup>	3
Semester I	Total	17
MAT 240	Calculus II	5
PHY 301	University Physics I	4
PHY 321	and Lab	1
CNA 100	Principles of Human Communication	3
CHE 107	General Chemistry II (Includes Lab)	4
Semester II	Total	17
MAT 250	Differential Equations	3
PHY 302	University Physics II	4
PHY 322	and Lab	1
CSC 150	Programming Fundamentals I	3
PHY 214	Applied Statics	3
PED 103	Lifestyle Assessment	2
	Humanities/Social Science Elective	3
Semester III	Total	19
MAT 340	Calculus III	4
PHY 215	Applied Dynamics	3
PHY 345	Thermodynamics	3
ENGL 2070	Technical Communication <sup>34</sup>	3
PED 203	Lifestyles Management (PE)	1
	Humanities/Social Science Elective	3
Semester IV	Total	17

<sup>33</sup> Studies in the humanities and social sciences serve not only to meet the objectives of a broad education but also to meet the objectives of the engineering profession. Therefore, studies in the humanities and social sciences must be planned to reflect a rationale or fulfill an objective appropriate to the engineering profession as well as Wayne State Colleges and the receiving engineering college's objectives. To satisfy this requirement, the courses must provide both breadth and depth, and not limited to a selection of unrelated introductory courses. Such course work must meet the generally accepted definitions that humanities are the branches of knowledge concerned with man and his culture, while social sciences are the studies of individual relationships in and to society. Examples of qualifying subjects are, philosophy, religion, history, literature, fine arts, sociology, psychology, political science, anthropology, economics, and foreign languages other than English or the student's native language. Subjects such as accounting, management, finance, personnel administration, personal economics, and military training do not fulfill the desired objectives of the humanities and social sciences.

<sup>34</sup> ENGL 2070 Technical Communication is offered through Northeast Community College by distance education.

<b>SDSU Mechanical Engineering</b>		
<b>Course #</b>	<b>Course Names</b>	<b>Credits</b>
	Program Total	69
PHY 115	Professionalism in Science	2
MAT 140	Calculus I	5
CHE 106	General Chemistry I (Includes Lab)	4
ENG 102	Composition Skills I	3
	Humanities/Social Science Elective <sup>35</sup>	3
Semester I	Total	17
MAT 240	Calculus II	5
PHY 301	University Physics I	4
PHY 321	and Lab	1
CNA 100	Principles of Human Communication	3
	Humanities/Social Science Elective	3
Semester II	Total	16
MAT 250	Differential Equations	3
PHY 302	University Physics II	4
PHY 322	and Lab	1
CSC 150	Programming Fundamentals I	3
PHY 214	Applied Statics	3
PED 103	Lifestyle Assessment	2
	Humanities/Social Science Elective	3
Semester III	Total	19
MAT 340	Calculus III	4
PHY 215	Applied Dynamics	3
PHY 345	Thermodynamics	3
ENGL 2070	Technical Communication <sup>36</sup>	3
PED 203	Lifestyles Management (PE)	1
	Humanities/Social Science Elective	3
Semester IV	Total	17

<sup>35</sup> Studies in the humanities and social sciences serve not only to meet the objectives of a broad education but also to meet the objectives of the engineering profession. Therefore, studies in the humanities and social sciences must be planned to reflect a rationale or fulfill an objective appropriate to the engineering profession as well as Wayne State Colleges and the receiving engineering college's objectives. To satisfy this requirement, the courses must provide both breadth and depth, and not limited to a selection of unrelated introductory courses. Such course work must meet the generally accepted definitions that humanities are the branches of knowledge concerned with man and his culture, while social sciences are the studies of individual relationships in and to society. Examples of qualifying subjects are, philosophy, religion, history, literature, fine arts, sociology, psychology, political science, anthropology, economics, and foreign languages other than English or the student's native language. Subjects such as accounting, management, finance, personnel administration, personal economics, and military training do not fulfill the desired objectives of the humanities and social sciences.

<sup>36</sup> ENGL 2070 Technical Communication is offered through Northeast Community College by distance education.

<b>SDSU Physics</b>		
<b>Course #</b>	<b>Course Names</b>	<b>Credits</b>
	Program Total	70
PHY 115	Professionalism in Science	2
MAT 140	Calculus I	5
CHE 106	General Chemistry I (Includes Lab)	4
ENG 102	Composition Skills I	3
	Humanities/Social Science Elective <sup>37</sup>	3
Semester I	Total	17
MAT 240	Calculus II	5
PHY 301	University Physics I	4
PHY 321	and Lab	1
CNA 100	Principles of Human Communication	3
CHE 107	General Chemistry II (Includes Lab)	4
Semester II	Total	17
MAT 250	Differential Equations	3
PHY 302	University Physics II	4
PHY 322	and Lab	1
CSC 150	Programming Fundamentals I	3
PHY 214	Applied Statics	3
PED 103	Lifestyle Assessment	2
	Humanities/Social Science Elective	3
Semester III	Total	19
MAT 340	Calculus III	4
PHY 215	Applied Dynamics	3
PHY 345	Thermodynamics	3
ENGL 2070	Technical Communication <sup>38</sup>	3
PED 203	Lifestyles Management (PE)	1
	Humanities/Social Science Elective	3
Semester IV	Total	17

<sup>37</sup> Studies in the humanities and social sciences serve not only to meet the objectives of a broad education but also to meet the objectives of the engineering profession. Therefore, studies in the humanities and social sciences must be planned to reflect a rationale or fulfill an objective appropriate to the engineering profession as well as Wayne State Colleges and the receiving engineering college's objectives. To satisfy this requirement, the courses must provide both breadth and depth, and not limited to a selection of unrelated introductory courses. Such course work must meet the generally accepted definitions that humanities are the branches of knowledge concerned with man and his culture, while social sciences are the studies of individual relationships in and to society. Examples of qualifying subjects are, philosophy, religion, history, literature, fine arts, sociology, psychology, political science, anthropology, economics, and foreign languages other than English or the student's native language. Subjects such as accounting, management, finance, personnel administration, personal economics, and military training do not fulfill the desired objectives of the humanities and social sciences.

<sup>38</sup> ENGL 2070 Technical Communication is offered through Northeast Community College by distance education.

<b>SDSU Software Engineering</b>		
<b>Course #</b>	<b>Course Names</b>	<b>Credits</b>
	Program Total	69
PHY 115	Professionalism in Science	2
MAT 140	Calculus I	5
CSC 150	Programming Fundamentals I	3
ENG 102	Composition Skills I	3
	Humanities/Social Science Elective <sup>39</sup>	3
Semester I	Total	16
MAT 240	Calculus II	5
CSC 160	Programming Fundamentals II	3
CNA 100	Principles of Human Communication	3
	Natural Science Elective	3
	Humanities/Social Science Elective	3
Semester II	Total	17
MAT 350	Linear Algebra	3
MAT 410	Probability & Statistics I	3
CSC 310	Data Structures	3
CSC 340	Modern Programming Methods	3
PED 103	Lifestyle Assessment	2
	Humanities/Social Science Elective	3
Semester III	Total	17
MAT 305	Discrete Mathematics	3
CSC 320	Computer Organization	3
CSC 380	Advanced Operating Systems	3
ENGL 2070	Technical Communication <sup>40</sup>	3
PED 203	Lifestyles Management (PE)	1
	Humanities/Social Science Elective	3
	Natural Science Elective	3
Semester IV	Total	19

<sup>39</sup> Studies in the humanities and social sciences serve not only to meet the objectives of a broad education but also to meet the objectives of the engineering profession. Therefore, studies in the humanities and social sciences must be planned to reflect a rationale or fulfill an objective appropriate to the engineering profession as well as Wayne State Colleges and the receiving engineering college's objectives. To satisfy this requirement, the courses must provide both breadth and depth, and not limited to a selection of unrelated introductory courses. Such course work must meet the generally accepted definitions that humanities are the branches of knowledge concerned with man and his culture, while social sciences are the studies of individual relationships in and to society. Examples of qualifying subjects are, philosophy, religion, history, literature, fine arts, sociology, psychology, political science, anthropology, economics, and foreign languages other than English or the student's native language. Subjects such as accounting, management, finance, personnel administration, personal economics, and military training do not fulfill the desired objectives of the humanities and social sciences.

<sup>40</sup> ENGL 2070 Technical Communication is offered through Northeast Community College by distance education.

## Iowa State University (ISU)

WSC is discussing a formal written articulation agreement with Iowa State University (ISU). The ISU contact person is \_\_\_\_\_. This agreement is to include program descriptions for aerospace, agricultural, chemical, civil, computer, construction, electrical, industrial, materials, and mechanical engineering. Upon successful completion<sup>41</sup> of his/her program, the student will be academically prepared to start a third year at ISU.

Each participating student will be paired with a mentor from ISU as well as a WSC advisor.

Studies in the humanities and social sciences serve not only to meet the objectives of a broad education but also to meet the objectives of the engineering profession. Therefore, studies in the humanities and social sciences must be planned to reflect a rationale or fulfill an objective appropriate to the engineering profession as well as Wayne State College and ISU's objectives. To satisfy this requirement, the courses must provide both breadth and depth, and not be limited to a selection of unrelated introductory courses. Such course work must meet the generally accepted definitions that humanities are the branches of knowledge concerned with man and his culture, while social sciences are the studies of individual relationships in and to society. Examples of qualifying subjects are, philosophy, religion, history, literature, fine arts, sociology, psychology, political science, anthropology, economics, and foreign languages other than English or the student's native language. Subjects such as accounting, management, finance, personnel administration, personal economics, and military training do not fulfill the desired objectives of the humanities and social sciences.

WSC qualifying courses include: ...

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<sup>41</sup> Successful completion is to be defined by ISU.

<b>ISU Aerospace Engineering (WSC Proposal)</b>		
<b>Course #</b>	<b>Course Names</b>	<b>Credits</b>
	Program Total	67
PHY 115	Professionalism in Science	2
MAT 140	Calculus I	5
CHE 106	General Chemistry I (Includes Lab)	4
ENG 102	Composition Skills I	3
	Humanities/Social Science Elective <sup>42</sup>	3
Semester I	Total	17
MAT 240	Calculus II	5
PHY 301	University Physics I	4
PHY 321	and Lab	1
CNA 100	Principles of Human Communication	3
GST 196	Library Science	1
CSC 150	Fundamentals of Programming I	3
Semester II	Total	17
MAT 250	Differential Equations	3
PHY 302	University Physics II	4
PHY 322	and Lab	1
PHY 214	Applied Statics	3
	Mathematics/Science Elective	3
	Humanities/Social Science Elective	3
Semester III	Total	17
MAT 340	Calculus III	4
PHY 215	Applied Dynamics	3
ENGL 2070	Technical Communication <sup>43</sup>	3
	Mathematics/Science Elective	3
	Humanities/Social Science Elective	3
Semester IV	Total	16

<sup>42</sup> Studies in the humanities and social sciences serve not only to meet the objectives of a broad education but also to meet the objectives of the engineering profession. Therefore, studies in the humanities and social sciences must be planned to reflect a rationale or fulfill an objective appropriate to the engineering profession as well as Wayne State Colleges and the receiving engineering college's objectives. To satisfy this requirement, the courses must provide both breadth and depth, and not limited to a selection of unrelated introductory courses. Such course work must meet the generally accepted definitions that humanities are the branches of knowledge concerned with man and his culture, while social sciences are the studies of individual relationships in and to society. Examples of qualifying subjects are, philosophy, religion, history, literature, fine arts, sociology, psychology, political science, anthropology, economics, and foreign languages other than English or the student's native language. Subjects such as accounting, management, finance, personnel administration, personal economics, and military training do not fulfill the desired objectives of the humanities and social sciences.

<sup>43</sup> ENGL 2070 Technical Communication is offered through Northeast Community College by distance education.

<b>ISU Agricultural Engineering (WSC Proposal)</b>		
<b>Course #</b>	<b>Course Names</b>	<b>Credits</b>
	Program Total	69
PHY 115	Professionalism in Science	2
MAT 140	Calculus I	5
CHE 106	General Chemistry I (Includes Lab)	4
ENG 102	Composition Skills I	3
	Humanities/Social Science Elective <sup>44</sup>	3
Semester I	Total	17
MAT 240	Calculus II	5
PHY 301	University Physics I	4
PHY 321	and Lab	1
CNA 100	Principles of Human Communication	3
GST 196	Library Science	1
ITE 109	Drafting Communications	3
Semester II	Total	17
MAT 250	Differential Equations	3
PHY 302	University Physics II	4
PHY 322	and Lab	1
CSC 150	Programming Fundamentals I	3
PHY 214	Applied Statics	3
BIO 110	General Biology I	4
Semester III	Total	18
MAT 340	Calculus III	4
PHY 345	Thermodynamics	3
ENGL 2070	Technical Communication <sup>45</sup>	3
ECO 201/202		3
BIO 210		4
Semester IV	Total	17

<sup>44</sup> Studies in the humanities and social sciences serve not only to meet the objectives of a broad education but also to meet the objectives of the engineering profession. Therefore, studies in the humanities and social sciences must be planned to reflect a rationale or fulfill an objective appropriate to the engineering profession as well as Wayne State Colleges and the receiving engineering college's objectives. To satisfy this requirement, the courses must provide both breadth and depth, and not limited to a selection of unrelated introductory courses. Such course work must meet the generally accepted definitions that humanities are the branches of knowledge concerned with man and his culture, while social sciences are the studies of individual relationships in and to society. Examples of qualifying subjects are, philosophy, religion, history, literature, fine arts, sociology, psychology, political science, anthropology, economics, and foreign languages other than English or the student's native language. Subjects such as accounting, management, finance, personnel administration, personal economics, and military training do not fulfill the desired objectives of the humanities and social sciences.

<sup>45</sup> ENGL 2070 Technical Communication is offered through Northeast Community College by distance education.

<b>ISU Chemical Engineering (WSC Proposal)</b>		
<b>Course #</b>	<b>Course Names</b>	<b>Credits</b>
	Program Total	70
PHY 115	Professionalism in Science	2
MAT 140	Calculus I	5
CHE 106	General Chemistry I (Includes Lab)	4
ENG 102	Composition Skills I	3
	Humanities/Social Science Elective <sup>46</sup>	3
Semester I	Total	17
MAT 240	Calculus II	5
PHY 301	University Physics I	4
PHY 321	and Lab	1
CHE 107	General Chemistry II (Includes Lab)	4
GST 196	Library Science	1
	Humanities/Social Science Elective	3
Semester II	Total	18
MAT 250	Differential Equations	3
PHY 302	University Physics II	4
PHY 322	and Lab	1
CHE 314	Organic Chemistry I (Includes Lab)	4
CSC 150	Fundamental of Programming I (PE)	3
	Humanities/Social Science Elective	3
Semester III	Total	18
MAT 340	Calculus III	4
CHE 315	Organic Chemistry II (Includes Lab)	4
CHE 456		3
PHY 345	Thermodynamics	3
ENGL 2070	Technical Communication <sup>47</sup>	3
Semester IV	Total	17

<sup>46</sup> Studies in the humanities and social sciences serve not only to meet the objectives of a broad education but also to meet the objectives of the engineering profession. Therefore, studies in the humanities and social sciences must be planned to reflect a rationale or fulfill an objective appropriate to the engineering profession as well as Wayne State Colleges and the receiving engineering college's objectives. To satisfy this requirement, the courses must provide both breadth and depth, and not limited to a selection of unrelated introductory courses. Such course work must meet the generally accepted definitions that humanities are the branches of knowledge concerned with man and his culture, while social sciences are the studies of individual relationships in and to society. Examples of qualifying subjects are, philosophy, religion, history, literature, fine arts, sociology, psychology, political science, anthropology, economics, and foreign languages other than English or the student's native language. Subjects such as accounting, management, finance, personnel administration, personal economics, and military training do not fulfill the desired objectives of the humanities and social sciences.

<sup>47</sup> ENGL 2070 Technical Communication is offered through Northeast Community College by distance education.

<b>ISU Civil Engineering (WSC Proposal)</b>		
<b>Course #</b>	<b>Course Names</b>	<b>Credits</b>
	Program Total	68
PHY 115	Professionalism in Science	2
MAT 140	Calculus I	5
CHE 106	General Chemistry I (Includes Lab)	4
ENG 102	Composition Skills I	3
	Humanities/Social Science Elective <sup>48</sup>	3
Semester I	Total	17
MAT 240	Calculus II	5
PHY 301	University Physics I	4
PHY 321	and Lab	1
CHE 107	General Chemistry II (Includes Lab)	4
GST 196	Library Science	1
ITE 109	Drafting Communication	3
Semester II	Total	18
MAT 250	Differential Equations	3
PHY 302	University Physics II	4
PHY 322	and Lab	1
CSC 150	Programming Fundamentals I	3
PHY 214	Applied Statics	3
CNA 100	Principles of Human Communication	3
Semester III	Total	17
MAT 340	Calculus III	4
PHY 215	Applied Dynamics	3
ENGL 2070	Technical Communication <sup>49</sup>	3
	Mathematics/Science Elective	3
	Humanities/Social Science Elective	3
Semester IV	Total	16

<sup>48</sup> Studies in the humanities and social sciences serve not only to meet the objectives of a broad education but also to meet the objectives of the engineering profession. Therefore, studies in the humanities and social sciences must be planned to reflect a rationale or fulfill an objective appropriate to the engineering profession as well as Wayne State Colleges and the receiving engineering college's objectives. To satisfy this requirement, the courses must provide both breadth and depth, and not limited to a selection of unrelated introductory courses. Such course work must meet the generally accepted definitions that humanities are the branches of knowledge concerned with man and his culture, while social sciences are the studies of individual relationships in and to society. Examples of qualifying subjects are, philosophy, religion, history, literature, fine arts, sociology, psychology, political science, anthropology, economics, and foreign languages other than English or the student's native language. Subjects such as accounting, management, finance, personnel administration, personal economics, and military training do not fulfill the desired objectives of the humanities and social sciences.

<sup>49</sup> ENGL 2070 Technical Communication is offered through Northeast Community College by distance education.

<b>ISU Computer Engineering (WSC Proposal)</b>		
<b>Course #</b>	<b>Course Names</b>	<b>Credits</b>
	Program Total	69
PHY 115	Professionalism in Science	2
MAT 140	Calculus I	5
CHE 106	General Chemistry I (Includes Lab)	4
ENG 102	Composition Skills I	3
CSC 150	Fundamentals of Programming I	3
Semester I	Total	17
MAT 240	Calculus II	5
PHY 301	University Physics I	4
PHY321	and Lab	1
CSC 160	Programming Fundamentals II	3
GST 196	Library Science	3
Semester II	Total	16
MAT 250	Differential Equations	3
CSC 310	Data Structures	3
PHY 302	University Physics II	3
PHY 322	and Lab	4
CNA 100	Principles of Human Communications	1
	Humanities/Social Science Elective <sup>50</sup>	3
Semester III	Total	17
MAT 305	Discrete Mathematics	3
MAT 340	Calculus III	4
PHY 326	Electronics	3
ENGL 2070	Technical Communication <sup>51</sup>	3
	Computer Science/Mathematics Elective	3
	Humanities/Social Science Elective	3
Semester IV	Total	19

<sup>50</sup> Studies in the humanities and social sciences serve not only to meet the objectives of a broad education but also to meet the objectives of the engineering profession. Therefore, studies in the humanities and social sciences must be planned to reflect a rationale or fulfill an objective appropriate to the engineering profession as well as Wayne State Colleges and the receiving engineering college's objectives. To satisfy this requirement, the courses must provide both breadth and depth, and not limited to a selection of unrelated introductory courses. Such course work must meet the generally accepted definitions that humanities are the branches of knowledge concerned with man and his culture, while social sciences are the studies of individual relationships in and to society. Examples of qualifying subjects are, philosophy, religion, history, literature, fine arts, sociology, psychology, political science, anthropology, economics, and foreign languages other than English or the student's native language. Subjects such as accounting, management, finance, personnel administration, personal economics, and military training do not fulfill the desired objectives of the humanities and social sciences.

<sup>51</sup> ENGL 2070 Technical Communication is offered through Northeast Community College by distance education.

<b>ISU Construction Engineering (WSC Proposal)</b>		
<b>Course #</b>	<b>Course Names</b>	<b>Credits</b>
	Program Total	70
PHY 115	Professionalism in Science	2
MAT 140	Calculus I	5
CHE 106	General Chemistry I (Includes Lab)	4
ENG 102	Composition Skills I	3
PSY 101	General Psychology	3
Semester I	Total	17
MAT 240	Calculus II	5
PHY 301	University Physics I	4
PHY 321	and Lab	1
ITE 109	Drafting Communication	3
GST 196	Library Science	1
	Humanities/Social Science Elective <sup>52</sup>	3
Semester II	Total	17
MAT 250	Differential Equations	3
CSC 150	Fundamentals of Programming I	3
PHY 302	University Physics II	4
PHY 322	and Lab	1
PHY 214	Applied Statics	3
ITE 202		3
Semester III	Total	17
MAT 340	Calculus III	4
PHY 345	Thermodynamics	3
BUS 240	Accounting I	3
ECO 201/202	Micro/Macro Economics	3
ENGL 2070	Technical Communication <sup>53</sup>	3
	Humanities/Social Science Elective	3
Semester IV	Total	19

<sup>52</sup> Studies in the humanities and social sciences serve not only to meet the objectives of a broad education but also to meet the objectives of the engineering profession. Therefore, studies in the humanities and social sciences must be planned to reflect a rationale or fulfill an objective appropriate to the engineering profession as well as Wayne State Colleges and the receiving engineering college's objectives. To satisfy this requirement, the courses must provide both breadth and depth, and not limited to a selection of unrelated introductory courses. Such course work must meet the generally accepted definitions that humanities are the branches of knowledge concerned with man and his culture, while social sciences are the studies of individual relationships in and to society. Examples of qualifying subjects are, philosophy, religion, history, literature, fine arts, sociology, psychology, political science, anthropology, economics, and foreign languages other than English or the student's native language. Subjects such as accounting, management, finance, personnel administration, personal economics, and military training do not fulfill the desired objectives of the humanities and social sciences.

<sup>53</sup> ENGL 2070 Technical Communication is offered through Northeast Community College by distance education.

<b>ISU Electrical Engineering (WSC Proposal)</b>		
<b>Course #</b>	<b>Course Names</b>	<b>Credits</b>
	Program Total	67
PHY 115	Professionalism in Science	2
MAT 140	Calculus I	5
CHE 106	General Chemistry I (Includes Lab)	4
ENG 102	Composition Skills I	3
CSC 150	Programming Fundamentals I	3
Semester I	Total	17
MAT 240	Calculus II	5
PHY 301	University Physics I	4
PHY 321	and Lab	1
CNA 100	Principles of Human Communication	3
GST 196	Library Science	1
	Humanities/Social Science Elective <sup>54</sup>	3
Semester II	Total	17
MAT 250	Differential Equations	3
MAT 350	Linear Algebra	3
PHY 302	University Physics II	4
PHY 322	and Lab	1
PHY 214	Applied Statics	3
	Humanities/Social Science Elective	3
Semester III	Total	17
MAT 340	Calculus III	4
PHY 326	Electronics	3
ENGL 2070	Technical Communication <sup>55</sup>	3
	Mathematics Elective	3
	Humanities/Social Science Elective	3
Semester IV	Total	16

<sup>54</sup> Studies in the humanities and social sciences serve not only to meet the objectives of a broad education but also to meet the objectives of the engineering profession. Therefore, studies in the humanities and social sciences must be planned to reflect a rationale or fulfill an objective appropriate to the engineering profession as well as Wayne State Colleges and the receiving engineering college's objectives. To satisfy this requirement, the courses must provide both breadth and depth, and not limited to a selection of unrelated introductory courses. Such course work must meet the generally accepted definitions that humanities are the branches of knowledge concerned with man and his culture, while social sciences are the studies of individual relationships in and to society. Examples of qualifying subjects are, philosophy, religion, history, literature, fine arts, sociology, psychology, political science, anthropology, economics, and foreign languages other than English or the student's native language. Subjects such as accounting, management, finance, personnel administration, personal economics, and military training do not fulfill the desired objectives of the humanities and social sciences.

<sup>55</sup> ENGL 2070 Technical Communication is offered through Northeast Community College by distance education.

<b>ISU Industrial Engineering (WSC Proposal)</b>		
<b>Course #</b>	<b>Course Names</b>	<b>Credits</b>
	Program Total	70
PHY 115	Professionalism in Science	2
MAT 140	Calculus I	5
CHE 106	General Chemistry I (Includes Lab)	4
ENG 102	Composition Skills I	3
PSY 101	General Psychology	3
Semester I	Total	17
MAT 240	Calculus II	5
PHY 301	University Physics I	4
PHY 321	and Lab	1
ITE 109	Drafting Communication	3
GST 196	Library Science	1
	Humanities/Social Science Elective <sup>56</sup>	3
Semester II	Total	17
MAT 250	Differential Equations	3
MAT 180	Applied Probabilities & Statistics	3
PHY 302	University Physics II	4
PHY 322	and Lab	1
PHY 214	Applied Statics	3
ITE 108	Manufacturing Processes & Systems	3
Semester III	Total	17
MAT 340	Calculus III	4
BUS 240	Accounting I	3
ECO 201/202	Micro/Macro Economics	3
ENGL 2070	Technical Communication <sup>57</sup>	3
ITE 315	Manufacturing Technology	3
	ITE Elective	3
Semester IV	Total	19

<sup>56</sup> Studies in the humanities and social sciences serve not only to meet the objectives of a broad education but also to meet the objectives of the engineering profession. Therefore, studies in the humanities and social sciences must be planned to reflect a rationale or fulfill an objective appropriate to the engineering profession as well as Wayne State Colleges and the receiving engineering college's objectives. To satisfy this requirement, the courses must provide both breadth and depth, and not limited to a selection of unrelated introductory courses. Such course work must meet the generally accepted definitions that humanities are the branches of knowledge concerned with man and his culture, while social sciences are the studies of individual relationships in and to society. Examples of qualifying subjects are, philosophy, religion, history, literature, fine arts, sociology, psychology, political science, anthropology, economics, and foreign languages other than English or the student's native language. Subjects such as accounting, management, finance, personnel administration, personal economics, and military training do not fulfill the desired objectives of the humanities and social sciences.

<sup>57</sup> ENGL 2070 Technical Communication is offered through Northeast Community College by distance education.

<b>ISU Materials Engineering (WSC Proposal)</b>		
<b>Course #</b>	<b>Course Names</b>	<b>Credits</b>
	Program Total	68
PHY 115	Professionalism in Science	2
MAT 140	Calculus I	5
CHE 106	General Chemistry I (Includes Lab)	4
ENG 102	Composition Skills I	3
	Humanities/Social Science Elective <sup>58</sup>	3
Semester I	Total	17
MAT 240	Calculus II	5
PHY 301	University Physics I	4
PHY 321	and Lab	1
CHE 107	General Chemistry II (Includes Lab)	4
CNA 100	Principles of Human Communication	3
Semester II	Total	17
MAT 250	Differential Equations	3
PHY 302	University Physics II	4
PHY 322	and Lab	1
CSC 150	Programming Fundamentals I	3
PHY 214	Applied Statics	3
ITE 109	Drafting Communications	3
Semester III	Total	17
MAT 340	Calculus III	4
PHY 345	Thermodynamics	3
ENGL 2070	Technical Communication <sup>59</sup>	3
CHE 456	Physical Chemistry I	3
GST 196	Library Science	1
	Humanities/Social Science Elective	3
Semester IV	Total	17

<sup>58</sup> Studies in the humanities and social sciences serve not only to meet the objectives of a broad education but also to meet the objectives of the engineering profession. Therefore, studies in the humanities and social sciences must be planned to reflect a rationale or fulfill an objective appropriate to the engineering profession as well as Wayne State Colleges and the receiving engineering college's objectives. To satisfy this requirement, the courses must provide both breadth and depth, and not limited to a selection of unrelated introductory courses. Such course work must meet the generally accepted definitions that humanities are the branches of knowledge concerned with man and his culture, while social sciences are the studies of individual relationships in and to society. Examples of qualifying subjects are, philosophy, religion, history, literature, fine arts, sociology, psychology, political science, anthropology, economics, and foreign languages other than English or the student's native language. Subjects such as accounting, management, finance, personnel administration, personal economics, and military training do not fulfill the desired objectives of the humanities and social sciences.

<sup>59</sup> ENGL 2070 Technical Communication is offered through Northeast Community College by distance education.

<b>ISU Mechanical Engineering (WSC Proposal)</b>		
<b>Course #</b>	<b>Course Names</b>	<b>Credits</b>
	Program Total	67
PHY 115	Professionalism in Science	2
MAT 140	Calculus I	5
CHE 106	General Chemistry I (Includes Lab)	4
ENG 102	Composition Skills I	3
	Humanities/Social Science Elective <sup>60</sup>	3
Semester I	Total	17
MAT 240	Calculus II	5
PHY 301	University Physics I	4
PHY 321	and Lab	1
CNA 100	Principles of Human Communication	3
ITE 109	Drafting Communication	3
Semester II	Total	16
MAT 250	Differential Equations	3
PHY 302	University Physics II	4
PHY 322	and Lab	1
CSC 150	Programming Fundamentals I	3
PHY 214	Applied Statics	3
	Humanities/Social Science Elective	3
Semester III	Total	17
MAT 340	Calculus III	4
PHY 215	Applied Dynamics	3
PHY 345	Thermodynamics	3
ENGL 2070	Technical Communication <sup>61</sup>	3
GST 196	Library Science	1
ECO 201/202	Micro/Macro Economics	3
Semester IV	Total	17

<sup>60</sup> Studies in the humanities and social sciences serve not only to meet the objectives of a broad education but also to meet the objectives of the engineering profession. Therefore, studies in the humanities and social sciences must be planned to reflect a rationale or fulfill an objective appropriate to the engineering profession as well as Wayne State Colleges and the receiving engineering college's objectives. To satisfy this requirement, the courses must provide both breadth and depth, and not limited to a selection of unrelated introductory courses. Such course work must meet the generally accepted definitions that humanities are the branches of knowledge concerned with man and his culture, while social sciences are the studies of individual relationships in and to society. Examples of qualifying subjects are, philosophy, religion, history, literature, fine arts, sociology, psychology, political science, anthropology, economics, and foreign languages other than English or the student's native language. Subjects such as accounting, management, finance, personnel administration, personal economics, and military training do not fulfill the desired objectives of the humanities and social sciences.

<sup>61</sup> ENGL 2070 Technical Communication is offered through Northeast Community College by distance education.

## Northeast Community College

WSC has a formal written articulation agreement with Northeast Community College (NECC). The NECC contacts for this program are Chuck Pohlman and David Heidt. This agreement describes the details of a “1+1” program between NECC and WSC in pre-engineering. Students completing the program at Wayne State College can transfer credits back to NECC to receive an Associate of Science degree. Upon successful completion<sup>62</sup> of one year at NECC, the student will transfer to WSC to finish another year, preparing to transfer to one of the engineering schools that WSC has an agreement or arrangement with. WSC currently has formal agreements with [South Dakota School of Mines and Technology](#), and [South Dakota State University](#). Refer to previous sections of this guide for more information. WSC has an arrangement with Iowa State University and is working toward a formal written agreement with ISU. Wayne State has an arrangement with the University of Nebraska, and is willing to discuss arrangements with other engineering schools as well.

Students must complete all requirements asked of them by the receiving engineering school, thus each student will be assigned a WSC academic advisor and possibly one from his/her chosen engineering school. Course requirements will also include social science and humanities courses. Course matrices will be developed suggesting course sequencing for NECC students.

Students who then matriculate to WSC and then an engineering school, and satisfactorily complete the requirements for a Bachelor's of Science in one of the engineering school's degree programs will receive a Bachelor's of Science degree from that engineering school.

Students participating in this program must have NECC transcripts sent to WSC before transferring to WSC. Students must have achieved a minimum transfer grade point average of 2.00 as well as a minimum grade of C (2.00) in each course specified as part of this agreement<sup>63</sup>, and meet the other transfer admission requirements specified in the WSC bulletin.

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<sup>62</sup> Successful completion is defined as a minimum of a “C” (2.0) in all coursework.

<sup>63</sup> The minimum transfer grade to an engineering school is usually a “B” (3.0).

<b>Possible Program of Study in General Engineering</b>	
<b>First Semester (NECC)</b>	<b>Credits</b>
PHY 115 Professionalism in Science <sup>1</sup>	2
MATH 2000 Calculus I	5
CHEM 1140 General Chemistry I	5
ENGL 1010 Composition Skills I	3
Social Science Elective <sup>2</sup>	3
<b>Total</b>	<b>18</b>
<b>Second Semester (NECC)</b>	<b>Credits</b>
MATH 2001 Calculus II	5
CHEM 1160 General Chemistry II	5
PHYS 2030 General Physics I & Lab (Calc-Based)	5
SPCH 1010 Prin. of Human Comm.	3
<b>Total</b>	<b>18</b>
<b>Third Semester (WSC)</b>	<b>Credits</b>
MAT 250 Differential Equations <sup>3</sup>	3
PHY 302 & 322 University Physics II & Lab (Calc-Based) <sup>4</sup>	5
PHY 214 Applied Statics	3
CSC 150 Programming Fundamentals I	3
Humanities/Social Science Elective <sup>2 &amp; 5</sup>	3
PED 103 Lifestyles Assessment	2
<b>Total</b>	<b>19</b>
<b>Fourth Semester (WSC)</b>	<b>Credits</b>
MAT 340 Calculus III	4
PHY 215 Applied Dynamics	3
Humanities/Social Science Elective	3
ENGL 2070 Technical Communication <sup>6</sup>	3
Science Elective	3
PED 203 Lifestyles Management	1
<b>Total</b>	<b>17</b>
<b>Total Credits</b>	<b>72</b>

<sup>1</sup> PHY 115 Professionalism in Science is offered through WSC.

<sup>2</sup> Studies in the humanities and social sciences serve not only to meet the objectives of a broad education but also to meet the objectives of the engineering profession. Therefore, studies in the humanities and social sciences must be planned to reflect a rationale or fulfill an objective appropriate to the engineering profession as well as Wayne State College's, Northeast Community College's and the receiving engineering college's objectives. To satisfy this requirement, the courses must provide both breadth and depth, and not limited to a selection

of unrelated introductory courses. Such course work must meet the generally accepted definitions that humanities are the branches of knowledge concerned with man and his culture, while social sciences are the studies of individual relationships in and to society. Examples of qualifying subjects are, philosophy, religion, history, literature, fine arts, sociology, psychology, political science, anthropology, economics, and foreign languages other than English or the student's native language. Subjects such as accounting, management, finance, personnel administration, personal economics, and military training do not fulfill the desired objectives of the humanities and social sciences.

<sup>3</sup> Course is available at NECC as MATH 2100.

<sup>4</sup> Course is available at NECC as PHYS 2040.

<sup>5</sup> ENGL 2070 Technical Communication is offered through NECC.

<sup>6</sup> An appropriate course could be taken at NECC.