

SINCLAIR COMMUNITY COLLEGE

and

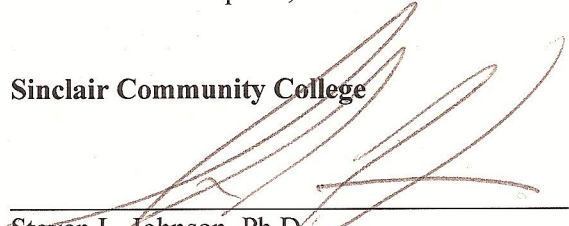
CENTRAL STATE UNIVERSITY

Graduates of Sinclair Community College who have completed the requirements of the **Associate of Science Degree** and have completed courses as indicated for the Engineering Science University Parallel program (see Attachment) will receive credits towards the **Bachelor of Science in Manufacturing Engineering** degree at Central State University.

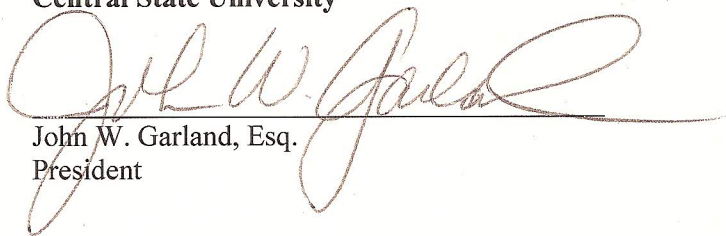
This agreement will be in effect on the date indicated below and continue for a period of two years, after which time officials from both institutions will make any necessary revisions.


Effective Date: April 9, 2009


**Sinclair Community College**

  
\_\_\_\_\_  
Steven L. Johnson, Ph.D.  
President

**Central State University**

  
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John W. Garland, Esq.  
President

  
\_\_\_\_\_  
Helen Grove, Ph.D.  
Senior Vice President and Provost

  
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Terrence Glass, Ph.D.  
Provost and Vice President for Academic Affairs



Sinclair  
Community  
College

## Sinclair Community College to Central State University

### Articulation and Transfer Course Guide

#### Leading to Central State University

#### *Bachelor of Science Degree in Manufacturing Engineering*



**Introduction:** The information in this guide has been reviewed by officials at the listed institutions and has been verified as transferrable and applicable towards the major listed. The student who intends to transfer to Central State University for the degree listed, and who completes an Associate of Science (A.S.) Degree in Engineering Science (University Parallel) at Sinclair Community College, should follow this guide in addition to **contacting Academic Advisors at Sinclair and Central State University.**

#### Course of Study

Sinclair Degree Program			Central State Degree Program		
Qtr. Cr.	Course	Description	Semester Cr.	Course	Description
First Quarter Sinclair					
3	ETD 128	Introduction to Design Engineering Symbology	4	INT 1210	Engineering Computer Graphics
3	*ENG 111	English Composition I	5 *1 of 2	ENG 1101	Intro Writing for College
5	MAT 201	Calculus and Analytic Geometry I	4	MTH 2502	Calculus I
6	**PHY 201	General Physics I	5 0	PHY 2211 PHY2212	TAG University Physics I University Physics Lab I
Total 17	4 courses		Total 18	5 courses	
Second Quarter					
3	ENG 112	English Composition II	4	ENG 1102	Writing and Researching the Essay
2	OPT 198	Excel for Engineering Technology	---	----	-----
5	MAT 202	Calculus and Analytic Geometry II	5	MTH 2503	Calculus II
6	**PHY 202	General Physics II	5 0	PHY 2213 PHY 2214	TAG – See above University Physics II University Physics Lab II
3	Social Science Elective	** Transfer Module Requirement	3	XXXX	♦ Transfer Module SBS Elective
Total 19	5 courses		Total 17	5 courses	
Third Quarter					
5	***CHE 151	General Chemistry I	4	*CHM 1201	Chemistry I
3	ENG 113	English Composition III	*2 of 2	*ENG 1101	Intro Writing for College
5	MAT 203	Calculus and Analytic Geometry III	---	----	-----
6	**PHY 203	General Physics III	TAG – See above		
Total 19	4 courses		Total 4	2 courses	
Fourth Quarter					
5	***CHE 152	General Chemistry II	2 of 2	*CHM 1201	Chemistry I
3	COM 211	Effective Public Speaking			
2	ETD 199	Introduction to Computer-Aided Drafting Concepts	---	----	-----
4	MAT 216	Elements of Linear Algebra	3	MFE 1210	Engineering Analysis I

3	Engineering Technical Elec.		---	----	-----
Total 17	5 courses		Total 6	3 courses	
Fifth Quarter					
5	MAT 215	Differential Equations	3	MTH 3110	Differential Equations
3	Social Science Elective	** Transfer Module Requirement	3	XXXX	◆Transfer Module SBS Elective
3/4	Humanities Elective	Recommended Course HIS 105 African American History (4)	3	HIS 1110	Intro. Africans in the U.S.
5	ETD 211	Statics: Calculus Based	3	MFE 2310	Statics
Total 16/17	4 courses		Total 12	4 courses	
Sixth Quarter					
5	Social Science Elective	** Transfer Module Requirement	3	XXXX	◆Transfer Module SBS Elective
3	ETD 212	Dynamics: Calculus Based	3	MFE 2420	Dynamics
6	Humanities Elective	** Transfer Module Requirement	3	XXXX	◆Transfer Module Hum. & Fine Art Electives
3	Engineering Technical Elective		3	XXXX	Technical Elective
Total 17	4 courses		Total 12	4 courses	
<b>Total Hours Parity</b>			<b>105</b>	<b>69/70</b>	
TAGS					
*ENG 111, 112, and 113 (9 Qr. hrs.) are equivalent to ENG1101 and 1102 (8 Sem. hrs.).					
**PHY 201, 202, and 203 (18 qr. hrs.) are equivalent to PHY 2211 and 2213 (10 Sem. Hrs.)					
***CHM151, 152 and 153 (9 Qr. hrs.) are equivalent to CHM 1201 and 1202 (8 Sem. hrs.)					
◆ Ohio Transfer Module					

#### General Notes

1. Chemistry 153 at Sinclair (or CHM 1202 at CSU) is needed. It is recommended that the course be taken during the summer prior to fall enrollment at Central State University.
2. MFE 2320, MFE 2410 & MFE 2430 have no equivalencies at Sinclair. Therefore it is highly recommended that MFE 2320, 2410 & 2430 be taken as consortium credit courses while attending Sinclair Community college through the Southwestern Ohio Council for Higher Education (SOCHE) Agreement. These courses are prerequisite requirements for other required civil engineering courses. If you are unable to take these courses while at Sinclair, contact the chair of the Manufacturing Engineering Department at Central State University to modify your plan of study.
3. All students must satisfy the English proficiency requirement by testing or passing ENG 3000.

**TRANSFER GUIDE COURSE PLAN FOR THE DEGREE, BACHELOR OF SCIENCE**

**MAJOR In Manufacturing Engineering**

The curriculum below is to be used in consultation with an academic advisor. The student must be familiar with the University requirements, the Core Curriculum and any Special Requirements for the above degree.

FALL SEMESTER				SPRING SEMESTER				
Year	Course Number	Title	Credit Hrs	Year	Course Number	Title	Credit Hrs	
	MFE 3510	Circuit Analysis	4		MFE 3610	Automatic Control Systems	3	
Junior	MFE 3520	Microprocessor	3	Junior	MFE 3620	Programmable Logic Controllers	3	
	MFE 3530	Strength of Materials	3		MFE 3630	Manufacturing processes	4	
	MFE 3540	Material Science & Processes	4		MFE 3640	Machine & Tool Design	4	
	MFE 3550	Thermodynamics & Heat Transfer	3		HPR 1000	Personal & Community Health	3	
	HPR 1xxx	HPR Activity	1					
		Total	<b>18</b>			Total	<b>17</b>	
		MFE 4710	Measurement & Instrumentation		3		MFE 4810	Design for Assembly & System Int.
Senior	MFE 4720	Manufacturing Quality & Economy	4	Senior	MFE 4820	Manufacturing Planning, Control	4	
	MFE 4730	Hydraulics & Pneumatics	3		MFE 4895	Senior Design Project II	2	
	MFE 4795	Senior Design Project I	1		xxx xxxx	Social Science Elective	3	
	xxx xxxx	Humanities Elective	3					
		Total	<b>14</b>			Total	<b>12</b>	
<b>Minimum semester hours required 124</b>								
<b>Total hours needed to obtain MFE Degree 142</b>				<b>Grand Total: 70 hrs plus 72 transfer hours</b>				<b>143/144</b>

**Course of Study by Discipline**

<b>Central State MFE Degree</b>			<b>Sinclair Eng. Science Degree</b>		
Semester Cr.	Course	Description	Qtr. Cr.	Course	Description
<b>Mathematics</b>					
4	MTH 2502	Calculus I	5	MAT 201	Calculus & Anal. Geom. I
5	MTH 2503	Calculus I I	5	MAT 202	Calculus & Anal. Geom. II
			5	MAT 203	Calculus & Anal. Geom. III
3	MTH 3110	Differential Equations	5	MAT 215	Differential Equations
3	MFE 1210	Engineering Analysis I	4	MAT 216	Elements of Linear Algebra
*3	MFE 2410	Engineering Analysis II			
<b>Physics</b>					
5	PHY 2211	University Physics I	6	PHY 201	General Physics I
5	PHY 2213	University Physics II	6	PHY 202	General Physics II
			6	PHY 203	General Physics III
<b>Chemistry</b>					
4	CHM 1201	Chemistry I	5	CHE 151	General Chemistry I
4	CHM 1202	Chemistry II	5	CHE 152	General Chemistry II
			5	CHE 153	General Chemistry III
<b>English</b>					
4	ENG 1101	Intro. Writing for College	3	ENG 111	English Composition I
4	ENG 1102	Writing & Researching the Essay	3	ENG 112	English Composition II
			3	ENG 113	English Composition III
			3	COM 211	Effective Public Speaking
<b>Engineering</b>					
3	MFE 1110	Principles of Manufacturing	3	ETD 102	Principles of Engineering
			4	INT 109	Fund. Of Tool & MFG Processes
4	INT 1210	Engr. Comp. Graphics	3	ETD 128	Print Reading with GD&T
			1	ETD 199	Intro. Comp.-aided Drafting Concepts
3	MFE 2310	Statics	5	ETD 211	Statics-Calculus Based
3	MFE 2420	Dynamics	5	ETD 212	Dynamics-Calculus Based
3	MFE 2440	Computer-Aided Manufacturing	3	INT 113	Fundamentals of CNC
			3	INT 116	CNC Operations
*3	MFE 2320	Computer-Aided Design			
*3	MFE 2430	Design of Experiments			
<b>General Education</b>					
6	xxx xxx	Social Science Elective	9	xxx xxx	Social Science Elective
6	xxx xxx	Humanities Elective	9	xxx xxx	Humanities Elective
3	xxx xxxx	Technical Elective	6	xxx xxx	Engineering Technical Elective
<b>72</b>	<b>Total</b>				
<b>*</b>	<b>Not included</b>				

**Pre-admission to CSU:**

Fall: MFE 2320 Computer-Aided Design (3 hrs.)

Spring: MFE 2410 Engineering Analysis II (3 hrs.)  
MFE 2430 Engineering Analysis II (3 hrs.)

**Total: 9 hrs.**