

**COLLEGE OF ENGINEERING, INDUSTRIAL AND SYSTEMS ENGINEERING
GRADUATION CHECKSHEET FOR THE CLASS OF 2009 B.S.I.S.E.**

FALL SEMESTER FRESHMAN 2005		Credit Hrs	SPRING SEMESTER FRESHMAN 2006		Credit Hrs
<input type="checkbox"/>	ENGL 1105 English I	3	<input type="checkbox"/>	ENGL 1106 English II	3
<input type="checkbox"/>	CHEM 1035 Gen Chem for Engineers	3	<input type="checkbox"/>	PHYS 2305 Found of Physics I w/lab	4
<input type="checkbox"/>	CHEM 1045 Gen Chem Lab for Eng	1	<input type="checkbox"/>	MATH 1206 Calculus II	3
<input type="checkbox"/>	MATH 1114 Linear Algebra	2	<input type="checkbox"/>	MATH 1224 Vector Geometry	2
<input type="checkbox"/>	MATH 1205 Calculus I	3	<input type="checkbox"/>	ENGE 1104 Exploration Digital Future OR ENGE 1114 Exploration Engr Design	2
<input type="checkbox"/>	ENGE 1024 Engineering Exploration	2	<input type="checkbox"/>	Elective*	3
<input type="checkbox"/>	Elective*	3			
TOTAL		17	TOTAL		17
FALL SEMESTER SOPHOMORE 2006			SPRING SEMESTER SOPHOMORE 2007		
<input type="checkbox"/>	PHYS 2306 Foundations of Physics II w/lab	4	<input type="checkbox"/>	MATH 2214 Differential Equations (C-)	3
<input type="checkbox"/>	MATH 2224 Multivariable Calculus (C-)	3	<input type="checkbox"/>	STAT 4105 Theoretical Statistics (C-)	3
<input type="checkbox"/>	ISE 2014 Engineering Economy (C-) <i>Pre: ENGE 1024</i>	2	<input type="checkbox"/>	ISE 2204 Manufacturing Processes (C-) <i>Pre: ENGE 1104 or 1114</i>	2
<input type="checkbox"/>	ENGE 2314 Eng Prob Solving w/C++ <i>Pre: ENGE 1104 or 1114, MATH 1114, MATH 1206</i>	2	<input type="checkbox"/>	ISE 2214 Manufacturing Processes Lab (C-) <i>Pre: ENGE 1104 or 1114</i>	1
<input type="checkbox"/>	ENGE 2344 Computer-Aided Drafting	1	<input type="checkbox"/>	ISE 2404 Deterministic Oper Research (C-) <i>Co: MATH 2224</i>	3
<input type="checkbox"/>	ESM 2104 Statics	3	<input type="checkbox"/>	ESM 2304 Dynamics	3
			<input type="checkbox"/>	MSE 2034 Materials Engineering	3
TOTAL		15	TOTAL		18
FALL SEMESTER JUNIOR 2007			SPRING SEMESTER JUNIOR 2008		
<input type="checkbox"/>	STAT 4706 Statistics for Engineers (C-) <i>Pre: STAT 4105</i>	3	<input type="checkbox"/>	ISE 3214 Facilities Plan & Matl Handling (C-) <i>Pre: ISE 2014, 2404, 3414, ENGE 2344; Co: ISE 3424</i>	3
<input type="checkbox"/>	ISE 3014 Work Meas & Meth Eng (C-) <i>Pre: ISE 2204 or 2214, STAT 4105</i>	3	<input type="checkbox"/>	ISE 3424 Discrete-Event Comp Sim (C-) <i>Pre: ISE 3414; Co: STAT 4706</i>	3
<input type="checkbox"/>	ISE 3414 Probabilistic Oper Research (C-) <i>Pre: MATH 2214, MATH 2224, ENGE 2314, STAT 4105</i>	3	<input type="checkbox"/>	ISE 3624 Industrial Ergonomics <i>Pre: ISE 3014, ESM 2104</i>	3
<input type="checkbox"/>	ISE 3614 Intro to Human Factors (C-) <i>Pre: STAT 4105</i>	3	<input type="checkbox"/>	ISE 3024 Data Management for IEs (C-) <i>Pre: ISE 2214, ENGE 2314; Co: ISE 3214</i>	3
<input type="checkbox"/>	ECE 3054 Electrical Theory	3	<input type="checkbox"/>	Elective*	6
<input type="checkbox"/>	Elective*	1			
TOTAL		16	TOTAL		18
FALL SEMESTER SENIOR 2008			SPRING SEMESTER SENIOR 2009		
<input type="checkbox"/>	ISE 4005 Proj Mgmt & System Design (C-) <i>Pre: ISE 3024, 3214, 3424, 3614; Co: ISE 3624, 4204</i>	3	<input type="checkbox"/>	ISE 4006 Proj Mgmt & System Design <i>Pre: ISE 4005</i>	2
<input type="checkbox"/>	ISE 4204 Production Planning and Inv Control <i>Pre: ISE 2404, STAT 4706</i>	3	<input type="checkbox"/>	ISE 4304 Global Issues in Industrial Mgt	3
<input type="checkbox"/>	ISE 4404 Statistical Quality Control <i>Pre: ISE 3414, STAT 4706, STAT 4105</i>	3	<input type="checkbox"/>	Electives*	12
<input type="checkbox"/>	Electives*	9			
TOTAL		18	TOTAL		17

***ELECTIVES: Choose electives from the approved lists in the ISE UG Student Handbook and the Curriculum for Liberal Education Guide.**

<input type="checkbox"/>	AREA 2 IDEAS, CULTURAL TRADITIONS, VALUES (6 hrs)	1)	2)
<input type="checkbox"/>	AREA 3 SOCIETY & HUMAN BEHAVIOR (6 hrs)	1)	2)
<input type="checkbox"/>	AREA 6 CREATIVITY & AESTHETIC EXPERIENCE (1 hr)	1)	
<input type="checkbox"/>	ISE TECHNICAL ELECTIVES (6 hrs)	1)	2)
<input type="checkbox"/>	TECHNICAL ELECTIVE (3 hrs)	1)	
<input type="checkbox"/>	ENGINEERING SCIENCE ELECTIVES (6 hrs)	1)	2)
<input type="checkbox"/>	NON-TECHNICAL ELECTIVES (6 hrs)	1)	2)

TOTAL Electives

34 hrs

ADDITIONAL REQUIREMENTS AND NOTES FOR 2009 ISE CHECKSHEET

GRADUATION REQUIREMENTS: A minimum of 136 hours is required for graduation. An in-major and overall GPA of 2.0 is required for graduation. In-major GPA is determined from all ISE classes, STAT 4105, and STAT 4706.

FOREIGN LANGUAGE REQUIREMENT: Students who did not complete 2 units of a foreign language in high school must earn 6 credits of a college-level foreign language in addition to the 136 credits normally required for graduation.

PREREQUISITES: There are no hidden prerequisites for any course on this Checksheet. Prerequisite courses are indicated in the Checksheet and are also listed in the University Undergraduate Catalog, and in the ISE Undergraduate Student Handbook.

GRADE OF C- OR BETTER: ISE, STAT, and MATH courses for which students must earn a C- or better in order to progress to more advanced ISE courses are indicated by a (C-) on the Checksheet and are identified in the University Undergraduate Catalog and the ISE Undergraduate Student Handbook.

CURRICULUM FOR LIBERAL EDUCATION REQUIREMENTS: Areas 1, 4, 5, and 7 are satisfied through the required set of courses, with ISE 4304 satisfying the Area 7 requirement. ISE 3014, 4005, and 4006 fulfill the Writing Intensive Core requirement. The ISE Department has an approved plan to fulfill the Visual Expression and Writing Speaking (ViEWS) requirement. Areas 2, 3 and 6 are satisfied through selection of elective courses, found in the Curriculum for Liberal Education Guide, by taking 6 credits of Area 2 electives, 6 credits of Area 3 electives, and 1 credit of Area 6 elective. Although suggested guidelines are included in the 2009 Checksheet for how many elective credits might be taken each semester, this may be revised depending on choice of specific elective courses for each semester.

ELECTIVES: Students must also take 6 credits of ISE Technical Electives, 3 credits of Technical Elective, 6 credits of Engineering Science Electives, and 6 credits of Non-Technical Electives. A listing of courses which the College of Engineering does not allow to be used to fulfill degree requirements can be found in the ISE Undergraduate Student Handbook or at the following web site:
www.eng.vt.edu/overview/docs/non_degree_courses.pdf.

BUSINESS MINOR: Those students pursuing the Business Minor need to select pre-specified elective courses for ISE Technical Electives, Non-Technical Electives, and Area 3 Electives – these are identified in the ISE Undergraduate Student Handbook. Students should carefully select when they take these pre-specified electives in order to graduate in a timely manner. Students pursuing the Business Minor take two additional courses above and beyond the 136 credit hours required for graduation.

CAPSTONE SENIOR DESIGN REQUIREMENT: The ISE 4005-4006 sequence is the capstone senior design experience for ISE majors and must be taken as a Fall-Spring sequence.

PROGRESS TOWARDS DEGREE POLICY: Satisfactory progress toward the BSISE requires that an ISE major, after having completed 72 hours (including transfer, advanced placement, advanced standing, and credit by examination), must:

- 1) Have an overall GPA of 2.0 or better;
- 2) Have an in-major GPA of 2.0 or better;
- 3) Have completed ENGE 1104 or ENGE 1114, ISE 2014, ISE 2204, ISE 2214, MATH 2214, and MATH 2224;
- 4) Be enrolled in 12 or more credits of ISE classes per year;
- 5) Not taken any ISE or STAT designated course required for the degree more than twice, including attempts ending in course withdrawal;
- 6) Not repeated more than 3 ISE or STAT designated courses required for the degree, including attempts ending in course withdrawal.