

NORTHWEST VISTA COLLEGE
ENGINEERING
 ASSOCIATE OF SCIENCE DEGREE PLAN
 2009-2010 Catalog



The Associate of Science in Engineering will prepare students with the skills and background needed for success in a university engineering program:

- Students will complete the Northwest Vista College core.
- Students will apply science, mathematics, computer aided analysis and design, and technical communication to solve and present solutions to open-ended engineering problems.
- The flexibility of the program allows students to customize the degree plan to the various engineering fields of specialization.

Student: _____ Student ID # (SSN): _____ Date: _____
LAST NAME FIRST NAME MI

Concentration/Field of Study: _____ Academic Advisor: _____

COURSE REQUIREMENTS	COURSE TAKEN	HRS.	GRADE	SEMESTER	INSTITUTION
COMMUNICATION					
ENGL 1301 – Composition I	_____	3	_____	_____	_____
ENGL 1302 – Composition II	_____	3	_____	_____	_____
ADDITIONAL COMMUNICATION*	_____	3	_____	_____	_____
MATHEMATICS					
MATH 2413 – Calculus I	_____	4	_____	_____	_____
NATURAL SCIENCES					
PHYS 2425 – University Physics I	_____	4	_____	_____	_____
PHYS 2426 – University Physics II	_____	4	_____	_____	_____
HUMANITIES & VISUAL/PERFORMING ARTS					
HUMANITIES*	_____	3	_____	_____	_____
ADDITIONAL HUMANITIES*	_____	3	_____	_____	_____
VISUAL/PERFORMING ARTS*	_____	3	_____	_____	_____
SOCIAL/BEHAVIORAL SCIENCES					
HISTORY*	_____	3	_____	_____	_____
HISTORY*	_____	3	_____	_____	_____
GOVT 2305 – National Government	_____	3	_____	_____	_____
GOVT 2306 – State Government	_____	3	_____	_____	_____
SOCIAL/BEHAVIORAL SCIENCE*	_____	3	_____	_____	_____
KINESIOLOGY [take any combination of Kinesiology or Dance that equals at least 2 credit hours]					
KINESIOLOGY*	_____	2	_____	_____	_____
ADDITIONAL REQUIREMENTS					
ENGR 1201 – Introduction to Engineering	_____	2	_____	_____	_____
MATH 2414 – Calculus II	_____	4	_____	_____	_____
<i>Select two (2) of the following:</i>					
ENGR 1304 – Engineering Graphics I	ENGR 2302 – Mechanics II: Dynamics	_____	_____	ENGR 2305 – Circuit Analysis and Network Theory	_____
ENGR 1307 – Plane Surveying	ENGR 2303^ – Engineering Mechanics: Statics & Dynamics	_____	_____	ENGR 2332 – Mechanics of Materials	_____
ENGR 2301^ – Mechanics I: Statics	ENGR 2304 – Computer Programming for Engineering Apps	3	_____	_____	_____
_____	_____	3	_____	_____	_____
<i>Select one (1) of the following:</i>					
BIOL 1406 – Biology for Science Majors I	CHEM 1411^^ – General Chemistry I	_____	_____	MATH 2415 – Calculus III	_____
BIOL 2401 – Human Anatomy and Physiology I	MATH 2318 – Linear Algebra	_____	_____	or other Science or Mathematics class with <i>PRIOR</i>	_____
CHEM 1311^^ – Gen Chemistry Lecture I	MATH 2320 – Differential Equations	_____	_____	Department Approval.	_____

TOTAL CREDIT HOURS **62-63 credit hours**

NOTES: A course may be used only once to fulfill degree requirements.
 A grade of C or higher is required for all prerequisite and technical courses.
 While a grade of D or higher will satisfy NVC degree requirements for non-prerequisite courses, most institutions require a grade of C or higher in order for a course to be considered for transfer.
 Check with the transfer institution to ensure that the courses taken at NVC will apply to the appropriate degree program.
 *Select courses from the Core Curriculum selection list when specific courses are not listed.
 Engineering students should first complete the Accuplacer, and then contact the Engineering department if desiring consideration for higher initial placement in Mathematics.
 All Engineering students should enroll in MIM (Math Intensive Mathematics) courses when available.

Calculus III is strongly recommended for students that will transfer into the UTSA Mechanical or Electrical Engineering programs.
 ^ Students cannot take both ENGR 2301 and ENGR 2303 for credit.
 ^^ Students cannot take both CHEM 1311 and CHEM 1411 for credit

Transfer coursework is *unofficial* until all official transcripts are evaluated and posted.

Communication [010]

6 Credit Hours (complete BOTH)

ENGL 1301	Composition I
ENGL 1302	Composition II

Additional Communication [011]

3 Credit Hours (choose ONE)

SPCH 1311	Intro to Speech Communication
SPCH 1315	Public Speaking
SPCH 1321	Business & Professional Comm.

Mathematics [020]

3 Credit Hours (choose ONE)

MATH 1314	College Algebra
MATH 1316	Plane Trigonometry
MATH 1324	Math for Business & Soc. Sci. I
MATH 1325	Math for Business & Soc. Sci. II
MATH 1332	Contemporary Math I (Liberal Arts)
MATH 1348	Analytic Geometry
MATH 1350	Fund. of Math I for Teachers
MATH 1351	Fund. of Math II for Teachers
MATH 1442	Elementary Statistical Methods
MATH 2318	Linear Algebra
MATH 2320	Differential Equations
MATH 2412	Precalculus
MATH 2413	Calculus I
MATH 2414	Calculus II
MATH 2415	Calculus III

Natural Sciences [030]

7-8 Credit Hours (choose TWO; at least one must have a lab)

ANTH 2301	Physical Anthropology
ASTR 1304	Solar System Lecture
BIOL 1308	Principles of Biology
BIOL 1322	Introduction to Nutrition
BIOL 1406	Biology for Science Majors I
BIOL 1407	Biology for Science Majors II
BIOL 1411	General Botany
BIOL 1413	General Zoology
BIOL 2306	Environmental Biology
BIOL 2389	Academic Co-op for Biological Sci.
BIOL 2401	Human Anatomy & Physiology I
BIOL 2402	Human Anatomy & Physiology II
BIOL 2404	Human Anatomy & Physiology
BIOL 2416	Genetics
BIOL 2421	Microbiology
CHEM 1104	Chemical Calculations
CHEM 1305 with 1105 ⁺ (or CHEM 1405)	Introductory Chemistry I
CHEM 1307 with 1107 ⁺ (or CHEM 1407)	Introductory Chemistry II
CHEM 1311 with 1111 ⁺ (or CHEM 1411)	General Chemistry I
CHEM 1312 with 1112 ⁺ (or CHEM 1412)	General Chemistry II
CHEM 2323 with 2223 ⁺	Organic Chemistry I
CHEM 2325 with 2225 ⁺	Organic Chemistry II
CHEM 2401	Quantitative Analysis
GEOG 1301	Physical Geography
GEOL 1345	Oceanography
GEOL 1403	Physical Geology
GEOL 1404	Historical Geology
PHYS 1301 with 1101 ⁺	General Physics I
PHYS 1302 with 1102 ⁺	General Physics II
PHYS 1305 with 1105 ⁺	Introductory Physics I
PHYS 1307 with 1107 ⁺	Introductory Physics II
PHYS 2425	University Physics I
PHYS 2426	University Physics II

Humanities [040]

3-4 Credit Hours (choose ONE)

ANY 2000-LEVEL LITERATURE COURSE*

ANY FOREIGN LANGUAGE OR SIGN LANGUAGE COURSE*

HIST 2321	World Civilizations I
HIST 2322	World Civilizations II
HUMA 1301	Introduction to the Humanities I
HUMA 1302	Introduction to the Humanities II
HUMA 1305	Intro. to Mexican-American Studies
HUMA 1315	Fine Arts Appreciation
HUMA 2319	American Minority Studies
HUMA 2323	World Cultures
PHIL 1301	Introduction to Philosophy
PHIL 1304	Introduction to World Religions
PHIL 2303	Introduction to Logic
PHIL 2306	Introduction to Ethics
PHIL 2307	Introduction to Social and Political Philosophy

Additional Humanities [041]

3 Credit Hours (choose ONE)

ANY 2000-LEVEL LITERATURE COURSE*

HIST 2321	World Civilizations I
HIST 2322	World Civilizations II
HUMA 2319	American Minority Studies
PHIL 2306	Introduction to Ethics
SPAN 2312	Intermediate Spanish II

Visual and Performing Arts [050]

3 Credit Hours (choose ONE)

ARTS 1301	Art Appreciation
ARTS 1303	Art History I
ARTS 1304	Art History II
ARTS 1316	Drawing I
ARTS 2316	Painting I
ARTS 2326	Sculpture I
ARTS 2346	Ceramics I
ARTS 2348	Digital Art I
ARTS 2356	Photography I (fine arts emphasis)
DANC 1305	World Dance
DANC 2303	Dance Appreciation
DRAM 1310	Introduction to Theatre
HUMA 1311	Mexican-American Fine Arts Appreciation
HUMA 1315	Fine Arts Appreciation
MUSI 1306	Music Appreciation
MUSI 1310	American Music

History [060]

6 Credit Hours

(choose TWO – see acceptable combinations below)

HIST 1301	United States History I
HIST 1302	United States History II
HIST 2301	Texas History
HIST 2327	Mexican-American History I
HIST 2328	Mexican-American History II

ONLY ONE OF THE FOLLOWING COMBINATIONS WILL BE ACCEPTED:

[HIST 1301 & HIST 1302], OR
 [HIST 2327 & HIST 2328], OR
 [HIST 1301 & HIST 2328], OR
 [HIST 1302 & HIST 2327], OR
 [HIST 2301 & HIST 1302], OR
 [HIST 2301 & HIST 2328]

Government [070]

6 Credits (complete BOTH)

GOVT 2305	National Government
GOVT 2306	State Government

Social and Behavioral Sciences [080]

3 Credit Hours (choose ONE)

ANTH 2302	Archaeology
ANTH 2346	General Anthropology
ANTH 2351	Cultural Anthropology
COMM 1307	Intro to Mass Communications
CRJI 1301	Introduction to Criminal Justice
ECON 1301	Introduction to Economics
ECON 2301	Principles of Macroeconomics
ECON 2302	Principles of Microeconomics
GEOG 1302	Cultural Geography
GEOG 1303	World Regional Geography
GEOG 1304	Geography of Middle America
GEOG 1305	Geography of North America
GOVT 2304	Introduction to Political Science
GOVT 2311	Mexican-American Politics
GOVT 2378	American Government: Introduction to International Relations
HIST 2301	Texas History
HIST 2311	Western Civilizations I
HIST 2312	Western Civilizations II
HIST 2321	World Civilizations I
HIST 2322	World Civilizations II
HIST 2323	Eastern Civilizations
HIST 2327	Mexican-American History I
HIST 2328	Mexican-American History II
HIST 2381	African-American History
PSYC 2301	General Psychology
PSYC 2306	Human Sexuality
PSYC 2308	Child Psychology
PSYC 2314	Lifespan Growth and Development
PSYC 2316	Psychology of Personality
PSYC 2317	Statistical Methods in Psychology
PSYC 2319	Social Psychology
PSYC 2371	Abnormal Psychology
PSYC 2389	Academic Cooperative
SOCI 1301	Introduction to Sociology
SOCI 1306	Social Problems

Kinesiology [090]

2 Credit Hours

Take any combination of Kinesiology (KINE) or Dance (DANC) that equal at least two (2) credit hours*

NOTE: All Core Curricula must include courses in the 010, 020, 030, 040, 050, 060, 070 and 080 categories. Institutions then select from the remaining categories (011, 021, 031, 041, 081 and 090) to complete their own Core Curriculum. Because of all the combinations available, it is very likely that while similar, no two institutions will have exactly the same Core Curriculum. Never fear! If you complete the Core Curriculum at one institution, it really does substitute for the Core Curriculum at any other public college or university in Texas, even if there are differences (taken from <http://statecore.its.txstate.edu/>) Also, view Title 19, Part 1, Chapter 4, Subchapter B, Rule §4.28 at [http://info.sos.state.tx.us/pls/pub/readtac\\$ext.viewtac](http://info.sos.state.tx.us/pls/pub/readtac$ext.viewtac).

*Lab Science Courses are optional.

*Please consult the Catalog for specific courses that qualify (see <http://myvccatalog.alamo.edu/>).

Additional courses that satisfy core requirements may be offered at other Alamo Colleges.