Western Nevada College

Associate of Science Program Review

2015

The 2015 AS Program Review report is designed to be viewed as a website. Please click here to access the report in its intended format.

Associate of Science Program Review 2015

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Site Visit Agenda November 20, 2015

Questions about content, broken links, etc. may be directed to:
scott.morrison@wnc.edu

Associate of Science Program Review Team 2014-15:
Scott Morrison--Chair
Dr. Gary Schwartz
Dr. Steve Carman
Dr. Thomas Herring

Presentation Outline

- Introductions of review team members and reviewers L1
- Charge of the review team L2
- Format of the review report AL
- History of the program 1E
- Review team recommendations 2G

Discussion

AS Degree Program Review Team, Internal/External Reviewers

Review Team

- Chair: Scott Morrison, Academic Director, Liberal Arts Divison
- Dr. Gary Schwartz, Community College Professor of Mathematics
- Dr. Steve Carman, Community College Professor of Biophysical Sciences
- Dr. Thomas Herring, Community College Professor of Physics

Reviewers

- Internal: Dr. Robert Whitcomb, Community College Professor of Business
- External: Dr. Lance Bowen, Dean of Sciences, TMCC

Charge of the Review Team:

To develop and present all report elements as described in *WNC Academic Program Review Guidelines*.

Paraphrased from *WNC Policy 14-1-1: Assessment and Evaluation:*

- Gather information toward improvement
- Determine worth or significance of the program

Paraphrased from *Academic Program Review Guidelines*:

- Identify a program's strengths and weaknesses
- Align program mission with college mission
- Build consensus around goals and outcomes
- Provide meaningful assessment data
- Evaluate progress

Report Elements:

Program Description (1)

- College and Program Mission (1.A)
- College and Program Goals (1.B)
- Short Description (1.C)
- Program Student Learning Outcomes (1.D)
  - WNC General Education SLOs (1.D.1)
  - WNC Institutional SLOs (1.D.2)
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Program Description (1)

The Associate of Science degree at Western Nevada College is designed for students who plan to pursue a baccalaureate degree in science, math, engineering, or related fields. The WNC Associate of Science degree aligns with:

- 25 **science transfer agreements with UNR**
- 4 **science transfer agreements with NSC**
- 22 **science transfer agreements with UNLV**

> The primary basis for admission to upper-division study with full junior status of transfer students from an NSHE community college to any other NSHE institution shall be the associate of arts, associate of science, and the associate of business degrees.
>
> The completion of the associate of arts, associate of science, and associate of business degree at a community college automatically fulfills the lower-division general education requirements at any other NSHE institution. *(NSHE Board of Regents Handbook, Title 4, Ch 14, Sec 15)*

In addition to general education degree requirements, the WNC Associate of Science degree is designed to introduce and provide experiences involving the fundamental tenets of scientific inquiry, critical and creative thinking, relevant experimental techniques, and foundations and applications of mathematics in the sciences, math, or engineering.

Students may complete an associate of science degree in four semesters via multiple tracks on multiple campuses (see **AS Tracks and Hypothetical Schedules** for details). Care is taken to schedule classes in a way that

fits the needs of traditional and non traditional students. The process of building and maintaining an efficient array of class offerings requires attention year-round; this process is managed directly by the division director and the college scheduling coordinator with input from academic faculty and other departments outside of the academic divisions. Enrollment trends are analyzed continuously toward optimizing the opportunities for all students to make reasonable progress toward their goals.

The **WNC Liberal Arts Division** takes responsibility for oversight of the AS Program. The division's academic faculty in arts, sciences, and humanities disciplines work in conjunction with the division director and staff to manage curriculum, scheduling, assessment, reporting, and faculty and student support.

Supplementary Info (link will open a new tab):
WNC Academic Divisions FTE

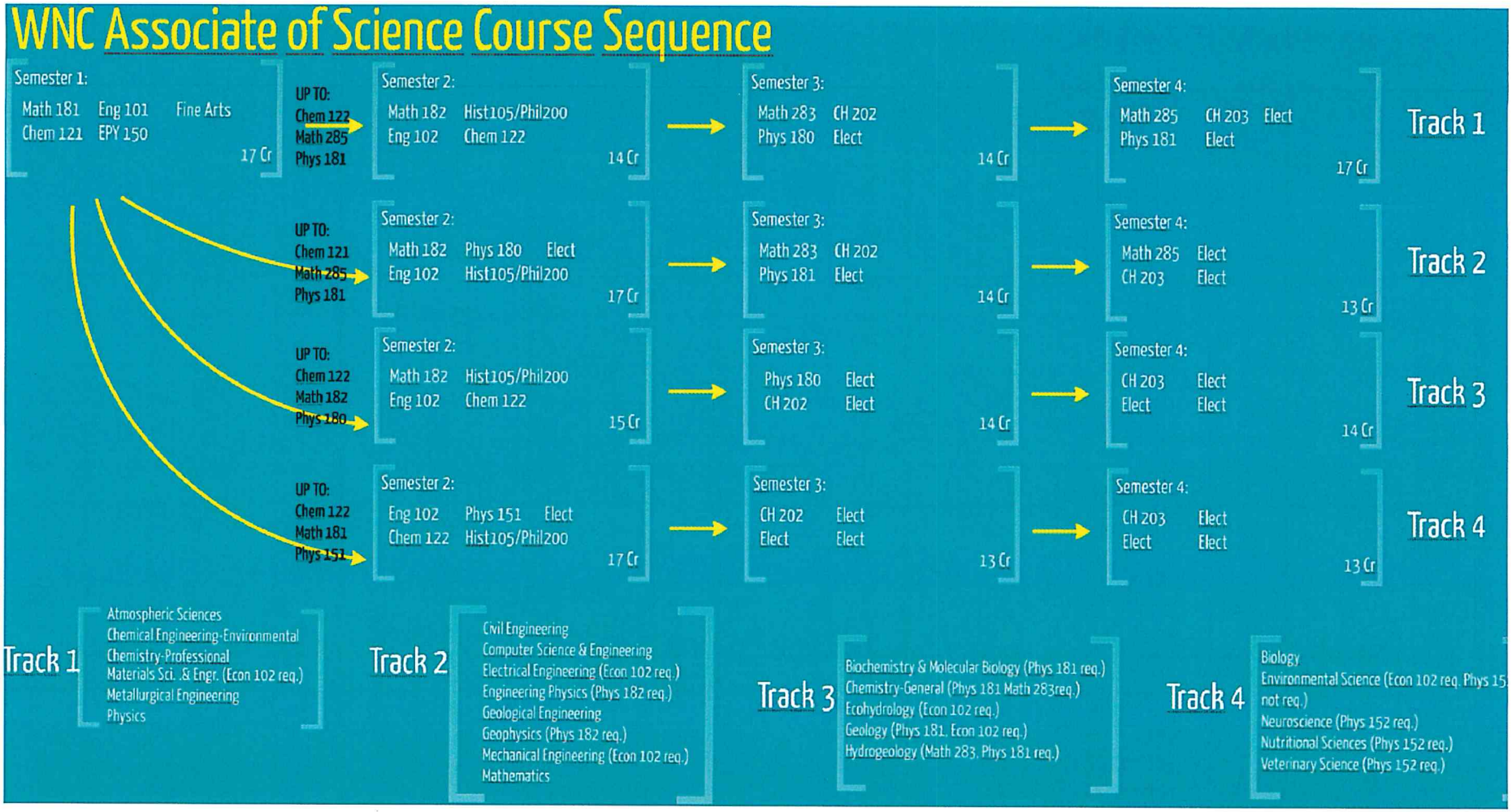
Liberal Arts FTE by Discipline

Next section: **College and Program Mission (1.A)**

Jump to:

- **College and Program Goals (1.B)**
- **Short Description (1.C)**
- **Program Student Learning Outcomes (1.D)**
- **Degrees and/or Certificates Offered (1.E)**
- **Niches Served (1.F)**

AS Tracks and Hypothetical Schedules



Example schedules in relation to *Course Sequence Tracks 1-4 (see graphic above)*

Track 1

							credits
Fall 2012	MATH	181	1001	11:00 AM	12:40 PM	MW	4
	CHEM	121	1002	9:30 AM	12:15 PM	TUES	4
	ENG	101	1005	9:30 AM	10:45 AM	MW	3
	EPY	150	1005	2:30 PM	3:45 PM	TR	3
	MUS	121	1001	4:00 PM	6:45 PM	THURS	3
							17
Spring 2013	MATH	182	1002	5:00 PM	6:45 PM	TR	4
	ENG	102	1007	5:30 PM	6:45 PM	MW	3
	PHIL	200	1001	7:00 PM	9:45 PM	WED	3
	CHEM	122	1001	1:00 PM	3:45 PM	TUES	4
							14
Fall 2013	MATH	283	1001	5:15 PM	6:55 PM	TR	4
	PHYS	180	1001	11:00 AM	12:15 PM	ME	3
	PHYS	180L	1001	1:00 PM	3:45 PM	MON	1
	CH	202	1001	7:00 PM	9:45 PM	TUES	3
	Elective						3
							14
Spring 2014	MATH	285	1001	5:30 PM	6:45 PM	MW	3
	PHYS	181	1001	11:00 AM	12:15 PM	MW	3
	PHYS	181L	1001	1:00 PM	3:45 PM	MON	1
	CH	203	1001	1:00 PM	3:45 PM	TUES	3
	Elective						3
	Elective						3
							16
						Total:	61

Track 2

							credits
Fall 2012	MATH	181	1001	11:00 AM	12:40 PM	MW	4
	CHEM	121	1002	9:30 AM	12:15 PM	TUES	4
	ENG	101	1005	9:30 AM	10:45 AM	MW	3
	EPY	150	1005	2:30 PM	3:45 PM	TR	3
	MUS	121	1001	4:00 PM	6:45 PM	THURS	3
							17
Spring 2013	MATH	182	1002	5:00 PM	6:45 PM	TR	4
	ENG	102	1003	1:00 PM	2:15 PM	TR	3
	PHYS	180	1001	4:00 PM	5:15 PM	MW	3
	PHYS	180L	1002	1:00 PM	3:45 PM	WED	1
	PHIL	200	1001	7:00 PM	9:45 PM	WED	3
	Elective						3
							17
Fall 2013	MATH	283	1001	5:15 PM	6:55 PM	TR	4
	PHYS	181	1001	4:00 PM	5:15 PM	MW	3
	PHYS	181L	1001	7:00 PM	9:45 PM	WED	1
	CH	202	1001	7:00 PM	9:45 PM	TUES	3
	Elective						3
							14
Spring 2014	MATH	285	1001	5:30 PM	6:45 PM	MW	3
	CH	203	1001	1:00 PM	3:45 PM	TUES	3
	Elective						3
	Elective						3
							12
						Total:	60

Track 3

							credits
Fall 2012	MATH	181	1001	11:00 AM	12:40 PM	MW	4
	CHEM	121	1002	9:30 AM	12:15 PM	TUES	4
	ENG	101	1005	9:30 AM	10:45 AM	MW	3
	EPY	150	1005	2:30 PM	3:45 PM	TR	3
	MUS	121	1001	4:00 PM	6:45 PM	THURS	3
							17
Spring 2013	ENG	102	1006	9:00 AM	11:45 AM	WED	3
	MATH	182	1002	5:00 PM	6:45 PM	TR	4
	PHIL	200	1001	7:00 PM	9:45 PM	WED	3
	CHEM	122	1001	1:00 PM	3:45 PM	TUES	4
							14
Fall 2013	PHYS	180	1001	11:00 AM	12:15 PM	ME	3
	PHYS	180L	1001	1:00 PM	3:45 PM	MON	1
	CH	202	1001	7:00 PM	9:45 PM	TUES	3
	Elective						3
	Elective						3
	Elective						3
							16
Spring 2014	CH	203	1001	1:00 PM	3:45 PM	TUES	3
	Elective						3
	Elective						3
	Elective						3
	Elective						3
						Total:	15 62

Track 4

							credits
Fall 2012	MATH	181	1001	11:00 AM	12:40 PM	MW	4
	CHEM	121	1002	9:30 AM	12:15 PM	TUES	4
	ENG	101	1005	9:30 AM	10:45 AM	MW	3
	EPY	150	1005	2:30 PM	3:45 PM	TR	3
	MUS	121	1001	4:00 PM	6:45 PM	THURS	3
							17
Spring 2013	ENG	102	1005	11:00 AM	12:15 PM	TR	3
	CHEM	122	1001	1:00 PM	3:45 PM	TUES	4
	PHYS	180	1001	4:00 PM	5:15 PM	MW	3
	PHYS	180L	1002	1:00 PM	3:45 PM	WED	1
	HIST	105	1003	4:00 PM	6:45 PM	THURS	3
							14
Fall 2013	CH	202	1001	7:00 PM	9:45 PM	TUES	3
	Elective						3
	Elective						3
	Elective						3
							15
Spring 2014	CH	203	1001	1:00 PM	3:45 PM	TUES	3
	Elective						3
	Elective						3
	Elective						3
	Elective						3
						Total:	15 61

FALLON

								credits
Fall 2012	ENG	101	1010	FALLON	4:00 PM	5:15 PM	TR	3
	THTR	180	1001	FALLON	7:00 PM	9:45 PM	WED	3
	MATH	181	1006	WEB	WEB			4
	CHEM	121	1010	FALLON	7:00 PM	9:45 PM	TUES	4
	ANTH	101	1004	FALLON	1:00 PM	2:15 PM	TR	3
								17
Spring 2013	ENG	102	1010	WEB				3
	HIST	106	1005	FALLON	4:00 PM	6:45 PM	WED	3
	MATH	182	1008	FALLON	5:00 PM	6:45 PM	TR	4
	CHEM	122	1004	FALLON	1:00 PM	3:45 PM	MON	4
								14
Fall 2013	HIST	105	1004	FALLON	1:00 PM	3:45 PM	TUES	3
	HIST	111	1003	FALLON	9:30 AM	10:45 AM	TR	3
	GEOL	101	1002	FALLON	1:00 PM	3:45 PM	THURS	3
	PHYS	151	1003	FALLON	5:30 PM	6:45 PM	TR	4
	MATH	283	1004	FALLON	5:15 PM	6:55 PM	MW	4
								17
Spring 2014	BIOL	100	1004	FALLON	4:00 PM	5:15 PM	MW	3
	GEOG	103	1002	FALLON	4:00 PM	6:45 PM	TUES	3
	Elective							3
	Elective							3
								12
							Total:	60

DOUGLAS

								credits
Fall 2012	CHEM	121	1008	DOUGLAS	11:00 AM	1:45 PM	WED	4
	HUM	101	1002	DOUGLAS	1:00 PM	3:45 PM	THURS	3
	HIST	111	1005	WEB				3
	MATH	181	1003	DOUGLAS	5:00 PM	6:45 PM	TR	4
	PSC	103	1005	DOUGLAS	7:00 PM	9:45 PM	TUES	3
								17
Spring 2013	ENG	101	1008	DOUGLAS	1:00 PM	3:45 PM	THURS	3
	HIST	106	1004	DOUGLAS	4:00 PM	6:45 PM	WED	3
	MATH	182	1003	DOUGLAS	5:00 PM	6:45 PM	TR	4
	GEOG	103	1003	WEB				3
	Elective							3
								16
Fall 2013	ENG	102	1009	WEB				3
	HIST	105	1003	DOUGLAS	4:00 PM	6:45 PM	THURS	3
	PSY	101	1007	DOUGLAS	7:00 PM	9:45 PM	TUES	3
	BIOL	190	1001	CARSON	9:30 AM	12:15 PM	TUES	3
	BIOL	190L	1001	CARSON	9:30 AM	12:15 PM	THURS	1
	Elective							3
								16
Spring 2014	BIOL	191	1001	CARSON	9:30 AM	12:15 PM	TUES	3
	BIOL	191L	1001	CARSON	9:30 AM	12:15 PM	THURS	1
	MATH	283	1001	CARSON	5:15 PM	6:55 PM	MW	4
	BIOL	113	1003	WEB				3
								14
							Total:	60

College and Program Mission (1.A)

A. College and Program Mission:

<table>
<tr>
<td>College Mission
Western Nevada College inspires success in our community through opportunities that cultivate creativity, intellectual growth and technological excellence, in an environment that nurtures individual potential and respects differences.</td>
<td>AS Mission (2014-15 WNC Program Guide and wnc.edu)
The purpose of the AS degree is to provide the academic knowledge and skills for successful transfer to meet higher education goals.
(Note: multiple sets of learning objectives for the AS program)
<table>
<tr>
<td>Program Guide
Students who complete an Associate of Science degree at WNC are expected to demonstrate that they:
have met the general education student learning outcomes.
understand the content of calculus.
can apply the content of calculus at the appropriate level in mathematics, science, and/or engineering courses.
understand scientific inquiry and the role of science and technology in the modern world.
can succeed at their transfer institution.
WNC AS Degree .pdf</td>
<td>wnc.edu
Students who complete either an Associate of Arts or an Associate of Science degree at WNC are expected to demonstrate that they:
have met general education student learning outcomes.
know the subject matter appropriate to the emphasis of the degree.
can succeed at their transfer institutions.
Link to degree description</td>
</tr>
</table>
</td>
</tr>
</table>

The 2014-15 AS Program Review team recommends replacing the mission statement and student learning outcomes with the following:

The mission of the Associate of Science degree is to provide the academic knowledge and skills for successful transfer to meet higher education goals.
Associate of Science Program Outcomes-- The successful student will:

- Meet the general education student learning outcomes
- Be able to identify the fundamental tenets of scientific inquiry
- Present accurate calculations and symbolic operations, and explain how such calculations and operations are used in the sciences, mathematics, or engineering
- Use critical thinking and creativity to select and apply recognized experimental

techniques suitable for examining contemporary or enduring problems in the sciences
- Be prepared to succeed at transfer institution

Success threshold: students who transfer to baccalaureate programs at UNR or UNLV will succeed at a rate equivalent to or greater than those who begin similar programs at the respective universities.

Next section: **College and Program Goals (1.B)**

Jump to:

- **Short Description (1.C)**
- **Program Student Learning Outcomes (1.D)**
- **Degrees and/or Certificates Offered (1.E)**
- **Niches Served (1.F)**

College and Program (Review) Goals (1.B)

B. College and Program Goals: The College Strategic Goals and the program goals and related outcomes are presented side-by-side in a table to show how they align.

College Goals	**Program Review Goals (Program Review Goals Status (1.B.1))**
• Improve student success in program completion and graduation rates [Students Graduate & Engage]	• Provide oversight for the Associate of Science degree. 1.1 Explore efficiency in student pathways to degrees toward improvement in **average time to degree**, **transfer performance**, and emphasis course series **assessment results**. 1.2 Inventory and create a local clearinghouse of course or course-series assessment projects and results. Include Noel Levitz, CLA, and CCSSE results as applicable. 1.3 Encourage and support faculty training and networking especially with adjunct faculty involved with gateway courses. 1.4 Review of gen ed writing components--

	explore scientific writing focus for science majors.

• Ensure institutional excellence in teaching, programs and services	• Assess program. 2.1 Review existing program mission and outcomes, and provide recommendations for alignment via new general education and institutional student learning outcomes. 2.2 Craft recommendations on program review process related to AS and AA since emphases have been removed. 2.3 Review of AS General Education from perspectives of all 5 pseudo departments--recommendations for removal of courses or movement from group C to B, for example. 2.4 Set a process, timeline, and responsible party for review and revision of program specific course learning outcomes toward alignment with new program outcomes. 2.5 In conjunction with PARC, set a 5-year assessment cycle aligned with program learning outcomes.

	2.6 Review student course evaluations.

• Embrace our college's many communities and respond to their diverse needs.	• Recognize and assess the implications of enrollment trends and the demands of primary transfer institutions. 3.1 Review campus-specific enrollment trends and ensure appropriate upgrade requests within the demands of the budget cycle. 3.2 Recognize high demand target or transfer programs and develop advisory relationships with faculty and staff. 3.3 Communicate regularly and systematically with advising staff to ensure consistent info for students. 3.4 Explore efficacy of expanded online programs in high demand sequences.

Next section: **Short Description (1.C)**

Jump to:

- **Program Student Learning Outcomes (1.D)**
- **Degrees and/or Certificates Offered (1.E)**

- Niches Served (1.F)

Program Review Goals Status (1.B.1)

PR Goal 1.1: Efficiencies [Complete]

- Time to degree **Summary Data Sheet (2.A.ii)**
- Transfer performance **Summary Data Sheet (2.A.ii)**
- Emphasis assessment results **Systematic Assessment (2.A.iii)**

PR Goal 1.2: Inventory of Assessment Projects [Data needed (external)]

- Need up to date results from CHEM, BIOL, MATH, PHYS... Is there a Geosciences Project?
- Program Review and Assessment Committee (PARC) will continue work toward an online catalog of WNC assessment projects, plans, and progress in Fall 2015. **WNC Institutional Research**
- As of July 2015, Nole-Levitz, CCSSEE, CLA results specific to AS declared students is unavailable. General survey results are available through IR: **Survey Results**.

PR Goal 1.3: Faculty Training/Networking [Transfer (copy) of info from CR Report needed]

- Adjunct Faculty Evaluation Process
- Biology: Biol 190/190L standardized labs (see Curriculum Review Report)
- Chemistry: Chem 121 standardized labs (see CR Report)
- Geosciences: FT Faculty teach all emphasis course sections (Geog, Geol)
- Mathematics: 2014-15 Math Faculty Forum & Panel Discussion

PR Goal 1.4: Scientific Writing Initiative [Complete][Recommendation]

- Initial discussions involved AS Program Review Team Members (Math & Science Faculty); suggestions include:
    - ENG 107/108 in place of 101/102 for AS majors
    - Particular sections of ENG 102 geared toward scientific writing
    - Increased exposure to scientific reading and writing in gateway science courses

PR Goal 2.1: Review Mission & Outcomes [Complete][Recommendation]

- Review complete [recommendation]: **College and Program Mission (1.A)**

PR Goal 2.2: Program Review Process Recommendations [Ongoing] [Recommendation]

- Clarify the role of PARC with respect to support and guidance in the process
- Clarify intent of section 1.B in relation to *Program Goals and Outcomes*. In previous program reviews these appear to be program 'review' goals rather than program goals.
- Recommend release time for an academic faculty member to monitor assessment projects in AS and facilitate the 5-year cycle of program review. (1 for AS, 1 for AA, and together they can help with a periodic review of GENED and AGS.

PR Goal 2.3: Review of AS General Education [Ongoing][Recommendation]

- In response to the ongoing process of updating General Education course objectives toward alignment with new GESLOs, certain courses under the AS Science Requirement have been suggested for removal from GE credit status (CHEM 220, CPE 201, ME 241, 242) with paperwork submitted April 2015.
- ASPR recommends a full review of all

'Group C' AS Science Requirement courses.

- 226 students earned 239 AS Degrees (13 earned 2 degrees)
  12 of these students took BIOL 223, 224, **and** 251.
  5 of these students used one or more of these BIOL courses to count for AS GenEd Science requirement.
  3 of these students used BIOL 223, 224, **and** 251 to count for the entire AS Gen Ed Science requirement (they took no other classes from groups A, B or C)

PR Goal 2.4: Course Outline Update Process [Ongoing]

- Course outline review, update, and approval with respect to new General Education and Institutional Student Learning Outcomes began in Spring 2015. The following course outline updates were approved by the General Education Committee as of May 2015:
  - Biology: 100, 113, 190, 190L, 191, 191L, 200, 223, 224, 251
  - Chemistry: 100, 121, 122
  - Geography: 103, 104
  - Geology: 107
  - Mathematics?
  - Physics?

PR Goal 2.5: 5-year Assessment Cycle [Ongoing][Recommendation]

- To be developed in cooperation between AS Program Faculty reps. and PARC pending approval of recommendations on:
  - AS Mission and Student Learning Outcomes
  - Designated science faculty member for oversight of AS Program
  - Review of 'Group C' AS Science Requirement courses

PR Goal 2.6: Student Course Evaluations [Ongoing]

- New student course evaluation tool to be implemented Fall 2015

PR Goal 3.1: Enrollment Trends [Complete]

- What are the campus-specific enrollment trends? 2015-16 will likely look quite different from the previous 3-4 years.
- Upgrade requests--lab space?

PR Goal 3.2: High Demand Transfer Programs [Complete]

- See summary data sheet for transfer degree frequencies.

PR Goal 3.3: Advising Proposal [Complete] [Recommendation]

- **Faculty Advising Recommendation**
- Welcome and advising letter for AS declared students

PR Goal 3.4: Expanded Online Offerings [Ongoing][Recommendation]

- Pending revision of Distance Education Committee structure (Fall 2015) and subsequent recommendations

Short Description (1.C)

i. Unique Characteristics

The AS degree serves a wide variety of academic pathways in the sciences. For example, students may complete the AS degree by following twenty-five different transfer agreements with UNR alone, so degree pathways can vary dramatically. However, with effective advising and support, students may complete the first two years toward a baccalaureate degree at various transfer institutions in areas from atmospheric science and engineering to ecohydrology and neuroscience.

Atmospheric Science **Biochemistry** **Biology** **Chemistry** **Civil Engineering** **Computer Science**	**Computer Engineering** **Ecohydrology** **Electrical Engineering** **Engineering Physics** **Environmental Engineering** **Environmental Science**	**Geography** **Geology** **Geological Engineering** **Geophysics** **Hydrogeology** **Materials Engineering** **Mathematics**	**Mechanical Engineering** **Metallurgical Engineering** **Neuroscience** **Nutritional Sciences** **Physics** **Wildlife Ecology** **Veterinary Science**

Ph.D qualified faculty represent each substanial area under the AS program: biology, chemistry, geosciences, mathematics, physics & engineering. Each area provides unique opportunities to students. For example:

- In addition to offering all required first and second year math courses each semester, the mathematics department also offers MATH 330 (Linear Algebra) each year; this is a required course for a four-year degree in the discipline, and it is a valuable elective for a variety of

ii. Concerns or trends affecting the program

Gateway courses in the main AS pathways include Biol 190, 191, Chem 121, 122, Geog 103, Geol 101, Math 181, Phys 151, 180. AS majors in these courses tend to make up 12% to 40% of enrollment in these courses (**See Enrollment History**), while non degree-seeking students tend to make up 20% to 32%.

Despite a recent downward trend in student FTE in **AS Science Requirement** courses, programs like **Jump Start College**, 15-to-Finish and Guided Pathways have the potential to create a steep enrollment increase in STEM degree programs. Proper staffing is a concern in coming years in all areas of math and science. Lab space is limited on rural campuses and compounds the staffing issues with respect to workload limitations. The labs on all campuses are in need of update in both infrastructure and equipment.

Enrollment in primary gateway math courses (MATH 126, 127, 128) increased by more than 60% in the 2014-15 academic year. There is evidence this increased demand will remain leading into the 2015-16 year and that enrollments in Calculus and AS required courses will rise as a result. Please see **Enrollment Trends (2.D)** for details.

Assessment projects within the main AS pathways have developed in recent years; however, these projects are limited in some cases by faculty non-participation. Reporting mechanisms are inconsistent or underdeveloped; there is need for focused faculty oversight of the AS program with particular

other majors including engineering science.

- In addition to serving traditional biophysical or engineering majors, approximately 30-50% of enrollment in gateway biology and chemistry courses is made up of pre-nursing students. (**See Enrollment History**)
- Anatomy & Physiology (BIOL 223, 224) students have the opportunity to dissect human cadavers.
- Gateway biology courses include lab experiences involving PCR.
- A majority of lecture and lab course pairings are taught by full-time faculty as opposed to a teaching or lab assistant. Most lab science sections are taught by full-time faculty.
- Select lecture sections are offered via lecture capture by which students can interact with live lectures remotely and attend lab sections on a WNC campus that is most convenient.
- WNC's main campus boasts an observatory with direct faculty connections to physics and engineering faculty.
- Geoscience courses emphasize opportunities for fieldwork.
- Required science courses and those emphasized by relevant transfer agreements carry average enrollments of approximately 17 students.

emphasis on regular reporting and reflection.

iii. Significant changes or needs in the next five years

Please see recommendations detailed in **section 2.G**.

- AS Program Lead Faculty
- Assessment: writing in the sciences
- Update of AS Program Student Learning Outcomes
- Review of *Group C* under AS Gen. Ed. Science Requirement
- Consistent reporting and development of AS assessment projects
- Development of faculty advising roles (see CCSSE #6 below)
- Review of online offerings and possible expansion

2014 CCSSE #6 "While attending this college, what has been your best source of academic advising (academic planning, course recommendations, graduation requirements, etc.)?"

- 50% (273/543) chose 'Academic Advisor (faculty)'
- 7% (35/543) chose 'Academic Advisor (not faculty)'
- 20% chose 'Friends, family, or other students'

Next section: **Program Student Learning Outcomes (1.D)**

Jump to:

- **Degrees and/or Certificates Offered (1.E)**
- **Niches Served (1.F)**

Program Student Learning Outcomes (1.D)

Western's General Education Student Learning Outcomes and Institutional Student Learning Outcomes were updated in Fall 2014.

The revision is based on the LEAP (**Liberal Education and America's Promise**) and DQP (**Degree Qualifications Profile**) models. These are initiatives of the AAC&U (Association of American Colleges and Universities) and Lumina Foundation based on research into knowledge, skills, and attitudes that employers seek from college educated individuals. Institutional outcome #7 provides a basis for alignment of learning outcomes related to all WNC degree programs.

AS Mission (2014-15 WNC Program Guide and wnc.edu)
The purpose of the AS degree is to provide the academic knowledge and skills for successful transfer to meet higher education goals.

Program Guide	**wnc.edu (WNC AS Mission and Outcomes)**
Students who complete an Associate of Science degree at WNC are expected to demonstrate that they: • have met the general education student learning outcomes. • understand the content of calculus. • can apply the content of calculus at the appropriate level in mathematics, science, and/or engineering courses. • understand scientific inquiry and the role of science and technology in the modern world. • can succeed at their transfer institution.	Students who complete either an Associate of Arts or an Associate of Science degree at WNC are expected to demonstrate that they: • have met general education student learning outcomes. • know the subject matter appropriate to the emphasis of the degree. • can succeed at their transfer institutions.

The 2014-15 AS Program Review team recommends replacing the mission statement and student learning outcomes with the following:

The mission of the Associate of Science degree is to provide the academic knowledge

and skills for successful transfer to meet higher education goals.
Associate of Science Program Outcomes--
The successful student will:

- Meet all general education student learning outcomes.
- Be able to identify the fundamental tenets of scientific inquiry.
- Present accurate calculations and symbolic operations, and explain how such calculations and operations are used in the sciences, mathematics, or engineering.
- Use critical thinking and creativity to select and apply recognized experimental techniques suitable for examining contemporary or enduring problems in the sciences.
- Be prepared to succeed at transfer institution.

Success threshold: students who transfer to baccalaureate programs at UNR or UNLV will succeed at a rate equivalent to or greater than those who begin similar programs at the respective universities.

Next--Sub sections:

- **WNC General Education SLOs (1.D.1)**
- **WNC Institutional SLOs (1.D.2)**
- **Program SLO Course Matrix (1.D.3)**

Jump to:

- **Degrees and/or Certificates Offered (1.E)**
- **Niches Served (1.F)**

WNC General Education SLOs (1.D.1)

Western Nevada College General Education Student Learning Outcomes Approved Fall 2014

Intellectual Skills

1. Demonstrate working knowledge of key concepts, principles, themes, and major content areas needed to explain and solve discipline-specific problems.

2. Present substantially error-free prose suitable in style and content to the purpose of the document and the audience.

3. Present accurate calculations and symbolic operations, and explain how such calculations and operations are used in either the specific field of study or in interpreting information in other fields.

4. Locate, evaluate, and appropriately use information from multiple resources to complete projects, activities, and papers.

Personal and Social Responsibility

5. Describe diverse historical and/or contemporary positions on selected democratic values or practices.

6. Take an active role in a community context (work, service, co-curricular activities, etc.), and examine the civic issues encountered and the insights gained from the community experience.

7. Design an approach or process toward resolving a social, personal or ethical dilemma.

Integrative Learning

8. Describe approaches from at least two disciplines that identify, define, and address the importance of a significant contemporary or enduring problem.

9. Use critical thinking and creativity to select and apply recognized methods suitable for solving significant contemporary or enduring problems.

10. Draw a conclusion about how to solve a significant contemporary or enduring problem, and present a rational defense of the conclusion.

Next sub section:

- WNC Institutional SLOs (1.D.2)
- Program SLO Course Matrix (1.D.3)

Back to:

- Program Student Learning Outcomes (1.D)

Jump to:

- Degrees and/or Certificates Offered (1.E)

WNC Institutional SLOs (1.D.2)

Western Nevada College Institutional Student Learning Outcomes
Approved Fall 2014 (*Revised 3-27-2015*)
Students completing degrees at WNC need to demonstrate a combination of intellectual skills, personal and social responsibility, and the ability to integrate knowledge and skills to understand and solve contemporary and enduring problems. Upon completing a degree at WNC, students must demonstrate they are able to:

1. Identify, describe, and apply information, theories, methodologies and approaches from the sciences, social sciences, and humanities/arts. (Working Knowledge)

2. Write effective projects, papers, and reports. (Written Communication)

3. Present accurate calculations and symbolic operations, and explain how such calculations and operations are used in either the specific field of study or in interpreting information in other fields.(Quantitative Reasoning)

4. Locate, evaluate, and appropriately use information from multiple resources to complete projects, activities, and papers. (Information Competency)

5. Describe diverse historical and/or contemporary positions on selected democratic values or practices. (Diversity & Society)

6. Integrate knowledge and skills from the study of sciences, mathematics, social sciences, and the humanities/arts to think critically about and develop solutions to contemporary and/or enduring problems. (Critical Thinking)

Notes:

- Institutional learning outcomes provide a framework for **alignment of degrees** and programs with the college's strategic plan. Just as general education student learning outcomes help clarify the integrative roles that general education courses play in the substance of a degree at Western, the institutional outcomes provide **linkage within the strategic plan** for overarching degree program goals.

- Institutional outcomes #1-6 line up with **core elements of the general education** outcomes which are based on the LEAP (Liberal Education and America's Promise) and DQP (Degree Qualifications Profile) models. These are initiatives of the AAC&U (Association of American Colleges and Universities) and Lumina Foundation **based on research into knowledge, skills, and attitudes that employers seek from college educated individuals**. Institutional outcome #7 provides a basis for alignment of learning outcomes related to all WNC degree programs.

- **Demonstration of the care taken to ensure alignment is an important component of accreditation.** Toward mission fulfillment, it is the institution's responsibility to make clear the linkage between degree programs and its mission and goals. **Student achievement of learning outcomes is as critical to the accreditation process** as any other measures of institutional success.

7. Identify, describe, and apply information in the discipline or career area of their choice sufficient for further study and/or demonstrate competencies required to succeed in the workplace. (Career Preparation)

Next sub section:

- Program SLO Course Matrix (1.D.3)

Back to:

- Program Student Learning Outcomes (1.D)

Jump to:

- Degrees and/or Certificates Offered (1.E)

Program SLO Course Matrix (1.D.3)

- Meet all general education student learning outcomes.
- Be able to identify the fundamental tenets of scientific inquiry.
- Present accurate calculations and symbolic operations, and explain how such calculations and operations are used in the sciences, mathematics, or engineering.
- Use critical thinking and creativity to select and apply recognized experimental techniques suitable for examining contemporary or enduring problems in the sciences.
- Be prepared to succeed at transfer institution.

Course	Gen.Ed. Status	Fund. Tenets	Calc./Ops.	Cr. Thk./Exp. Tech.	Trans. Prep.
BIOLOGY					
BIOL 190/190L	Science (A)	X	X	X	X
BIOL 191/191L	Science (A)	X		X	X
BIOL 223	Science (C)	X		X	X
BIOL 224	Science (C)	X		X	X
BIOL 251	Science (C)	X		X	X
CHEMISTRY					
CHEM 121	Science (A)	X	X	X	X
CHEM 122	Science (A)	X	X	X	X
	Science				

Course	Gen.Ed. Status	Fund. Tenets	Calc./Ops.	Cr. Thk./Exp. Tech.	Tra Pre
MATHEMATICS					
MATH 181	Mathematics		X	X	X
MATH 182	Mathematics		X	X	X
MATH 283	Mathematics		X	X	X
MATH 285	Mathematics		X	X	X
MATH 330	Mathematics		X	X	X
PHYSICS/ENGINEERING					
PHYS 151	Science (A)		X	X	X
PHYS 152	Science (A)		X	X	X
PHYS 180/180L	Science (A)	X	X	X	X
PHYS 181/181L	Science (A)	X	X	X	X
PHYS 182/182L	Science (A)	X	X	X	X
Additional AS Science Requirement Courses					
ANTH 102	Science (B)	X		X	X

CHEM 220	(C)	X		X	X
CHEM 241		X	X	X	X
CHEM 242		X	X	X	X
GEOSCIENCE					
GEOG 103/104*	Science (B)				X
GEOG 106	Social Science				
GEOG 200	Social Science				
GEOL 101/103*	Science (A)				X
GEOL 102					

*Preliminary response to proposed AS outcomes:
Geosciences at the undergraduate level are essentially observational sciences, rather than experimental. As a result [certain required] classes do not fit into the new program outcome statements. [Geosciences faculty] suggest that we need to look at what these outcomes mean for the earth science students in their pursuit of an AS degree and the possibility of adding or editing an outcome to better suit the Geosciences. For reference, [please see] the UNR Core Student outcome that Geoscience classes there address:
Core Objective 4 [UNR]: Physical & Natural Phenomena: Students will be able to explain the processes by which the natural and physical world is investigated, articulate basic principles used to explain natural phenomena, and apply scientific processes to real problems using observational or experimental methods.

ANTH 110L	Science (B)	X		X	X
AST 109	Science (B)		X		
AST 110	Science (B)		X		
AST 120	Science (B)		X		

Back to:

- **Program Student Learning Outcomes (1.D)**

Next section:

- **Degrees and/or Certificates Offered (1.E)**

Degrees and/or Certificates Offered (1.E)

The 2014-15 Associate of Science Program Review focuses uniquely on the WNC Associate of Science degree. Within the past five years, this degree has been offered both in conjunction with specific emphases and as a generic transfer preparation; in either form, the intent is to support students interested in pursuing a bachelor's degree. For the purposes of this review, all Associate of Science degrees, regardless of emphasis, pursued or earned in the relevant five year period are considered equally.

Background

During the 2011-12 academic year, steps were taken to remove degree emphases from within both the Associate of Arts and Associate of Science degrees (see attachments below). Degree emphases under the AS umbrella previously included:

- Biological Sciences
- Chemistry
- Computer Science
- Engineering Science
- Geosciences
- Mathematics
- Physics

Beginning in Fall 2012, new students pursuing degrees in any of these emphasis areas worked toward a general Associate of Science degree which requires a minimum 39 general education credits and allows 16 to 21 credits for electives and transfer requirements. This degree may be tailored to align with numerous bachelor's degree programs at NSHE institutions by way of transfer agreements and are regularly accepted by institutions outside of Nevada.

Next Section: Niches Served (1.F)

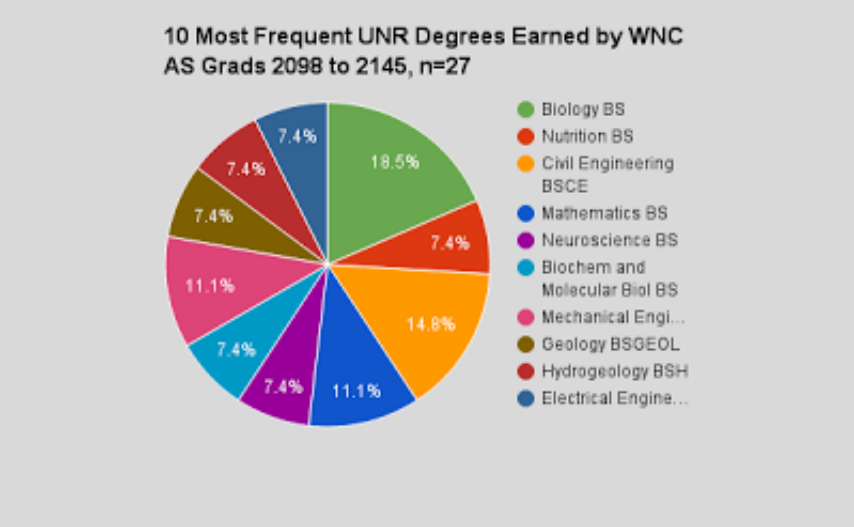
Jump to: Quality of Program (2)

Niches Served (1.F)

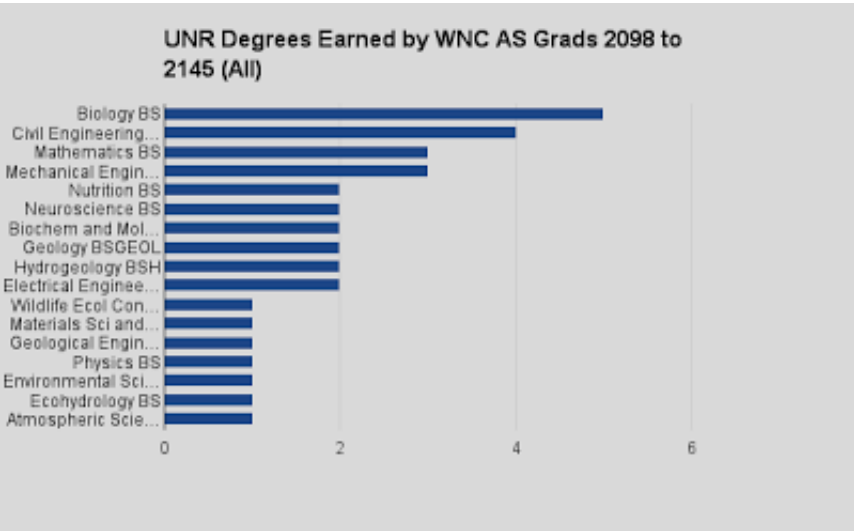
The extremely wide scope of the WNC AS degree provides pathways for students with a variety of educational and professional goals.
Some unique niches served by the programs or by required courses or sequences include:

- University transfer to a wide range of bachelor's degrees in science
- Prerequisites for nursing and other health science programs
- General education credit for all gateway AS courses in BIOL, CHEM, GEOG, GEOL, MATH, PHYS

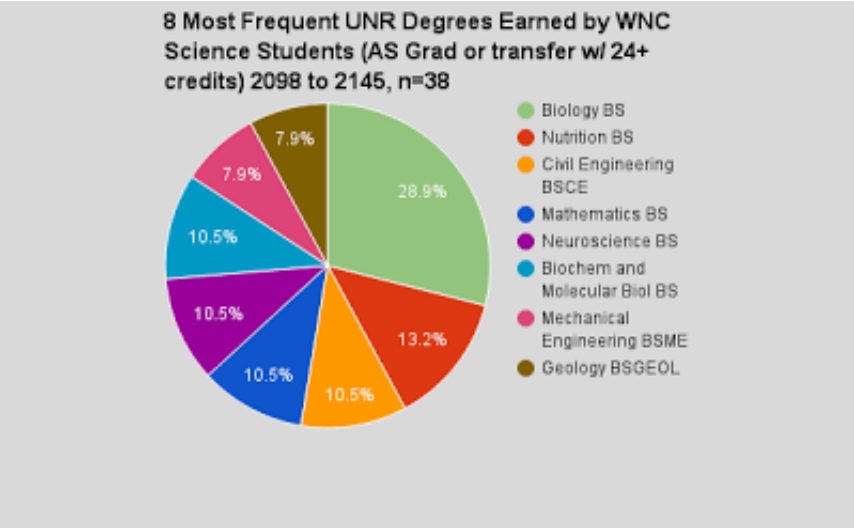
UNR Degrees Earned by WNC AS Grads:
(click graphic to enlarge)



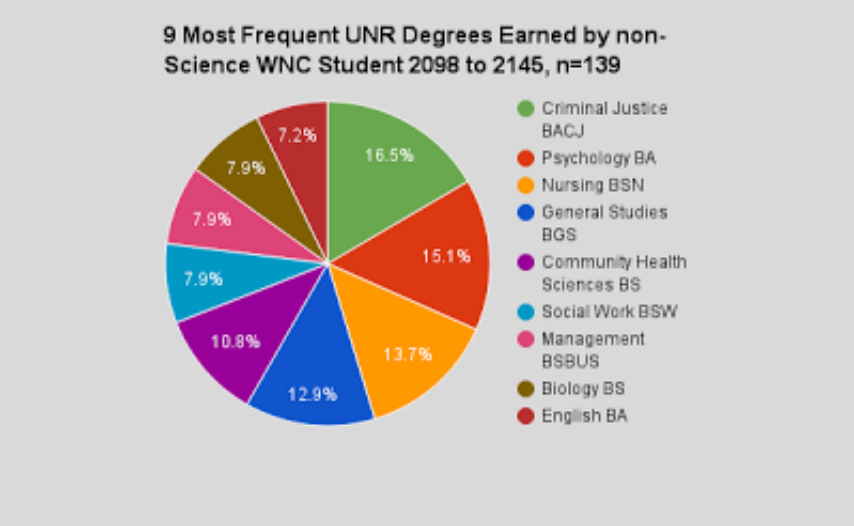
(2098 = Fall 2009; 2145 = Summer 2014)



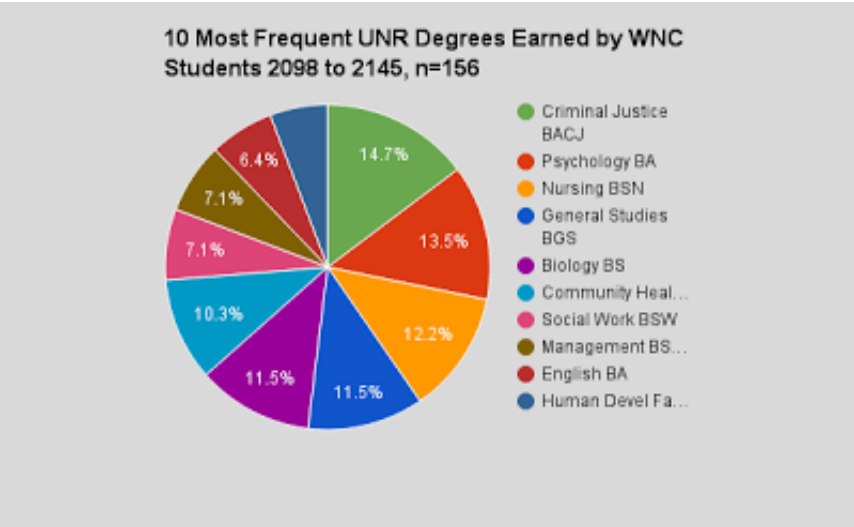
UNR Degrees Earned by all WNC Science Student Transfers



UNR Degrees Earned by WNC Non-Science Transfers



UNR Degrees Earned by all WNC Transfer Students



The Nursing Niche

Biology--Enrollments by Major

Chemsitry--Enrollments by Major

Geoscience--Enrollments by Major

Mathematics--Enrollments by Major

Physics--Enrollments by Major

Engineering 100--Enrollments by Major

This Concludes Part 1: Program Description

Jump to Part 2: Quality of Program (2)

Back to Main Page: Associate of Science Program Review 2015

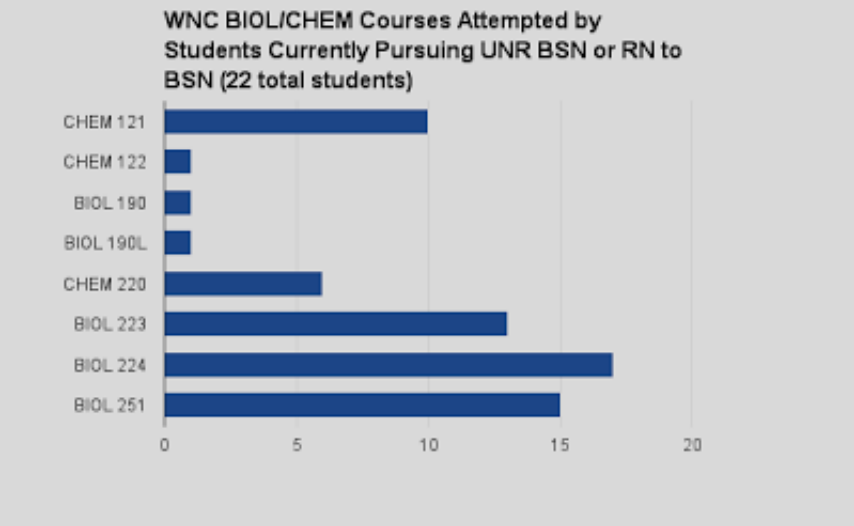
The Nursing Niche

Biol/Chem Enrollment Totals AS vs AAS NURS

2098 to 2145 (corrected 11-12-15)

Biol	AAS RN	AS	Other	Total Enrl
100	5.3%	6.7%	88.0%	1410
113	4.3%	7.0%	88.7%	470
190	16.0%	26.5%	57.6%	257
191	3.7%	35.1%	61.2%	134
200	21.3%	10.0%	68.7%	150
204	25.0%	5.8%	69.2%	52
208	0.0%	0.0%	100.0%	4
223	44.9%	10.8%	44.4%	836
224	43.7%	10.3%	46.1%	662
251	47.7%	8.6%	43.8%	619
190L	15.7%	26.5%	57.8%	223
191L	3.8%	35.9%	60.3%	131

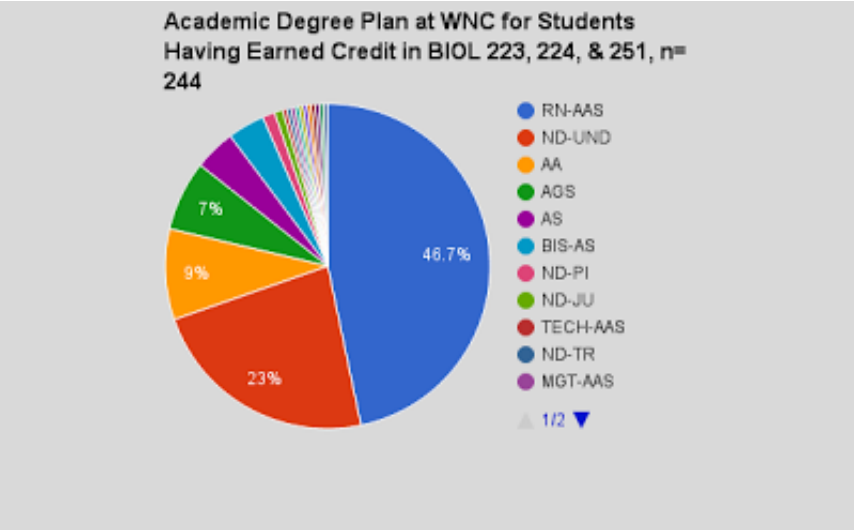
Chem	AAS RN	AS	Other	Total Enrl
100	7.7%	9.9%	82.4%	233
121	30.8%	20.9%	48.3%	1597
122	5.9%	39.1%	55.0%	220
220	20.0%	16.7%	63.3%	60
241	0.0%	31.3%	68.8%	16
242	0.0%	33.3%	66.7%	12
241L	0.0%	31.3%	68.8%	16
242L	0.0%	33.3%	66.7%	12

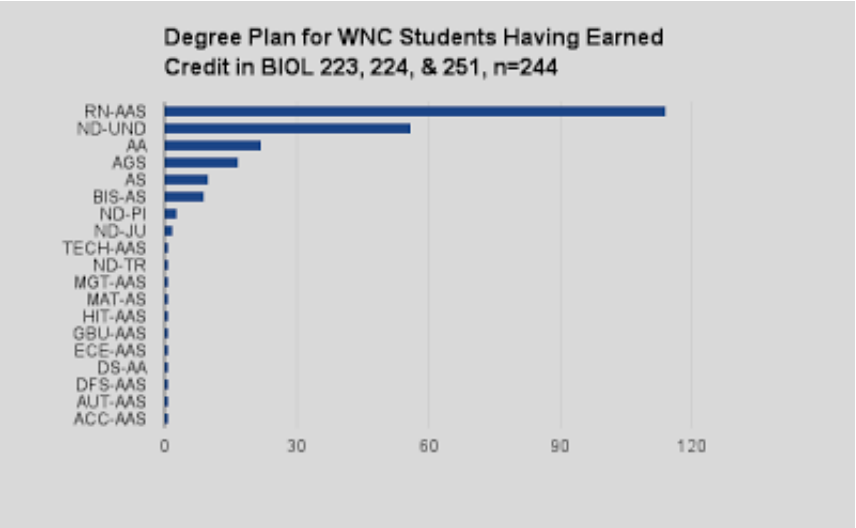


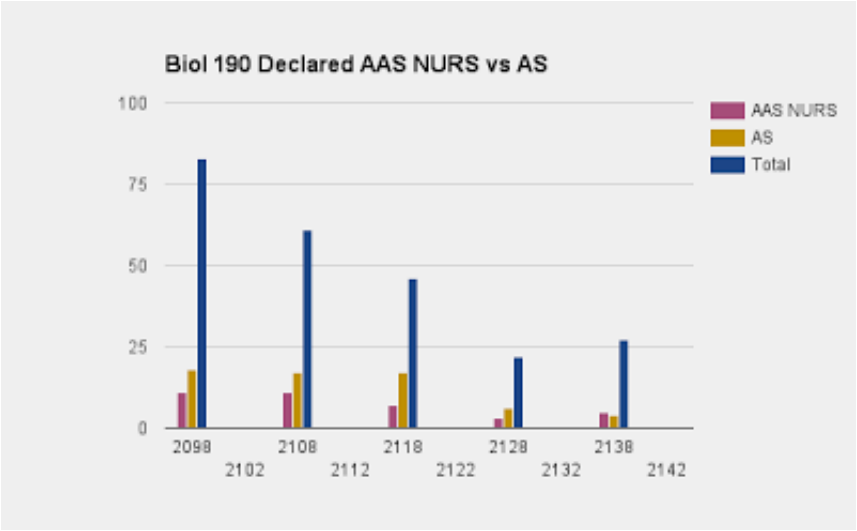
From 2098 to 2145:

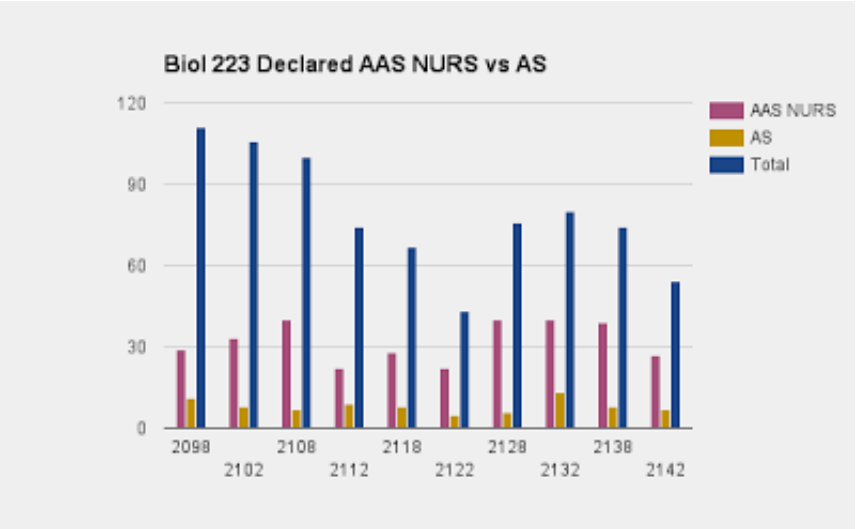
- 296 WNC students attempted BIOL 223, 224, and 251
- 246/296 (83%) earned credit for all three courses (repeat attempts possible)
- 43/246 (17%) transferred to UNR (3 appear to be currently working on a UNR BSN or RN/BSN degree)
- 20/246 (8%) of these students completed degrees at UNR; here they are specifically:

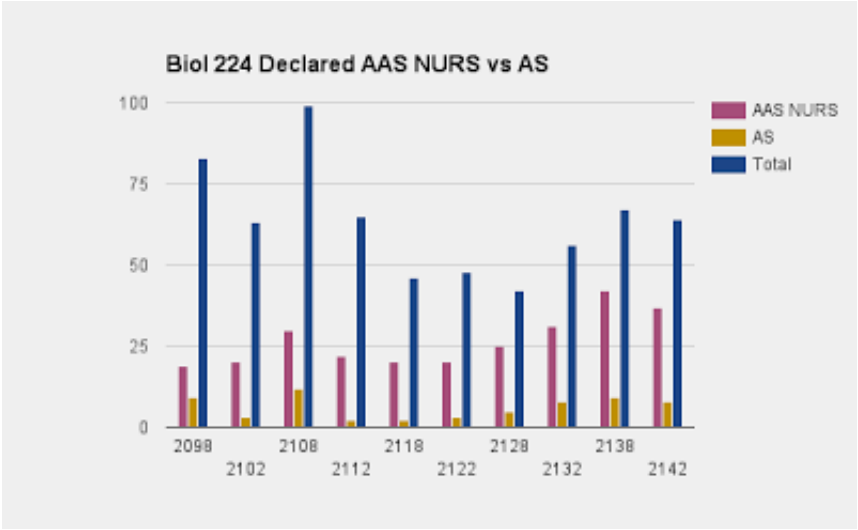
Nursing BSN
Nutrition BS
Management BSBUS
Nursing BSN
Nursing BSN
Nursing BSN
Psychology BA
Nursing BSN
Nursing BSN
Political Science BA
Community Health Sciences BS
Nursing BSN
Nursing BSN
Nursing BSN
Human Devel Fam Studies BS
Biology BS
Biology BS
Neuroscience BS
Animal Science BS
Nursing BSN

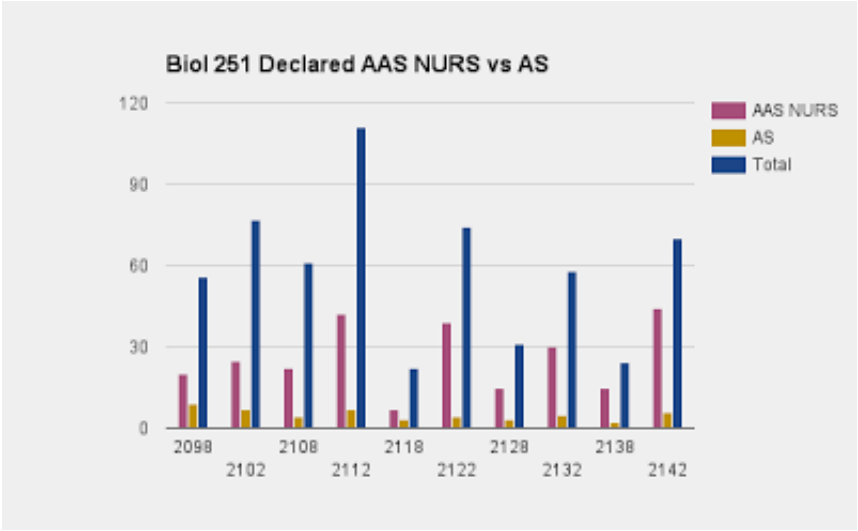


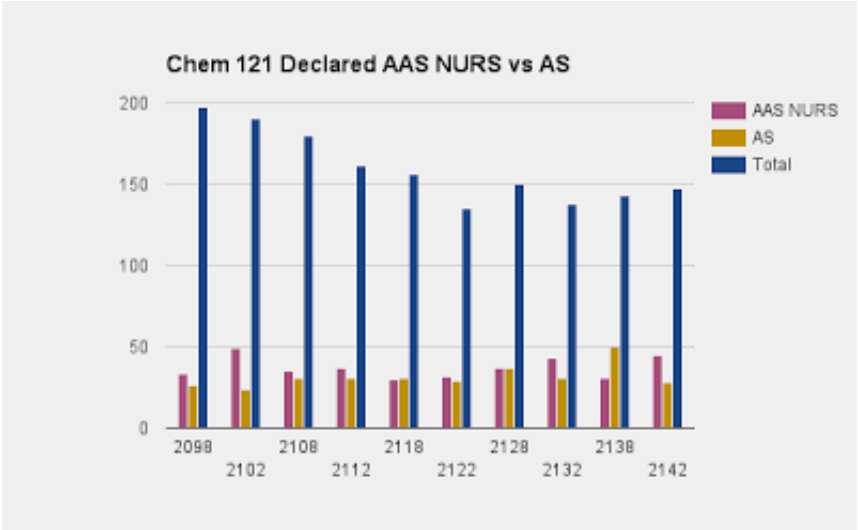

Degree Plan for WNC Students Having Earned Credit in BIOL 223, 224, & 251, n=244
RN-AAS
ND-UND
AA
AGS
AS
BIS-AS
ND-PI
ND-JU
TECH-AAS
ND-TR
MGT-AAS
MAT-AS
HIT-AAS
GBU-AAS
ECE-AAS
DS-AA
DFS-AAS
AUT-AAS
ACC-AAS
0
30
60
90
120

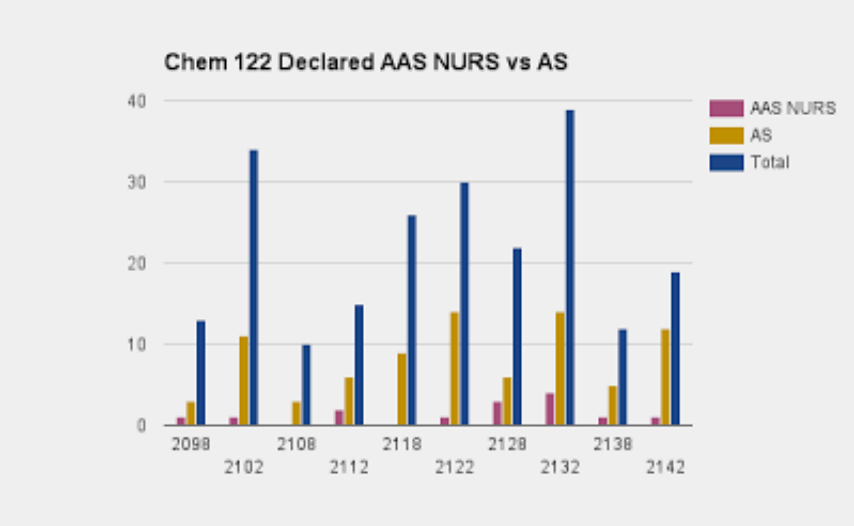

Biol 190 Declared AAS NURS vs AS
100
75
50
25
0
2098
2102
2108
2112
2118
2122
2128
2132
2138
2142
AAS NURS
AS
Total

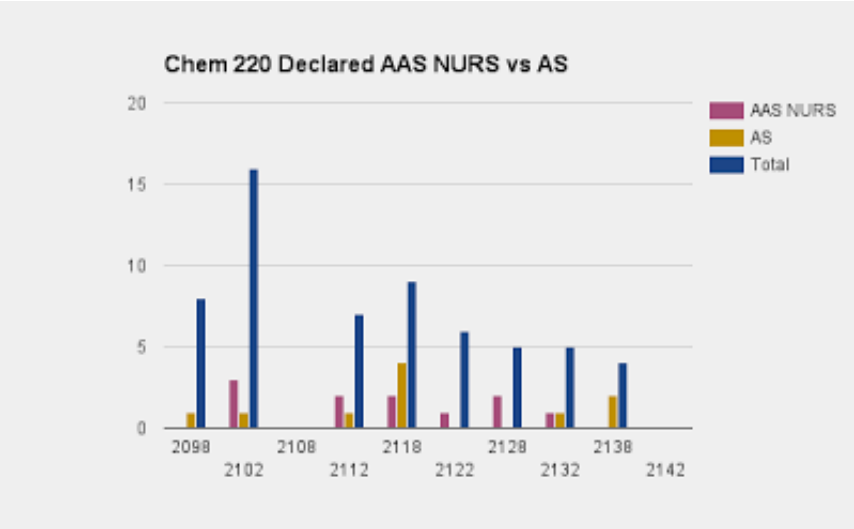

Biol 223 Declared AAS NURS vs AS
120
90
60
30
0
2098
2102
2108
2112
2118
2122
2128
2132
2138
2142
AAS NURS
AS
Total


Biol 224 Declared AAS NURS vs AS
100
75
50
25
0
2098
2102
2108
2112
2118
2122
2128
2132
2138
2142
AAS NURS
AS
Total


Biol 251 Declared AAS NURS vs AS
120
90
60
30
0
2098
2102
2108
2112
2118
2122
2128
2132
2138
2142
AAS NURS
AS
Total


Chem 121 Declared AAS NURS vs AS
200
150
100
50
0
2098
2102
2108
2112
2118
2122
2128
2132
2138
2142
AAS NURS
AS
Total





Back to: **Niches Served (1.F)**

Quality of Program (2)

89% of students who participated in the 2014 CCSSE Survey rated the academic quality of the college in general as *good* or *excellent*. (*Source:* 2014 CCSSE q#9)

Next section:

- **Evidence of Effectiveness (2.A)**

Jump to:

- **Evidence of Satisfaction (2.B)**
- **Certifications/Licenses (2.C)**
- **Enrollment Trends (2.D)**
- **Need for the Program (2.E)**
- **Curriculum Review Report (2.F)**
- **Findings and Recommendations (2.G)**

Mathematics Assessment Summary

Math Assessment Summary.docx

Math Assessment Results 14-15.docx

Math Assessment Report 11-12.pdf

Math Assessment Report 10-11.pdf

Math Assessment Report 09-10.pdf

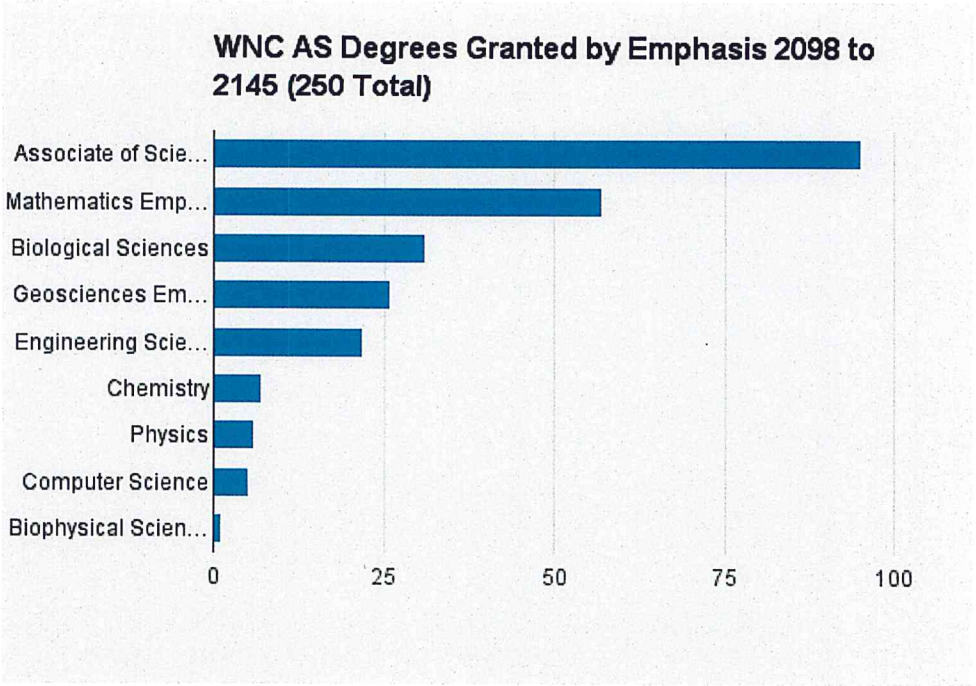
Math Assessment Report 08-09.pdf

Back to: Evidence of Effectiveness (2.A)

Evidence of Effectiveness (2.A)

A. Evidence of Effectiveness

Please click links for detailed subsections.



i. Course Scheduling/Enrollment History Report (2.A.i)

2014 CCSSE #12 "Courses at this college are offered in such a way that I can take them in the recommended sequence and still complete my degree in a timely manner." 420/536 = 78% agree or strongly agree.

ii. Summary Data Sheet (2.A.ii):

- **Performance at Primary Transfer Institution**
- **Enrollment History Report (2.A.i)**
- **UNR Degrees Earned by WNC AS Grads and Transfer Students**
- **Faculty Workload and Student FTE**

(source IR intranet pg)	2011	2012	2013	2014
AS Declared (fall)	375	441	440	452
AS Graduates (fall+spring)	37	43	68	70

iii. Systematic Assessment Detail View (2.A.iii):

Department	**Assessment Type**	**Course Assessments**		
Biology Assessment Summary	Pre/Post--HAPS	A&P Series		
Chemistry Assessment Summary	Pre/Post--ACS	GenChem Series		

Geosciences Assessment Summary				
Mathematics Assessment Summary	Common Question	181,182,283,285		
Physics & Engineering Assessment Summary	Pre/Post-- Learning Gains	180, 181		

Next Section: **Evidence of Satisfaction (2.B)**

Jump to:

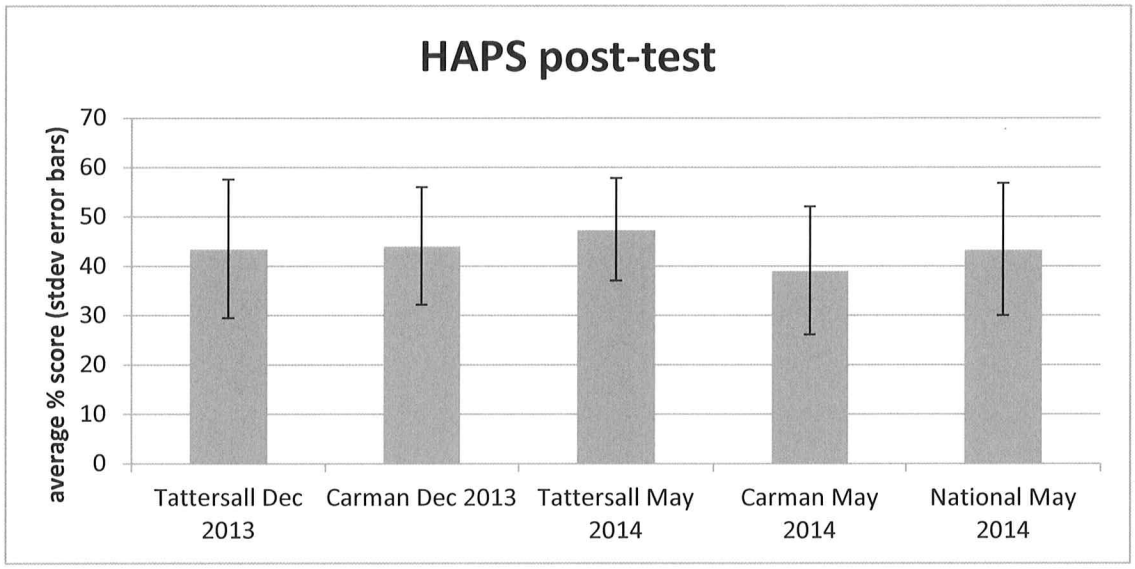
- **Certifications/Licenses (2.C)**
- **Enrollment Trends (2.D)**
- **Need for the Program (2.E)**
- **Curriculum Review Report (2.F)**
- **Findings and Recommendations (2.G)**

Biology Assessment Summary

HAPS Data 2013-14.pdf

Back to: Evidence of Effectiveness (2.A)

	Tattersall Dec 2013	Carman Dec 2013	Tattersall May 2014	Carman May 2014	National May 2014
avg	43.4375	44	47.31579	39	43.3
lo	21	27	33	20	11
hi	63	75	64	64	99
mode	62	45	38	34	44
stdev	14.05214	11.894	10.39259	13	13.4
median	42.5	41	47	34	42
p val (ttest btwn instructors)			0.177676		
range			36	44	
N	16	15	19	11	1559



Chemistry Assessment Summary

ACS Assessment CHEM 121 Data 2011-2015a.xlsx

ACS Data 2014.docx

2011-2012 AS Chemistry Plan

2012-2011 AS Chemistry Report

Back to: Evidence of Effectiveness (2.A)

CHEM 121 ACS Post-Test Assessment (Score in **Per Cent (%)**!) Fall 2011 - Spring													
	Carman ACS Form 2000								**Evett ACS Form 2**				
	2011-01	2011-03	2012-01	2012-03	2013-01	2013-03	2014-01	2014-03	2011-01	2011-03	2012-01	2012-03	2013-01
	ACS %	ACS %	ACS %	ACS %	ACS %	ACS %	ACS %	ACS %	ACS %	ACS %	ACS %	ACS %	ACS %
1	56	74	68	58	30	23	31	37					
2	50	45	40	17	53	44	25	23					
3	34	32	42	20	35	40	27	23					
4	37	64	48	27	77	30	44	30					
5	66	49	45	28	38	30	35	40					
6	64	32	35	57	42	44	53	44					
7	40	38	72	18	43	36	55	40					
8	43	38	68	47	47	29	52	53					
9	37	36	40	27	40	29	32	34					
10	36	36	28	70	37	47	36	73					
11	36	71	35	23	32	64	44	33					
12	37	42		50	38	41	37	37					
13	36	28		25	38	60	25	27					
14	27	45		30	32	20	29	71					
15	37	42		63	38	29	21	43					
16	36	55		27	30	39	23	30					
17	47	28		38	43	27	27	34					
18	24	35		55	35	29	39	50					
19	49	35		30	33	31	60						
20	27	67		52	32	43							
21	40	90		43	85								
22	59	100		45									
23	26	64		38									
24	23	45		37									
25	29	87		25									
26	43	49		37									
27	39	35		40									
28	27	60		30									
29	39	35		37									

2015 -- ACS Form 2000 (Carman began using form 2012 in 2015-01)													
2000				**Tattersall ACS Form 2000**									
2013-03	2014-01	2014-03	2015-01	2011-01	2011-03	2012-01	2012-03	2013-01	2013-03	2014-01	2014-03	2015-01
ACS %	ACS %	ACS %	ACS %	ACS %	ACS %	ACS %	ACS %	ACS %	ACS %	ACS %	ACS %	ACS %
										35.71429	38.57143	47.14286
										31.42857	58.57143	30
										37.14286	41.42857	42.85714
										28.57143	40	41.42857
										62.85714	50	40
										48.57143	38.57143	40
										34.28571	38.57143	25.71429
										37.14286	62.85714	42.85714
										52.85714	40	41.42857
										37.14286	18.57143	27.14286
										28.57143	44.28571	21.42857
										18.57143	51.42857	
										38.57143	51.42857	
										24.28571	87.14286	
										28.57143	45.71429	
										32.85714	38.57143	
										51.42857	35.71429	
											40	
											37.14286	
											50	
											45.71429	
											52.85714	
											50	

30	63	41		45									
31	50	64		40									
32	33	41		47									
33	40	45		28									
34		35											
35		55											
36		42											
Hi	**66**	**100**	**72**	**70**	**85**	**64**	**60**	**73**					
Median	**37**	**44**	**42**	**37**	**38**	**34**	**35**	**37**	**#NUM!**	**#NUM!**	**#NUM!**	**#NUM!**	**#NUM!**
Mean	**40**	**49**	**47**	**38**	**42**	**37**	**37**	**40**	**#DIV/0!**	**#DIV/0!**	**#DIV/0!**	**#DIV/0!**	**#DIV/0!**
St Deva	**11.55136**	**18.03601**	**15.1081**	**13.48712**	**14.28502**	**11.5789**	**11.77833**	**14.23427**	**#DIV/0!**	**#DIV/0!**	**#DIV/0!**	**#DIV/0!**	**#DIV/0!**
Mode	**37.14286**	**34.61538**	**68**	**26.66667**	**38**	**28.57143**	**25.33333**	**37.14286**	**#N/A**	**#N/A**	**#N/A**	**#N/A**	**#N/A**
Lo	**23**	**28**	**28**	**17**	**30**	**20**	**21**	**23**					
N	**33**	**36**	**11**	**33**	**21**	**20**	**19**	**18**					
Raw Avg	**28**	**35**	**33**	**27**	**29**	**26**	**26**	**28**	**#DIV/0!**	**#DIV/0!**	**#DIV/0!**	**#DIV/0!**	**#DIV/0!**
AVG %ile	**14**	**33**	**26**	**11**	**16**	**9**	**9**	**14**					

#NUM!	#NUM!	#NUM!	#NUM!	#NUM!	#NUM!	#NUM!	#NUM!	#NUM!	#NUM!	36	44	40
#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	37	46	36
#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	11.28122	12.7532	8.603835
#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	37.14286	38.57143	42.85714
#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	26	32	25

	CHEM 121 ACS Pre-Test Assessment (Score in **Per Cent (%)**!) Fall 2011 - Spring													
									Evett ACS Form					
									2011-01	2011-03	2012-01	2012-03	2013-01	
									ACS %	ACS %	ACS %	ACS %	ACS %	
1														
2														
3														
4														
5														
6														
7														
8														
9														
10														
11														
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19														
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22														
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24														
25														
26														
27														
28														
29														

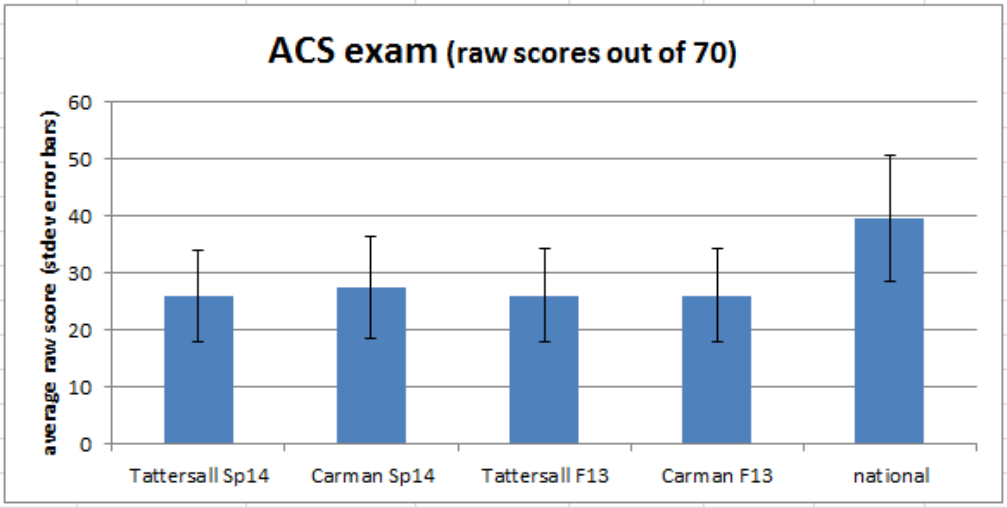
2015 -- ACS Form 2000 (Carman began using form 2012 in 2015-01)													
2000				**Tattersall ACS Form 2000**									
2013-03	2014-01	2014-03	2015-01	2011-01	2011-03	2012-01	2012-03	2013-01	2013-03	2014-01	2014-03	2015-01	
ACS %	ACS %	ACS %	ACS %	ACS %	ACS %	ACS %	ACS %	ACS %	ACS %	ACS %	ACS %	ACS %	
									23	27.14286	24.28571	25.71429	
									23	31.42857	30	22.85714	
									26	22.85714	30	20	
									26	21.42857	25.71429	32.85714	
									27	31.42857	25.71429	25.71429	
									36	24.28571	31.42857	22.85714	
									36	24.28571	21.42857	21.42857	
									42	15.71429	30	28.57143	
									43	31.42857	22.85714	30	
									43	30	15.71429	25.71429	
									44	21.42857	11.42857	24.28571	
									44	12.85714	15.71429	22.85714	
									44	24.28571	27.14286	24.28571	
									44	24.28571	44.28571	31.42857	
									46	15.71429	28.57143	18.57143	
									50	18.57143	34.28571	17.14286	
									60	22.85714	25.71429	24.28571	
									63	28.57143	31.42857		
										27.14286	27.14286		
											21.42857		
											30		

30													
31													
32													
33													
34													
35													
36													
Hi													
Median									**#NUM!**	**#NUM!**	**#NUM!**	**#NUM!**	**#NUM!**
Mean									**#DIV/0!**	**#DIV/0!**	**#DIV/0!**	**#DIV/0!**	**#DIV/0!**
St Deva									**#DIV/0!**	**#DIV/0!**	**#DIV/0!**	**#DIV/0!**	**#DIV/0!**
Mode									**#N/A**	**#N/A**	**#N/A**	**#N/A**	**#N/A**
Lo													
N													
Raw Avg									**#DIV/0!**	**#DIV/0!**	**#DIV/0!**	**#DIV/0!**	**#DIV/0!**
AVG %ile													

#NUM!	#NUM!	#NUM!	#NUM!	#NUM!	#NUM!	#NUM!	#NUM!	#NUM!	43	24		24
#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	40	24		25
#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	11.6871	5.524198		4.301442
#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	44	24.28571		25.71429
#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	28	17	0	17

ACSsummary - Microsoft Excel

	A	B	C	D	E	F	G	H
1	ACS (out of 70)							
2		Tattersall Sp14	Carman Sp14	Tattersall F13	Carman F13	national		
3	MEAN raw	25.88235294	27.42105	25.94444444	26	39.58		
4	STDEV raw	7.896853431	8.833747	8.221007683	8.105	10.99		
5	mean %	36.97478992	36.5614					
6	stdev %	11.28121919	11.77833					
7	MODE	26	19	29	24			
8	median	25	26	28	24	39.3		
9	hi	44	45	42	45			
10	lo	13	16	14	14			
11	N	18	19					



Sheet1 Sheet2 Sheet3

Ready 100%

2011-2012 Annual Academic Program Assessment Plan

Academic Program:	A.S. Chemistry
Academic Program Division:	Science, Mathematics, and Engineering
Program Responsible Person:	Mike Sady
Assessment Team Member/s:	Steve Carman, Gary Evett
Date Submitted:	19 May 2011
College Strategic Plan Goals:	1. Improve student success in program completion and graduation rates. 2. Ensure institutional excellence in teaching, programs and services. 3. Embrace our college's many communities and respond to their diverse needs.
Division Mission:	To prepare students to succeed in college-level science, math and engineering courses. ○ To prepare students to transfer to 4-year colleges. ○ To provide students with the knowledge they need in their careers. ○ To provide students with opportunities for personal enrichment
Program Mission:	Provide the academic knowledge and skills for successful transfer to meet higher educational goals.

2011-2012 Annual Academic Program Assessment Plan

Outcome #1

Program Goal:	To prepare students with an A.S. Chemistry degree to understand the basics of general and organic chemistry
Outcome:	Skills and knowledge in general and organic chemistry for our students.
Assessment Methods and Criteria for Success:	Standardized exams given to Chem 122 classes on all campuses F'11 & Sp'12semester.
Planned Use of Results:	To assess national norms and the performance of our WNC students.

2010-2011 Annual Academic Program Assessment Report

Academic Program:	A.S. Chemistry
Academic Program Division:	Science, Mathematics, and Engineering
Program Responsible Person:	Mike Sady
Assessment Team Member/s:	Steve Carman, Gary Evett
Date Submitted:	20 May 2011
College Strategic Plan Goals:	1. Improve student success in program completion and graduation rates. 2. Ensure institutional excellence in teaching, programs and services. 3. Embrace our college's many communities and respond to their diverse needs.
Division Mission:	To prepare students to succeed in college-level science, math and engineering courses. ○ To prepare students to transfer to 4-year colleges. ○ To provide students with the knowledge they need in their careers. ○ To provide students with opportunities for personal enrichment
Program Mission:	Provide the academic knowledge and skills for successful transfer to meet higher educational goals.

2010-2011 Annual Academic Program Assessment Report

Outcome #1

Program Goal:	To prepare students with an A.S. Chemistry degree to understand the basics of general and organic chemistry
Outcome:	Skills and knowledge in general and organic chemistry for our students..
Assessment Methods Used and Criteria for Success:	Unable to complete testing. Plan to begin again in Fall'11 with Chem 122.
Summary of Results and Conclusions Drawn:	Comparable to other colleges chemistry courses
Use of Results:	Curricular and testing review.

Completion Data

Total Attempts

		2098	2102	2108	2112	2118	2122	2128	2132	2138	2142	Grand Total
CHEM	121	197	190	180	161	156	135	150	138	143	147	1597

C or better

		2098	2102	2108	2112	2118	2122	2128	2132	2138	2142	Grand Total
CHEM	121	119	109	104	113	90	85	106	89	73	67	955
		60%	57%	58%	70%	58%	63%	71%	64%	51%	46%	60%

D- or better

		2098	2102	2108	2112	2118	2122	2128	2132	2138	2142	Grand Total
CHEM	121	132	120	114	123	113	89	115	101	98	115	1120
		67%	63%	63%	76%	72%	66%	77%	73%	69%	78%	70%

Geosciences Assessment Summary

Back to: Evidence of Effectiveness (2.A)

Math Assessment Summary

- Assessments are done for 120, 126, 127, 181, 182
- For Math 120, there are three specific questions given, and instructors are permitted to vary only minimally from the given questions.
- For each other course, there are two questions. Instructors have more freedom to vary the specifics of each question.
- The questions for each course are used on assessments throughout the semester. Instructors may choose which assessment each question appears on.
- The criteria for success is that the student's response is essentially correct according to the judgement of the instructor. That is, the student's response must demonstrate that the student understands the material well enough to solve the problem completely, but possibly with minor mistakes.
- Each instructor reports the number of students who took the assessment and the number of students who answered the question(s) essentially correctly.
- For each question, these numbers are combined to compute the success percentage.

RESULTS OF COMMON IMBEDDED QUESTIONS ON EXAMS SPRING 2014, FALL 2014, SPRING 2015

MATH 181, CALCULUS I

1. Find the equation of the tangent line to …

Two sections reported the following ratio (number of correct responses or with slight error) / (total number of responses)
433/53 = 62%

2. Find the area of the region bounded by the graph of …

Two sections reported the following ratio (number of correct responses or with slight error) / (total number of responses)
26/48 = 54%

MATH 182, CALCULUS II

1. Find the volume of the solid generated by revolving the region bounded by …

Two sections reported the following ratio (number of correct responses or with slight error) / (total number of responses)
25/39 = 64%

2. Using partial fractions, find the integral of …

Two sections reported the following ratio (number of correct responses or with slight error) / (total number of responses)
16/36 = 44%

MATH 127, PRECALCULUS II

1. Using the laws of sines and cosines, find the missing angles A, B and side c…

Two sections reported the following ratio (number of correct responses or with slight error) / (total number of responses)
31/36 = 86%

2. Find all solutions of the quadratic trigonometric equation over the interval $[0, 2\pi)$

Two sections reported the following ratio (number of correct responses or with slight error) / (total number of responses)
16/34 = 47%

MATH 126, PRECALCULUS I

1. How much of a 10 kg sample of radioactive material with half- life 60 years will remain in 100 years?

Three sections reported the following ratio (number of correct responses or with slight error) / (total number of responses)
46/59 = 80%

2. Find the horizontal and vertical asymptotes and graph the rational function…

Three sections reported the following ratio (number of correct responses or with slight error) / (total number of responses)
46/58 = 79%

MATH 120, FUNDAMENTALS OF COLLEGE MATHEMATICS

1. a. $20,000 is invested at an annual percentage rate of 4.5% compounded quarterly. How much is the investment worth after 8 years?
   b. How much interest has accrued at the end of the 8 years?

Four sections reported the following ratios (number of correct responses) / (total number of responses)
40/59 = 68%

2. A bag contains 5 green marbles, 8 red marbles, and 12 blue marbles. Five marbles are drawn from the bag without replacement. Find the probability of drawing 2 red marbles and 3 blue marbles.

Four sections reported the following ratios (number of correct responses) / (total number of responses)
40/58 = 69%

3. The life span of Acme tires is normally distributed with a mean of 40,000 miles and a standard deviation of 3,500 miles. Find the probability that an Acme tire will last 45,000 miles or more.

Four sections reported the following ratios (number of correct responses) / (total number of responses)
24/46 = 52%

Conclusion: The data indicates a majority of the students are learning the material with the exception of question 2 in Math 182 and 127.

FALL 2011/SPING2012 ASSESSMENT REPORT, MATHEMATICS

Common questions for multiple sections and instructors were imbedded in exams for Math 120, 181, 182, 283, and 285 during the Fall/2011 and Spring/2012 semesters. The following results were collected.

MATH 120

Question 1 involved finance and compound interest. Eight sections reported the following ratio (number of correct responses or with slight error) / (total number of responses) **164/196 = 84%**

Question 2 involved probability and combinations. Six sections reported the following ratio (number of correct responses or with slight error) / (total number of responses) **108/151 = 72%**

Question 3 involved statistics and the normal curve. Six sections reported the following ratio (number of correct responses or with slight error) / (total number of responses) **101/144 = 70%**

MATH 181

Question 1 involved finding derivatives and the equation of a tangent line. Two sections reported the following ratio (number of correct responses or with slight error) / (total number of responses) **52/68 = 76%**

Question 2 involved finding the area under a curve. Two sections reported the following ratio (number of correct responses or with slight error) / (total number of responses) **50/66 = 76%**

MATH 182

Question 1 involved finding volumes of revolution. Three sections reported the following ratio (number of correct responses or with slight error) / (total number of responses) **53/72 = 68%**

Question 2 involved integration using partial fractions. Three sections reported the following ratio (number of correct responses or with slight error) / (total number of responses) **56/72 = 78%**

MATH 283

Question 1 involved directional derivatives. Three sections reported the following ratio (number of correct responses or with slight error) / (total number of responses) **36/54 = 67%**

Question 2 involved using a double integral to find the volume under a surface. Three sections reported the following ratio (number of correct responses or with slight error) / (total number of responses) **34/54 = 63%**

MATH 285

Question 1 involved mixture problems. One section reported the following ratio (number of correct responses or with slight error) / (total number of responses) **24/27 = 89%**

Question 2 involved finding the equation of motion of a vibrating spring with mass and damper. One section reported the following ratio (number of correct responses or with slight error) / (total number of responses) **20/27 = 74%**

CONCLUSION

The data indicates that a significant majority of the students have learned the material in their respective math classes and have gained an understanding of the content of calculus and differential equations.

2010-2011 Annual Academic Program Assessment Plan

Outcome #1

Program Goal:	By providing students with mathematical knowledge, WNC AS Math graduates will grow intellectually and have the ability to more easily integrate and develop technological advances into their academic and professional lives.
Outcome:	Students who complete an AS Math degree are expected to: 1. understand the content of calculus and differential equations; 2. succeed at their transfer institutions.
Assessment Methods and Criteria for Success:	1. Imbed common questions into exams for sections of Calculus I, II, III, and Differential Equations; 2. Track AS Math graduates BA/BS completion from Spring, 2006 through Spring, 2007.
Planned Use of Results:	The department members will meet at the beginning of the Fall/10 semester to develop the common questions. The department will meet at the conclusion of the 2010-2011 year to share and discuss results.

OUTCOME I

RESULTS OF COMMON IMBEDDED QUESTIONS ON EXAMS, FALL 2010 AND SPRING 2011

MATH 181, CALCULUS I

1. Find the equation of the tangent line to $f(x) = \frac{1}{(3-x)^2}$ at the point (2, 1).

Three sections reported the following ratio (number of correct responses or with slight error) / (total number of responses)
43/89 = 48%

2. Find the area of the region bounded by the graph of $y = -x^2 - 2x + 3$ and the x axis.

Five sections reported the following ratio (number of correct responses or with slight error) / (total number of responses)
51/71 = 72%

MATH 182, CALCULUS II

1. Find the volume of the solid generated by revolving the region bounded by
$$y = 2x^2 + 1, \quad x = 0, \quad x = 3, \quad y = 0,$$
about the x axis.

Two sections reported the following ratio (number of correct responses or with slight error) / (total number of responses)
51/57 = 89%

2010-2011 Annual Academic Program Assessment Plan

2. Find $\int \frac{4}{9x^2-1}\,dx$

Two sections reported the following ratio (number of correct responses or with slight error) / (total number of responses)
38/50 = 76%

MATH 283, CALCULUS III

1. Find the rate of change of $f(x,y) = x^2 + 2xy + y^3$ at the point $(-2,3)$ in the direction of the vector $v = \langle 1, 5 \rangle$.

Two sections reported the following ratio (number of correct responses or with slight error) / (total number of responses)
28/34 = 82%

2. Find the volume of the solid bounded by the graphs of the equations $2x + y + z = 6$, $x = 0$, $y = 0$, $z = 0$, first octant.

Two sections reported the following ratio (number of correct responses or with slight error) / (total number of responses)
25/34 = 74%

MATH 285, DIFFERENTIAL EQUATIONS

1. A tank initially contains 600 gallons of beer at 4% alcohol. Beer containing 7% alcohol begins to flow into the tank at the rate of 4 gal/min. The well-stirred mixture flows out at a rate of 5 gal/min. How many gallons of alcohol are in the tank 45 minutes later?

One section reported the following ratio (number of correct responses or with slight error) / (total number of responses)
21/35 = 60%

2. A mass of 0.5 kg hanging from a ceiling stretches a spring 0.49 m on coming to rest at equilibrium. The damping constant for the system is 4 N-sec/m. If the mass is raised 0.25 m above the equilibrium position and released, find the equation of motion, damping factor, and when the mass will first return to its equilibrium position.

One section reported the following ratio (number of correct responses or with slight error) / (total number of responses)
27/32 = 84%

Conclusion: Data indicates a significant majority of the students are learning the material.

In addition to imbedding common questions in the higher level math courses, three common questions were also imbedded in three sections of Math 120. The results follow.

MATH 120, FUNDAMENTALS OF COLLEGE MATHEMATICS

1. a. $10,000 is invested at an annual percentage rate of 7.5% compounded quarterly. How much is the investment worth after 5 years?
   b. How much interest has accrued at the end of the 5 years?

Three sections reported the following ratios (number of correct responses) / (total number of responses)
38/54 = 70%

2. A bag contains 3 green marbles, 4 red marbles, and 5 blue marbles. Three marbles are drawn from the bag without replacement. Find the probability of drawing 2 red marbles and 1 blue marble.

Three sections reported the following ratios (number of correct responses) / (total number of responses)
40/57 = 70%

3. The life span of Acme tires is normally distributed with a mean of 35,000 miles and a standard deviation of 5,000 miles. Find the probability that an Acme tire will last 42,500 miles or more.

Three
~~Six~~ sections reported the following ratios (number of correct responses) / (total number of responses)
37/54 = 67%

Conclusion: Again the data indicates a significant majority of the students are learning the material.

OUTCOME 2

Number of WNC AS-MAT (Mathematics Emphasis) graduates from Spring 2006 – Fall 2007: 21
How many of these of these students transferred to a 4 year institution: 13
How many of these students completed a bachelor's degree and in what major: 10

- B.S - Mathematics (Applied)
- B.S - Electrical Engineering
- B.A - Anthropology
- B.S - Mechanical Engineering
- B.S - Civil Engineering, M.S -Civil And Environmental Engineering
- B.A - Psychology
- B.S - Civil Engineering
- B.S - Biology
- B.S - Environmental Engineering
- B.S - Civil Engineering

Conclusion: Data indicates WNC AS-MAT (Mathematics Emphasis) graduates are succeeding at their transfer institutions.

Results of imbedded questions for Math 120, Fall 2009 and Spring 2010

1. a. $10,000 is invested at an annual percentage rate of 7.5% compounded quarterly. How much is the investment worth after 5 years?
   b. How much interest has accrued at the end of the 5 years?

Six sections reported the following ratios (number of correct responses) / (total number of responses)
70/120 = 58%

2. A bag contains 3 green marbles, 4 red marbles, and 5 blue marbles. Three marbles are drawn from the bag without replacement. Find the probability of drawing 2 red marbles and 1 blue marble.

Six sections reported the following ratios (number of correct responses) / (total number of responses)
77/131 = 59%

3. The life span of Acme tires is normally distributed with a mean of 35,000 miles and a standard deviation of 5,000 miles. Find the probability that an Acme tire will last 42,500 miles or more.

Six sections reported the following ratios (number of correct responses) / (total number of responses)
48/131 = 37%

Conclusion: Three of these six sections were taught by the same adjunct faculty member who seemed to not have good success in communicating the material – his response ratio was for question

1. 24/53 = 45%
2. 34/66 = 52%
3. 6/66 = 9%

This adjunct faculty member has moved out of the area and is no longer teaching at WNC.
The other three sections were taught by two faculty members whose response ratio was for question

1. 46/67 = 69%
2. 39/65 = 60%
3. 42/65 = 65%

The later data indicates a sizable majority of the students are learning the material.

Results of imbedded questions for Math 181, Fall 2009 and Spring 2010

1. Find the equation of the tangent line to $f(x) = \frac{1}{(3-x)^2}$ at the point (2, 1).

Five sections reported the following ratio (number of correct responses or with slight error) / (total number of responses)
95/128 = 74%

2. Find the area of the region bounded by the graph of $y = -x^2 - 2x + 3$ and the x axis.

Five sections reported the following ratio (number of correct responses or with slight error) / (total number of responses)
90/116 = 78%

Results of imbedded questions for Math 182, Fall 2009 and Spring 2010

1. Find the volume of the solid generated by revolving the region bounded by
$$y = 2x^2 + 1,\ x = 0,\ x = 3,\ y = 0,$$
about the x axis.

Two sections reported the following ratio (number of correct responses or with slight error) / (total number of responses)
48/54 = 89%

2. Find $\int \frac{4}{9x^2-1}\, dx$

Two sections reported the following ratio (number of correct responses or with slight error) / (total number of responses)
26/37 = 70%

Results of imbedded questions for Math 283, Fall 2009 and Spring 2010

1. Find the rate of change of $f(x,y) = x^2 + 2xy + y^3$ at the point $(-2,3)$ in the direction of the vector $v = \langle 1, 5 \rangle$.

Three sections reported the following ratio (number of correct responses or with slight error) / (total number of responses)
37/44 = 84%

2. Find the volume of the solid bounded by the graphs of the equations $2x + y + z = 6,\ x = 0,\ y = 0,\ z = 0,$ first octant.

Three sections reported the following ratio (number of correct responses or with slight error) / (total number of responses)
32/42 = 76%

Conclusion: Data indicates a significant majority of the students are learning the material.

Annual Academic Program Assessment Report and Plan

Assessment Report 2008-2009

A.S. Math	Assessment Plan for 2008-2009
Enter name, phone number and email address **Richard Arrigotti, 445 4298, arrigott@wnc.edu**	Submitted: 1-14-2009
College Mission Statement/Goals Enter portion of statement that relates to your unit here	**Academic Program Mission Statement/Goals** Enter your program statement and goals here
By providing students with mathematical knowledge, WNC AS Math graduates will grow intellectually and have the ability to more easily integrate and develop technological advances into their academic and professional lives.	**Mission**: The purpose of the Associate of Science degree, emphasis Mathematics, is to provide the academic knowledge and skills for successful transfer to meet higher educational goals. **Student Learning Outcomes**: Students who complete an Associate of Science degree, emphasis Mathematics, at WNC are expected to demonstrate that they- • have met the general education student learning outcomes. • understand the content of calculus and differential equations. • are able to apply the content of calculus and differential equations at the appropriate level in mathematics, science, and engineering courses. • can succeed at their transfer institutions.

Outcomes	Means of Assessment	Findings	Actions
1.can succeed at their transfer institutions	Track AS Math graduates BA/BS completion from 2003 - 2005	There were 17 graduates. 5 students transferred to a 4 year institution. All 5 of these students completed their bachelor's degree	The data indicates that WNC AS Math graduates can succeed at their transfer institutions
	Track AS Math graduates type of BA/BS from 2003 - 2005	The were 2 B.S. in Mech Eng 1 B.S. in Elect Eng, 1 B.S. in Inform Tech, 1 B.S. in Bus Ad(Accounting/Finance)	

Signature, Division Chair **Date**

Signature, Dean of Instruction **Date**

Assessments are overseen by Institutional Research and the Program and Assessment Review Committee (PARC).

Physics & Engineering Assessment Summary

Current: plans, activities, reports, data?

2011-12 Physics Assessment Plan

2011-12 Engineering Science Assessment Plan

2010-11 Engineering Science Assessment Report

2010-11 AS Physics Assessment Report

Back to: Evidence of Effectiveness (2.A)

2011-2012 Annual Academic Program Assessment Plan

Program: Physics

Division: SME

Responsible Person: Thomas Herring

Assessment team members: Thomas Herring

Date Submitted: May 19, 2011

Program Goal:

The primary goals will be to increase enrollment in the physics program and provide 4 year institutions with a group of well prepared and interested students that can continue towards BS degrees in physics and related fields (i.e. engineering, math, chemistry, etc.). Additionally the structure of the program should slowly shift to an activity based learning environment which has been shown to increase student understanding. To serve these ends the faculty will take part in training and national conferences through the American Association of Physics Teachers (AAPT), the American Physical Society (APS) particularly in regards to physics education but also in regards to physics research activities and their relevance to modern society. Also, the program goals and student learning outcomes should be reviewed and possibly changed to better serve students interested in physics and to take into account results from physics education research.

Outcome:

In order to begin the move towards an activity based learning environment student learning outcome 3, "Apply new knowledge in the areas of Newtonian mechanics, electricity and magnetism, and physical principles in modern physics." will be the focus of this year's assessment. The outcome will be addressed by examining gains on standard tests used in physics education research.

Assessment Methods and Criteria for Success:

In order to measure knowledge gained the Force Concept Inventory (FCI), a standard test used to assess physics programs throughout the United States, will be administered as a pre/post test at the beginning and end of each semester in PHYS 180. Also, a similar test, the Conceptual Survey of Electricity and Magnetism (CSEM), will be administered as a pre/post test to PHYS 181 classes each semester.

Success will be determined by calculating a normalized gain, <g>, as described by Hake[i]. This is the standard for assessing the success of physics programs nationwide. Gains are grouped into low (<g> < 0.3), medium (0.3 < <g> < 0.7), and high (<g> > 0.7). Medium or high gains would indicate a program that exceeds gains seen in most physics courses nationwide.

Planned Use of Results:

Results will be published on the WNC website at http://www.wnc.edu/institutional/academic_program_assessment/. The results will also be used to alter the physics course curricula to address any deficiencies found. Also, some suggestions about other courses in the program may arise (i.e. math or chemistry) that could help address any student deficiencies.

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[i] Hake, R.R. (June 6, 1999), *Analyzing Change/Gain Scores*. Retrieved May 19, 2011 from http://www.physics.indiana.edu/~sdi/AnalyzingChange-Gain.pdf

Physics Assessment

2010-2011

This year's assessment activities were focused on student learning outcome #3 which states, "Apply new knowledge in the areas of Newtonian mechanics, electricity and magnetism, and physical principles in modern physics." The introduction of a new online homework system focused this assessment on how homework affects this learning outcome. Not only performance on homework but also its correlation with scores from other performance metrics (quizzes, tests, final exam, overall score) was examined by comparing data from spring semester 2010 and fall semester 2010 in both Engineering Physics I and II (PHYS 180 and 181).

In spring 2010 traditional homework was assigned, collected once per week and graded by hand. In fall 2010 online homework was due once per week and was graded automatically by the online system. The same grading scale was used in order to make comparison of data easier. Homework sets in each semester consisted of the same (when possible) or at least similar problems all from the course textbook, "*Physics for Scientists and Engineers*", Serway and Jewett 8th Ed. 2010 (Brooks/Cole). The online homework system associated with this text is WebAssign (www.webassign.net) which provides online homework capabilities for many textbooks across a range of fields in science and mathematics. A quick comparison of overall class homework and test averages for each semester is shown in Table 1.

	Spring 2010 (Traditional HW)		Fall 2010 (Online HW)	
	Class HW Average	Class Test Average	Class HW Average	Class Test Average
PHYS 180	70.48%	77.39%	86.50%	85.01%
PHYS 181	82.00%	84.07%	78.23%	81.44%

Table 1. A comparison of class homework and test averages using traditional vs. online homework for PHYS 180 and PHYS 181.

For PHSY 180 an increase in both homework scores and test scores is seen in the online homework class. However, in PHYS 181 a small decrease in both averages occurred but is not as significant a difference as seen in the PHYS 180 classes. Because of the relatively small sample sizes involved these differences may be simple statistical variation, particularly in the case of the much smaller change in PHYS 181 scores. This motivated a closer look at how homework performance affects other metrics.

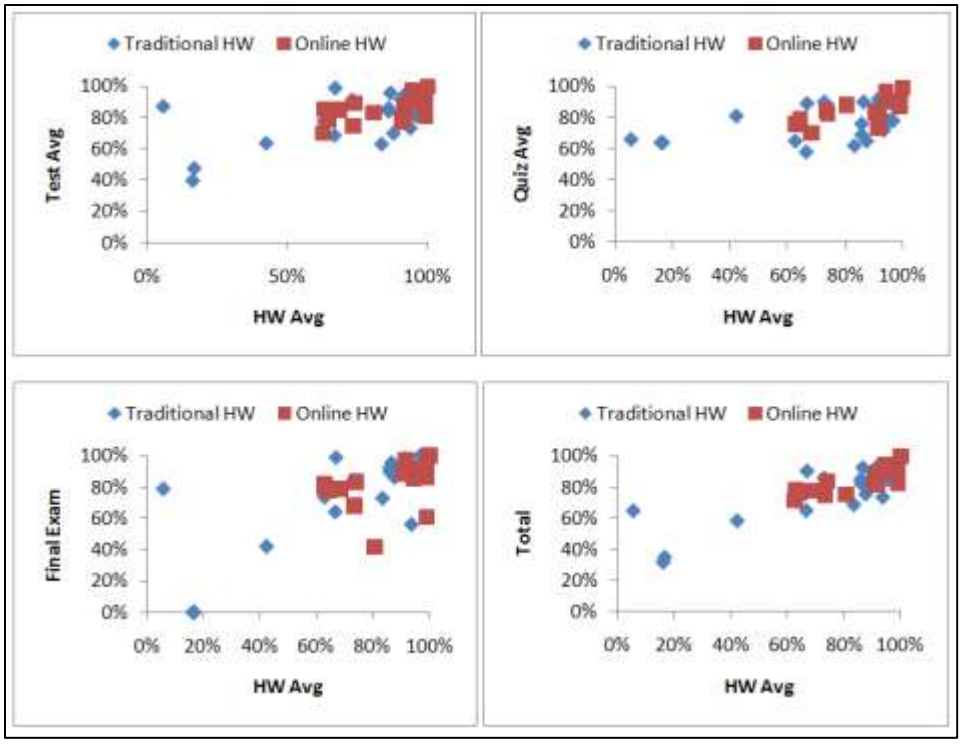


Figure 1. Physics 180 homework averages plotted versus other performance metrics. Strong correlation bewteen homework and each of these metrics is evident despite the presence of a few outliers.

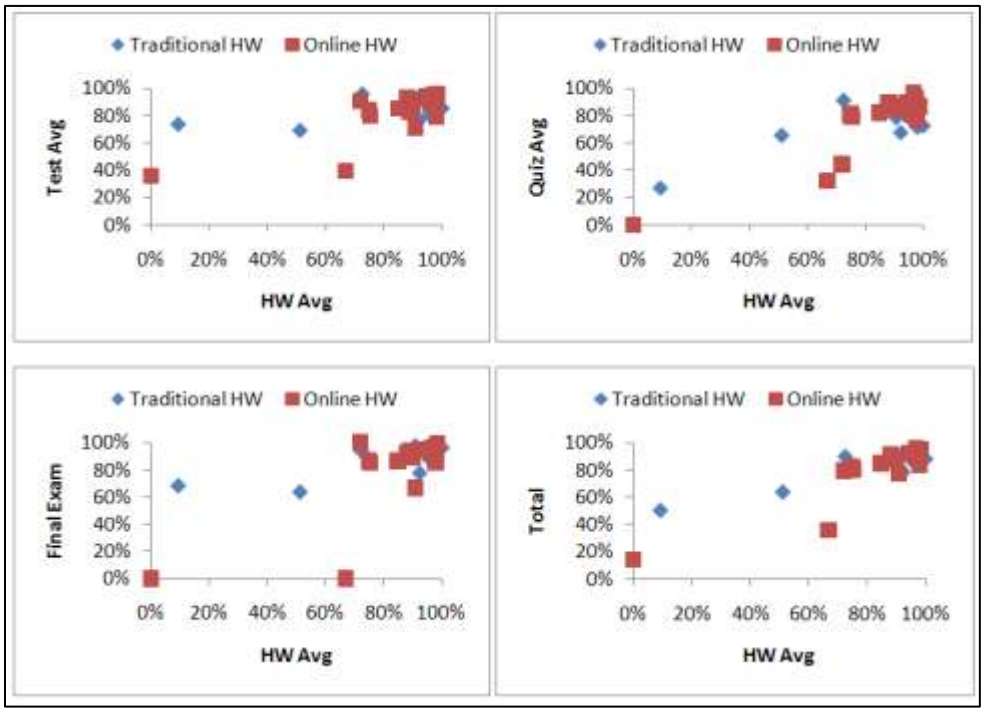


Figure 2. Physics 181 homework averages plotted versus other performance metrics. Strong correlation between homework and each of these metrics is evident despite the presence of a few outliers.

In order to assess the effect of the different homework systems on overall student performance, and thus the stated learning outcome, individual homework scores were plotted versus individual test scores, quiz scores, final exam scores, and overall total scores as shown in Figures 1 and 2. These graphs show a strong correlation between average homework score, test average, quiz scores, final exam scores, and total score with the presence of very few notable outliers. It is clear that students who perform well on homework are much more likely to succeed in other areas of the course. However, it is not clear that online homework provides any distinct advantage versus traditional homework in regards to other performance metrics. The only observable advantage to online homework is that fewer students have very low or zero homework averages. The cause of this effect is not clear and further investigation into the mechanisms behind this effect is warranted. It is suspected that this effect is due to the ability of the online homework system to provide almost instant feedback to the students allowing them to self correct before submitting homework to be graded.

In addition to the quantitative data above a more qualitative question regarding the online homework system was included in the course evaluations for the fall semester physics courses involved in this assessment. The question read, “Rate the effectiveness of the online homework system.”

Student response was overall positive with 50% of students rating it as excellent and 92% rating it as satisfactory or better. Interestingly the students who had experienced traditional homework in the spring 2010 physics 180 course unanimously (100%) rated the online homework in the fall semester 2010 physics 181 course as excellent. Overall the students preferred online homework to traditional homework with some minor dissention. Most dissenters did not provide clear reasons for their dislike simply stating that the online homework system was “not good.” Only one dissenter pointed out the inability of the online homework system to provide detailed feedback about performance on a particular homework question. However, this deficiency had been addressed the first day of class. All students were made aware of the availability of the professor during office hours to answer questions regarding the homework assignments and were informed that this was to address deficiencies in the online homework system.

After examination of this data it is clear that performance on homework assignments is a good indicator of the probability of a student’s success in physics courses. However, it is not clear that online homework offers any distinct advantage over traditional homework in this regard. Since students, on average, preferred the online system to traditional homework its use will be continued in future courses. In future assessment it would be useful to try to determine the cause of higher homework averages when using online homework. Additionally, a test to determine whether other performance metrics show any correlation would help determine the role of homework assignments in providing learning opportunity for students.

2011-2012 Annual Academic Program Assessment Plan

Program: Engineering

Division: SME

Responsible Person: Thomas Herring

Assessment team members: Thomas Herring

Date Submitted: May 19, 2011

Program Goal:

The primary goals will be to increase enrollment in the engineering program and provide 4 year institutions with a group of well prepared and interested students that can continue towards BS degrees in engineering and related fields (i.e. physics, math, etc.). Also, the program goals and student learning outcomes should be reviewed and possibly changed to better serve students interested in engineering and to take into account the needs of Nevada industry. Input from the WNC engineering advisory board will be necessary to determine any changes in the program.

Outcome:

The focus of this year's assessment activity will be student learning outcome 3, "Able to solve engineering problems." The outcome will be addresses by presenting students in engineering courses with a common set of problems formulated by the assessment team. This is a continuation of the 2010-2011 assessment project, the results of which showed that a larger data set was needed to properly address the assessment questions.

Assessment Methods and Criteria for Success:

A standard problem set will be formulated by the assessment team and distributed to students in engineering courses at all levels through regular assignments, quizzes, and/or exams. Comparisons in the quality and correctness of answers from students at different levels in the program will be carried out to assess any difference in problem solving ability from beginning students to students near completion. It will be necessary to compare students scores to the number of program courses completed since enrollment in a particular class is not necessarily indicative of their progress in the program.

A successful program would show an overall increase in the problem solving ability of students from beginning to graduating. This assessment method should probably be used over several years to properly assess the effectiveness of the program.

Planned Use of Results:

Results will be published on the WNC website at http://www.wnc.edu/institutional/academic_program_assessment/. The results will also be used to alter the engineering course curricula to address any deficiencies found. These results should also be

discussed with the WNC Engineering Advisory Board to include the voice of local industry in the educational process. Also, some suggestions about other courses in the program may arise (i.e. math or physics) that could help address any student deficiencies.

Engineering Assessment

2010-2011

This year's assessment activity focused on student learning outcome 3, "Able to solve engineering problems." In order to assess this outcome standard questions were provided to students in mechanical engineering 241 (statics) and 242 (dynamics) to track their progress throughout the academic year. Questions were administered on quizzes and tests and scores were gathered as a part of course grading activity. The original assessment plan called for similar problems to be given to students in the introductory engineering course (ENGR 100) to assess progress as students get through the program. However, because many students take the courses out of sequence it was decided that collecting data in this manner would not provide the desired information.

The questions focused on the use of Newtonian mechanics to solve problems involving stable structures in both static and dynamic equilibrium (see Figure 1 for an example question). The ability to successfully determine the forces acting on these structures was evaluated by having students draw free body diagrams. On average students performed at a consistent level scoring between 75% and 85% on assigned tasks. However, very little improvement in average student performance was noted from fall to spring semester with scores staying in the 75% to 85% range. While the level of performance is satisfactory overall the lack of measureable improvement is of concern.

In order to address the lack of improvement a focus on the drawing of free body diagrams will be implemented across a range of course in the engineering program. Having students routinely practice the skill with consistent methods form course to course will hopefully help improve performance in this metric.

(1) Draw a free body diagram for each block in the following system. The horizontal surface is NOT frictionless.

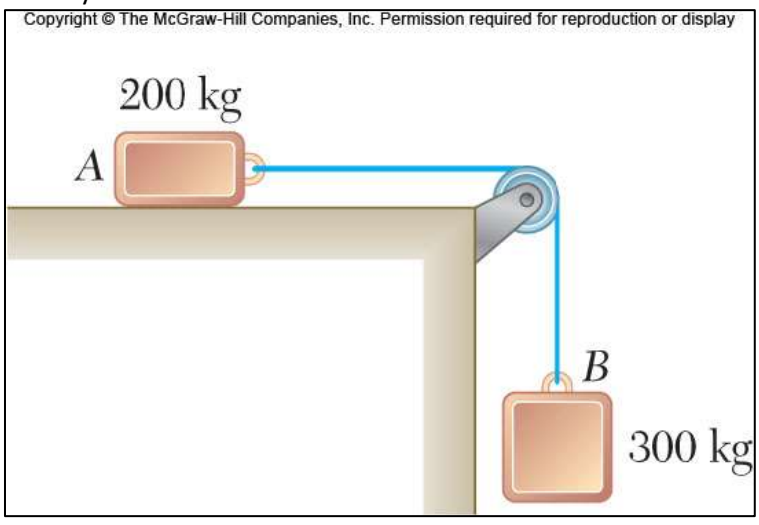


Figure 1. Example of a typical question used in the assessment.

Continuing with this assessment project for years would be desirable because the number of students sampled is very low for a single year. In order to properly measure the improvement in problem solving skills students should be tracked from their entry into the program until completion. Additionally, more data is necessary in order to collect a sufficient sample to validate the use of statistical methods used in the analysis.

Course Scheduling/Enrollment History Report (2.A.i)

The **WNC Liberal Arts Division** takes responsibility for course scheduling and staffing in the AS Program. The division's director and staff work in conjunction with the academic faculty to manage a balanced and efficient schedule with morning, afternoon, and evening offerings to fit the needs of a diverse student population. Class scheduling is driven by the needs of full-time, degree seeking students.

Notes related to charts (links below):

1. **Morning (Morn) classes begin before 12pm. Afternoon (Aft) classes begin from 12pm to 459pm. Evening (Eve) begin at 5pm or later.**
2. **Classes with lectures and labs that are not listed separately (e.g. BIOL 223, CHEM 121) are counted twice in the data.**
3. **Accelerated course sections tend to have longer meeting times; the start time may not accurately reflect the time of day the class primarily occupies.**

2014 CCSSE Results #10: ***How often have courses required for your major been available?***

- ***Most of the time***: 55% (296/538)
- ***Some of the time***: 29% (156/538)

2014 CCSSE Results #12: ***Courses at this college are offered in such a way that I can take them in the recommended sequence and still complete my degree in a timely manner.***

- ***Strongly agree***: 24% (126/535)
- ***Agree***: 55% (294/535)

Chemistry

- Chemsitry--Enrollments by Major
- Chemistry 121 & 122 Enrollment History
- Chemistry 220 Enrollment History

Geosciences

- Geoscience--Enrollments by Major
- Geography 103/104 Enrollment History
- Geography 106 & 200 Enrollment History
- Geology 101/103 Enrollment History
- Geology 102 Enrollment History

Mathematics

- Mathematics--Relative Enrollments by Major
- Mathematics 181 Enrollment History
- Mathematics 182 & 283 Enrollment History
- Mathematics 285 & 330 Enrollment History

Physics & Engineering

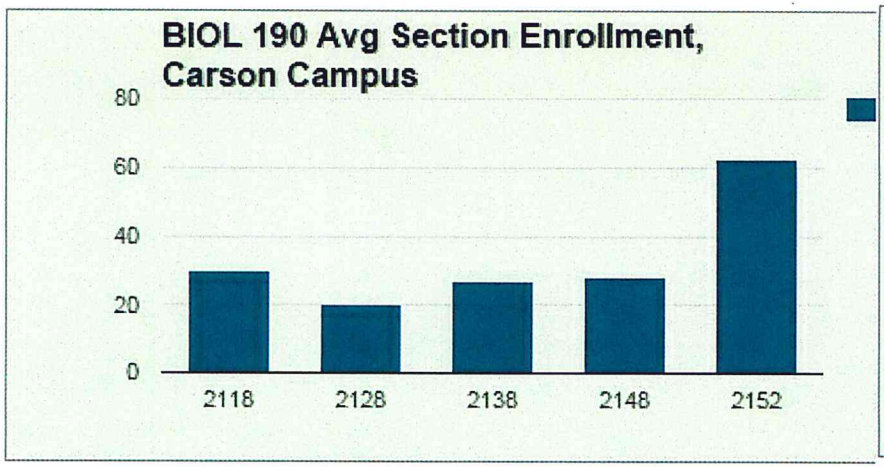
- Physics--Enrollments by Major
- Physics 151 & 152 Enrollment History
- Physics 180/180L Enrollment History

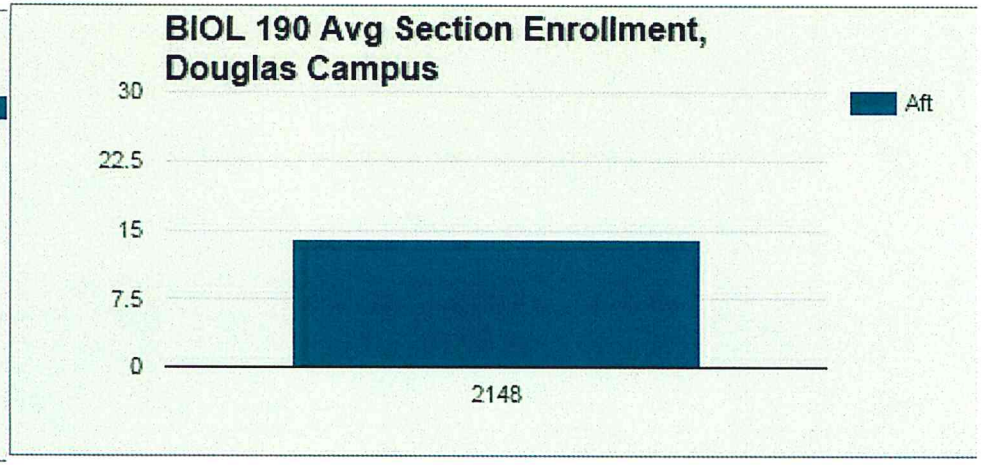
Biology

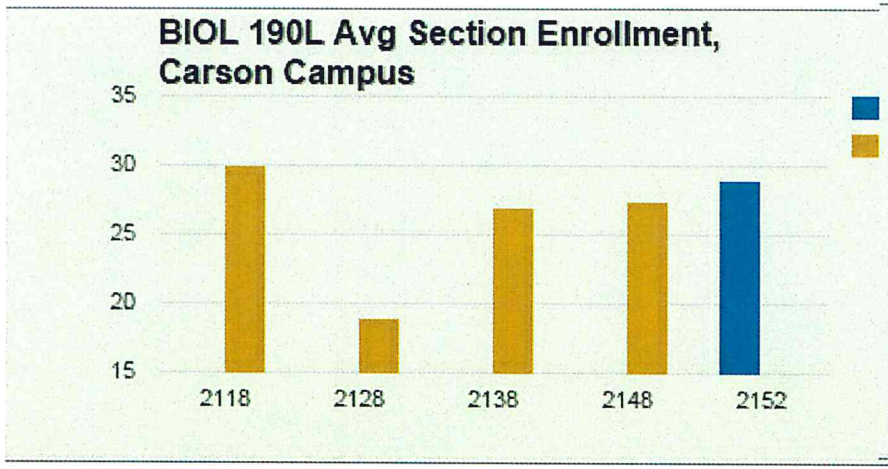
- Biology--Enrollments by Major
- Biology 190/190L Enrollment History
- Biology 191/191L Enrollment History
- Biology 223 & 224 Enrollment History
- Biology 251 Enrollment History

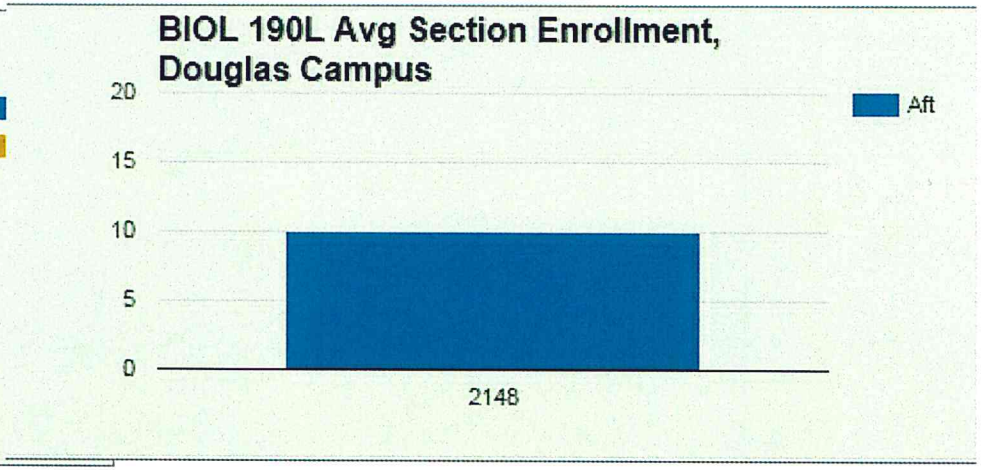
- Physics 181/181L & 182/182L Enrollment History
- Engineering 100--Enrollments by Major
- Engineering 100 Enrollment History

Biology 190/190L Enrollment History

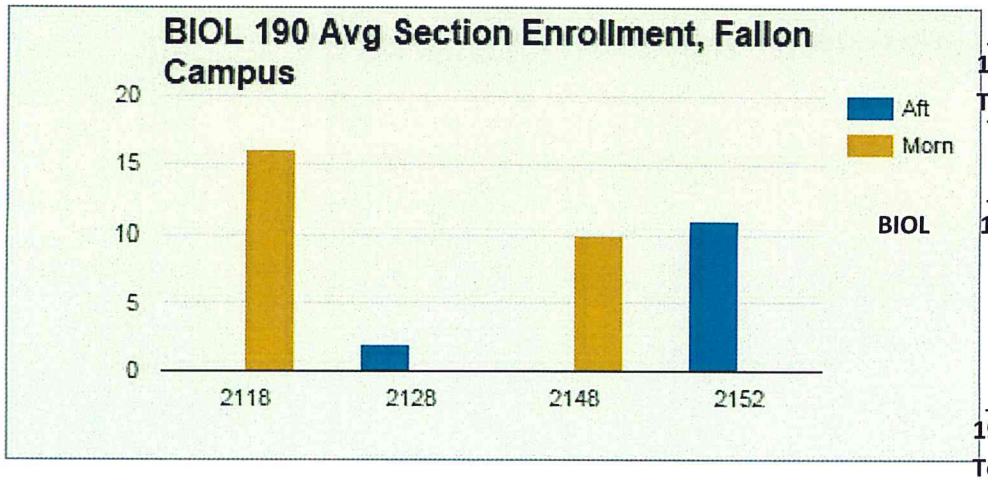






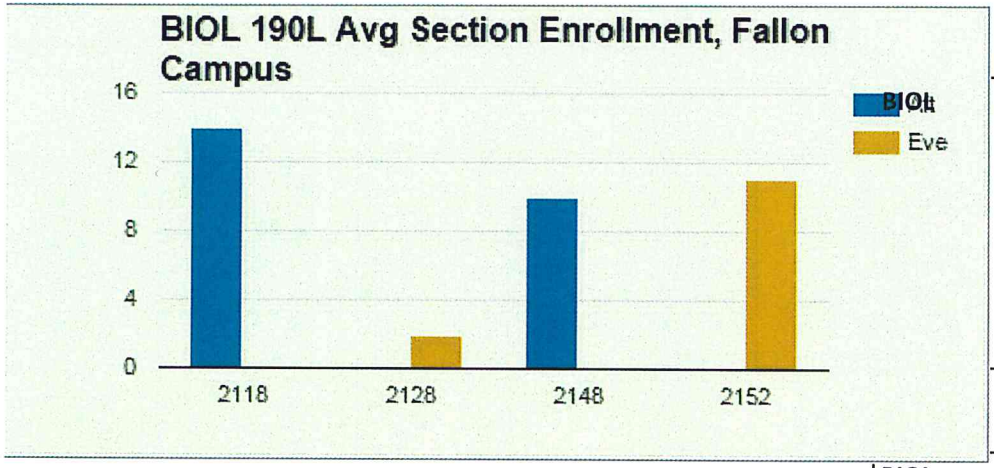


				2118	2128	2138	2148	2152
BIOL	190	CARSON	Morn	1	1	1	2	1
		DOUGLAS	Aft				1	
		FALLON	Aft		1			1
			Morn	1			1	



	WEB	WEB				1	
190 Total			2	2	1	5	2

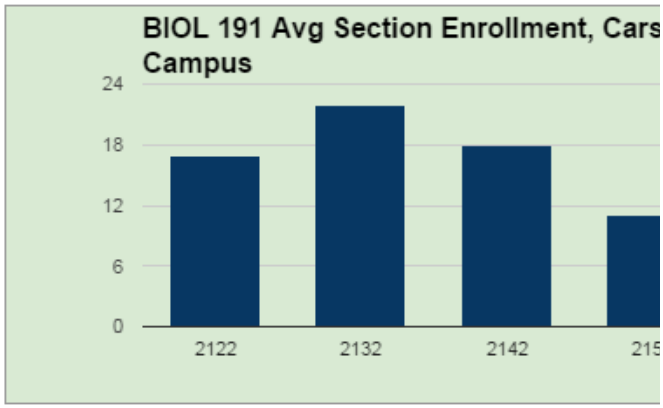
			2118	2128	2138	2148	2152
190L	CARSON	Aft					2
		Morn	1	1	1	2	
	DOUGLAS	Aft				2	
	FALLON	Aft	1			1	
		Eve		1			1
190L Total			2	2	1	5	3

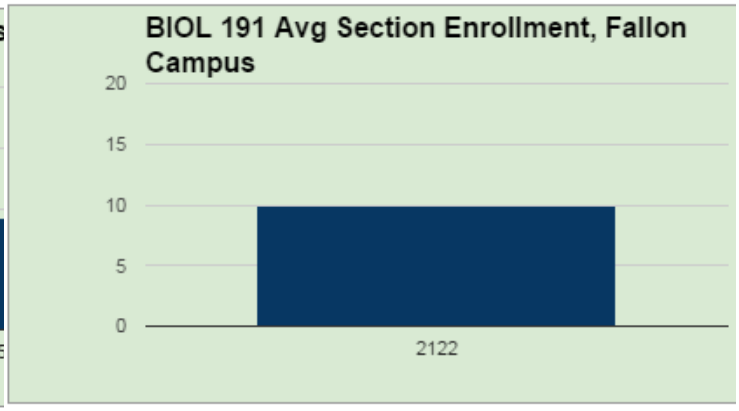


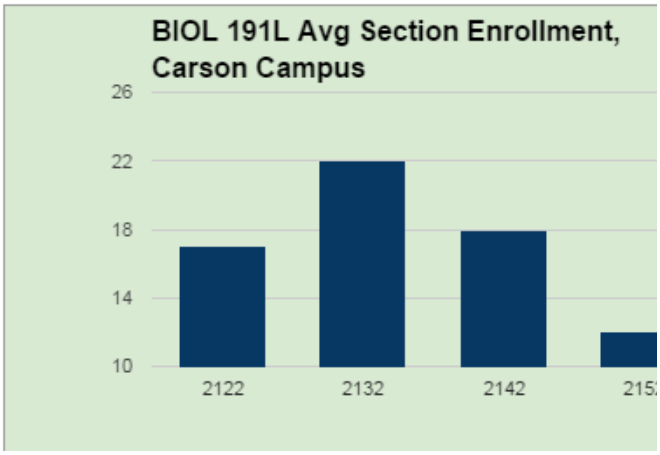
				Avg Enrl	Stdevp Enrl
190	CARSON	Morn		32.5	13.6
	DOUGLAS	Aft		14	
	FALLON	Aft		6.5	4.5
		Morn		13	3.0
	WEB	WEB		5	
190 Total				21.1	15.3

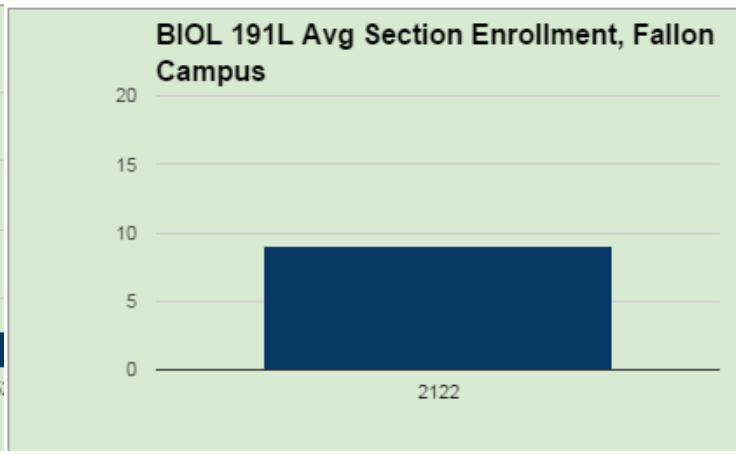
				Avg Enrl	Stdevp Enrl
BIOL	190L	CARSON	Aft	29	1
			Morn	26	4
		DOUGLAS	Aft	10	5
		FALLON	Aft	12	2
			Eve	7	5
	190L Total			19	10

Biology 191/191L Enrollment History









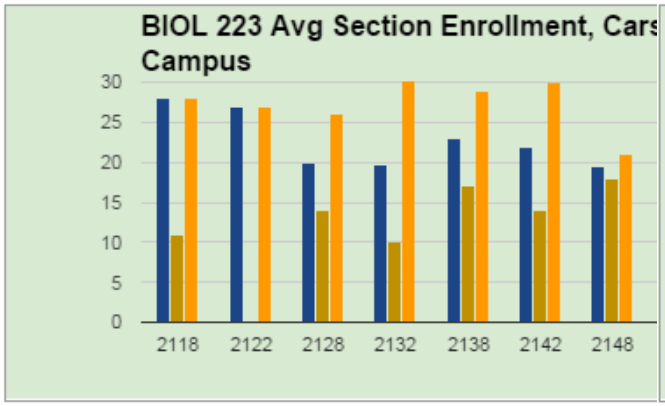
				2122	2132	2142	2152
BIOL	191	CARSON	Morn	1	1	1	1
		FALLON	Morn	1			
	191 Total			2	1	1	1

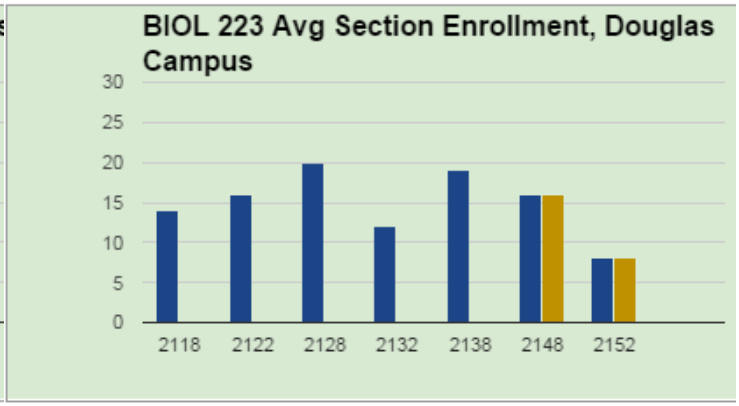
				Avg Enrl	Stdevp Enrl
BIOL	191	CARSON	Morn	17	4
		FALLON	Morn	10	
	191 Total			16	4

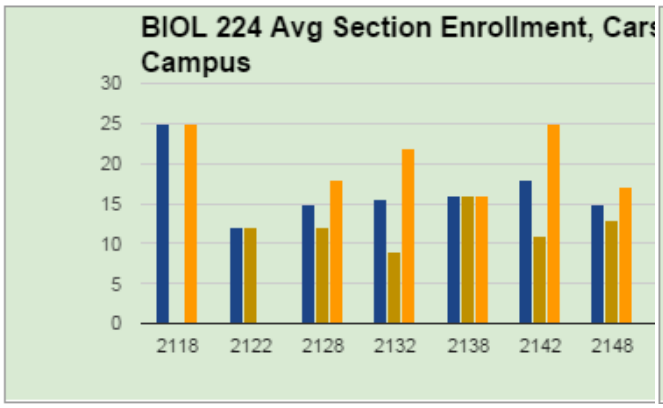
				2122	2132	2142	2152
BIOL	191L	CARSON	Morn	1	1	1	1
		FALLON	Aft	1			
	191L Total			2	1	1	1

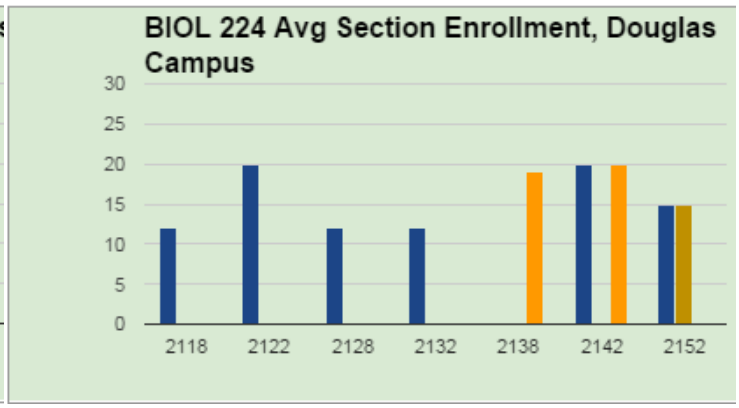
				Avg Enrl	Stdevp Enrl
BIOL	191L	CARSON	Morn	17	4
		FALLON	Aft	9	
	191L Total			16	5

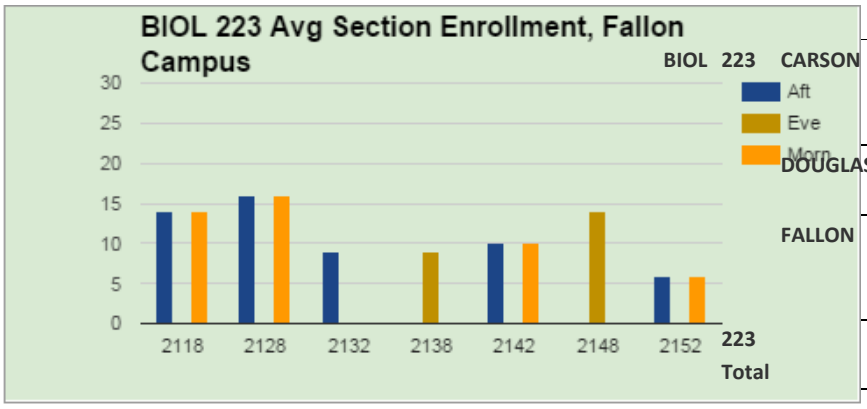
Biology 223 & 224 Enrollment History



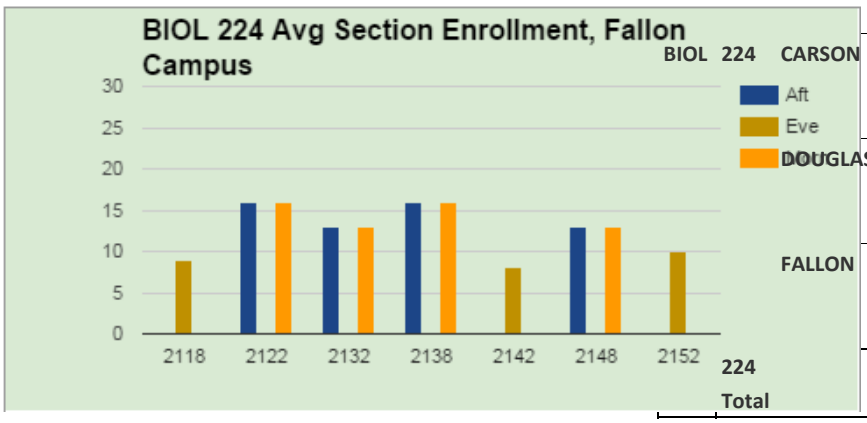








		2118	2122	2128	2132	2138	2142	2148	215
CARSON	Aft	1	1	2	3	2	2	2	
	Eve	2		1	1	1	1	1	
	Morn	1	1	1	1	1	1	1	
DOUGLAS	Aft	2	2	2	2	2		1	
	Eve							1	
FALLON	Aft	1		1	2		1		
	Eve					2		2	
	Morn	1		1			1		
223 Total		8	4	8	9	8	6	8	



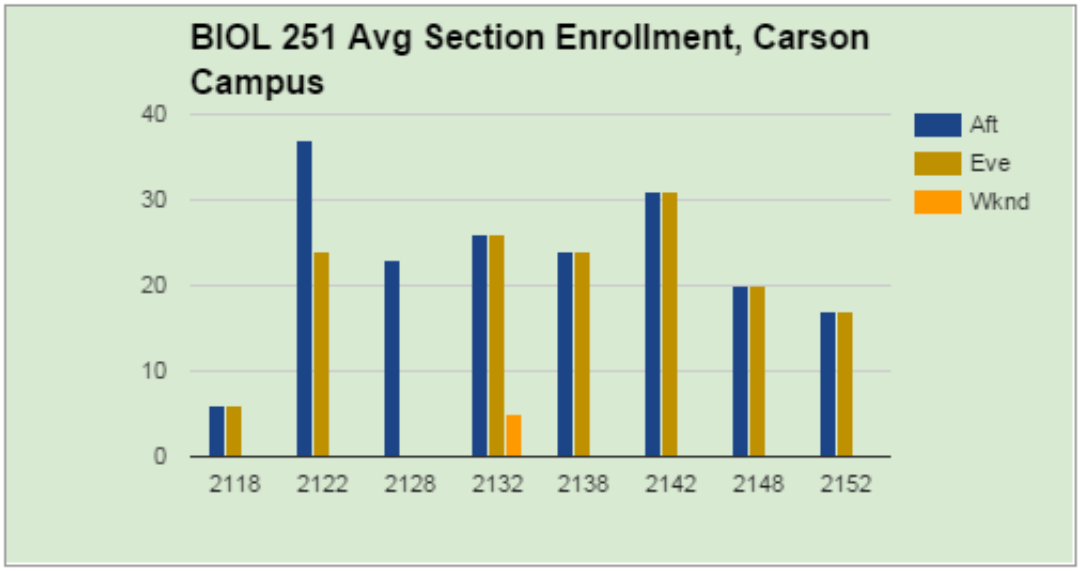
		2118	2122	2128	2132	2138	2142	2148	215
CARSON	Aft	1	1	2	2	2	2	2	
	Eve		1	1	1	1	1	1	
	Morn	1		1	1	1	1	1	
DOUGLAS	Aft	2	2	2	2		1		
	Eve								
	Morn					2	1		
FALLON	Aft		1		1	1		1	
	Eve	2					2		
	Morn		1		1	1		1	
224 Total		6	6	6	8	8	8	6	

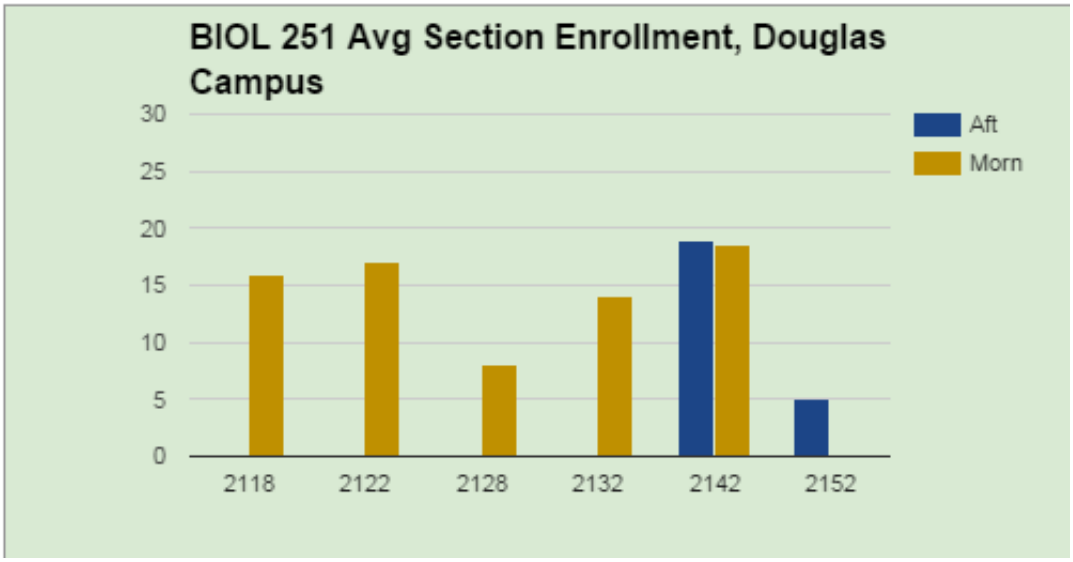
	Avg Enrl	Stdevp Enrl

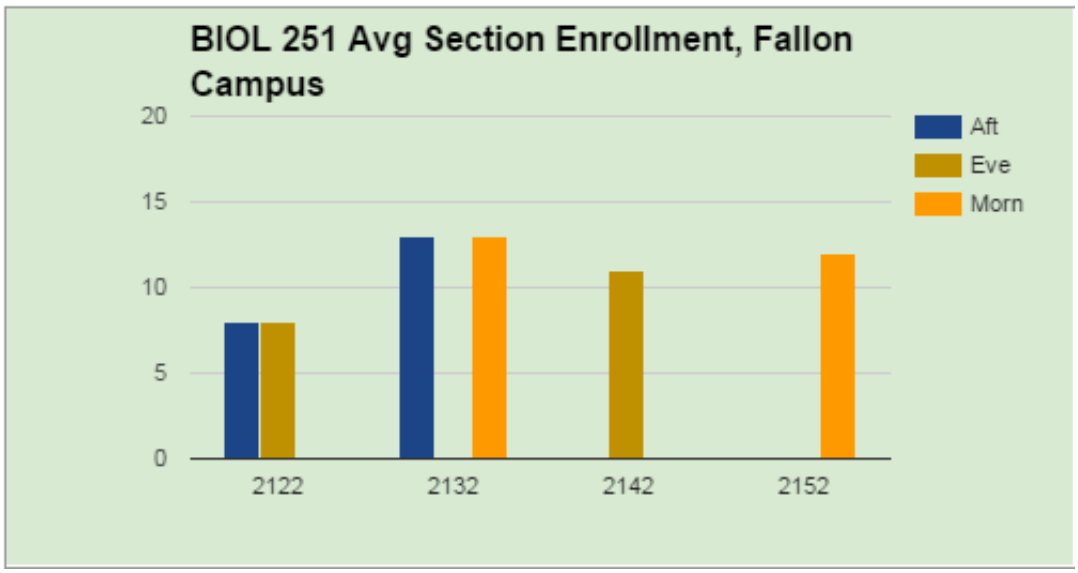
BIOL	**223**	**CARSON**	**Aft**	22	6
			Eve	15	4
			Morn	30	8
		DOUGLAS	**Aft**	16	4
			Eve	12	4
		FALLON	**Aft**	11	3
			Eve	12	3
			Morn	12	4
	223 Total			17.9	8.1

				Avg Enrl	**Stdevp Enrl**
BIOL	**224**	**CARSON**	**Aft**	16	5
			Eve	13	3
			Morn	20	4
		DOUGLAS	**Aft**	15	4
			Eve	15	
			Morn	19	0
		FALLON	**Aft**	15	2
			Eve	9	1
			Morn	14.5	1.5
	224 Total			15.1	4.5

Biology 251 Enrollment History







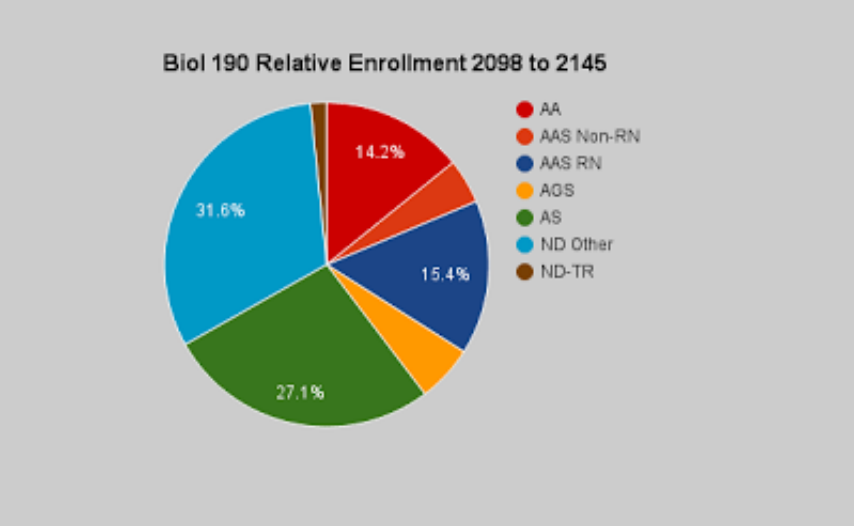
Number of Section Offered

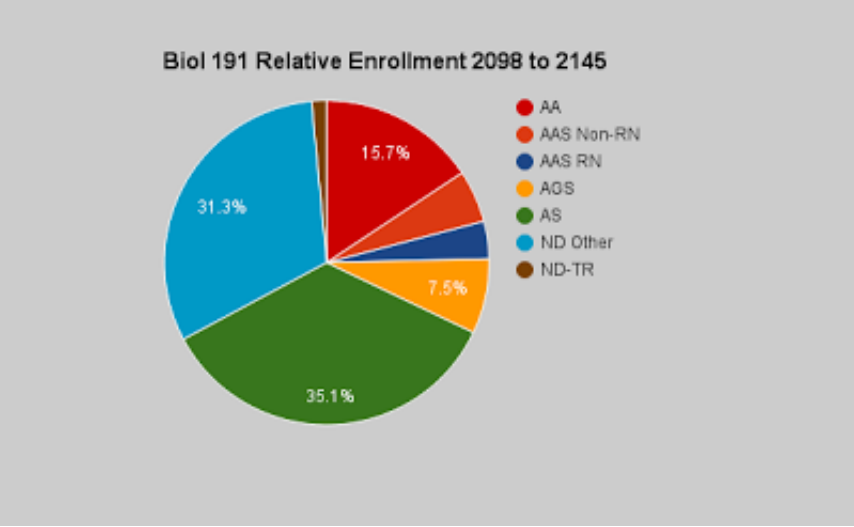
				2118	2122	2128	2132	2138	2142	2148	2152
BIOL	251	CARSON	Aft	1	2	2	1	1	1	1	1
			Eve	1	1		1	1	1	1	1
			Wknd				2				
		DOUGLAS	Aft						1		2
			Morn	2	2	2	2		2		
		FALLON	Aft		1		1				
			Eve		1				2		
			Morn				1				2
	251 Total			4	7	4	8	2	7	2	6

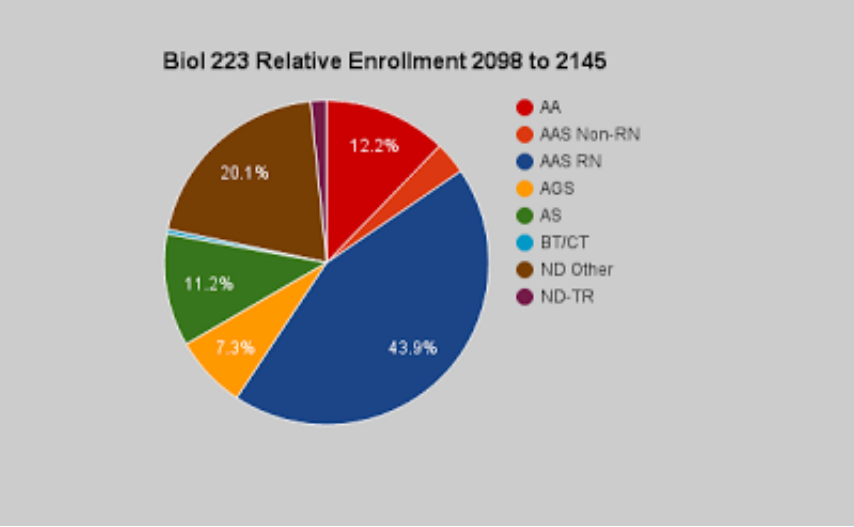
Average Enrollment Per Section

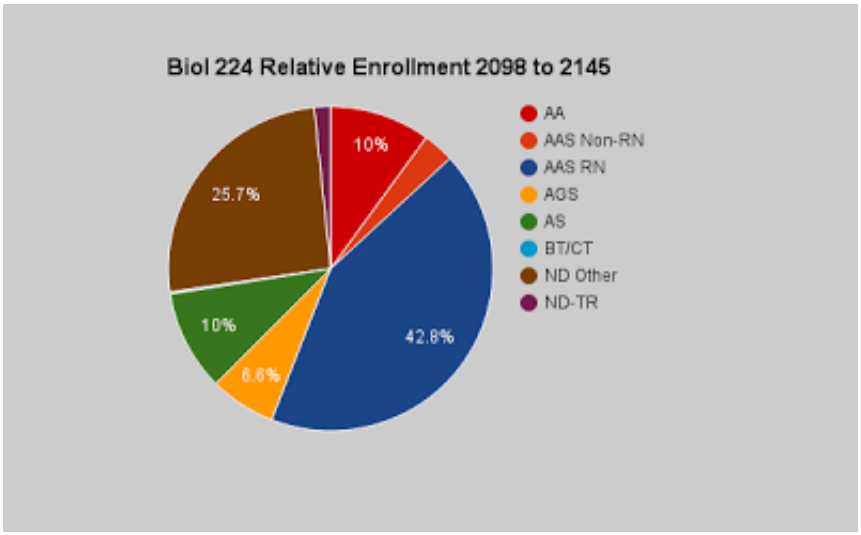
				Avg Enrl	Stdevp Enrl
BIOL	251	CARSON	Aft	24	10
			Eve	21	7
			Wknd	5	0
		DOUGLAS	Aft	10	7
			Morn	15	6
		FALLON	Aft	11	3
			Eve	10	1
			Morn	12	0
	251 Total			16.7	9.2

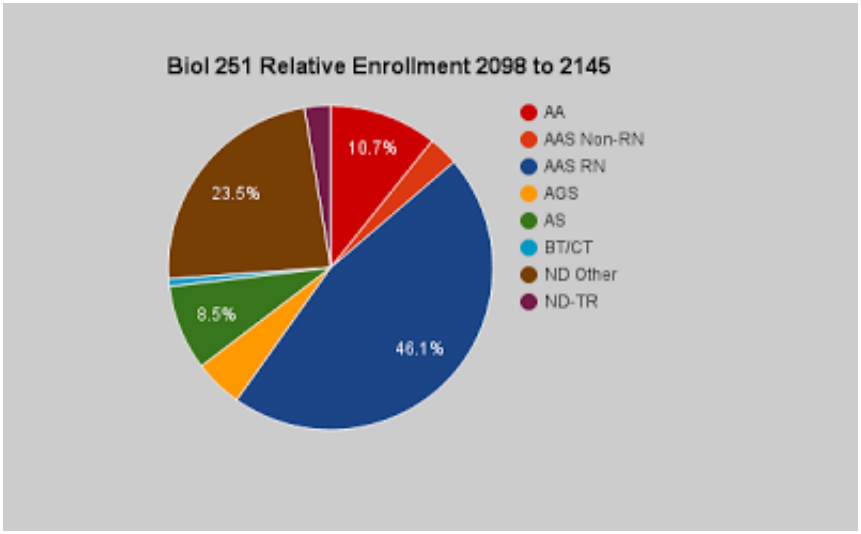
Biology--Enrollments by Major



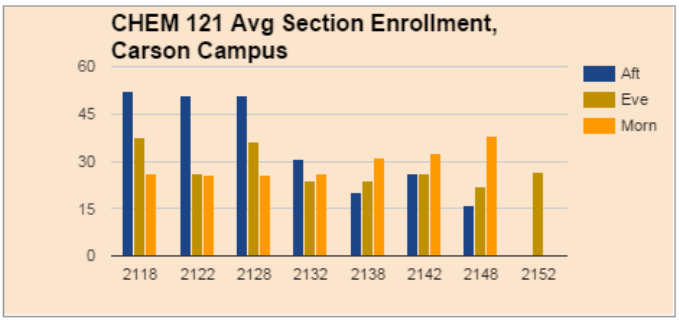


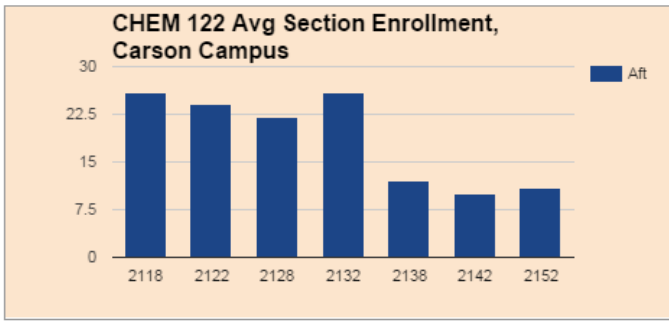


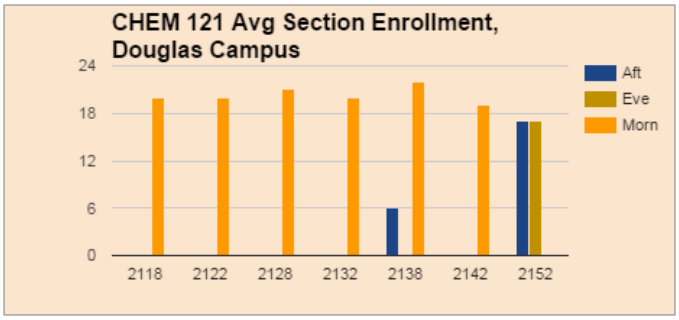

Biol 224 Relative Enrollment 2098 to 2145
10%
42.8%
6.6%
10%
25.7%
AA
AAS Non-RN
AAS RN
AGS
AS
BT/CT
ND Other
ND-TR

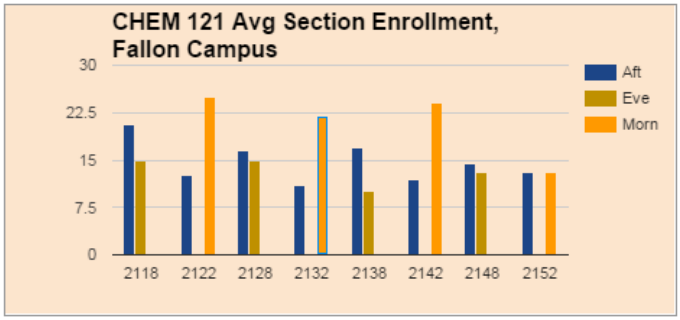

Biol 251 Relative Enrollment 2098 to 2145
10.7%
46.1%
8.5%
23.5%
AA
AAS Non-RN
AAS RN
AGS
AS
BT/CT
ND Other
ND-TR

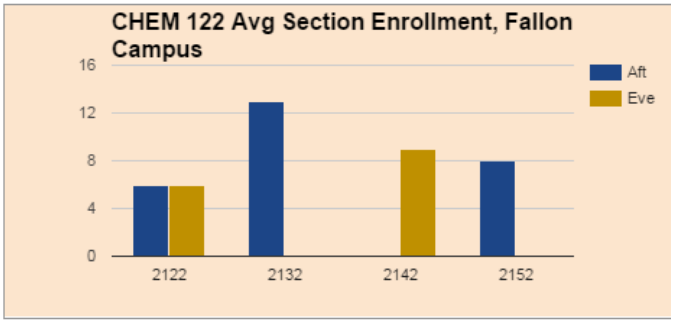
Chemistry 121 & 122 Enrollment History











Number of Sections Offered (Lecture and lab sections counted separately)

				2118	2122	2128	2132	2138	2142	2148	2152
CHEM	121	CARSON	Aft	1	1	1	3	1	1	3	
			Eve	3	3	3	2	2	2	2	3
			Morn	2	2	2	2	4	4	2	
		DOUGLAS	Aft					1			1
			Eve								1
			Morn	2	2	2	2	2	2		
		FALLON	Aft	2	2	2	2	2	2	2	1
			Eve	1		1		1		1	
			Morn		1		1		1		1
	121 Total			11	11	11	12	13	12	10	7

				2118	2122	2128	2132	2138	2142	2152
CHEM	122	CARSON	Aft	2	2	2	2	2	2	2
		FALLON	Aft		1		1			1
			Eve		1				2	
			Morn				1			1
	122 Total			2	4	2	4	2	4	4

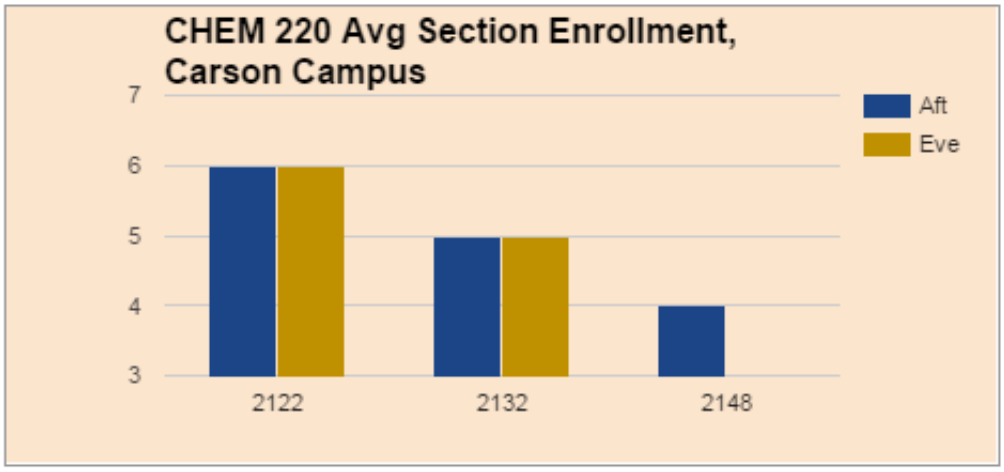
Average Enrollment Per Section

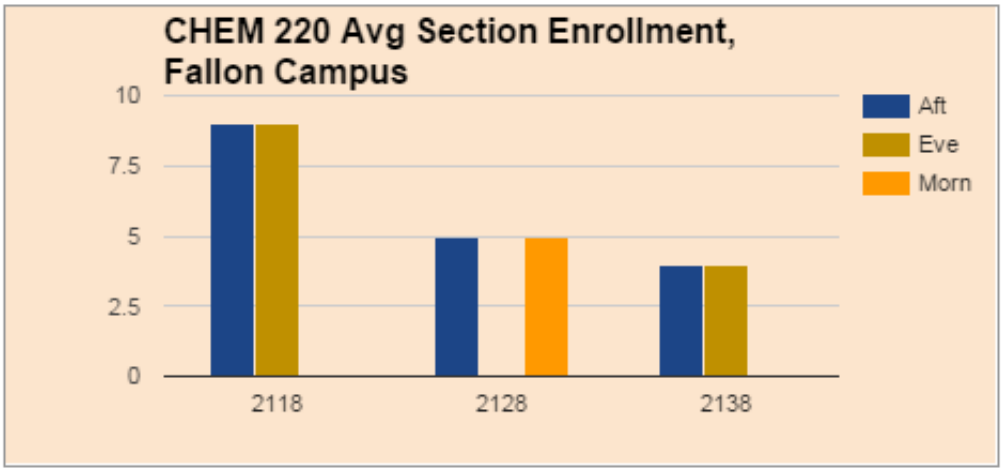
				Avg Enrl	Stdevp Enrl

CHEM	**121**	**CARSON**	**Aft**	31	15
			Eve	29	11
			Morn	30	9
		DOUGLAS	**Aft**	12	6
			Eve	17	
			Morn	20	2
		FALLON	**Aft**	15	6
			Eve	13	2
			Morn	21	4.7
					11
	121 Total			24	

				Avg Enrl	**Stdevp Enrl**
CHEM	**122**	**CARSON**	**Aft**	19	7
		FALLON	**Aft**	9	3
			Eve	8	1
			Morn	11	3
	122 Total			15	7

Chemistry 220 Enrollment History





Sections Offered (Lectures and labs counted separately)

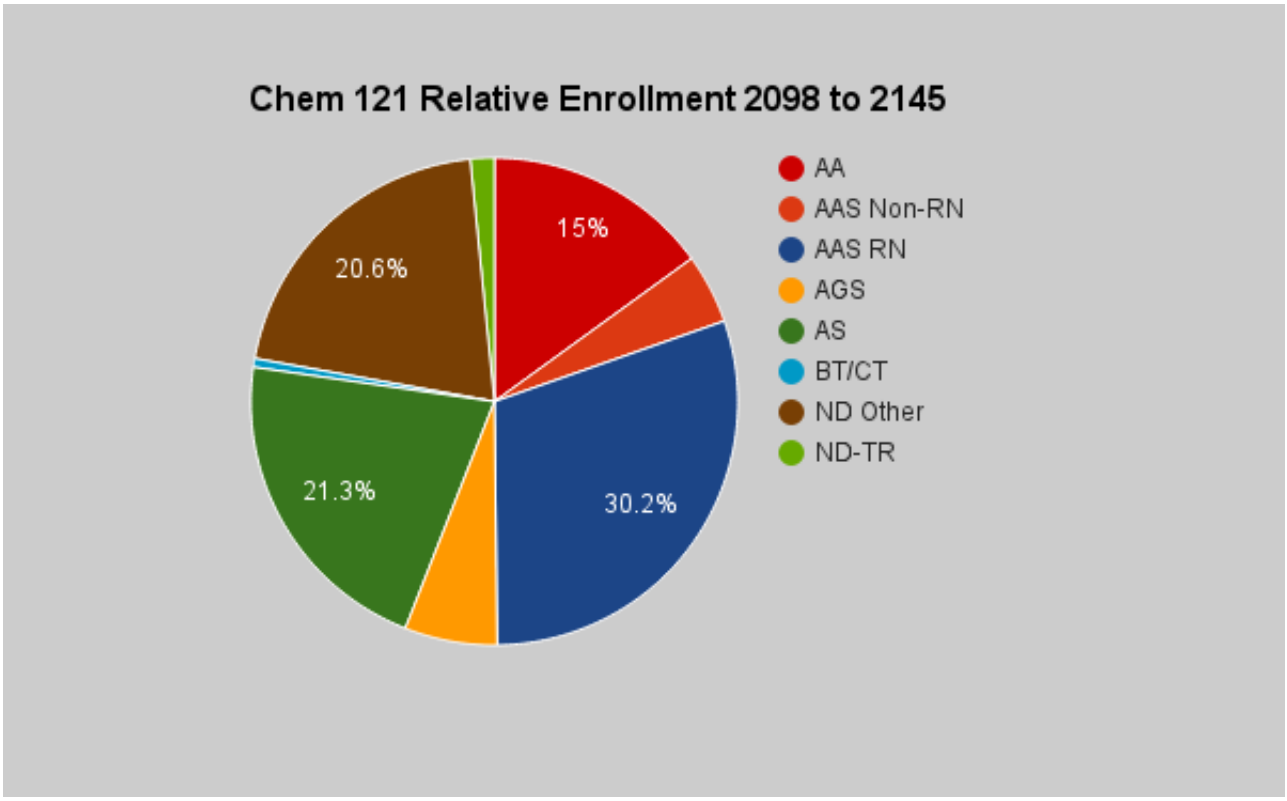
				2118	2122	2128	2132	2138	2148
CHEM	220	CARSON	Aft		1		1		2
			Eve		1		1		
		FALLON	Aft	1		1		1	
			Eve	1				1	
			Morn			1			
	220 Total			2	2	2	2	2	2

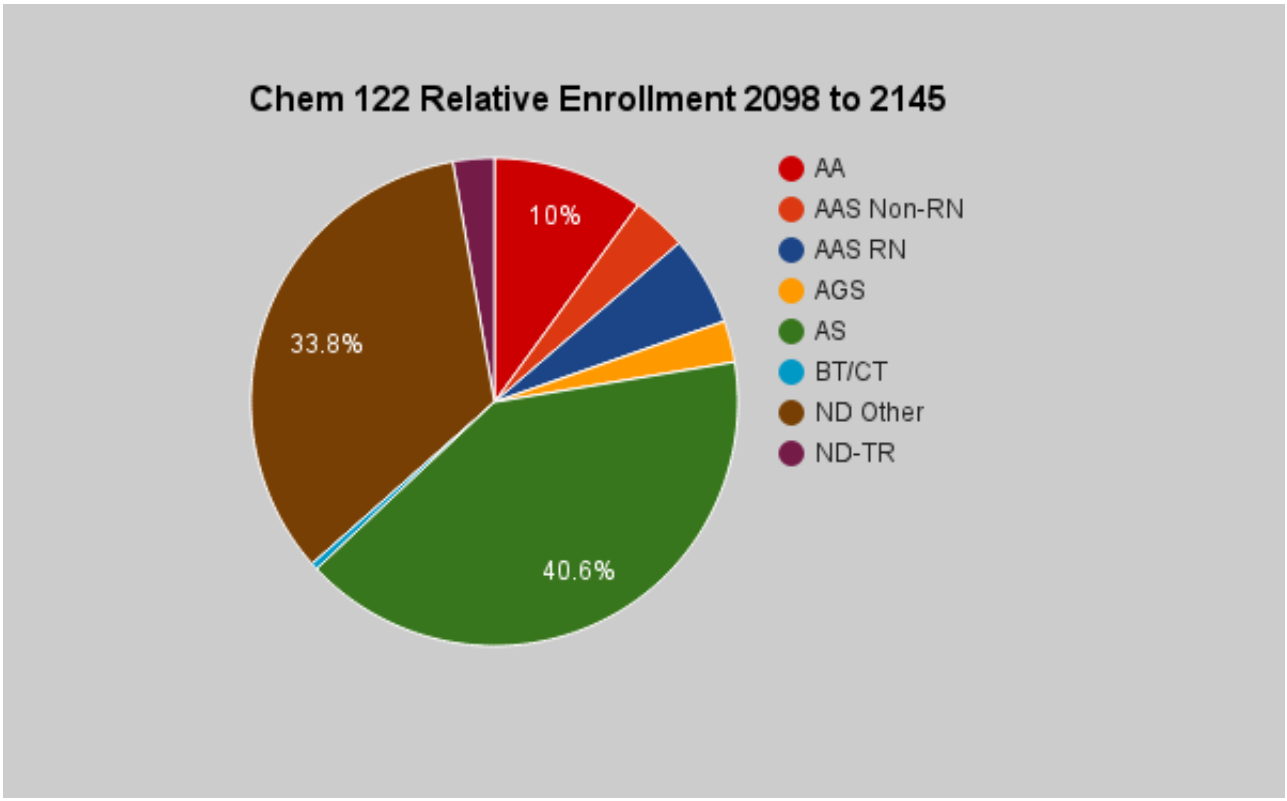
Average Enrollment Per Section

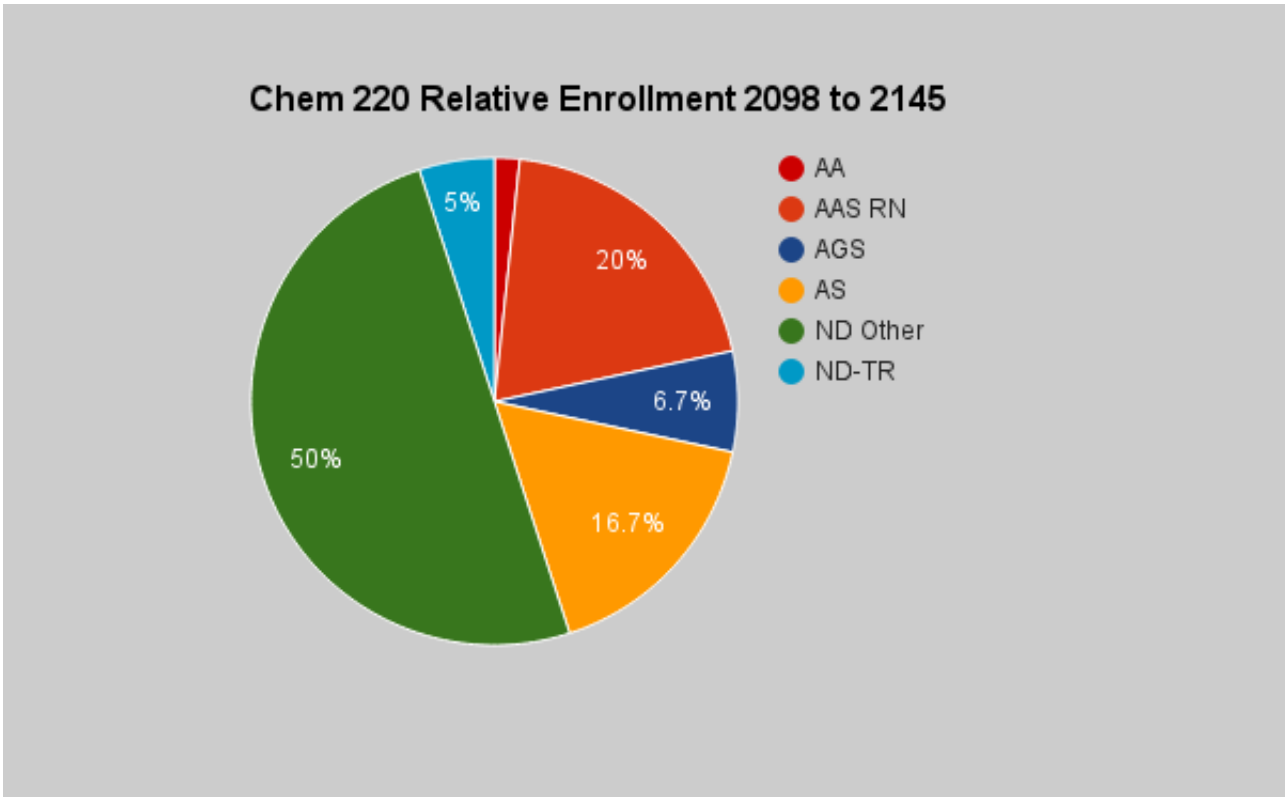
				Avg Enrl	Stdevp Enrl
CHEM	220	CARSON	Aft	5	1
			Eve	6	1
		FALLON	Aft	6	2
			Eve	7	3

			Morn	5	
	220 Total			6	2

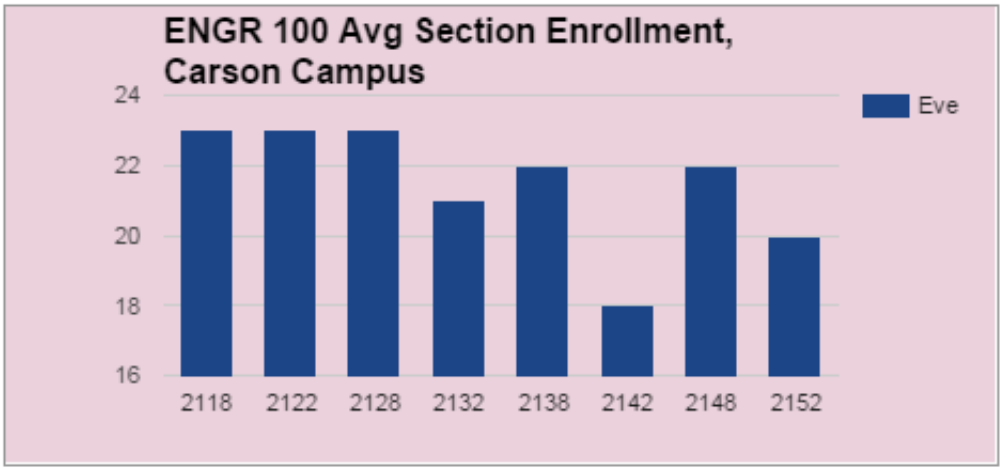
Chemistry--Enrollments by Major






Chem 220 Relative Enrollment 2098 to 2145
AA
AAS RN
AGS
AS
ND Other
ND-TR
5%
20%
6.7%
16.7%
50%

Engineering 100 Enrollment History



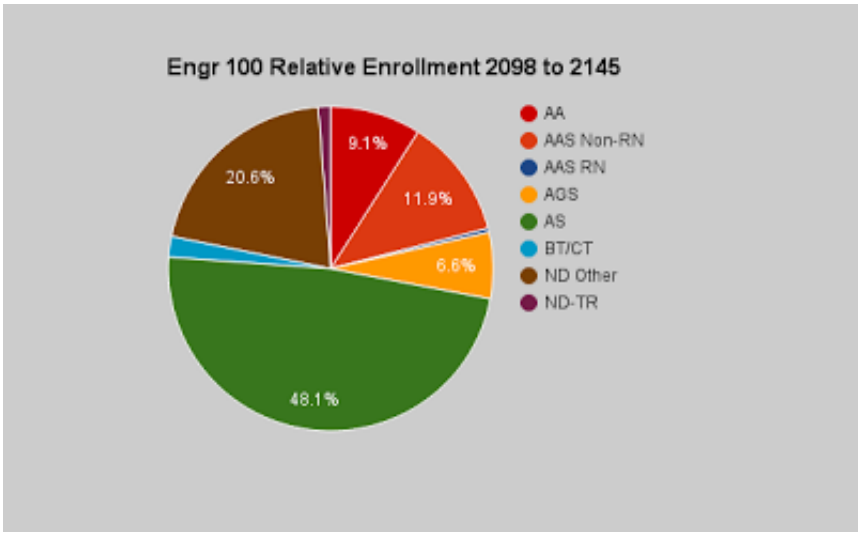
Number of Sections Offered

				2118	2122	2128	2132	2138	2142	2148	2152
ENGR	100	CARSON	Eve	1	1	1	1	1	1	1	1
	100 Total			1	1	1	1	1	1	1	1

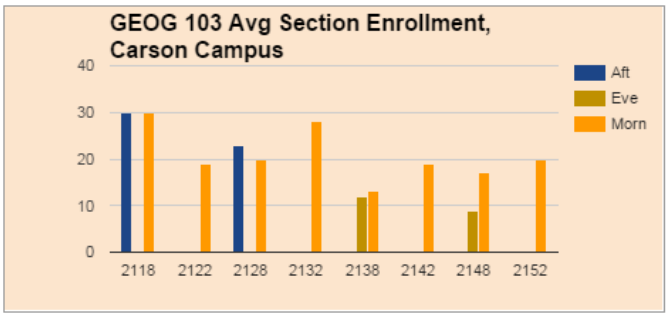
Average Enrollment Per Section

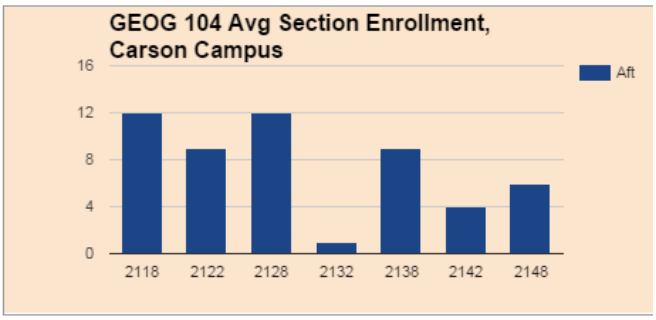
				Avg Enrl	Stdevp Enrl
ENGR	100	CARSON	Eve	22	2
	100 Total			22	2

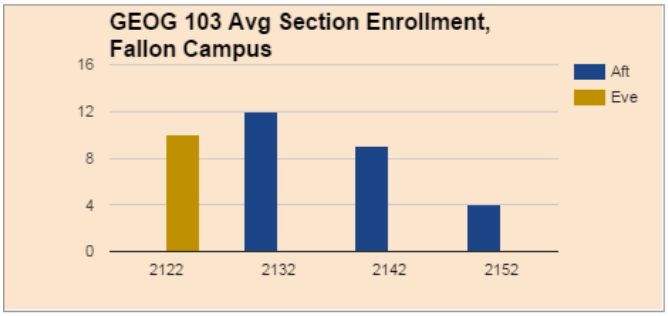
Engineering 100--Enrollments by Major



Geography 103/104 Enrollment History







Number of Sections Offered

				2118	2122	2128	2132	2138	2142	2148	2152
GEOG	103	CARSON	Aft	1		1					
			Eve					1		1	
			Morn	1	1	1	1	1	1	1	1
		FALLON	Aft				1		1		1
			Eve		1						
		SLVRSPRNGS	Morn								1
		WEB	WEB	1	1	1	1	2	2	1	1
	103 Total			3	3	3	3	4	4	3	4

Average Enrollment Per Section

				Avg Enrl	Stdevp Enrl
GEOG	103	CARSON	Aft	27	4
			Eve	11	2
			Morn	21	5
		FALLON	Aft	8	3
			Eve	10	
		SLVRSPRNGS	Morn	22	
		WEB	WEB	31	9
	103 Total			23	11

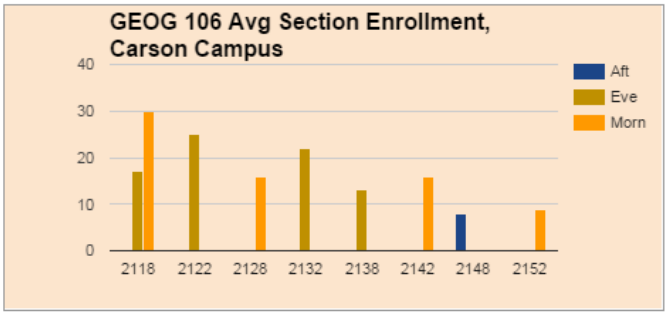
Number of Sections Offered

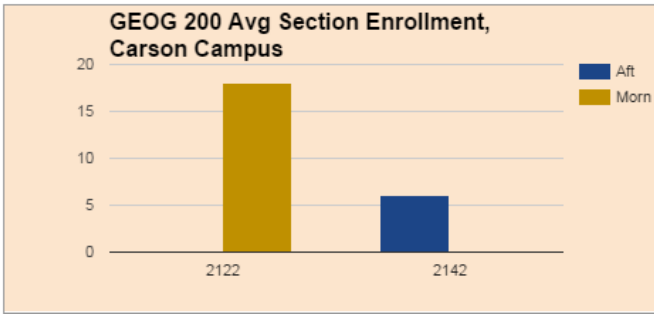
				2118	2122	2128	2132	2138	2142	2148	2152
GEOG	104	CARSON	Aft	1	1	1	1	1	1	1	
		WEB	WEB								1
	104 Total			1	1	1	1	1	1	1	1

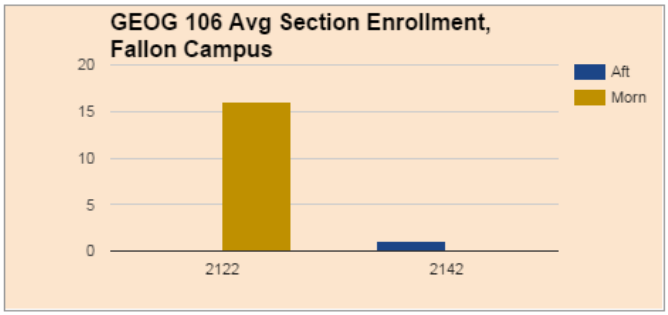
Average Enrollment Per Section

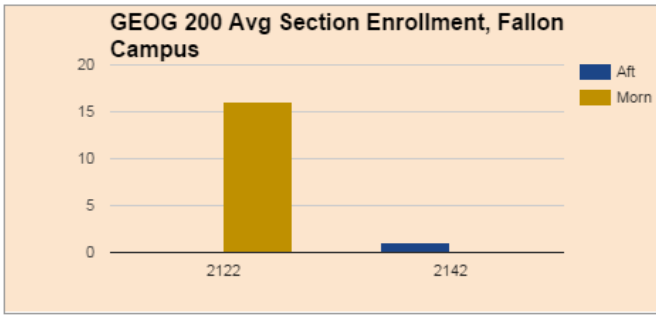
				Avg Enrl	Stdevp Enrl
GEOG	104	CARSON	Aft	8	4
		WEB	WEB	10	
	104 Total			8	4

Geography 106 & 200 Enrollment History









Number of Sections Offered

				2118	2122	2128	2132	2138	2142	2148	2152
GEOG	106	CARSON	Aft							1	
			Eve	1	1		1	1			
			Morn	1		1			1		1
		FALLON	Aft							1	
			Morn	1		1			1		1
	106 Total			3	1	2	1	1	2	2	2

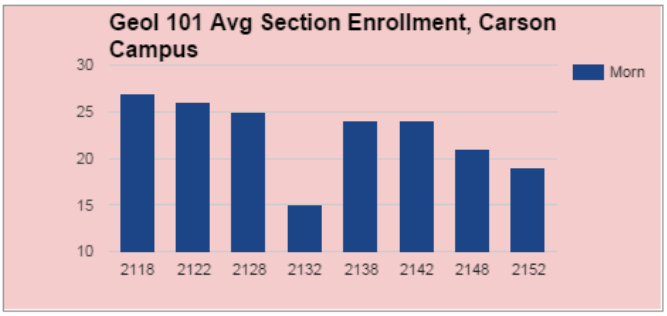
				2122	2142	2152
GEOG	200	CARSON	Aft		1	
			Morn	1		
		FALLON	Aft		1	
			Morn	1		
		WEB	WEB			1
	200 Total			2	2	1

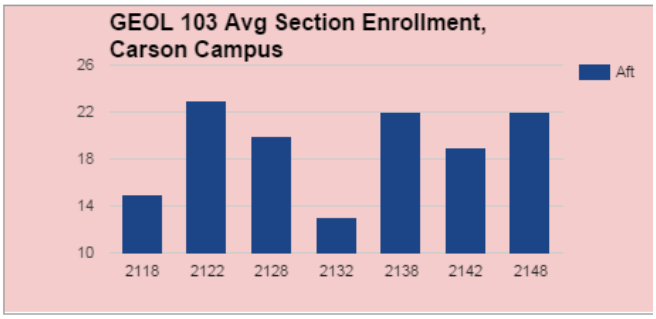
Average Enrollment Per Section

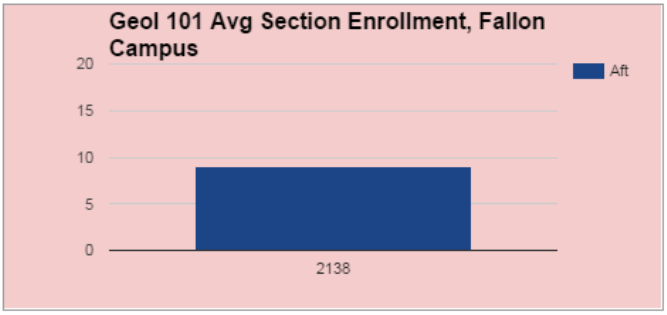
				Avg Enrl	Stdevp Enrl
GEOG	106	CARSON	Aft	8	
			Eve	19	5
			Morn	18	8
		FALLON	Aft	7	
			Morn	8	6
	106 Total			14	8

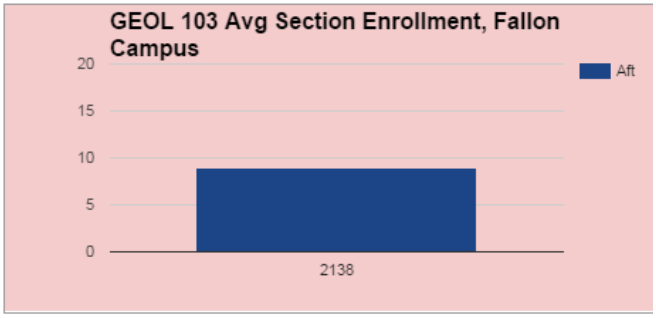
				Avg Enrl	Stdevp Enrl
GEOG	200	CARSON	Aft	6	
			Morn	18	
		FALLON	Aft	1	
			Morn	16	
		WEB	WEB	18	
	200 Total			12	7

Geology 101/103 Enrollment History









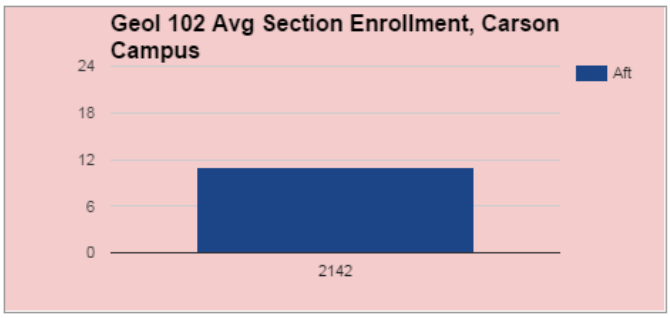
				2118	2122	2128	2132	2138	2142	2148	2152
GEOL	101	CARSON	Morn	1	1	1	1	1	1	1	1
		FALLON	Aft					1			
	101 Total			1	1	1	1	2	1	1	1

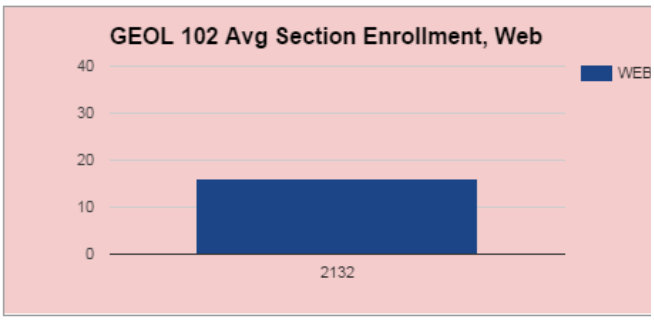
				2118	2122	2128	2132	2138	2142	2148
GEOL	103	CARSON	Aft	1	1	1	1	1	1	1
		FALLON	Aft					1		
	103 Total			1	1	1	1	2	1	1

				Avg Enrl	Stdevp Enrl
GEOL	101	CARSON	Morn	23	4
		FALLON	Aft	12	
	101 Total			21	5

				Avg Enrl	Stdevp Enrl
GEOL	103	CARSON	Aft	19	4
		FALLON	Aft	9	
	103 Total			18	5

Geology 102 Enrollment History

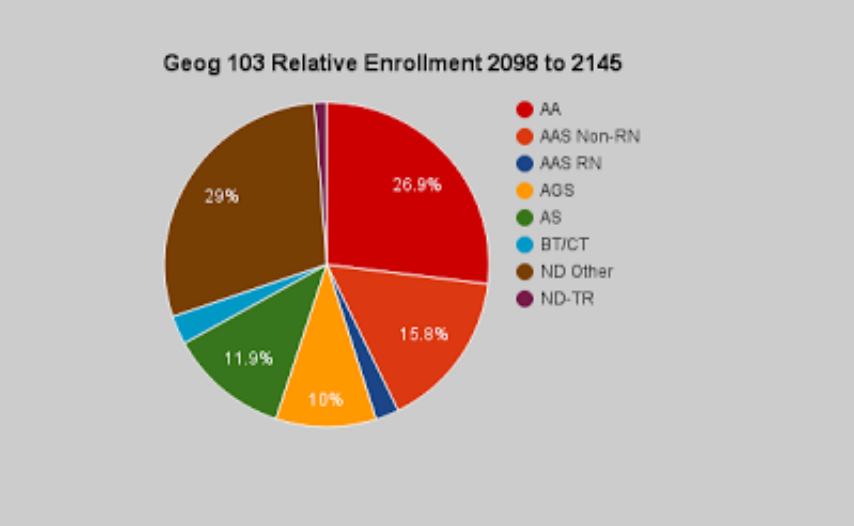


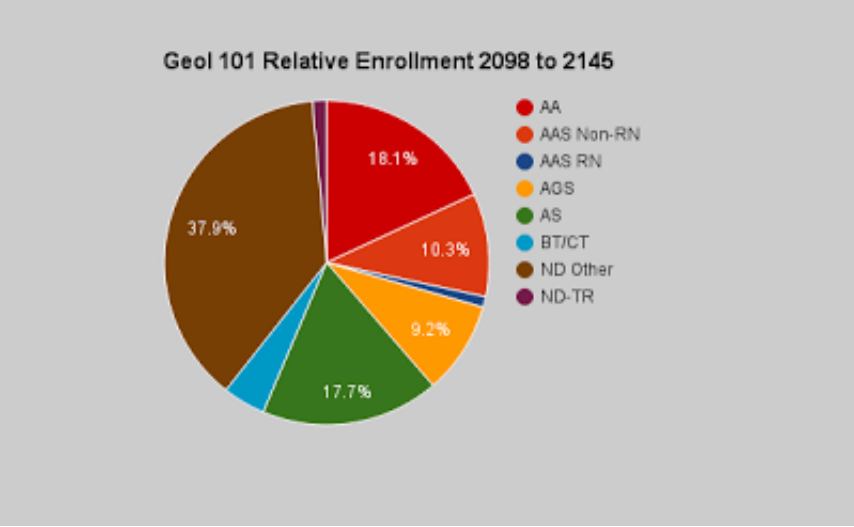


				2132	2142
GEOL	102	CARSON	Aft		1
		WEB	WEB	1	
	102 Total			1	1

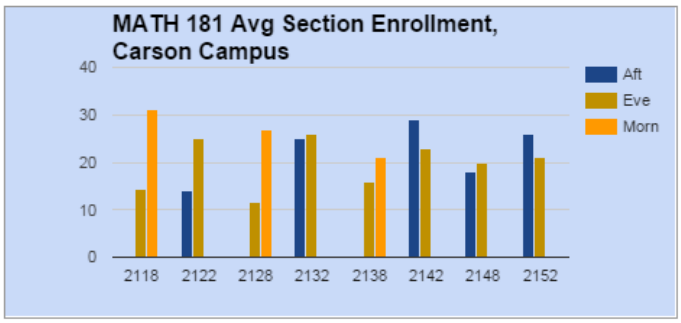
				Avg Enrl	Stdevp Enrl
GEOL	102	CARSON	Aft	11	
		WEB	WEB	16	
	102 Total			14	3

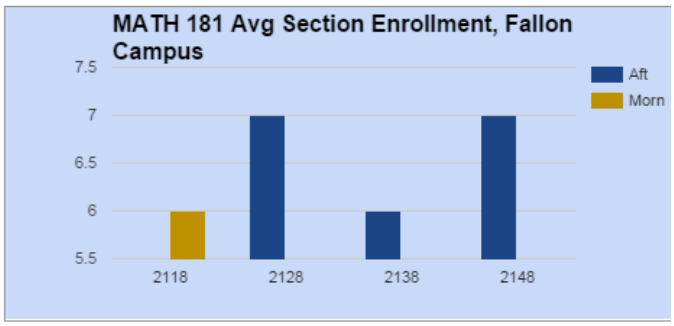
Geoscience--Enrollments by Major

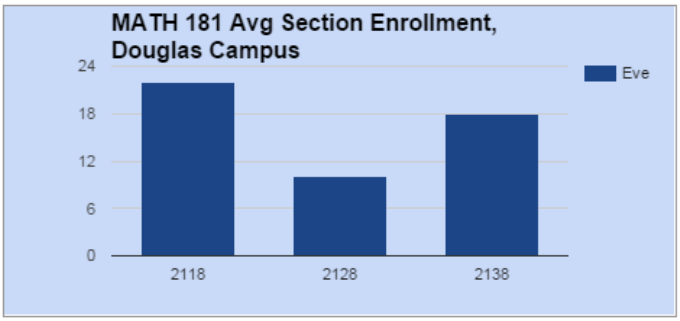


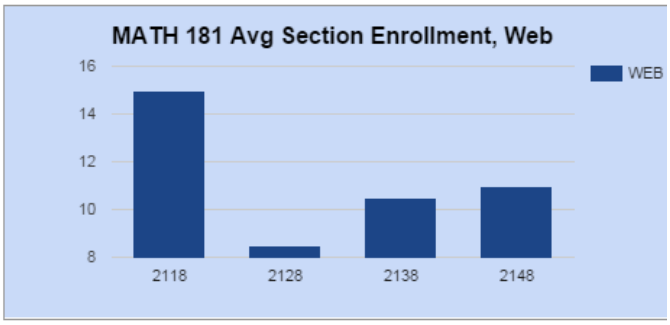


Mathematics 181 Enrollment History





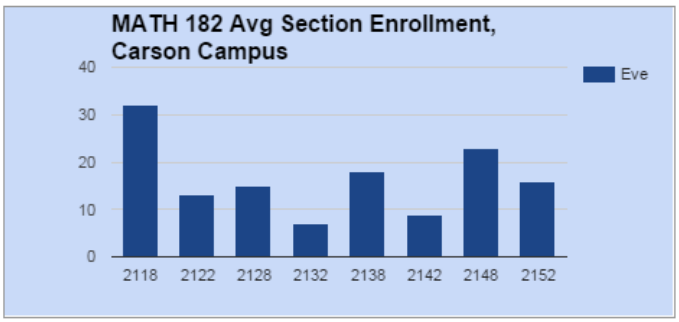


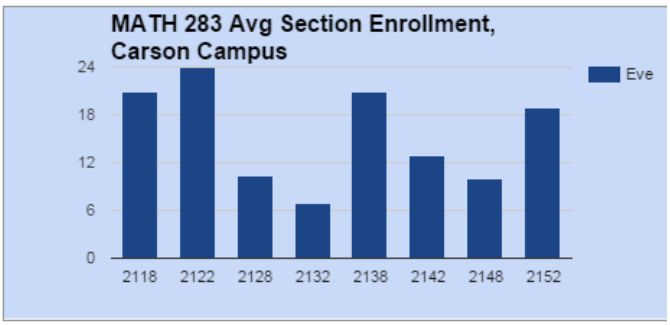


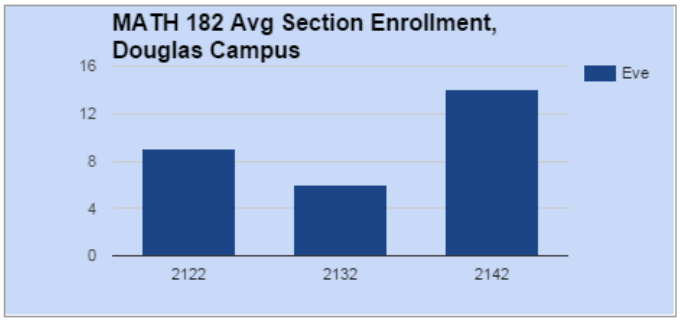
				2118	2122	2128	2132	2138	2142	2148	2152
MATH	181	CARSON	Aft		1		1		1	1	1
			Eve	2	1	3	1	1	1	1	1
			Morn	1		1		1			
		DOUGLAS	Eve	1		1		1			
		FALLON	Aft			1		1		1	
			Morn	1							
		WEB	WEB	2		2		2		2	
	181 Total			7	2	8	2	6	2	5	2

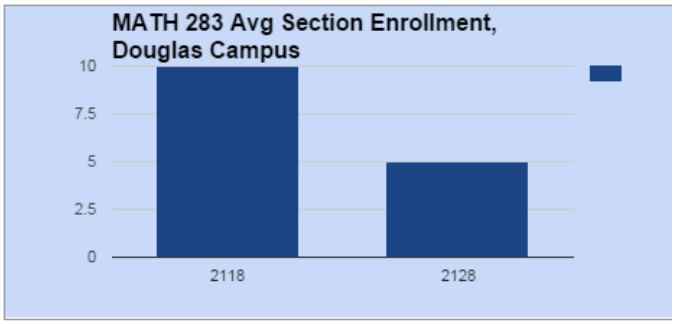
				Avg Enrl	Stdevp Enrl
MATH	181	CARSON	Aft	22	6
			Eve	18	8
			Morn	26	4
		DOUGLAS	Eve	17	5
		FALLON	Aft	7	0
			Morn	6	
		WEB	WEB	11	4
	181 Total			16	8

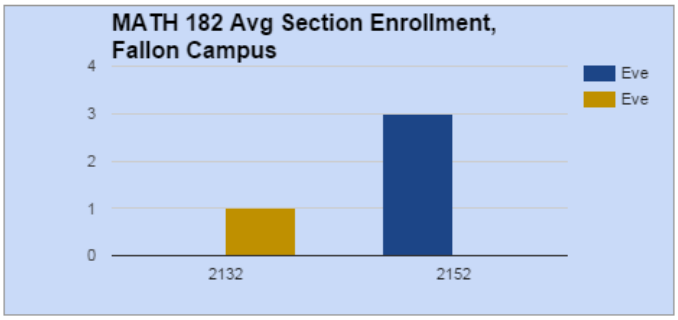
Mathematics 182 & 283 Enrollment History

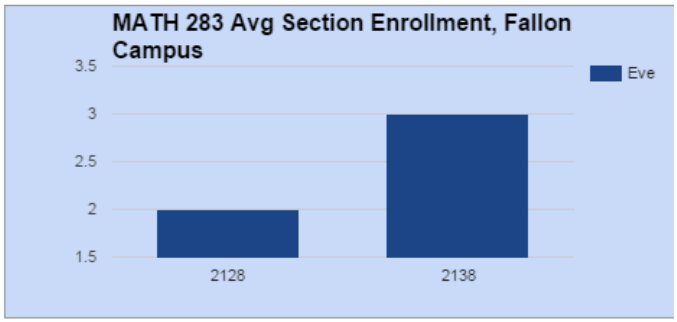


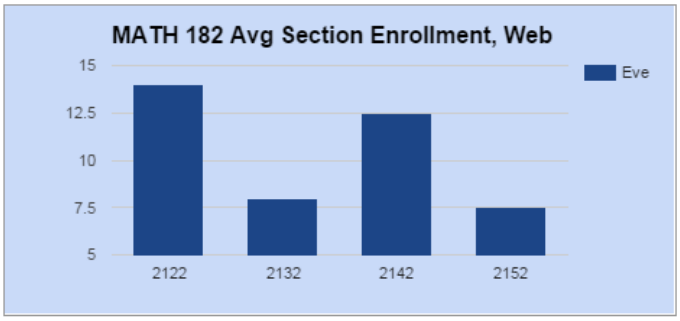












Number of Sections Offered

				2118	2122	2128	2132	2138	2142	2148	2152
MATH	182	CARSON	Eve	1	3	1	3	1	1	1	1
		DOUGLAS	Eve		1		1		1		
		FALLON	Aft								1
			Eve				1				
		WEB	WEB		2		2		2		2
	182 Total			1	6	1	7	1	4	1	4

				2118	2122	2128	2132	2138	2142	2148	2152
MATH	283	CARSON	Eve	1	1	3	1	1	1	1	1
		DOUGLAS	Eve	1		1					

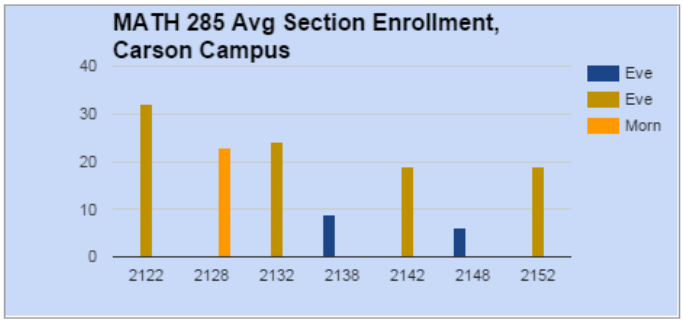
		FALLON	Eve				1		1				
	283 Total			2	1	5	1	2	1	1	1		

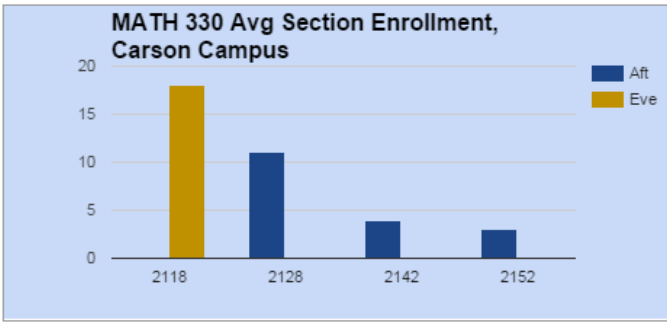
Average Enrollment Per Section

				Avg Enrl	Stdevp Enrl
MATH	182	CARSON	Eve	14	9
		DOUGLAS	Eve	10	3
		FALLON	Aft	3	
			Eve	1	
		WEB	WEB	11	4
	182 Total			12	8

				Avg Enrl	Stdevp Enrl
MATH	283	CARSON	Eve	15	8
		DOUGLAS	Eve	8	3
		FALLON	Eve	3	1
	283 Total			12	8

Mathematics 285 & 330 Enrollment History





Number of Sections Offered

				2122	2128	2132	2138	2142	2148	2152
MATH	285	CARSON	Aft				1		1	
			Eve	1		1		1		1
			Morn		1					
	285 Total			1	1	1	1	1	1	1

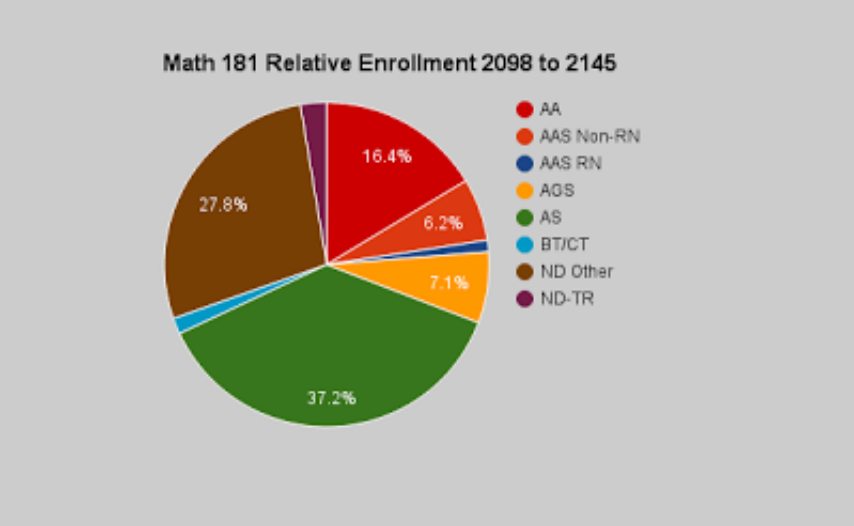
				2118	2128	2142	2152
MATH	330	CARSON	Aft		1	1	1
			Eve	1			
	330 Total			1	1	1	1

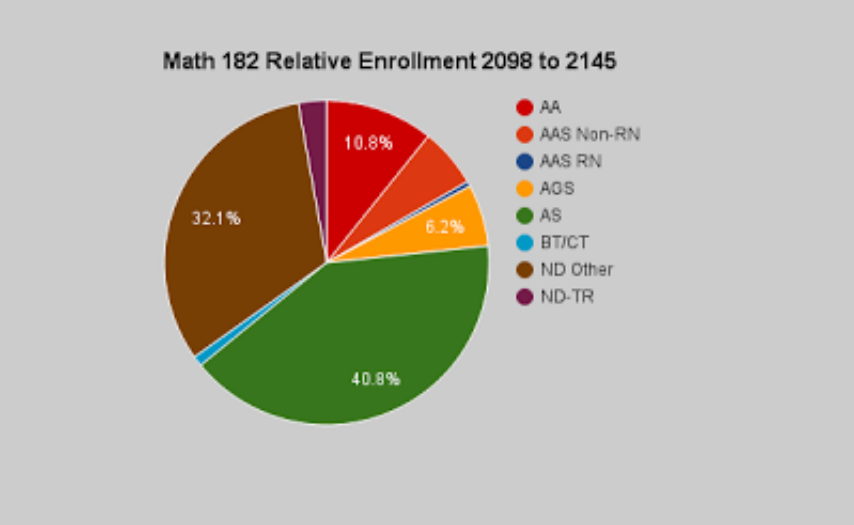
Average Enrollment Per Section

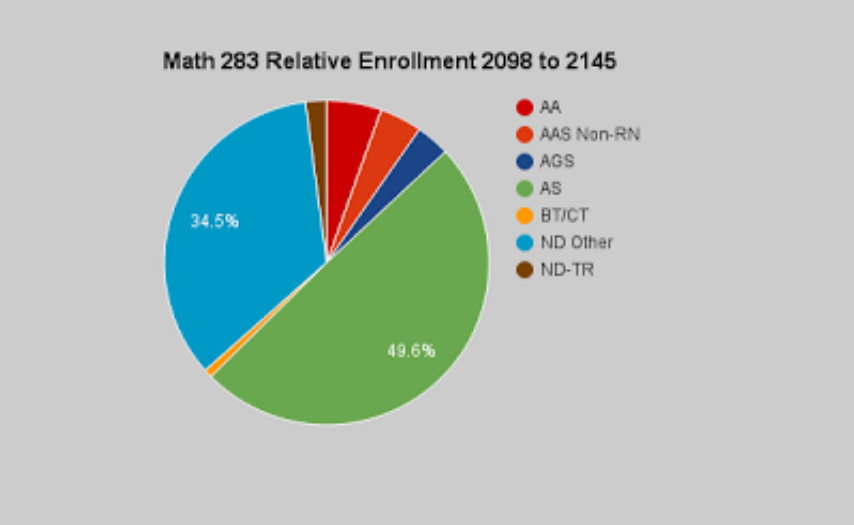
				Avg Enrl	Stdevp Enrl
MATH	285	CARSON	Aft	8	2
			Eve	24	5
			Morn	23	
	285 Total			19	8

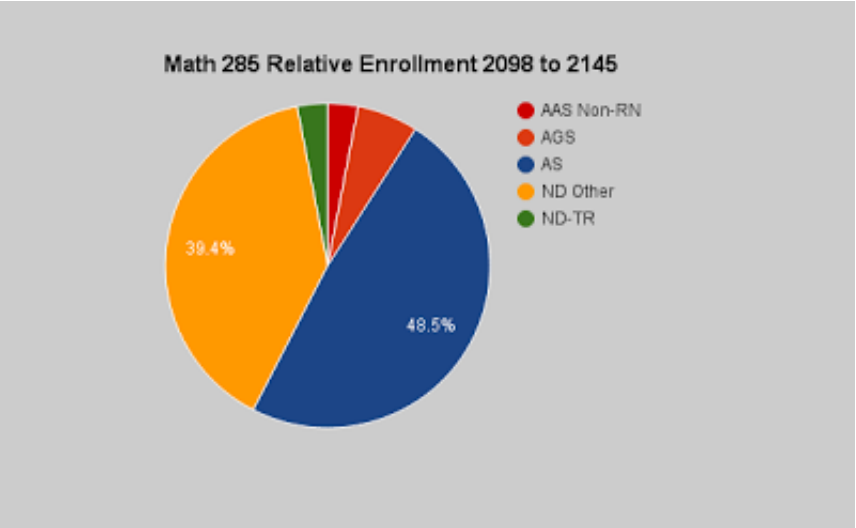
				Avg Enrl	Stdevp Enrl
MATH	330	CARSON	Aft	6	4
			Eve	18	
	330 Total			9	6

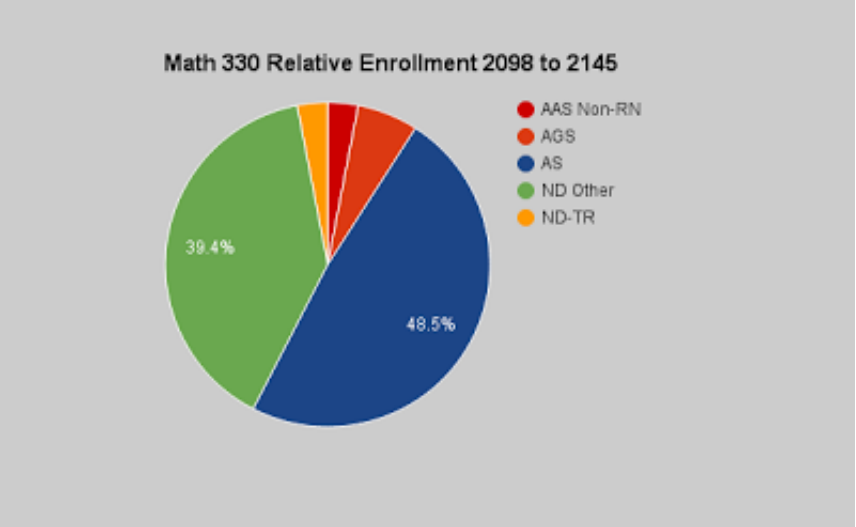
Mathematics--Enrollments by Major



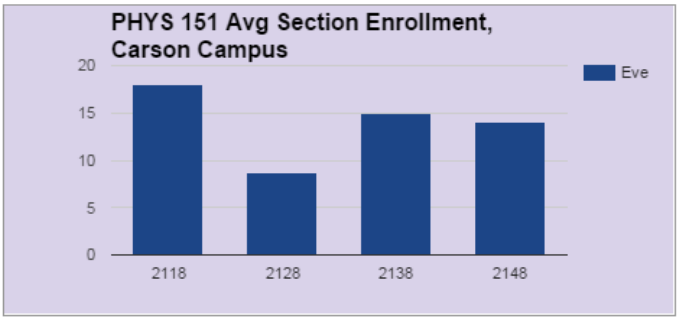


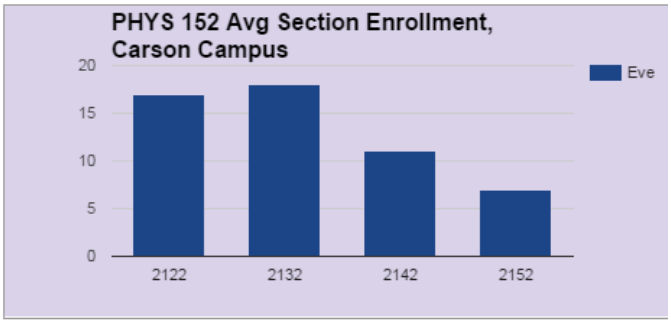


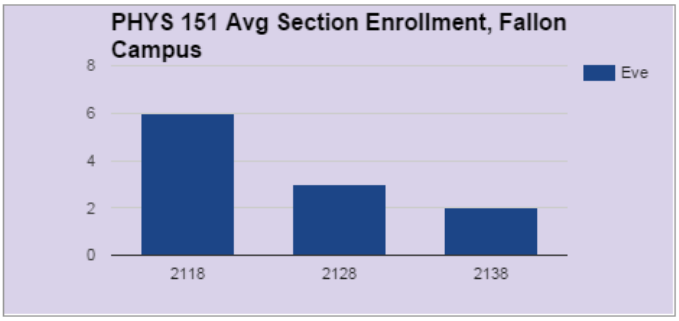

Math 285 Relative Enrollment 2098 to 2145
AAS Non-RN
AGS
AS
ND Other
ND-TR
39.4%
48.5%

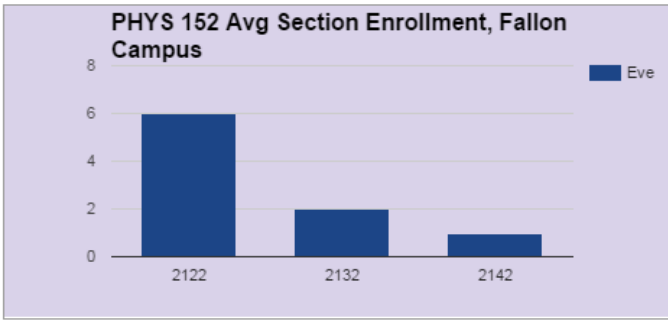

Math 330 Relative Enrollment 2098 to 2145
AAS Non-RN
AGS
AS
ND Other
ND-TR
39.4%
48.5%

Physics 151 & 152 Enrollment History









Number of Sections Offered

				2118	2128	2138	2148
PHYS	151	CARSON	Eve	3	4	2	2
		FALLON	Eve	3	1	2	
	151 Total			6	5	4	2

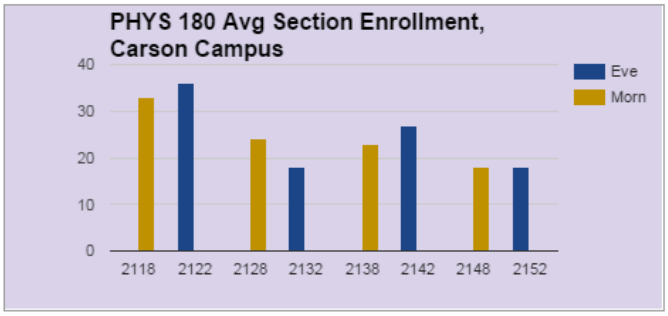
				2122	2132	2142	2152
PHYS	152	CARSON	Eve	2	2	2	2
		FALLON	Eve	2	2	2	
	152 Total			4	4	4	2

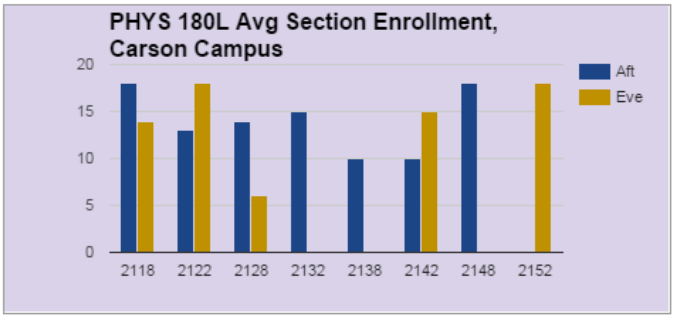
Average Enrollment Per Section

				Avg Enrl	Stdevp Enrl
PHYS	151	CARSON	Eve	13	5
		FALLON	Eve	4	2
	151 Total			10	6

				Avg Enrl	Stdevp Enrl
PHYS	152	CARSON	Eve	13	4
		FALLON	Eve	3	2
	152 Total			9	6

Physics 180/180L Enrollment History





Number of Sections Offered

				2118	2122	2128	2132	2138	2142	2148	2152
PHYS	180	CARSON	Aft		1		1		1		1
			Morn	1		1		1		1	
	180 Total			1	1	1	1	1	1	1	1

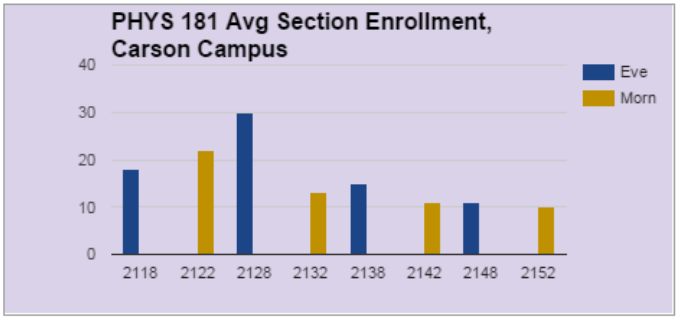
				2118	2122	2128	2132	2138	2142	2148	2152
PHYS	180L	CARSON	Aft	1	1	1	1	2	1	1	
			Eve	1	1	1			1		1
	180L Total			2	2	2	1	2	2	1	1

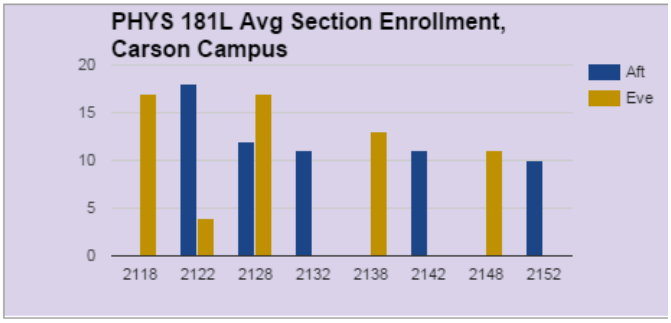
Average Enrollment Per Section

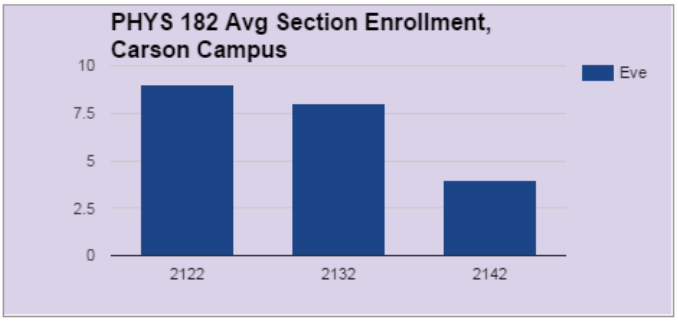
				Avg Enrl	Stdevp Enrl
PHYS	180	CARSON	Aft	25	7
			Morn	25	5
	180 Total			25	7

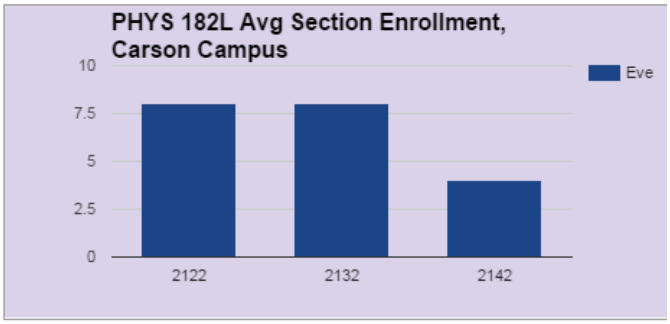
				Avg Enrl	Stdevp Enrl
PHYS	180L	CARSON	Aft	14	4
			Eve	14	4
	180L Total			14	4

Physics 181/181L & 182/182L Enrollment History









Number of Sections Offered

				2118	2122	2128	2132	2138	2142	2148	2152
PHYS	181	CARSON	Aft	1		1		1		1	
			Morn		1		1		1		1
	181 Total			1	1	1	1	1	1	1	1

				2118	2122	2128	2132	2138	2142	2148	2152
PHYS	181L	CARSON	Aft		1	1	1		1		1
			Eve	1	1	1		1		1	
	181L Total			1	2	2	1	1	1	1	1

				2122	2132	2142
PHYS	182	CARSON	Aft	1	1	1
	182 Total			1	1	1

				2122	2132	2142
PHYS	182L	CARSON	Eve	1	1	1
	182L Total			1	1	1

Average Enrollment Per Section

				Avg Enrl	Stdevp Enrl
PHYS	181	CARSON	Aft	19	7
			Morn	14	5
	181 Total			16	6

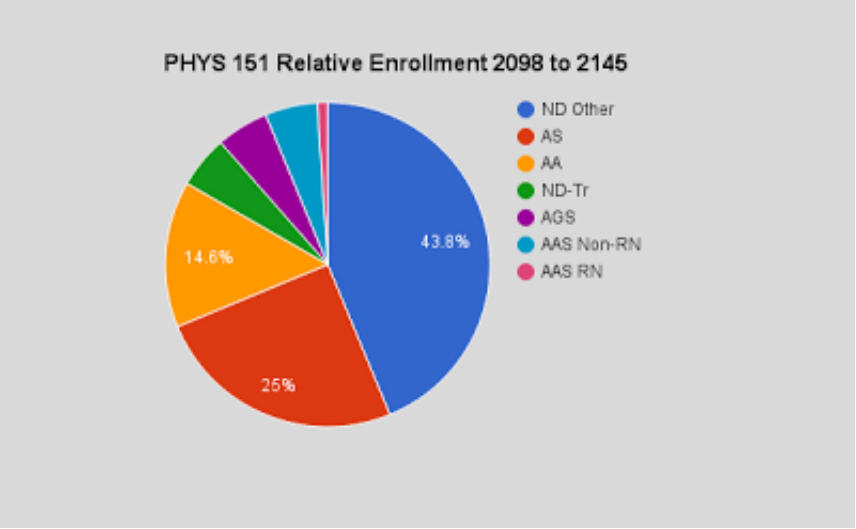
				Avg Enrl	Stdevp Enrl
PHYS	181L	CARSON	Aft	12	3
			Eve	12	5
	181L Total			12	4

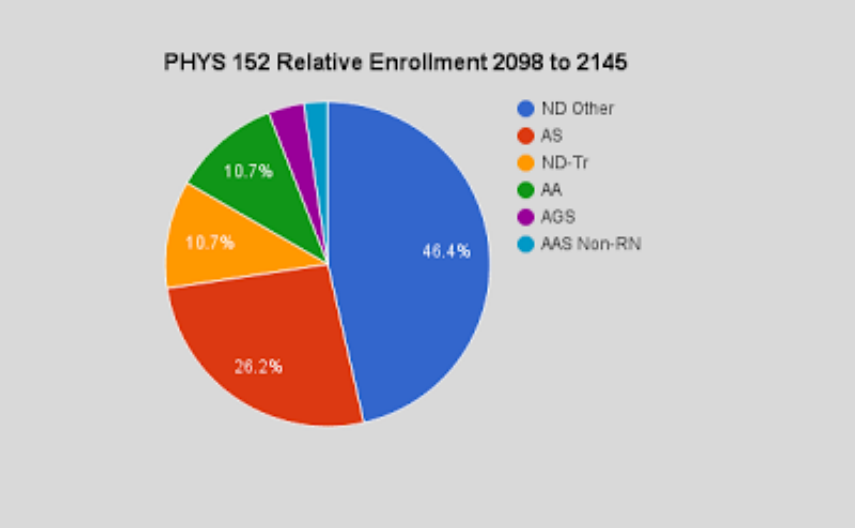
	Stdevp

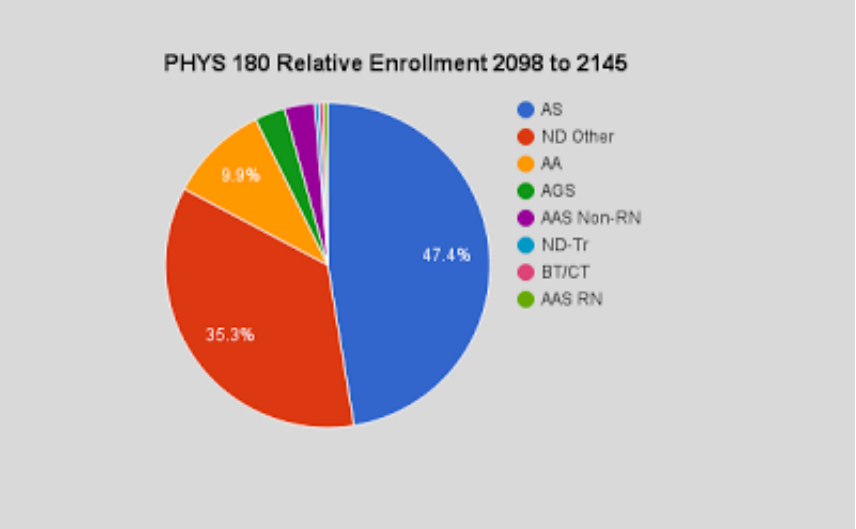
				Avg Enrl	Enrl
PHYS	182	CARSON	Aft	7	2
	182 Total			7	2

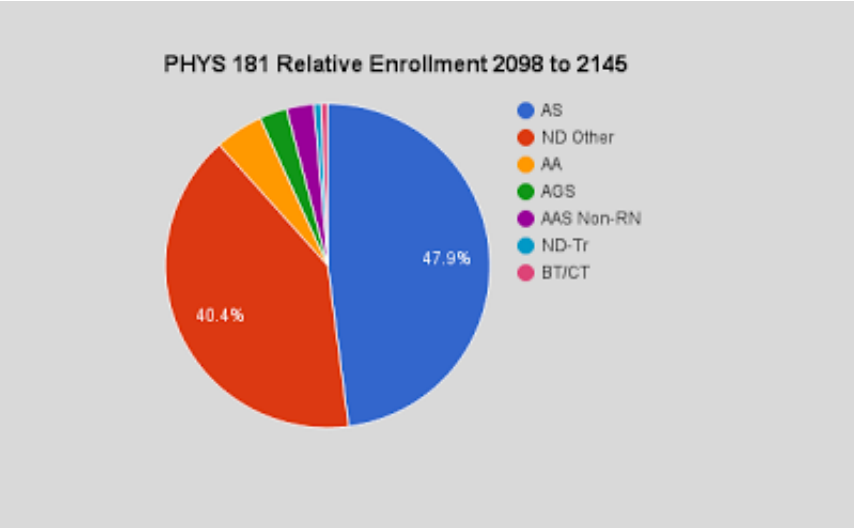
				Avg Enrl	Stdevp Enrl
PHYS	182L	CARSON	Eve	7	2
	182L Total			7	2

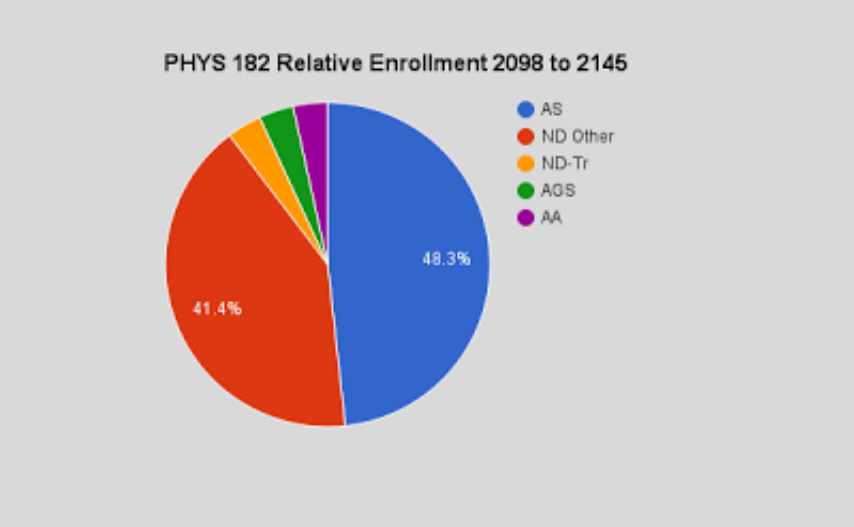
Physics--Enrollment by Major








PHYS 181 Relative Enrollment 2098 to 2145
AS
ND Other
AA
AGS
AAS Non-RN
ND-Tr
BT/CT
47.9%
40.4%

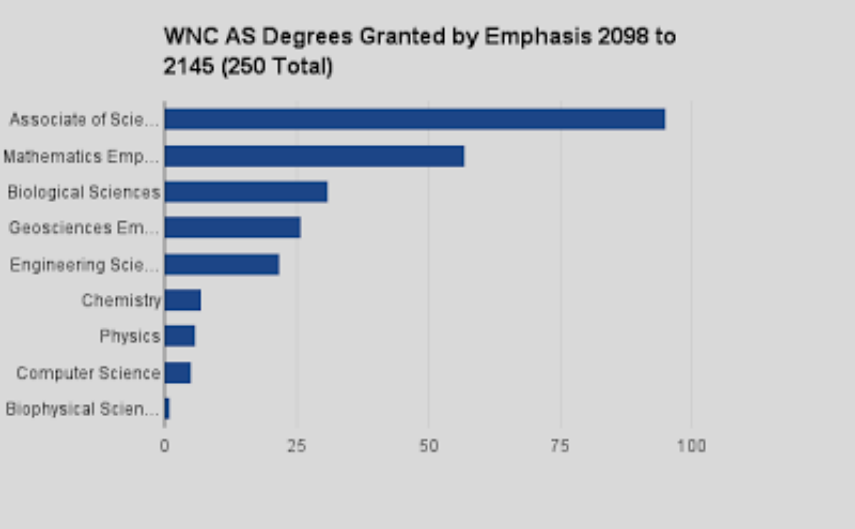

PHYS 182 Relative Enrollment 2098 to 2145
AS
ND Other
ND-Tr
AGS
AA
48.3%
41.4%

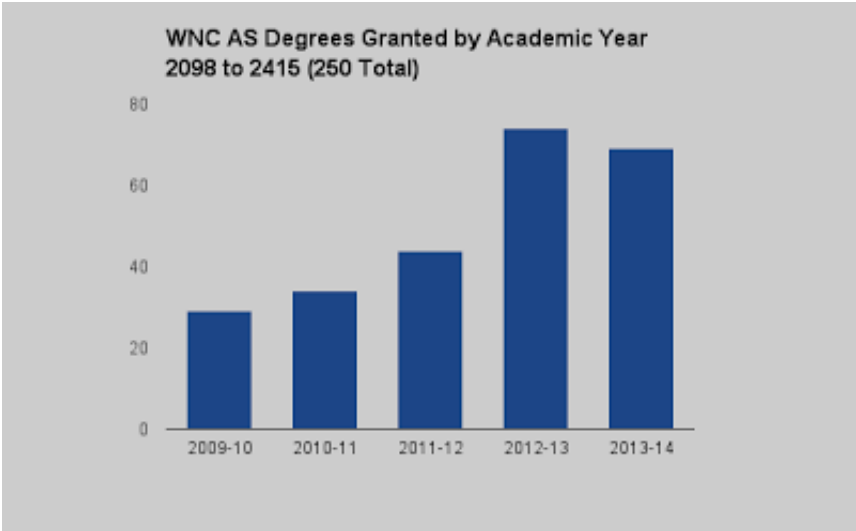
Summary Data Sheet (2.A.ii)

AS Declared Student Headcount

source IR intranet pg	2011	2012	2013	2014
AS Declared (fall)	375	441	440	452
AS Graduates (fall+spring)	37	43	68	70

AS Degrees Granted 2098 to 2145





250	**Associate of Science degrees were granted by WNC 2098 to 2145**
14	Students completed exactly two AS degrees at WNC (236 students earned at

	least one AS)
49	Completed more than 90 credits at WNC
91	Completed 71 to 90 credits at WNC (54 completed 60 to 70 credits)
39	Completed 30 to 59 credits at WNC
3	Completed fewer than 30 credits at WNC
8.1	Average number of semesters to complete WNC AS degree (s=3.7)
22.6	Average number of credits attempted per academic year including summer term (s=5.5)

(above updated 7-14-15 with revised data)

Course completion data

All reports are based on enrollment data spanning the period Fall 2009 through Spring 2014.

To open the .xlsx files, click the link, then choose 'open with' at the top of the preview. Select 'Google Sheets.'

AS Grads: Degrees and Classes Report (_3 years).pdf

This is a complete enrollment history (by term) for each student who completed an AS degree at WNC within 3 years.

AS Grads: Completion Report 2098-2145.xlsx (*open with* Google Sheets)

This is a summary of course completion in science courses for those students who completed an AS degree at WNC. Nine percentages are reported for each class – one of three completion numbers divided by one of three enrollment numbers.

Completion: Three definitions of successful completion are used:

C or better,

C- or better, and

D- or better.

Enrollment: For each completion statistic, three enrollment numbers are used:

Out of all enrollees,

Out of all enrollees who were enrolled beyond the 90% refund date (when that was an option), and

Out of all enrollees who were enrolled beyond the 90% refund date ***and*** who were not auditing the class.

Summary rates are presented for each course, and each subject.

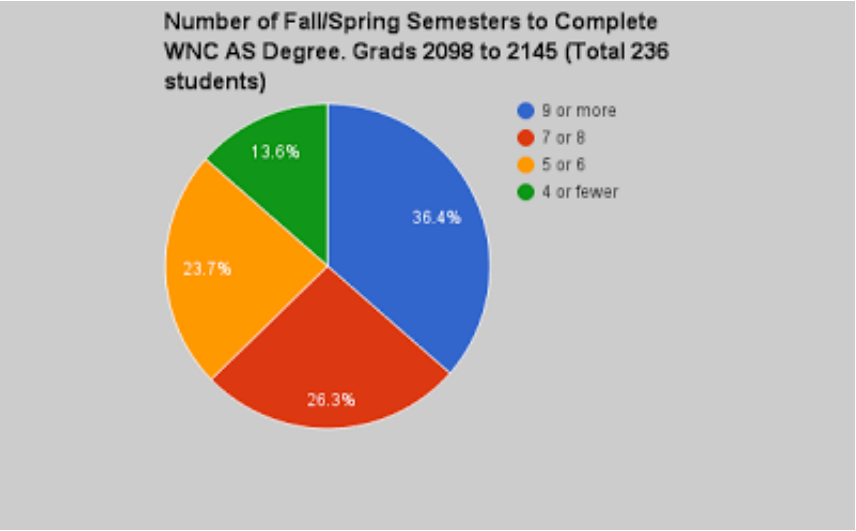
AS course grade summaries (all students).xlsx (*open with* Google Sheets)

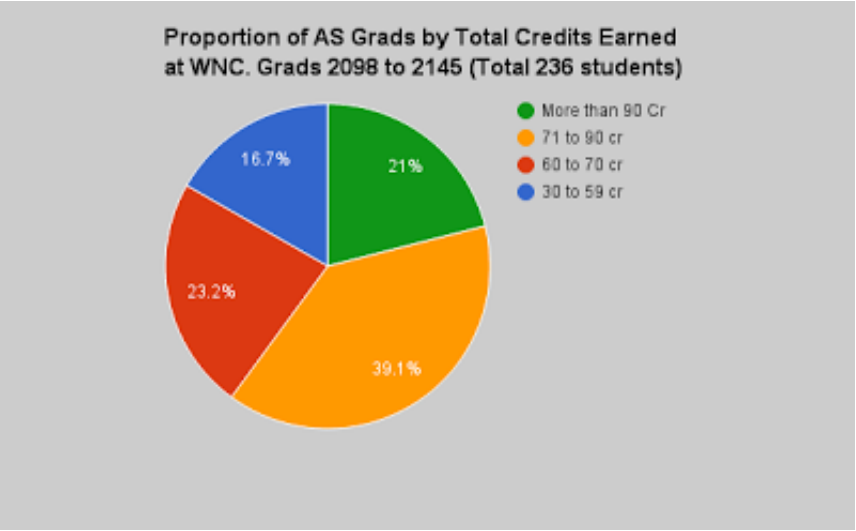
This is a summary of course completion in science courses for all students. Nine percentages are reported for each class – they are the same as the percentages described in the Completion Report above. Summary rates are presented for each course, and each subject.

Summary of student performance at primary transfer institution

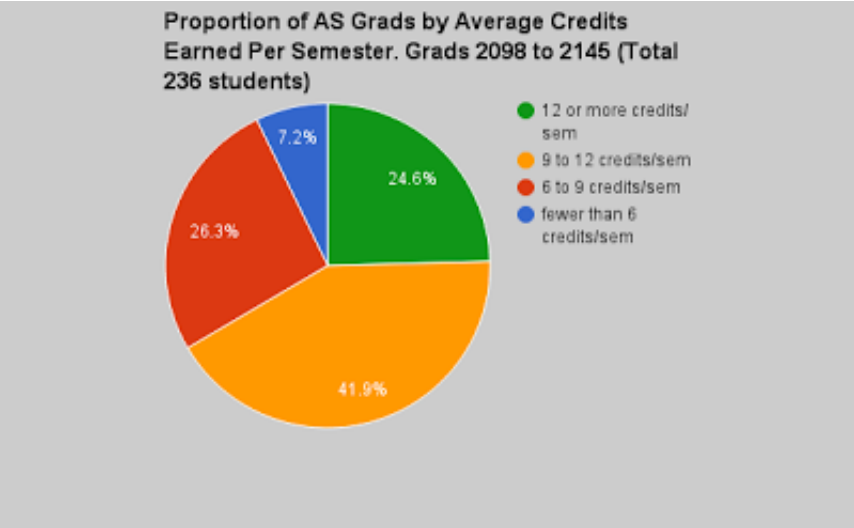
- WNC Science Student Performance at Primary Transfer Institution

Analysis of Student Credit Hours

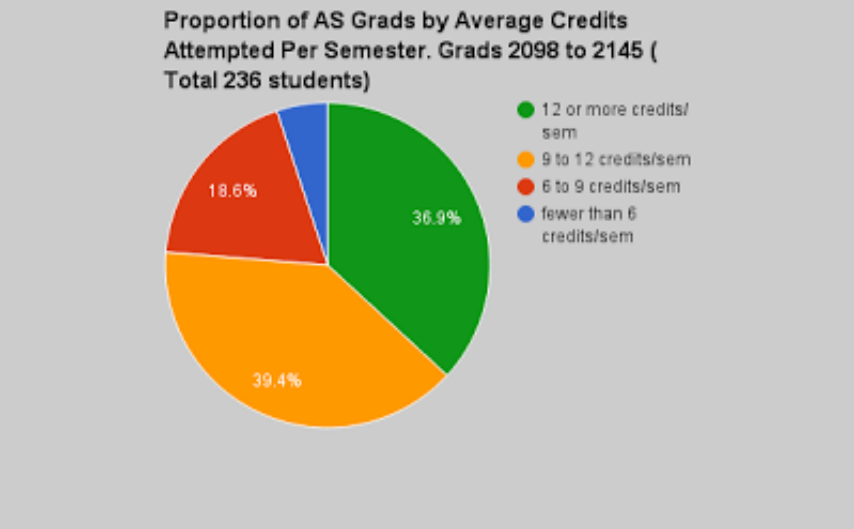




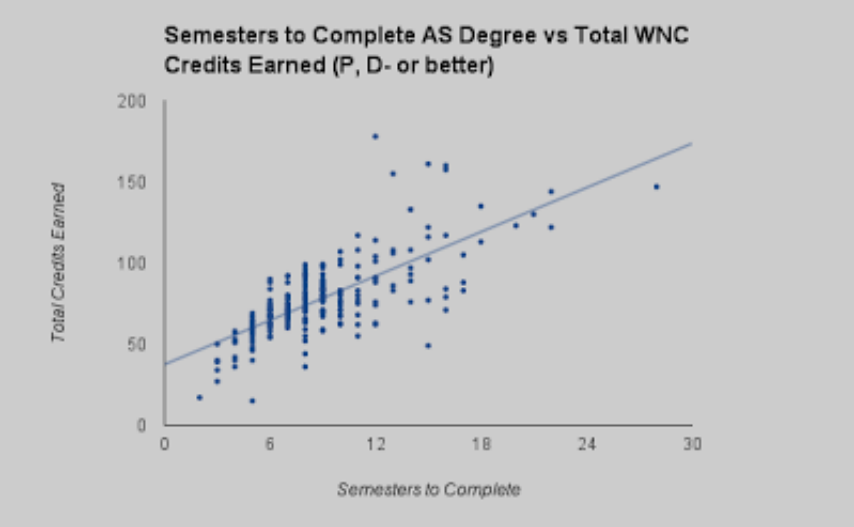
Credits Earned Per Semester



Credits Attempted Per Semester



Semesters to Complete vs Total Credits Earned (AS Grads)



Student FTE in AS Gateway/Emphasis Courses

Please see:
Course Scheduling/Enrollment History Report (2.A.i)

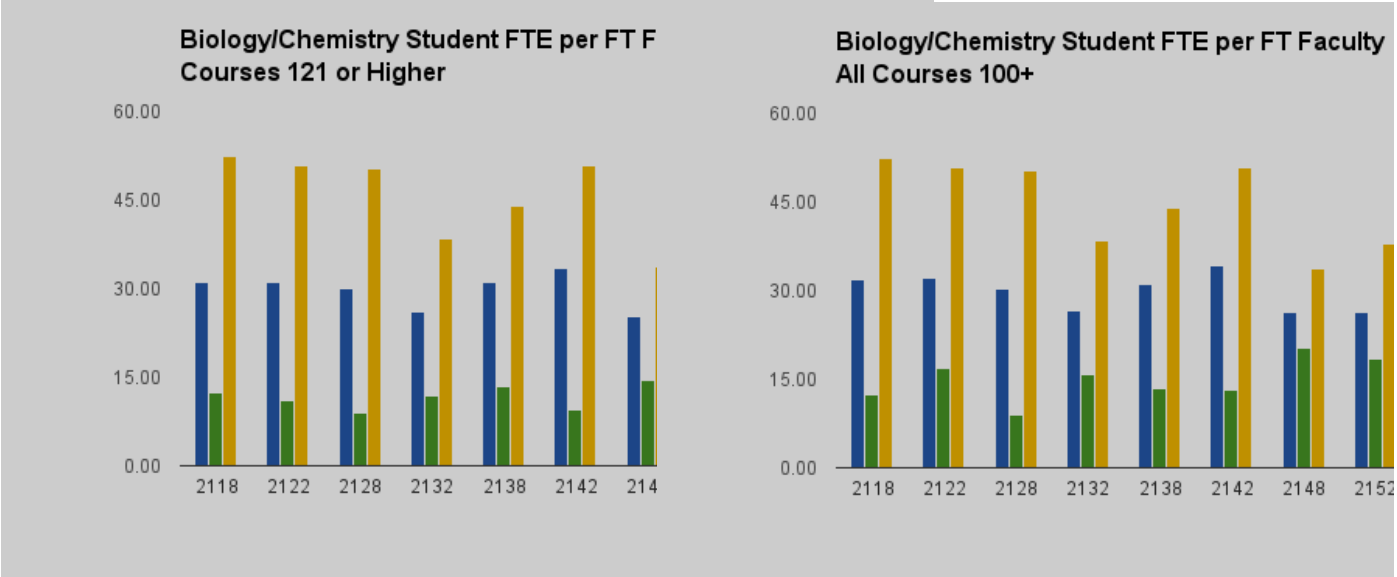
UNR Degrees Earned by WNC AS Grads and Transfer Students

Faculty Workload

- Full-Time Faculty Workload Related to Student FTE
- BIOL/CHEM FT/PT Workload
- Geoscience FT/PT Workload
- Math FT/PT Workload
- Physics/Engr FT/PT Workload

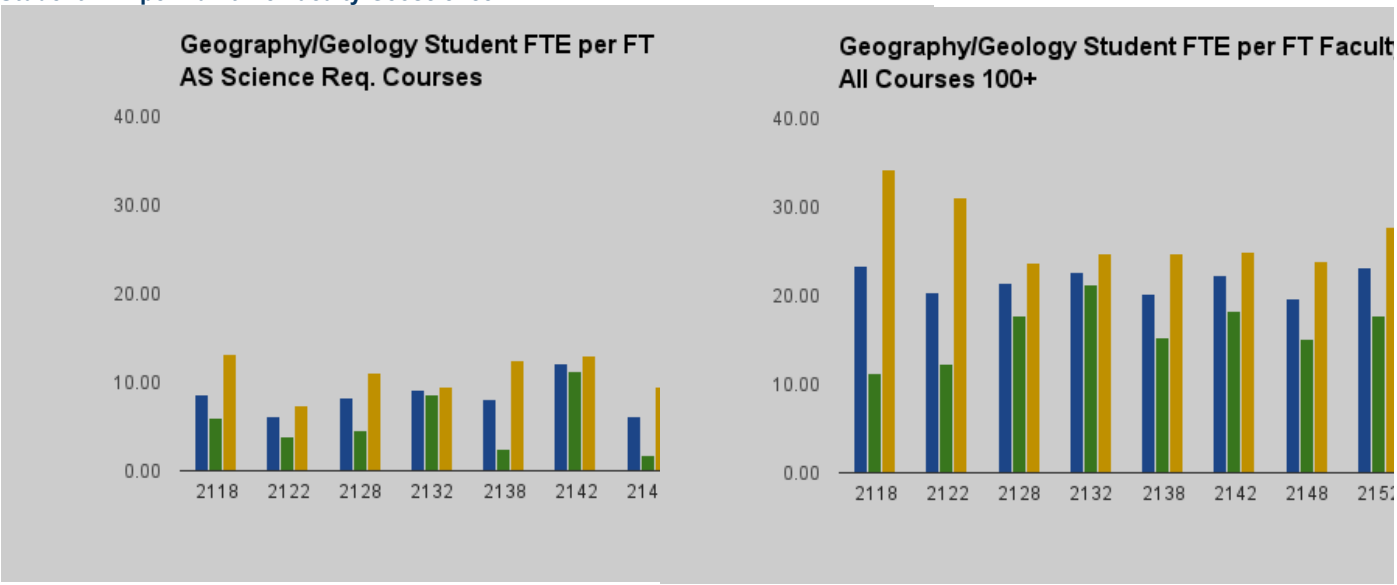
Full-Time Faculty Workload Related to Student FTE

Student FTE per Full-time Faculty Biol/Chem



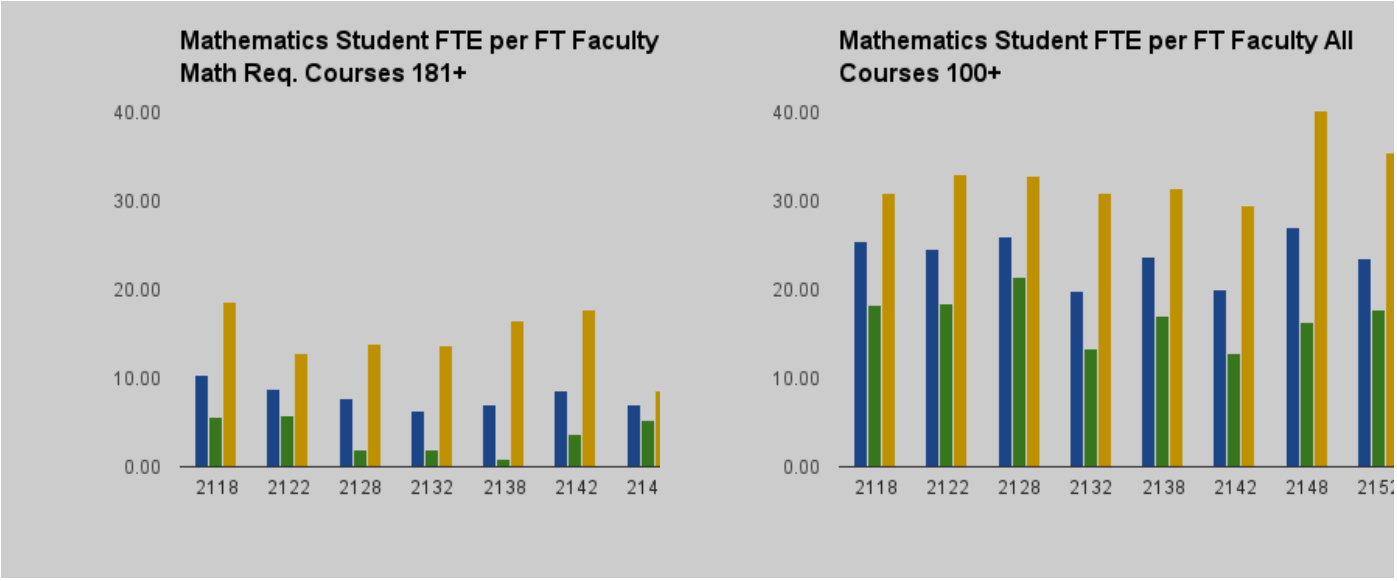
BIOL/CHEM FT/PT Workload

Student FTE per Full-time Faculty Geoscience



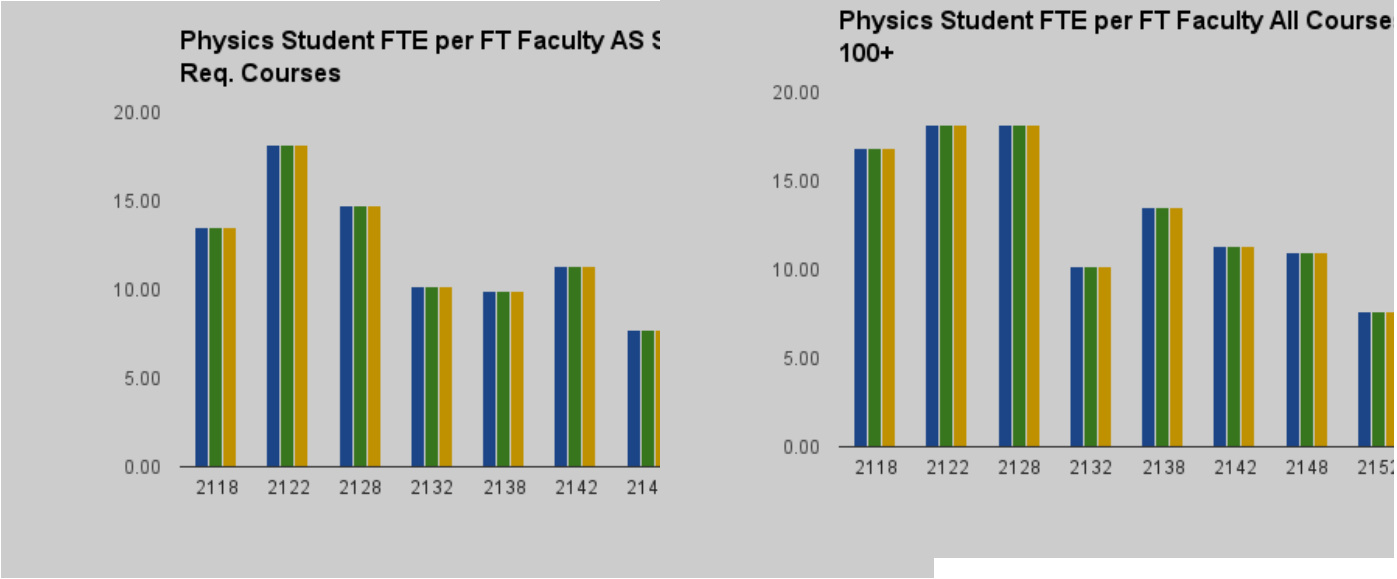
Geoscience FT/PT Workload

Student FTE per Full-time Faculty Mathematics



[Math FT/PT Workload]

Student FTE per Full-time Faculty Physics



[Physics FT/PT Workload]

BIOL/CHEM FT/PT Workload

Total Student FTE and Count of Sections Taught by FT or PT instructors

		SUM Student FTE	Count of Sections	SUM Student FTE	Count of Sections	SUM Student FTE	Count of Sections	SUM Student FTE	Count of Sections	SUM Student FTE	Count of Sections	SUM Student FTE	Count of Sections	SUM Student FTE	Count of Sections	SUM Student FTE	Count of Sections
		2118		**2122**		**2128**		**2132**		**2138**		**2142**		**2148**		**2152**	
BIOL	**100**	27.60	5	25.80	5	29.80	6	19.40	5	30.40	6	20.20	5	31.00	6	23.40	6
	113	4.80	1	14.40	2	5.40	1	17.40	2	5.20	1	15.20	3	6.00	1	11.80	2
	190	9.20	2			4.40	2			5.40	1			17.00	5	14.60	2
	190L	2.93	2			1.40	2			1.80	1			5.67	5	4.60	3
	191			5.40	2			4.40	1			3.60	1			2.20	1
	191L			1.73	2			1.47	1			1.20	1			0.80	1
	200	1.80	1			2.20	1			3.20	1			1.60	1		
	223	35.73	8	22.93	4	40.53	8	42.67	9	39.47	8	28.80	6	36.80	8	35.20	8
	224	24.53	6	25.60	6	22.40	6	29.87	8	35.73	8	34.13	8	22.93	6	29.87	8
	251	11.73	4	39.47	7	16.53	4	30.93	8	12.80	2	37.33	7	10.67	2	18.13	6
CHEM	**100**	5.00	3	2.20	1	4.40	2	3.20	1	3.60	1	2.00	1	1.80	1	2.00	1
	121	83.20	11	72.00	11	80.00	11	73.60	12	76.27	13	78.40	12	56.00	10	37.33	7
	122	13.87	2	16.00	4	11.73	2	20.80	4	6.40	2	10.13	4			10.13	4
	220	4.80	2	3.20	2	2.67	2	2.67	2	2.13	2			2.13	2		
Grand Total		225.20	47	228.73	46	221.47	47	246.40	53	222.40	46	231.00	48	191.60	47	190.07	49

Total Student FTE and Count of Sections Taught by PT Instructors

		SUM Student FTE	Count of Sections	SUM Student FTE	Count of Sections	SUM Student FTE	Count of Sections	SUM Student FTE	Count of Sections	SUM Student FTE	Count of Sections	SUM Student FTE	Count of Sections	SUM Student FTE	Count of Sections	SUM Student FTE	Count c Section
		2118		**2122**		**2128**		**2132**		**2138**		**2142**		**2148**		**2152**	
		SUM of FTE	COUNTA of Sect	SUM of FTE	COUNTA of Sect	SUM of FTE	COUNTA of Sect	SUM of FTE	COUNTA of Sect	SUM of FTE	COUNTA of Sect	SUM of FTE	COUNTA of Sect	SUM of FTE	COUNTA of Sect	SUM of FTE	COUNT of Sect
BIOL	**100**	27.6	5.0	20.0	4.0	29.8	6.0	15.4	4.0	30.4	6.0	16.6	4.0	25.2	5.0	13.6	4.
	113			14.4	2.0	5.4	1.0	17.4	2.0	5.2	1.0	15.2	3.0	6.0	1.0	11.8	2.
	190													5.2	1.0	12.4	1.
	190L													1.7	1.0	3.9	2.
	200	1.8	1.0			2.2	1.0			3.2	1.0			1.6	1.0		
	223							26.1	3.0								
	251											5.9	2.0	5.3	1.0	4.5	1.
CHEM	**100**	5.0	3.0	2.2	1.0	2.0	1.0	3.2	1.0	3.6	1.0	2.0	1.0	1.8	1.0	2.0	1.
	121							24.5	3.0	24.5	3.0	20.8	3.0	12.8	3.0	10.7	2.
Grand Total		34.4	9.0	36.6	7.0	39.4	9.0	86.7	13.0	66.9	12.0	60.5	13.0	59.6	14.0	58.9	13.

Percent of Student FTE and Sections Taught by Part Time Faculty (Courses not listed indicates 0% for all semesters)

		% Student FTE	% of Sections	% Student FTE	% of Sections	% Student FTE	% of Sections	% Student FTE	% of Sections	% Student FTE	% of Sections	% Student FTE	% of Sections	% Student FTE	% of Sections	% Student FTE	% of Sections
		2118		**2122**		**2128**		**2132**		**2138**		**2142**		**2148**		**2152**	
BIOL	**100**	100%	100%	78%	80%	100%	100%	79%	80%	100%	100%	82%	80%	81%	83%	58%	67%
	113	0%	0%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
	190	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	31%	20%	85%	50%
	190L	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	29%	20%	84%	67%
	191	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
	191L	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
	200	100%	100%	0%	0%	100%	100%	0%	0%	100%	100%	0%	0%	100%	100%	0%	0%
	223	0%	0%	0%	0%	0%	0%	61%	33%	0%	0%	0%	0%	0%	0%	0%	0%
	224	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
	251	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	16%	29%	50%	50%	25%	17%
CHEM	**100**	100%	100%	100%	100%	45%	50%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%

121	0%	0%	0%	0%	0%	0%	33%	25%	32%	23%	27%	25%	23%	30%	29%	29%
122	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
220	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%

Geoscience FT/PT Workload

Total Student FTE and Count of Sections Taught by FT or PT instructors

		SUM Student FTE	Count of Sections	SUM Student FTE	Count of Sections	SUM Student FTE	Count of Sections	SUM Student FTE	Count of Sections	SUM Student FTE	Count of Sections	SUM Student FTE	Count of Sections	SUM Student FTE	Count of Sections
		2118		**2122**		**2128**		**2132**		**2138**		**2142**		**2148**		**2152**	
ATMS	**117**							3.40	1					3.20	1		
ENV	**100**	13.80	3	6.80	1	10.80	3	3.60	1	8.80	3	3.40	1	4.00	2	9.80	2
GEOG	**103**	18.60	3	13.20	3	17.60	3	16.60	3	14.40	4	15.00	4	12.40	3	14.00	4
	104	0.80	1	0.60	1	0.80	1	0.07	1	0.60	1	0.27	1	0.40	1	0.67	1
	106	9.40	2	5.00	1	5.00	2	4.40	1	2.60	1	3.20	1	1.60	1	1.80	1
	111													0.60	1		
	200			3.60	1							1.40	2			3.60	1
	205															2.40	1
	211													1.73	1		
GEOL	**100**	34.80	6	36.40	7	37.40	6	41.20	7	32.60	7	32.60	8	32.40	7	24.00	6
	101	5.40	1	5.20	1	5.00	1	3.00	1	7.20	2	4.80	1	4.20	1	5.07	1
	102							4.27	1			2.93	1				
	103	1.00	1	1.53	1	1.33	1	0.87	1	2.07	2	1.27	1	1.47	1		
	105			4.20	1											3.80	1
	201	1.80	1					3.40	1								
Grand Total		85.60	18	76.53	17	77.93	17	80.80	18	68.27	20	64.87	20	62.00	19	65.13	18

Total Student FTE and Count of Sections Taught by PT Instructors

		SUM Student FTE	Count of Sections	SUM Student FTE	Count of Sections	SUM Student FTE	Count of Sections	SUM Student FTE	Count of Sections	SUM Student FTE	Count of Sections	SUM Student FTE	Count of Sections	SUM Student FTE	Count of Sections
		2118		**2122**		**2128**		**2132**		**2138**		**2142**		**2148**		**2152**	
ENV	**100**																

		7.80	2.0			1.80	1.0			4.60	2.0			1.00	1.0		
GEOG	103			2.00	1.0			2.40	1.0								
GEOL	100	18.60	3.0	21.00	4.0	16.80	3.0	16.80	3.0	9.20	2.0	8.40	3.0	5.40	1.0	1.40	1.0
	102							4.27	1.0								
	105			4.20	1.0												
	201	1.80	1.0														
Grand Total		28.20	6.0	27.20	6.0	18.60	4.0	23.47	5.0	13.80	4.0	8.40	3.0	6.40	2.0	1.40	1.0

Percent of Student FTE and Sections Taught by Part Time Faculty (Courses not listed indicates 0% for all semesters)

		% Student FTE	% of Sections	% Student FTE	% of Sections	% Student FTE	% of Sections	% Student FTE	% of Sections	% Student FTE	% of Sections	% Student FTE	% of Sections	% Student FTE	% of Sections	% Student FTE	% of Sections
		2118		**2122**		**2128**		**2132**		**2138**		**2142**		**2148**		**2152**	
ATMS	117	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
ENV	100	57%	67%	0%	0%	17%	33%	0%	0%	52%	67%	0%	0%	25%	50%	0%	0%
GEOG	103	0%	0%	15%	33%	0%	0%	14%	33%	0%	0%	0%	0%	0%	0%	0%	0%
	104	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
	106	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
	111	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
	200	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
	205	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
	211	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
GEOL	100	53%	50%	58%	57%	45%	50%	41%	43%	28%	29%	26%	38%	17%	14%	6%	17%
	101	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
	102	0%	0%	0%	0%	0%	0%	100%	100%	0%	0%	0%	0%	0%	0%	0%	0%
	103	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%

	105	0%	0%	100%	100%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
	201	100%	100%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%

Math FT/PT Workload

Total Student FTE and Count of Sections Taught by FT or PT instructors

		SUM Student FTE	Count of Sections	SUM Student FTE	Count of Sections	SUM Student FTE	Count of Sections	SUM Student FTE	Count of Sections	SUM Student FTE	Count of Sections	SUM Student FTE	Count of Sections	SUM Student FTE	Count of Sections
		2118		**2122**		**2128**		**2132**		**2138**		**2142**		**2148**		**2152**	
MATH	**91**	11.8	3.0	6.8	3.0												
	92	1.7	1.0	2.7	2.0	3.7	2.0	1.5	2.0	3.2	2.0	0.9	2.0	1.5	1.0	0.7	1.0
	93	22.8	5.0	10.4	3.0												
	95	41.6	7.0	51.6	9.0	74.2	14.0	60.8	12.0	71.6	13.0	47.0	11.0	71.8	13.0	47.6	11.0
	96	51.4	9.0	43.4	8.0	46.6	8.0	41.6	8.0	50.2	9.0	41.8	9.0	51.4	11.0	40.0	9.0
	98			10.7	2.0	10.1	2.0	5.1	2.0	2.9	1.0	2.9	1.0				
	100	2.9	2.0			2.5	2.0			1.8	2.0			1.4	2.0		
	110	3.6	1.0	4.4	1.0	4.8	1.0	5.0	1.0	4.6	1.0	3.2	1.0	4.6	1.0	4.6	1.0
	120	31.6	6.0	27.4	5.0	52.4	11.0	40.6	10.0	41.2	11.0	39.8	10.0	34.4	8.0	36.2	9.0
	122	2.2	1.0			1.6	1.0			2.8	1.0			2.0	1.0		
	123							3.4	1.0			1.8	1.0			1.2	1.0
	126	35.0	7.0	17.4	3.0	42.0	8.0	33.2	5.0	42.6	8.0	24.0	4.0	81.8	17.0	23.2	4.0
	127	9.4	2.0	23.2	6.0	9.8	2.0	24.2	6.0	10.0	2.0	22.0	6.0	12.0	2.0	55.6	17.0
	128	5.0	1.0	8.0	2.0	6.7	1.0	4.7	1.0	8.0	1.0			8.3	1.0	4.3	1.0
	176	4.6	1.0	5.2	2.0	2.2	1.0	7.2	2.0			4.4	2.0	2.2	1.0	5.6	2.0
	181	30.4	6.0	10.4	2.0	22.9	6.0	13.6	2.0	21.9	6.0	13.9	2.0	17.9	5.0	12.5	2.0
	182	8.5	1.0	16.8	4.0	4.0	1.0	10.9	4.0	4.8	1.0	12.8	4.0	6.1	1.0	9.1	4.0
	283	8.3	2.0	6.4	1.0	8.0	2.0	1.9	1.0	6.4	2.0	3.5	1.0	2.7	1.0	5.1	1.0
	285			6.4	1.0	4.6	1.0	4.8	1.0	1.8	1.0	3.8	1.0	1.2	1.0	3.8	1.0
	330	3.6	1.0			2.2	1.0					0.8	1.0			0.6	1.0
Grand Total		274.5	56.0	251.1	54.0	298.4	64.0	258.4	58.0	273.8	61.0	222.6	56.0	299.3	66.0	250.1	65.0

Total Student FTE and Count of Sections Taught by PT Instructors

		SUM Student FTE	Count of Sections	SUM Student FTE	Count of Sections	SUM Student FTE	Count of Sections	SUM Student FTE	Count of Sections	SUM Student FTE	Count of Sections	SUM Student FTE	Count of Sections	SUM Student FTE	Count of Sections
		2118		**2122**		**2128**		**2132**		**2138**		**2142**		**2148**		**2152**	
MATH	**91**	11.80	3	6.80	3												
	92													1.53	1		
	93	22.80	5	10.40	3												
	95	35.60	6	41.40	7	62.60	12	50.20	9	66.40	12	39.60	9	66.40	12	44.20	10
	96	41.80	7	38.40	7	40.60	7	35.80	7	44.20	8	35.80	8	49.00	10	40.00	9
	98			5.60	1	4.53	1	2.40	1	2.93	1	2.93	1				
	120	5.40	1	5.80	1	19.20	4	17.00	3	17.80	5	20.20	5	7.00	2	18.40	4
	122	2.20	1			1.60	1			2.80	1			2.00	1		
	123							3.40	1			1.80	1			1.20	1
	126	6.00	1	6.20	1	10.60	2	6.60	2	18.20	3	18.20	3	32.20	6	17.40	3
	127					5.60	1	6.00	1	5.60	1	5.80	1	6.00	1	9.20	2
	176			2.40	1	2.20	1	2.40	1			2.20	1			2.40	1
Grand Total		125.60	24	117.00	24	146.93	29	123.80	25	157.93	31	126.53	29	164.13	33	132.80	30

Percent of Student FTE and Sections Taught by Part Time Faculty (Courses not listed indicates 0% for all semesters)

		% Student FTE	% of Sections	% Student FTE	% of Sections	% Student FTE	% of Sections	% Student FTE	% of Sections	% Student FTE	% of Sections	% Student FTE	% of Sections	% Student FTE	% of Sections	% Student FTE	% of Sections
		2118		**2122**		**2128**		**2132**		**2138**		**2142**		**2148**		**2152**	
MATH	**91**	100%	100%	100%	100%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
	92	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	100%	100%	0%	0%
	93	100%	100%	100%	100%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
	95	86%	86%	80%	78%	84%	86%	83%	75%	93%	92%	84%	82%	92%	92%	93%	91%
	96	81%	78%	88%	88%	87%	88%	86%	88%	88%	89%	86%	89%	95%	91%	100%	100%
	98	0%	0%	53%	50%	45%	50%	47%	50%	100%	100%	100%	100%	0%	0%	0%	0%
		0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
		0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
	120	17%	17%	21%	20%	37%	36%	42%	30%	43%	45%	51%	50%	20%	25%	51%	44%
	122	100%	100%	0%	0%	100%	100%	0%	0%	100%	100%	0%	0%	100%	100%	0%	0%
	123																

	0%	0%	0%	0%	0%	0%	100%	100%	0%	0%	100%	100%	0%	0%	100%	100%
126	17%	14%	36%	33%	25%	25%	20%	40%	43%	38%	76%	75%	39%	35%	75%	75%
127	0%	0%	0%	0%	57%	50%	25%	17%	56%	50%	26%	17%	50%	50%	17%	12%
	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
176	0%	0%	46%	50%	100%	100%	33%	50%	0%	0%	50%	50%	0%	0%	43%	50%

Physics FT/PT Workload

Total Student FTE and Count of Sections Taught by FT or PT instructors

		SUM Student FTE	Count of Sections	SUM Student FTE	Count of Sections	SUM Student FTE	Count of Sections	SUM Student FTE	Count of Sections	SUM Student FTE	Count of Sections	SUM Student FTE	Count of Sections	SUM Student FTE	Count of Sections	SUM Student FTE	Count of Sections
		2118		**2122**		**2128**		**2132**		**2138**		**2142**		**2148**		**2152**	
ENGR	**100**	4.6	1.0	4.6	1.0	4.6	1.0	4.2	1.0	4.4	1.0	3.6	1.0	4.4	1.0	4.0	**1.0**
PHYS	**100**	3.4	1.0	5.0	1.0	3.4	1.0	2.6	1.0	3.6	1.0			3.2	1.0	3.0	**1.0**
	151	17.6	5.0			9.3	4.0			8.5	3.0			7.5	2.0		
	152			10.7	3.0			10.1	3.0			6.1	3.0			3.7	**2.0**
	180	6.6	1.0	7.2	1.0	4.8	1.0	3.6	1.0	4.6	1.0	5.4	1.0	3.6	1.0	3.6	**1.0**
	180L	2.1	2.0	2.1	2.0	1.3	2.0	1.0	1.0	1.3	2.0	1.7	2.0	1.2	1.0	1.2	**1.0**
	181	3.6	1.0	4.4	1.0	6.0	1.0	2.6	1.0	3.0	1.0	2.2	1.0	2.2	1.0	2.0	**1.0**
	181L	1.1	1.0	1.5	2.0	1.9	2.0	0.7	1.0	0.9	1.0	0.7	1.0	0.7	1.0	0.7	**1.0**
	182			1.8	1.0			1.6	1.0			0.8	1.0				
	182L			0.5	1.0			0.5	1.0			0.3	1.0				
	293			0.7	1.0	0.7	1.0	0.1	1.0	0.1	1.0	0.3	1.0			0.1	**1.0**
Grand Total		39.1	12.0	38.4	14.0	32.1	13.0	27.1	12.0	26.5	11.0	21.1	12.0	22.8	8.0	18.3	**9.0**

Total Student FTE and Count of Sections Taught by PT Instructors

		SUM Student FTE	Count of Sections	SUM Student FTE	Count of Sections	SUM Student FTE	Count of Sections	SUM Student FTE	Count of Sections	SUM Student FTE	Count of Sections	SUM Student FTE	Count of Sections	SUM Student FTE	Count of Sections	SUM Student FTE	Count of Sections
		2118		**2122**		**2128**		**2132**		**2138**		**2142**		**2148**		**2152**	
		SUM of FTE	COUNTA of Sect	SUM of FTE	COUNTA of Sect	SUM of FTE	COUNTA of Sect	SUM of FTE	COUNTA of Sect	SUM of FTE	COUNTA of Sect	SUM of FTE	COUNTA of Sect	SUM of FTE	COUNTA of Sect	SUM of FTE	COUNTA of Sect
ENGR	**100**	4.6	1.0	4.6	1.0	4.6	1.0	4.2	1.0	4.4	1.0	3.6	1.0	4.4	1.0	4.0	1.0
PHYS	**100**			5.0	1.0			2.6	1.0							3.0	1.0
	151	17.6	5.0			9.3	4.0			8.5	3.0			7.5	2.0		
	152			10.7	3.0			10.1	3.0			6.1	3.0			3.7	2.0

Grand Total		22.2	6.0	20.3	5.0	13.9	5.0	16.9	5.0	12.9	4.0	9.7	4.0	11.9	3.0	10.7	4.0

Percent of Student FTE and Sections Taught by Part Time Faculty (Courses not listed indicates 0% for all semesters)

		% Student FTE	% of Sections	% Student FTE	% of Sections	% Student FTE	% of Sections	% Student FTE	% of Sections	% Student FTE	% of Sections	% Student FTE	% of Sections	% Student FTE	% of Sections	% Student FTE	% of Sections
		2118		**2122**		**2128**		**2132**		**2138**		**2142**		**2148**		**2152**	
ENGR	**100**	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
PHYS	**100**	0%	0%	100%	100%	0%	0%	100%	100%	0%	0%	0%	0%	0%	0%	100%	100%
	151	100%	100%	0%	0%	100%	100%	0%	0%	100%	100%	0%	0%	100%	100%	0%	0%
	152	0%	0%	100%	100%	0%	0%	100%	100%	0%	0%	100%	100%	0%	0%	100%	100%
	180	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
	180L	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
	181	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
	181L	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
	182	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
	182L	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
	293	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%

Performance at Primary Transfer Institution

WNC Student Performance at Primary Transfer Institution

236	**WNC Associate of Science Grads 2098 to 2145 (250 total AS Degrees)**
125	Registered at UNR
115	Completed at least 1 UD credit (avg UD gpa 2.85, s=.699)
87	Completed at least 15 UD credits (avg UD gpa 2.91, s=.594)
62	Completed at least 30 UD credits (avg UD gpa 3.03, s=.496)
14	Completed at least 60 UD credits (avg UD gpa 3.08, s=.417)
36	Completed bachelor's degrees at UNR (avg UD gpa=3.17 , s=.483) (2 compl 2 degrees)
in process	Of the 89 who had not earned a bachelor's degree by 2145, 57 were enrolled at UNR in 2148; 56 had completed at least 1 UD credit (avg credit compl=26.1, s=16.3; avg UD gpa 2.77, s=.638); 51 had UD gpa of at least 2.0.

Summary: Of 125 registered at UNR, 36 completed bachelor's degrees (all BS degrees), and 51 are actively pursuing with gpa>=2.0. Relative successful persistence rate is 87/119 = ~73.1%

UNR Degrees Earned by WNC AS Grads and Transfer Students
(above updated 7-14-15 with revised data)

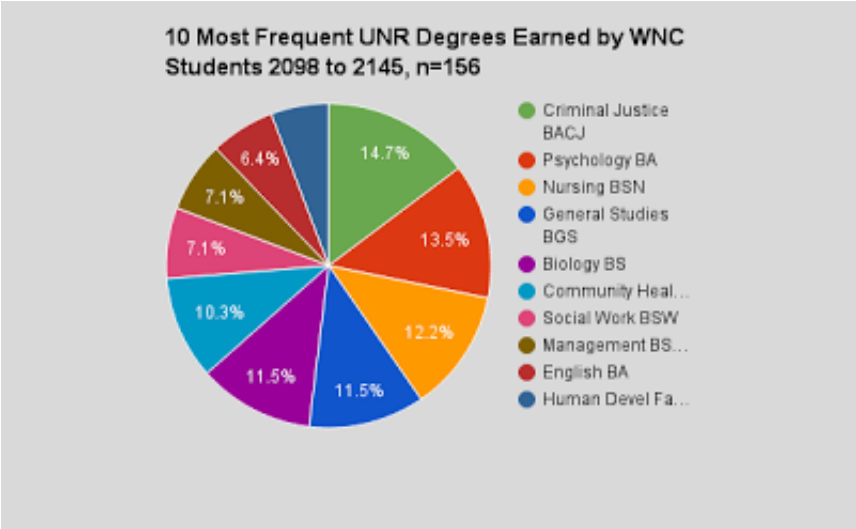
274	**WNC students 2098 to 2145 successfully completed MATH 181 at WNC and at least 24 total units at WNC and did not earn an AS degree**
127	Registered at UNR
114	Completed at least 1 UD credit (avg UD gpa=2.96 , s=.638)
84	Completed at least 15 UD credits (avg UD gpa 3.04, s=.518)
65	Completed at least 30 UD credits (avg UD gpa 3.13, s=.463)
12	Completed at least 60 UD credits (avg UD gpa 3.19, s=.415)
31	Completed bachelor's degrees at UNR (avg UD gpa 3.29, s=.359) (1 compl. 2 degrees)
in	Of the 96 who had not earned a bachelor's degree by 2145, 69 were enrolled at

process	UNR in 2148; 66 had completed at least 1 UD credit (avg UD credit compl=29.1, s=17.1; avg UD gpa 2.83, s=.661); 61 had UD gpa of at least 2.0.

Summary: Of 127 registered at UNR, 31 completed bachelor's degrees, and 61 are actively pursuing
with gpa>=2.0. Relative successful persistence rate is 92/127=72.4%
(above updated 7-16-15 with revised data)

Degrees earned at UNR by:

- **WNC transfers to UNR**

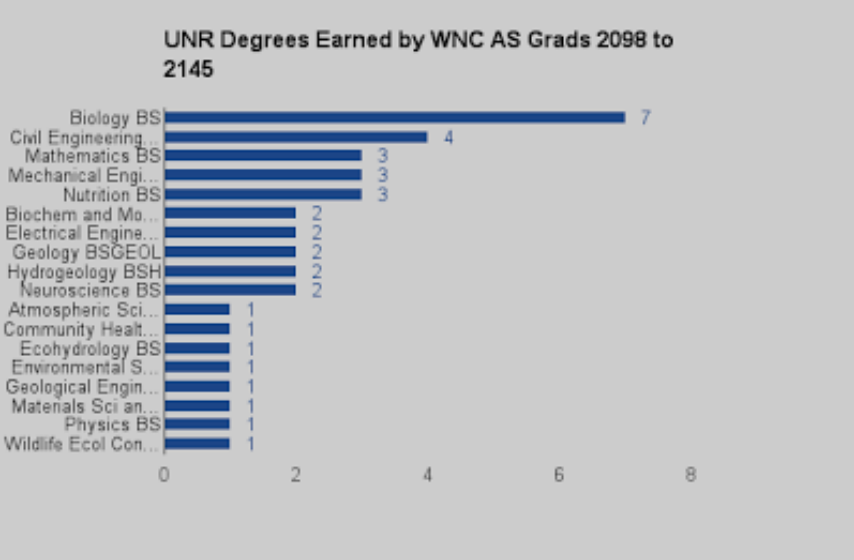


WNC Non-Sci, UNR Degree	# Deg
Criminal Justice BACJ	23
Psychology BA	21
Nursing BSN	19
General Studies BGS	18
Community Health Sciences BS	15
Social Work BSW	11
Management BSBUS	11
Biology BS	11
English BA	10
Human Devel Fam Studies BS	9
Anthropology BA	7
Speech Pathology BS	6
Spanish BA	6
Political Science BA	6
Integrated Elementary Teaching	6
Elementary Education BSEDU	6
Art BA	6
Nutrition BS	5
Journalism BA	5

History BA	5
Sociology BA	4
Secondary Education BSEDU	4
Mining Engineering BSMINE	4
International Affairs BA	4
Information Systems BSBUS	4
Electrical Engineering BSEE	4
Communication Studies BA	4
Wildlife Ecol Conservatn BS	3
Secondary Education BAEDU	3
Neuroscience BS	3
Health Ecology BS	3
Elem Educ / Special Educ BSEDU	3
Art (Art History) BA	3
Accounting BSBUS	3
Nursing (RN/BSN)	2
International Business BSBUS	2
Geography BS	2
General Business BSBUS	2
Environmental Science BS	2
Economics BSBUS	2
Economics BA	2
Women's Studies BA	1
Speech Communication BA	1
Psychology / Spanish	1
Music BA	1
Mechanical Engineering BSME	1
Mathematics BA	1
Marketing BSBUS	1
Geological Engineering BSGE	1
Geography BA	1
French BA	1
Forest Management and Ecology	1
Finance BSBUS	1
Enviro and Resource Econ BS	1
Construction Sciences BT	1
Computer Sci and Engr BSCSE	1
Civil Engineering BSCE	1
Chemistry BS	1
Chemical Engineering BSCHE	1
Biology / Biochemistry	1
Biochem and Molecular Biol BS	1
Animal Science BS	1
Accounting and Info Syst BSBUS	1

Back to: Summary Data Sheet (2.A.ii)

UNR Degrees Earned by WNC AS Grads and Transfer Students



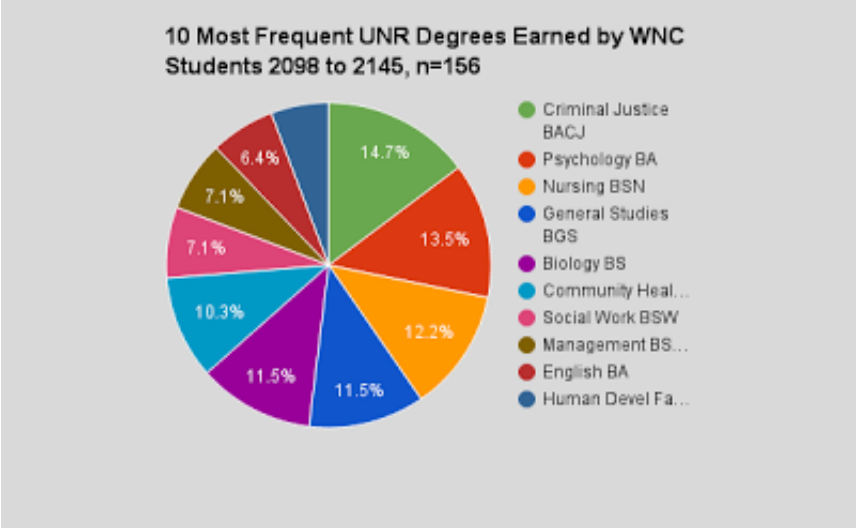
UNR Degrees by AS Grads:

Biology BS	7
Civil Engineering BSCE	4
Mathematics BS	3
Mechanical Engineering BSME	3
Nutrition BS	3
Biochem and Molecular Biol BS	2
Electrical Engineering BSEE	2
Geology BSGEOL	2
Hydrogeology BSH	2
Neuroscience BS	2
Atmospheric Science BS	1
Community Health Sciences BS	1
Ecohydrology BS	1
Environmental Science BS	1
Geological Engineering BSGE	1
Materials Sci and Engrg BSMSE	1
Physics BS	1
Wildlife Ecol Conservatn BS	1

31 UNR Degrees Completed by WNC Transfers
(Met AS Math Req. at WNC and transferred to UNR with 24+ credits and no associate's degree

Biology BS	6
Nutrition BS	3

Neuroscience BS	3
Mathematics BS	3
Geology BSGEOL	2
Civil Engineering BSCE	2
Biochem and Molecular Biol BS	2
Wildlife Ecol Conservatn BS	1
Physics BS	1
Mechanical Engineering BSME	1
Materials Sci and Engrg BSMSE	1
Hydrogeology BSH	1
Forest Management and Ecology	1
Electrical Engineering BSEE	1
Community Health Sciences BS	1
Chemistry BS	1
Accounting BSBUS	1



WNC Non-Sci, UNR Degree	# Deg
Criminal Justice BACJ	**23**
Psychology BA	**21**
Nursing BSN	**19**
General Studies BGS	**18**
Community Health Sciences BS	**15**
Social Work BSW	**11**
Management BSBUS	**11**
Biology BS	**11**
English BA	**10**
Human Devel Fam Studies BS	**9**
Anthropology BA	**7**
Speech Pathology BS	**6**
Spanish BA	**6**
Political Science BA	**6**

Integrated Elementary Teaching	6
Elementary Education BSEDU	6
Art BA	6
Nutrition BS	5
Journalism BA	5
History BA	5
Sociology BA	4
Secondary Education BSEDU	4
Mining Engineering BSMINE	4
International Affairs BA	4
Information Systems BSBUS	4
Electrical Engineering BSEE	4
Communication Studies BA	4
Wildlife Ecol Conservatn BS	3
Secondary Education BAEDU	3
Neuroscience BS	3
Health Ecology BS	3
Elem Educ / Special Educ BSEDU	3
Art (Art History) BA	3
Accounting BSBUS	3
Nursing (RN/BSN)	2
International Business BSBUS	2
Geography BS	2
General Business BSBUS	2
Environmental Science BS	2
Economics BSBUS	2
Economics BA	2
Women's Studies BA	1
Speech Communication BA	1
Psychology / Spanish	1
Music BA	1
Mechanical Engineering BSME	1
Mathematics BA	1
Marketing BSBUS	1
Geological Engineering BSGE	1
Geography BA	1
French BA	1
Forest Management and Ecology	1
Finance BSBUS	1
Enviro and Resource Econ BS	1
Construction Sciences BT	1
Computer Sci and Engr BSCSE	1
Civil Engineering BSCE	1
Chemistry BS	1
Chemical Engineering BSCHE	1

Biology / Biochemistry	1
Biochem and Molecular Biol BS	1
Animal Science BS	1
Accounting and Info Syst BSBUS	1

Systematic Assessment (2.A.iii)

WNC's General Education Student Learning Outcomes were updated in 2014. At the same time, the college developed a set of Institutional Student Learning Outcomes to provide for alignment from course level objectives through all programs up to the the college strategic goals.

WNC General Education SLOs (1.D.1)

WNC Institutional SLOs (1.D.2)

With these changes in mind, the AS Program Review team has proposed a revised set of AS Program Student Learning Outcomes. Upon a official approval, these will provide a foundation for cross-disciplinary learning assessments in the sciences.

Below are links to previous assessment plans and reports aimed at the previous general education or program SLOs. Also included are links to five-year assessment plans in each area as well as an overarching 5-year plan fr the AS program.

In most cases, the previous five year assessment plans were developed just before or during the transition from AS emphases to a generic AS degree program; the timelines, targets, and outcomes with regard to the previous plans are not consistent, and the progress with most was impeded by difficulty in measuring progress toward the stated outcomes. See section 2.G for recommendations related to development of assessment plans.

- Biology Assessment Summary
- BIOLOGY [DRAFT]five-year_academic_assessment_plan 2015 V 2.0.docx

- Chemistry Assessment Summary
- CHEMISTRY [DRAFT]five-year_academic_assessment_plan 2015.docx [updated 9-17-15]

- Geosciences Assessment Summary
- geoscience-5-year-plan.pdf

- Mathematics Assessment Summary
- MATH [DRAFT]five-year_academic_assessment_planV2.0 2015.docx

- Physics & Engineering Assessment Summary
- PHYSICSDRAFTfive-year_academic_assessment_plan2015.docx

- ASProgramDRAFTfive-year_academic_assessment_plan2015.docx

Evidence of Satisfaction (2.B)

(2008 and 2012)
Not available by major.

- ***CCSSE #11:*** *I am meeting my educational objectives as a result of my enrollment at this college.*
  - *Strongly agree: 40.9%*
  - *Agree: 49.8%*
  - *Disagree or Strongly Disagree: 5.9%*
  - *Too early to tell: 3.5%*

- ***CCSSE #14:*** *How often do your professors clearly explain course learning outcomes and how they will assess them?*
  - *Very often: 36.1%*
  - *Often: 43.5%*
  - *Occasionally: 13.4%*
  - *Seldom or never: 7.0%*

Student evaluation data.
Limited due to evaluation tool.

- **BIOL 190** (2128 to 2145; 56 responses) *Overall I rate the effectiveness of this course:*
  - *Excellent: 58.9%*
  - *Commendable: 12.5%*
  - *Satisfactory: 14.3%*
- **CHEM 121** (2128 to 2145; 217 responses) *Overall I rate the effectiveness of this course:*
  - *Excellent: 41.0%*
  - *Commendable: 23.0%*
  - *Satisfactory: 18.4%*
- **GEOG 103** (2128 to 2145; 121 responses) *Overall I rate the effectiveness of this course:*
  - *Excellent: 68.6%*
  - *Commendable: 19.0%*
  - *Satisfactory: 9.1%*

Instructional programs may include additional hard data regarding student satisfaction with courses and programs, employer satisfaction studies, etc., as indicators of effectiveness of the program. Results from the Noel-Levitz Student Satisfaction Inventory (2007 and 2009) and the Community College Survey of Student Engagement (2008 and 2012) can be broken out by declared major and are available upon request. Summarized results from student course evaluations are another source of satisfaction evidence, and instructors can add one question of their choice to the evaluations. The chair of the PRT should consult with Institutional Research regarding the availability of data.

- **GEOL 101** (2128 to 2145; 253 responses) *Overall I rate the effectiveness of this course:*
  - *Excellent: 73.1%*
  - *Commendable: 15.8%*
  - *Satisfactory: 7.1%*
- **MATH 181** (2128 to 2145; 86 responses) *Overall I rate the effectiveness of this course:*
  - *Excellent: 81.4%*
  - *Commendable: 11.6%*
  - *Satisfactory: 3.5%*
- **PHYS 180** (2128 to 2145; 40 responses) *Overall I rate the effectiveness of this course:*
  - *Excellent: 70%*
  - *Commendable: 27.5%*
  - *Satisfactory: 0%*
- **ENGR 100** (2128 to 2145; 17 responses) *Overall I rate the effectiveness of this course:*
  - *Excellent: 47.1%*
  - *Commendable: 35.2%*
  - *Satisfactory: 11.8%*

AS Gateway Course Class Evaluation Student Satisfaction Data.pdf

Noel-Levitz 2011 Summary
Not available by major.

Next Section: **Certifications/Licenses (2.C)**

Jump to:

- Enrollment Trends (2.D)
- Need for the Program (2.E)
- Curriculum Review Report (2.F)
- Findings and Recommendations (2.G)

BIOL 190

Q16. Overall, I rate the effectiveness of this course:

Semester	Excellent	Commendable	Satisfactory	Total evaluations
2152	18	1	1	21
2148	1	0	0	1
2148	1	3	3	11
2148	5	1	0	7
2148	2	0	1	4
2148	1	1	0	2
2138	2	1	1	4
2128	2	0	2	5
2128	1	0	0	1
% of evals	0.589285	0.125	0.142857142	56

CHEM 121

Q16. Overall, I rate the effectiveness of this course:

Semester	Excellent	Commendable	Satisfactory	Total evaluations
2152	5	1	1	8
2152	1	1	0	2
2152	4	1	0	5
2152	1	0	2	4
2152	3	2	1	8
2148	2	0	1	4
2148	4	9	5	20
2148	5	2	1	8
2142	0	2	3	6
2142	14	2	4	21
2142	3	1	0	4
2142	3	5	0	9
2142	1	2	3	7
2138	0	2	1	4
2138	2	2	0	4
2138	4	2	1	7
2138	1	0	2	5
2138	1	0	3	4
2132	1	2	2	6
2132	5	0	0	5
2132	1	0	3	17
2132	3	2	0	6
2132	11	1	2	16
2132	2	5	2	14
2132	5	0	0	5
2128	0	2	1	4
2128	7	4	2	14
% of evals	0.410138	0.2304147465	0.18433179	217

ENGR 100

Q16. Overall, I rate the effectiveness of this course:

Semester	Excellent	Commendable	Satisfactory	Total evaluations
2148	2	0	0	2
2142	2	2	0	4
2132	1	1	1	4
2128	3	3	1	7
% of evals	0.470588	0.3529411765	0.11764705	17

GEOG 103

Q16. Overall, I rate the effectiveness of this course:

Semeste	Excellent	Commendable	Satisfactory	Total evaluations
2152	3	1	0	4
2152	1	0	0	1
2152	3	1	2	6
2152	9	0	1	10
2148	4	1	0	5
2148	3	1	0	4
2148	6	0	0	6
2142	1	4	1	6
2142	1	0	1	2
2142	2	1	1	5
2138	3	0	1	4
2138	6	1	0	7
2138	4	0	0	4
2138	2	0	0	2
2132	8	5	1	16
2132	9	0	1	10
2132	2	1	0	3
2128	8	2	2	12
2128	4	4	0	9
2128	4	1	0	5
% of eval	0.685950	0.1900826446	0.09090909	121

GEOL 101

Q16. Overall, I rate the effectiveness of this course:

Semeste	Excellent	Commendable	Satisfactory	Total evaluations
2152	3	0	1	4
2152	5	2	1	9
2152	4	0	0	4
2152	2	1	0	3
2148	5	2	0	7
2148	2	0	0	2
2148	1	2	0	3
2148	5	2	0	7
2148	7	1	0	8
2148	2	1	0	3
2148	4	0	2	6
2142	3	0	0	3
2142	6	3	1	10
2142	4	2	1	7
2142	1	1	0	2
2142	9	0	2	11
2142	9	2	0	12
2142	4	0	0	4
2138	2	1	1	5
2138	3	1	0	4
2138	5	1	0	6
2138	5	2	0	7
2138	5	1	0	6
2138	6	0	0	8
2132	3	3	3	9
2132	13	0	0	13
2132	6	0	2	9
2132	11	2	1	14
2132	8	0	1	11
2132	8	0	0	8
2132	1	0	1	2
2128	8	1	0	9
2128	6	1	1	9
2128	7	1	0	8
2128	8	2	0	10
2128	4	3	0	7
2128	0	2	0	3
% of eval	0.731225	0.1581027668	0.07114624	253

MATH 181

Q16. Overall, I rate the effectiveness of this course:

Semester	Excellent	Commendable	Satisfactory	Total evaluations
2152	4	2	0	6
2152	6	0	0	7
2148	4	0	1	5
2148	3	0	0	3
2148	4	1	0	5
2142	8	2	0	10
2142	5	0	0	5
2138	2	0	0	2
2138	5	0	0	5
2138	2	1	0	4
2138	2	0	1	3
2132	5	0	1	6
2128	8	1	0	9
2128	6	2	0	9
2128	2	0	0	2
2128	2	0	0	2
2128	0	1	0	1
2128	2	0	0	2
% of evals	0.813953488	0.1162790698	0.034883720	86

PHYS 180

Q16. Overall, I rate the effectiveness of this course:

Semeste	Excellent	Commendable	Satisfactory	Total evaluations
2152	5	0	0	5
2148	1	4	0	5
2142	5	2	0	7
2138	6	1	0	7
2132	6	1	0	8
2128	5	3	0	8
% of eval	0.7	0.275	0	40

Certifications/Licenses (2.C)

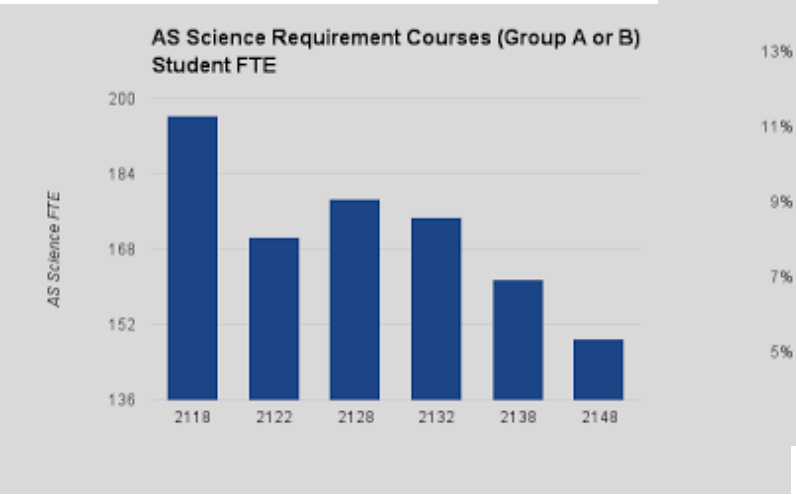
No special certifications or accreditation.

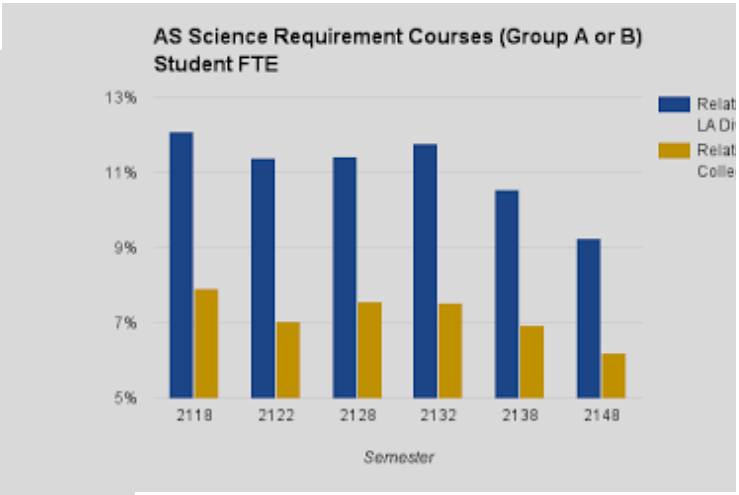
Recommendation for ACS Certification in Chemistry?

Enrollment Trends (2.D)

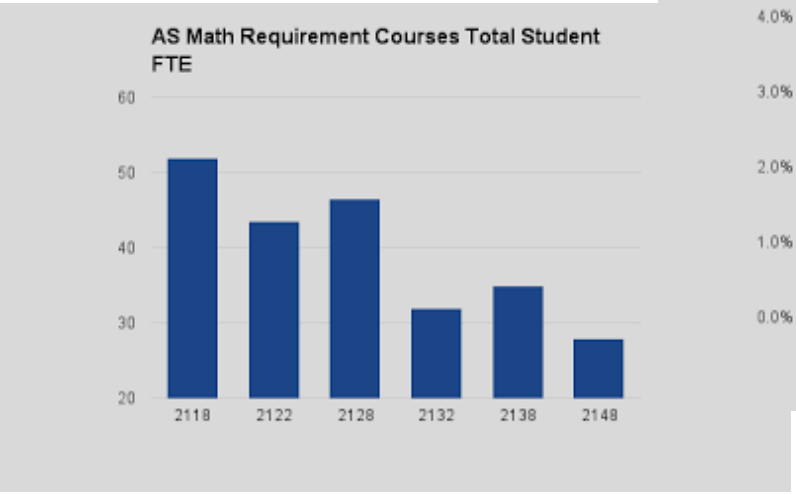
a. Notable Student Enrollment Trends

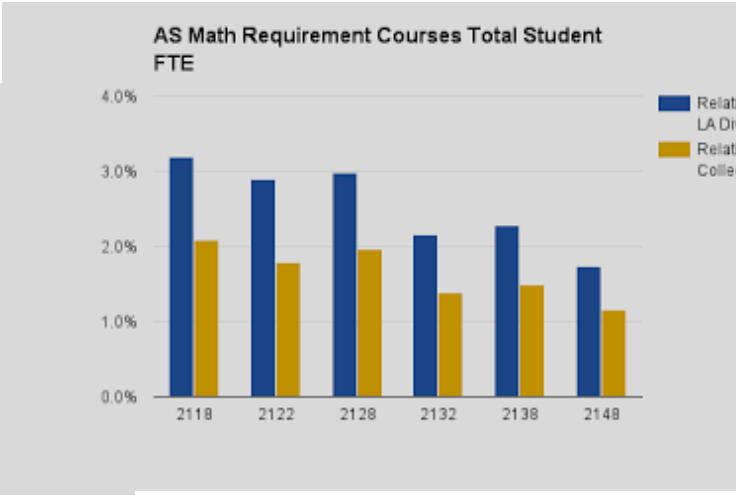
Total student FTE in AS science requirement courses (Group A or B) has declined steadily since Fall 2012 from around 175 to 150 student FTE.



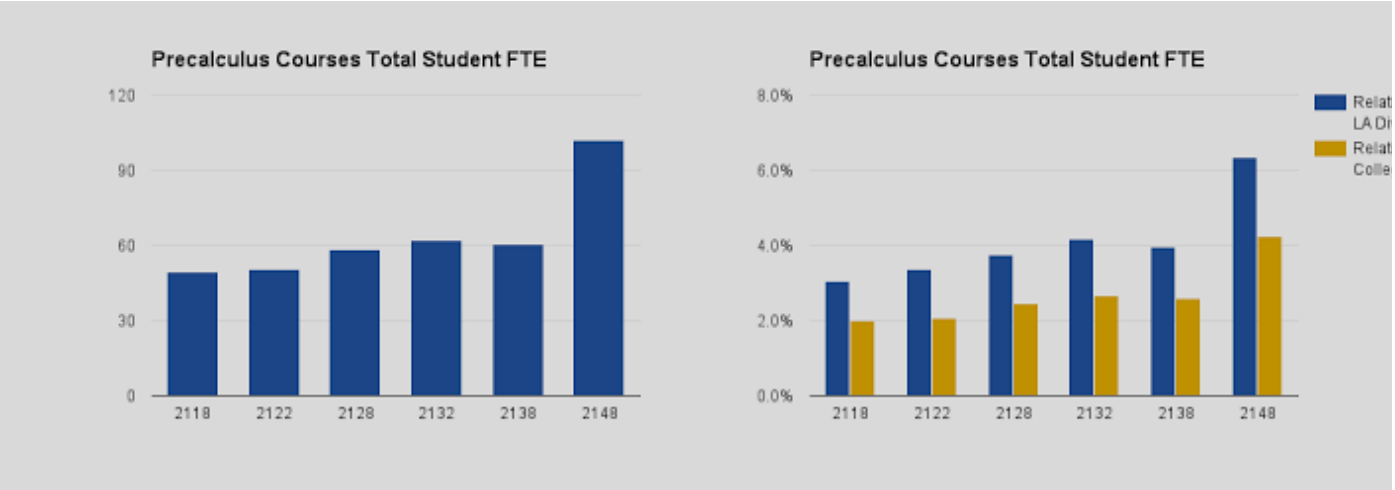


A similar decline has occurred in AS mathematics requirement courses (181 or higher), from 46 to 28 total student FTE.





However, the introduction of the Jump Start College program in 2014-15 boosted enrollment in Precalculus I and II by over 60%. This significant increase is expected to work its way into AS math required courses and AS science required courses over the next few semesters. In fact, as of 7/15/2015, student FTE enrolled in Math 181 for the Fall 2015 semester exceeded 26; this is the highest total in Calculus I since Fall 2011.



As of 7/15/2015:

- **total student FTE in AS math requirement courses for Fall 15 was over 35. This is the highest since Fall 2012 (47 FTE).**
- **total student FTE in AS science requirement courses for Fall 15 was over 165. This is the highest since Spring 2013 (175 FTE).**
- **total student FTE in precalculus courses for Fall 15 was over 93. This is consistent with the growth seen in the previous year and may imply a continuing trend.**

b. AS Program Demographics and Trends 2.D.b

c. What efforts have been made by the program to recruit students?
Faculty in the sciences participate in recruitment events like *WNC's College Day* and outreach opportunities at area public schools, museums, and events.

- Biology/Chemistry: Lab tours and informational lectures during College Day and in cooperation with area high schools.
- Geoscience: Public presentations and lectures, e.g. *Earth Day*. Work with USGS and community groups. Offering classes on high school campuses in the WNC service area via Jump Start.

- Math: College Day presentations; Precalculus I & II, Calculus I & II offered on high school campuses via Jump Start.
- Physics/Engineering: Numerous science demonstrations at area public schools of all levels. Weekly WNC Observatory events. Physics 181/181L offered on the Fernley High campus (Sp 16).

d. What initiatives have been undertaken to increase FTE?

- Varied schedule of lectures/labs with care taken to avoid course overlaps. Increased emphasis on block scheduling and consistent times/days for classes offered each year.
- Increased sections offered to accommodate Jump Start students on rural campuses and to meet demand for AS gateway and pre-nursing courses.
- AS gateway course lectures offered via lecture capture (pilot 2014) to increase enrollment caps without increasing overall workload (fewer lectures offered with more lab sections available taught by full-time faculty).
-

e. What initiatives have been undertaken to improve student retention?

- Faculty more consistently emphasize the benefits of completing the AS degree before transfer to university programs.
- Recent reviews of prerequisites for BIOL 190 and CHEM 121 toward better pre-nursing preparation for A&P, and better mathematics preparation for CHEM 121.
- Corequisite MATH 96D/126 (5cr pilot Fall 2015) offered for qualified students.
- Math placement assistance offered by full-time faculty working directly with advising staff during high enrollment periods.
- Increased implementation of block scheduling and cohort models with imbedded TA via Jump Start and involving WNC athletes and Latino Cohort students.
-

Next Section: Need for the Program (2.E)

Jump to:

FTE

Biology and Chemistry

Mathematics

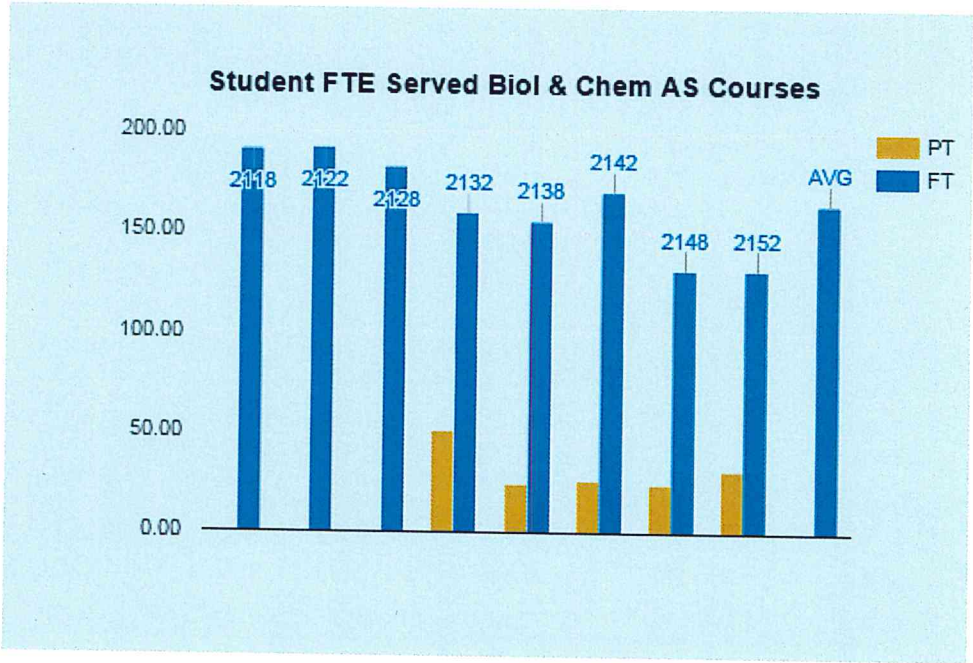
Physics

GeoSciences

Biology and Chemistry

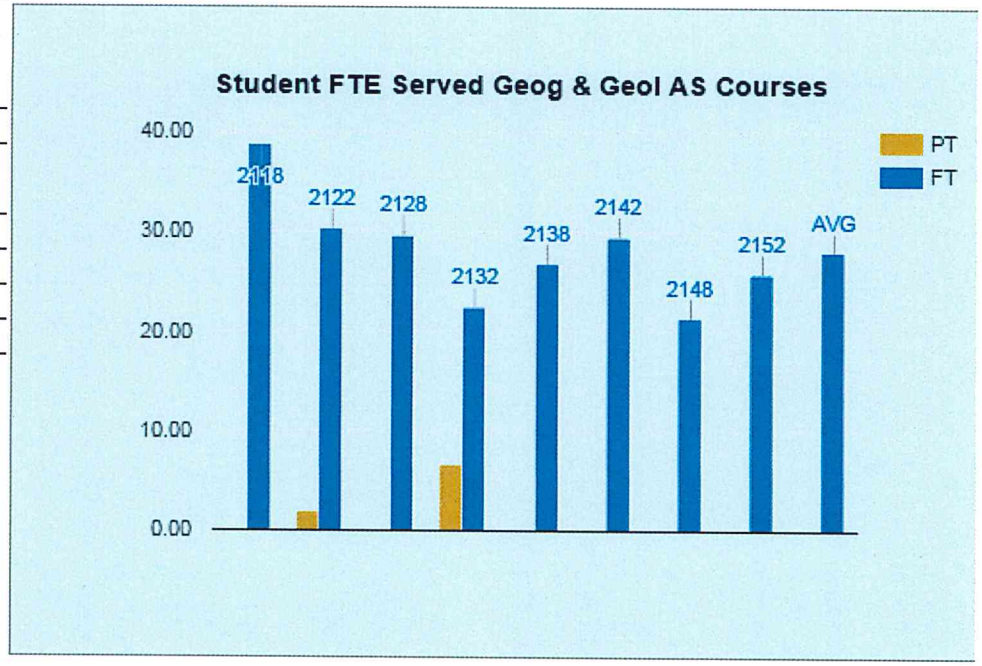
Student FTE by semester and by individual full-time instructor in biology and/or chemistry courses:
BIOL: 190, 191, 223, 224, 251
CHEM: 121, 122, 220, 241, 242

		2118	2122	2128	2132	2138	2142	2148	2152	Avg
1	BIOL	9.1	6.4	13.9	12.8	17.6	13.3	16.5	21.3	
	CHEM	29.9	24.0	28.8	15.5	19.2	12.3	13.9	16.5	
1 Total		38.9	30.4	42.7	28.3	36.8	25.6	30.4	37.9	33.9
2	BIOL	4.1	4.3		6.9			2.7	9.3	
	CHEM	19.7	16.5	17.9	18.7	27.7	45.3	24.8	11.2	
2 Total		23.9	20.8	17.9	25.6	27.7	45.3	27.5	20.5	26.2
3	BIOL	41.1	45.1	41.0	31.5	44.0	50.7	33.6	30.5	
3 Total		41.1	45.1	41.0	31.5	44.0	50.7	33.6	30.5	39.7
4	BIOL	12.3	16.9	9.1	15.7	13.3	13.2	20.2	18.3	
4 Total		12.3	16.9	9.1	15.7	13.3	13.2	20.2	18.3	14.9
5	CHEM	52.3	50.7	50.1	38.4					
5 Total		52.3	50.7	50.1	38.4					47.9
6	BIOL	22.4	28.3	21.3	20.3	20.3	25.6	13.7	14.9	
	CHEM					13.3	10.1	6.7	9.1	
6 Total		22.4	28.3	21.3	20.3	33.6	35.7	20.3	24.0	25.7
Grand Total		190.8	192.1	182.1	159.7	155.5	170.5	132.0	131.2	



GeoSciences

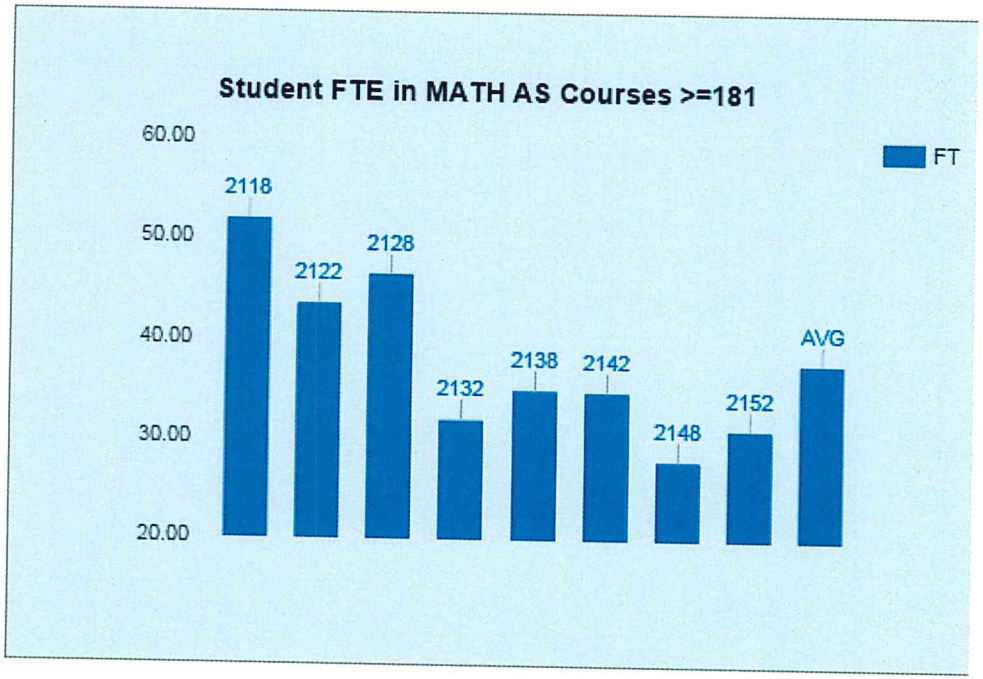
		2118	2122	2128	2132	2138	2142
⊟ Dillet-Tolhurst	GEOG	6.6	7.4	9.0	8.6	9.4	11.2
	GEOL					3.0	
Dillet-Tolhurst Total		6.6	7.4	9.0	8.6	12.4	11.2
⊟ Kortemeier	GEOG	6.8	0.6	4.8	5.7	3.2	4.1
	GEOL	6.4	6.7	6.3	3.9	6.3	9.0
Kortemeier Total		13.20	7.33	11.13	9.53	9.47	13.07
⊟ Ryan	GEOG	19.00	15.60	9.60	4.40	5.00	5.20
Ryan Total		19.00	15.60	9.60	4.40	5.00	5.20
Grand Total		38.80	30.33	29.73	22.53	26.87	29.47



Mathematics

Student FTE by semester and by individual full-time instructor in mathematics courses 181 or higher.

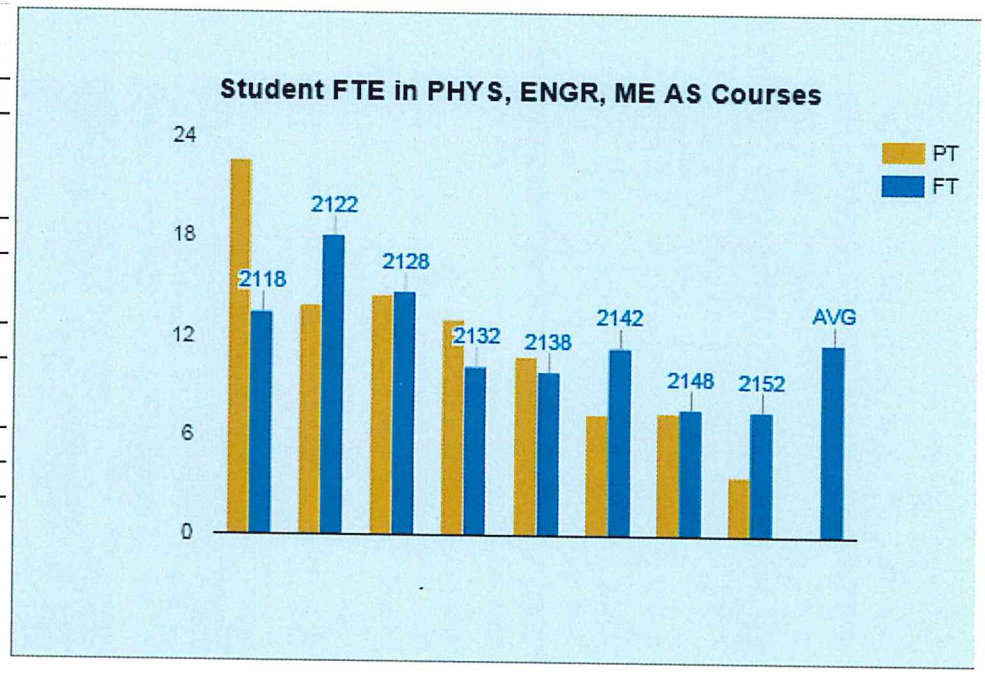
		2118	2122	2128	2132	2138	2142	2148	2152	Avg
Instr 1	MATH	8.5	12.8	13.9	9.9	5.6	17.7	6.1	8.9	10.4
Instr 2	MATH	9.6	7.5	4.5	4.3	7.2	6.7	7.7	4.8	6.5
Instr 3	MATH	9.6	5.9	8.8	2.4	4.8	3.7			5.9
Instr 4	MATH	18.5	6.9	11.3	13.6				0.6	10.2
Instr 5	MATH	5.6	10.4	6.2	1.9	16.5	6.7	8.7	11.2	8.4
Instr 6	MATH							5.3	5.6	5.5
Instr 7	MATH			1.9		0.8				1.3
Total		51.9	43.5	46.5	32.0	34.9	34.7	27.9	31.1	



Physics

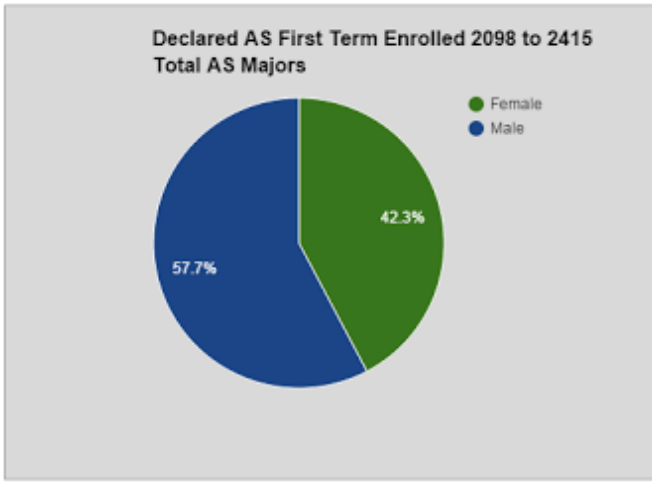
		2118	2122	2128	2132	2138	2142
⊟ Herring	PHYS	13.5	18.1	14.7	10.2	9.9	11.3
Grand Total		13.5	18.1	14.7	10.2	9.9	11.3

			2118	2122	2128	2132	2138
⊟ Campbell	⊟ PHYS	151	19.2		10.1		9.1
		152		12.3		10.7	
	PHYS Total		19.2	12.3	10.1	10.7	9.1
⊟ Meis	⊟ ME	241	3.4		4.4		1.8
		242		1.6		2.4	
	ME Total		3.4	1.6	4.4	2.4	1.8
Grand Total			22.6	13.9	14.5	13.1	10.9

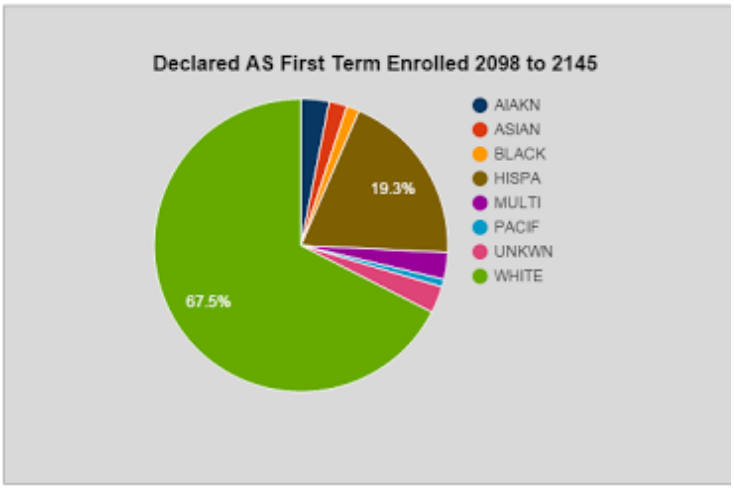


AS Program Demographics and Trends 2.D.b

AS Program Studens--age, sex



AS Program Students--race, sex

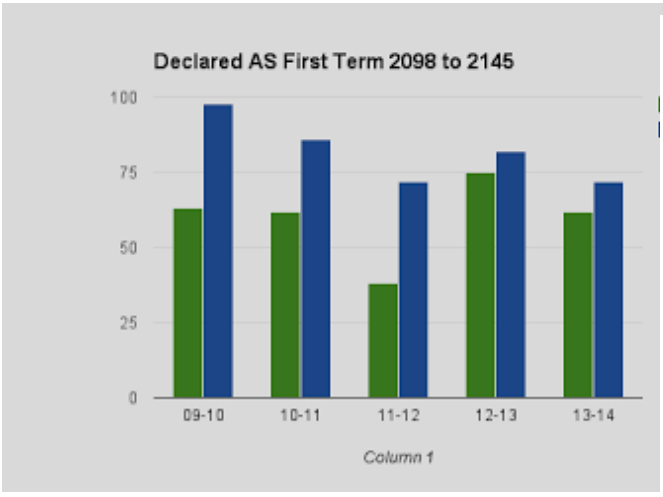


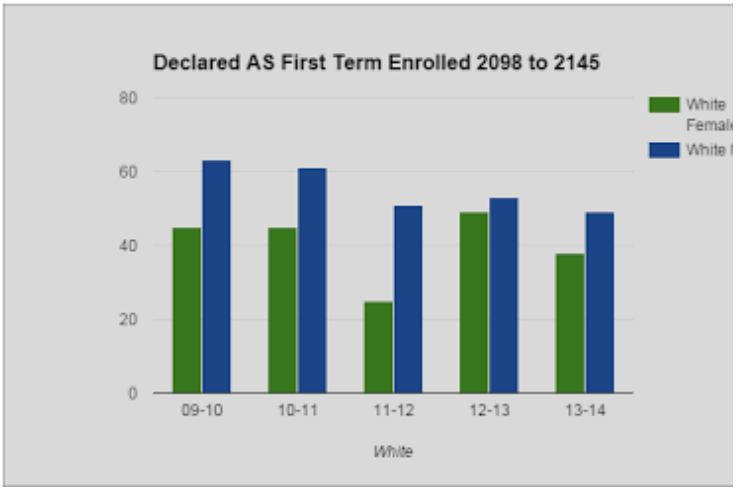
AS Program		
Female	300	42%
Male	410	58%

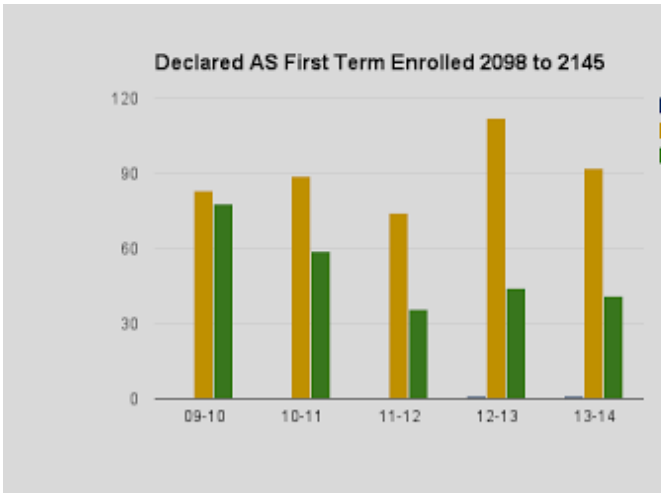
WNC Overall		
Female	5891	59%
Male	4107	41%

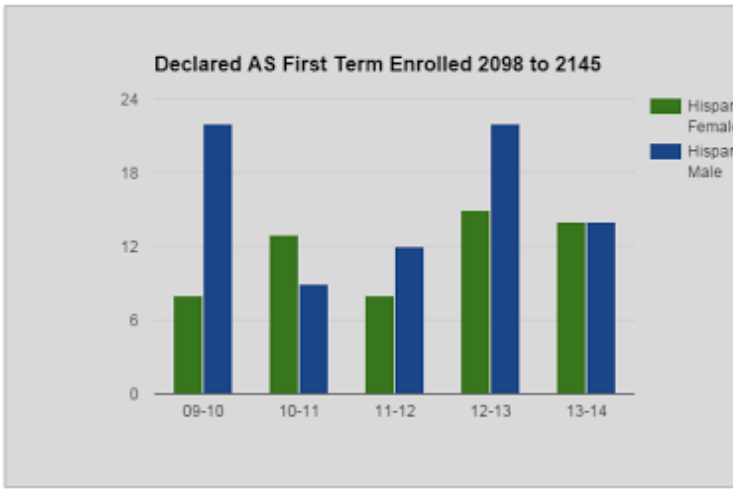
AS Program		
AIAKN	22	3%
ASIAN	14	2%
BLACK	10	1%
HISPA	137	19%
MULTI	21	3%
PACIF	6	1%
UNKWN	21	3%
WHITE	479	67%

WNC Overall		
AIAKN	322	3%
ASIAN	188	2%
BLACK	159	2%
HISPA	1524	15%
MULTI	246	2%
PACIF	71	1%
UNKWN	415	4%
WHITE	7136	71%

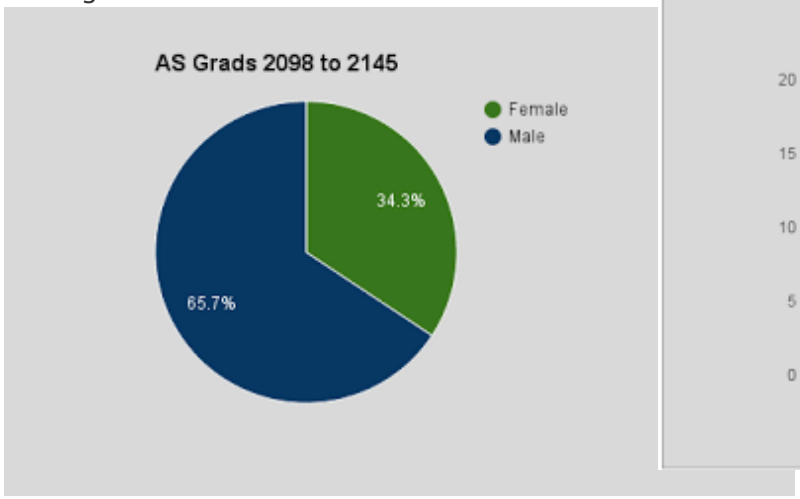


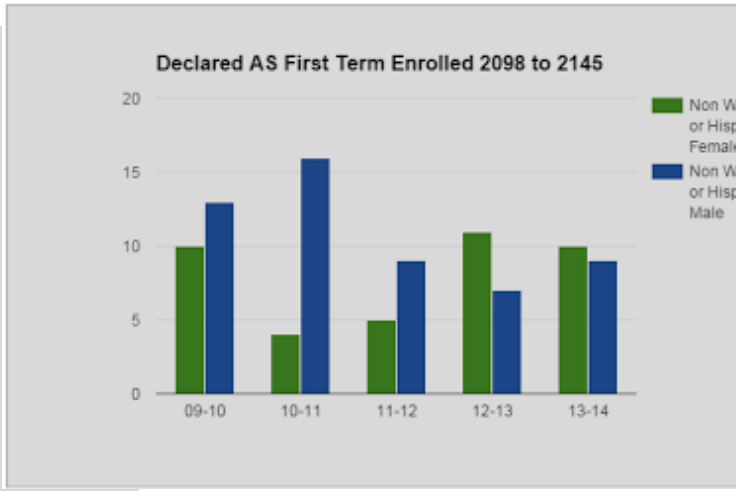


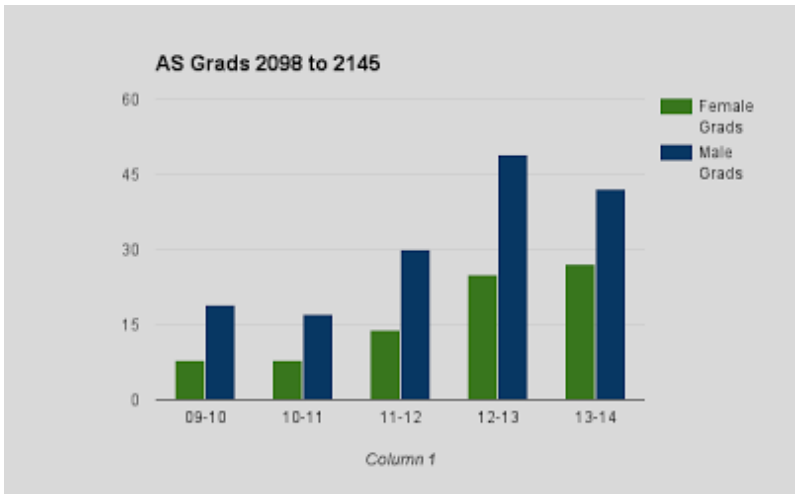




AS Program Graduates:







Need for the Program (2.E)

- **Role of the AS degree program within NSHE:**

  The primary basis for admission to upper-division study with full junior status of transfer students from an NSHE community college to any other NSHE institution shall be the associate of arts, associate of science, and the associate of business degrees.
  The completion of the associate of arts, associate of science, and associate of business degree at a community college automatically fulfills the lower-division general education requirements at any other NSHE institution. *(NSHE Board of Regents Handbook, Title 4, Ch 14, Sec 15)*

  The WNC Associate of Science degree aligns with:

  - 25 **science transfer agreements with UNR**
  - 4 **science transfer agreements with NSC**
  - 22 **science transfer agreements with UNLV**

- **Demand for the AS degree program at WNC:**

  AS Declared Student Headcount

source IR intranet pg	2011	2012	2013	2014
AS Declared (fall)	375	441	440	452
AS Graduates (fall+spring)	37	43	68	70

- **Niche populations served by the AS program at WNC:**
    - University transfer to a wide range of bachelor's degrees in science
    - Prerequisites for nursing and other health science programs
    - General education credit for all gateway AS courses in BIOL, CHEM, GEOG, GEOL, MATH, PHYS

Niches Served (1.F)

Next Section: Curriculum Review Report (2.F)

Jump to:

- Findings and Recommendations (2.G)

Curriculum Review Report (2.F)

Link to complete document: ASCurriculumReview2014-15.pdf
(accepted by WNC Curriculum Committee 12/2014)

- AS Mission and Outcomes (2.F.1)
- Relevancy and Currency of Curriculum (2.F.2)
- Course Sequences (2.F.3)
- Course Schedule (2.F.4)
- Curriculum Review Areas 5-9 (2.F.5-9)

Next Section: Findings and Recommendations (2.G)

AS Mission and Outcomes (2.F.1)

Curriculum Review Report for Associate of Science Degree

1. Associate of Science: Mission and Outcomes

The Associate of Science Program mission statement and student learning outcomes are published in the WNC program guide and on the college website. While the mission statement is consistent in both locations, the list of outcomes differs; the program guide shows five outcomes while the online version shows three.

2014-15 WNC Program Guide	**2014-15 wnc.edu**
Mission: The purpose of the AS degree is to provide the academic knowledge and skills for successful transfer to meet higher education goals. Students who complete an Associate of Science degree at WNC are expected to demonstrate that they: • have met the general education student learning outcomes. • understand the content of calculus. • can apply the content of calculus at the appropriate level in mathematics, science, and/or engineering courses. • understand scientific inquiry and the role of science and technology in the modern world. • can succeed at their transfer institution.	Mission: The purpose of the AS degree is to provide the academic knowledge and skills for successful transfer to meet higher education goals. Students who complete either an Associate of Arts or an Associate of Science degree at WNC are expected to demonstrate that they: • have met general education student learning outcomes. • know the subject matter appropriate to the emphasis of the degree. • can succeed at their transfer institutions.

The 2014-15 AS Program Review team recommends replacing the mission statement and learning outcomes with the following:

Mission: The mission of the AS degree is to provide the academic knowledge and skills for successful transfer to meet higher education goals.
Associate of Science Program Outcomes-- The successful student will:

- Meet the [new-passed 10-2014] general education student learning outcomes.
- Demonstrate the ability to identify the fundamental tenets of scientific inquiry.
- Present accurate calculations and symbolic operations, and explain how such calculations and operations are used in the sciences, mathematics, or engineering.
- Use critical thinking and creativity to select and apply recognized experimental techniques suitable for examining contemporary or enduring problems in the sciences.
- Succeed at transfer institution.

Success threshold: students who transfer to baccalaureate programs at UNR or UNLV will succeed at a rate equivalent to or greater than those who begin similar programs at the respective universities.

The proposed outcomes are not discipline specific; they align with the revised (2014-15) general education and institutional learning outcomes. A workable statement for success threshold will be dependent on access to data to track student progress at transfer institutions.

Relevancy and Currency of Curriculum (2.F.2)

2. Relevancy and Currency of Curriculum

While formal degree emphases were removed in 2011, the Associate of Science Program maintains a structure supported by key academic areas: biology, chemistry, geosciences, mathematics, physics & engineering, and general education. Through careful advising and maintenance of transfer agreements, students may follow a variety of different paths toward achievement of the degree. The following is a subset of 2013 UNR-WNC transfer agreements that align most closely with the WNC Associate of Science degree.

Atmospheric Science **Biochemistry** **Biology** **Chemistry** **Civil Engineering** **Computer Science**	**Computer Engineering** **Ecohydrology** **Electrical Engineering** **Engineering Physics** **Environmental Engineering** **Environmental Science**	**Geography** **Geology** **Geological Engineering** **Geophysics** **Hydrogeology** **Materials Engineering** **Mathematics**	**Mechanical Engineering** **Metallurgical Engineering** **Neuroscience** **Nutritional Sciences** **Physics** **Wildlife Ecology** **Veterinary Science**

The versatility of this program requires that support for relevancy and currency within the curriculum be addressed both internally and externally--within disciplines and in relation to other disciplines or college programs.

Biology

The biology faculty has committed to changes in prerequisites and corequisites related to student preparation for Human Anatomy & Physiology and Microbiology. In principle, the changes aimed to make Introduction to Cell and Molecular Biology (BIOL 190) the premier prerequisite for BIOL 223 and BIOL 251. Along

with related adjustments to the Introduction to Cell and Molecular Biology prerequisites, these changes (fully effective Fall 2015) helped to clarify the biology faculty's recommended course sequence, as it applies not only to various transfer agreement requirements but also to the WNC Nursing Program prerequisites. The changes to WNC's BIOL 190 came about following the utilization of a national assessment tool (HAPS National/Standardized Anatomy and Physiology (A & P) Examination) and observing national trends in A&P, which made it clear that BIOL 190 is the more appropriate pre-requisite for A&P and Microbiology courses.

With Introduction to Cell and Molecular Biology established as the gateway course to A & P and Microbiology, the faculty who teach the course regularly have begun the process of updating course outcomes in relation to new general education student learning outcomes and standardizing laboratory assignments accordingly. In particular, as of Fall 2014, three of four biology labs have been equipped to run polymerase chain reaction (PCR) experiments with the fourth to be updated soon.

The majority of the biology and chemistry faculty have agreed that all BIOL 190 lab sections are to have the students perform the "Using a Single Nucleotide Polymorphism (SNP) to Predict Bitter Tasting Ability Kit," available from Carolina Biological at all WNC campuses. This kit, which is based on PCR and DNA digestion, allows the student to develop technological skills at the freshman level that will provide the student with a more current technical skill set carried from the freshman level courses into the junior level courses at UNR or any other baccalaureate granting institution.

In the last three years, faculty members in biology have piloted various models of course

delivery to increase student access. Accelerated, eight-week courses in A & P have provided students with a means to complete program prerequisites in one year. Lecture capture technology is being used to expand General Biology offerings to students online giving them the opportunity to attend physical labs on their nearest campus.

Chemistry

As a result of the prerequisite shifts in biology, the chemistry faculty have taken the opportunity to update course emphases notably in General Chemistry. Previously, General Chemistry (CHEM 121) had acted as the primary prerequisite not only for CHEM 122 and BIOL 190, but also for A & P and Microbiology.

In January 2014, an analysis of the American Chemistry Society nationally standardized exam for CHEM 121 was performed by chemistry faculty. As a result of that analysis, it was determined that CHEM 121 at WNC was lacking somewhat in nationally recognized content (at WNC, only 89% of the content nationally recognized was being taught in CHEM 121).

While the placement of CHEM 121 as a gateway for high demand second year biology courses serves to match stated transfer requirements for some students, the content adjustments required in General Chemistry to minimally prepare a student for A & P or Microbiology proved persistently awkward. With three of five full-time biology faculty members regularly teaching both chemistry and biology, this has been a consistent concern. All biology faculty members were in agreement and the group presented the proposed change to WNC's Curriculum Committee in Fall 2014. The change was approved to remove CHEM 121 from the "gold standard" status of A & P pre-requisite and the CHEM 121 content has since been adjusted to

reflect 100% of the nationally recognized content being taught in CHEM 121.

In Spring 2014, chemistry faculty met to discuss standardizing CHEM 121 lab experiments across all sections. Faculty members agreed that some experiments would be standard in all CHEM 121 labs, and the remainder would be up to faculty to determine, with the understanding that the experiments would be standardized by concept. For example, at present there are three different approaches to thermochemistry experiments in the laboratory, yet they all deal with the overall concept of thermochemistry. At present, 60% of the experiments in CHEM 121 are identical on all three campuses at WNC.

In terms of equalizing CHEM 220 laboratory experiments, the biggest obstacle to standardizing chemistry lab equipment remains the cost; none of the equipment on any WNC campus is identical, making a common organic chemistry experience difficult at best. It is fortunate that the biology and chemistry faculty have an “Equipment Acquisition Committee” to assist in obtaining lab-required equipment.

Geosciences

The Geoscience faculty meet each semester to discuss relevance of courses and examine alignment with transfer institutions. In Fall 2014, faculty members committed to offering GEOL 101 only as a 4-credit course (as opposed to a split lecture and lab) beginning in Spring 2015. This is consistent with offerings at all other NSHE institutions and most other US higher education institutions.

Over the 2013-14 academic year, steps were taken to match discipline prefixes within transfer institutions; this included changing all GIS courses to GEOG and adding GEOG 121 (Climate Change: The Science Basis), NRES 210 (Environmental Pollution), and NRES 211 (Conservation, Humans & Diversity).

As a result of a recent review of geoscience courses, steps will be taken to correct the

following issues during the Spring 15 semester.

- GEOL 105 and ATMS 117 were never included in Group C (see AS Gen. Ed. Requirements)
- GEOL 102 should be included under group A
- GEOL 103 (lab) should be offered for students who took recently Geol 101 as a 3-credit course

Geoscience faculty regularly take part in professional development opportunities including National Association of Geoscience Teachers conferences and American Geophysical Union annual meetings.

Mathematics

Due to the central role of the science-calculus track as a prerequisite for multiple Associate of Science emphases and the minimum requirement of MATH 181 (Calculus I), the mathematics faculty meet regularly to discuss efficiency in prerequisites and alternative offerings within the discipline to support all STEM students. With regard to substantive changes in the discipline, a constant transition to increased use of technology and online publisher materials has been widespread. WNC mathematics faculty have carefully embraced the aspects of this movement that fit their primary focus on preparing students to succeed at transfer institutions.

The department has continued to offer precalculus both as a one semester, five-credit course (MATH 128) and as a two semester, split (MATH 126/127). On the Carson Campus, the calculus track begins each semester with two sections of MATH 181 and one section each of MATH 182 and 283. In the past, the Fallon and Douglas Campuses have offered all three semesters of calculus, though recent enrollments have forced some cancellations. In response to this, beginning in Fall 2014, lecture capture technology is being used to offer a hybrid Calculus I course

available in person and broadcast from the Fallon Campus.

In Fall 2012, WNC began offering MATH 285 (Differential Equations) in both fall and spring allowing students to more efficiently move toward graduation. In Fall 2011, MATH 330 was offered for the first time and has continued once per year since; the addition of this upper-division course has provided mathematics and engineering majors among others with the opportunity to earn credit for a required junior level course while still completing their AS at WNC.

In Spring 2014, Math faculty attended the NSHE sponsored Gateway Course Summit and at the suggestion of the NSHE system office, have begun development of a pilot corequisite course in precalculus.

Physics & Engineering

While subject matter in first and second year physics courses has changed little in the past 100 years, the delivery of the content has changed dramatically. Curricular changes in physics courses have been aimed at providing an active learning experience for students. These changes include delivery of material through multimedia (both in the classroom and online), more classroom activities and discussions, and a greater focus on conceptual knowledge of the subject versus simple procedural problem solving.

Well established nationally used pre and post assessments (FMCE and CSEM) are in use in calculus based physics courses. These changes are considered in accordance with recommendations from the American Physical Society (APS) and the American Association of Physics Teachers (AAPT).

With just one full-time faculty member in the discipline, the maintenance of curricular standards in Physics and the management of

transfer pathways for pre-engineering students is quite localized. Dr. Thomas Herring has developed and continues to maintain close relationships with faculty in physics and engineering at UNR, and he provides WNC students with a first step to successful transfer by way of annual field trips--open to all WNC students--to visit UNR labs and program representatives.

General Education

Since general education requirements make up at least 43 instructional units within the WNC Associate of Science degree, it is important that students are provided not only with clear information and advisement on how best to choose course sequences, but also with useful insights on what role these required fields of study play in the overall quality of the degree they seek.

Since Fall 2013, the General Education Committee has focused on clarifying general education course certification, and in Spring 2014, an initiative began to rewrite the general education student learning outcomes and provide the institution with a statement of institutional learning outcomes as well. Much of the impetus for this work stemmed from an earlier accreditation recommendation regarding assessibility of student learning outcomes; however, the movement to non discipline-specific outcome statements in general education has provided inspiration for revision of all types of outcomes from the course to the program levels.

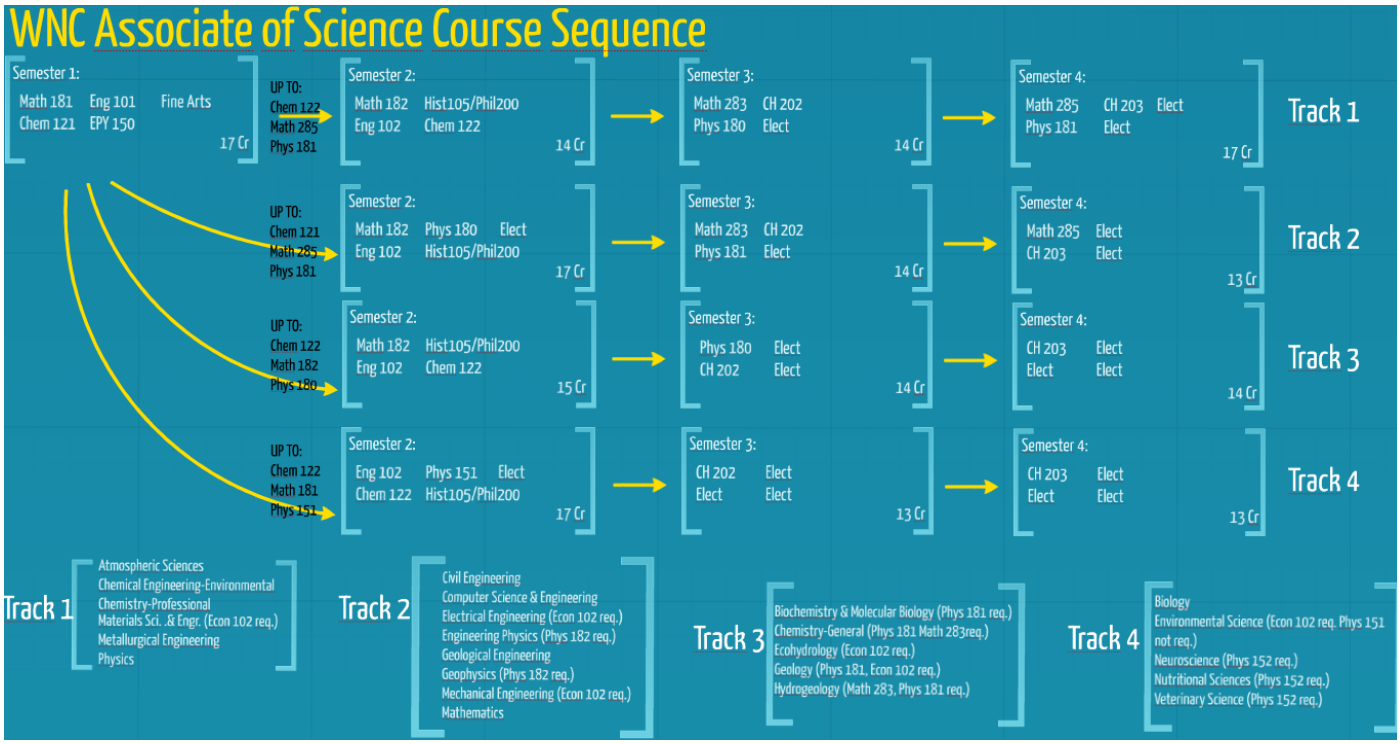
The work to clarify alignment of all general education courses with the new general education student learning outcomes will likely be spread over the next two years, and related initiatives toward integrating stages of general education (development of a required first semester seminar course, exploration of e-portfolios, undergraduate research opportunities, 15 to finish, etc.) help to maintain

the project’s momentum.

Course Sequences (2.F.3)

As a result of removing emphases (2011) from the Associate of Science degree, there are numerous sequences of offerings to follow to completion.
Appropriate progress toward the degree depends upon careful placement and enforcement of hard-flag prerequisites and consistent, sometimes
intrusive advising from Student Services staff and academic faculty.

The graphic below details course sequences designed to align with all related UNR transfer agreements.



The table below shows common AS degree course sequences with prerequisite courses listed to the left of courses they support.

Biology	• MATH 096 or (126 corequisite) ◦ BIOL 190 ▪ BIOL 191 ▪ BIOL 223 • BIOL 224 ▪ BIOL 251
Chemistry	• MATH 126 (or 120 until Fall 2015) ◦ CHEM 121 (and MATH 127) ▪ CHEM 122 ▪ CHEM 220
Geosciences	• MATH 120 or MATH 126 ◦ GEOL 101/103 ▪ GEOL 102 ◦ GEOG 103/104

	• GEOG 106, 200 (no prereq.)
Mathematics	• MATH 128 ◦ MATH 181 ▪ MATH 182 • MATH 283 ◦ MATH 330 • MATH 285
Physics	• MATH 128 ◦ PHYS 151 ▪ PHYS 152 • MATH 181 ◦ PHYS 180 ▪ PHYS 181 (MATH 182 coreq.) • PHYS 182

Course Schedule (2.F.4)

Possible schedules available for students beginning in Fall 2012 which lead to graduation in 4 semesters
These sample schedules are designed in relation to *Course Sequence Tracks 1-4* in section 2.F.3 (previous page).
Each track aligns with 5 or more different transfer agreements maintained with UNR.

	Track 1						credits
Fall 2012	MATH	181	1001	11:00 AM	12:40 PM	MW	4
	CHEM	121	1002	9:30 AM	12:15 PM	TUES	4
	ENG	101	1005	9:30 AM	10:45 AM	MW	3
	EPY	150	1005	2:30 PM	3:45 PM	TR	3
	MUS	121	1001	4:00 PM	6:45 PM	THURS	3
							17
Spring 2013	MATH	182	1002	5:00 PM	6:45 PM	TR	4
	ENG	102	1007	5:30 PM	6:45 PM	MW	3
	PHIL	200	1001	7:00 PM	9:45 PM	WED	3
	CHEM	122	1001	1:00 PM	3:45 PM	TUES	4
							14
Fall 2013	MATH	283	1001	5:15 PM	6:55 PM	TR	4
	PHYS	180	1001	11:00 AM	12:15 PM	ME	3
	PHYS	180L	1001	1:00 PM	3:45 PM	MON	1
	CH	202	1001	7:00 PM	9:45 PM	TUES	3
	Elective						3
							14
Spring 2014	MATH	285	1001	5:30 PM	6:45 PM	MW	3
	PHYS	181	1001	11:00 AM	12:15 PM	MW	3
	PHYS	181L	1001	1:00 PM	3:45 PM	MON	1
	CH	203	1001	1:00 PM	3:45 PM	TUES	3
	Elective						3
	Elective						3
							16
						Total:	61

	Track 2						credits
Fall 2012	MATH	181	1001	11:00 AM	12:40 PM	MW	4
	CHEM	121	1002	9:30 AM	12:15 PM	TUES	4
	ENG	101	1005	9:30 AM	10:45 AM	MW	3
	EPY	150	1005	2:30 PM	3:45 PM	TR	3
	MUS	121	1001	4:00 PM	6:45 PM	THURS	3
							17
Spring 2013	MATH	182	1002	5:00 PM	6:45 PM	TR	4
	ENG	102	1003	1:00 PM	2:15 PM	TR	3
	PHYS	180	1001	4:00 PM	5:15 PM	MW	3
	PHYS	180L	1002	1:00 PM	3:45 PM	WED	1
	PHIL	200	1001	7:00 PM	9:45 PM	WED	3
	Elective						3
							17
Fall 2013	MATH	283	1001	5:15 PM	6:55 PM	TR	4
	PHYS	181	1001	4:00 PM	5:15 PM	MW	3
	PHYS	181L	1001	7:00 PM	9:45 PM	WED	1
	CH	202	1001	7:00 PM	9:45 PM	TUES	3
	Elective						3
							14
Spring 2014	MATH	285	1001	5:30 PM	6:45 PM	MW	3
	CH	203	1001	1:00 PM	3:45 PM	TUES	3
	Elective						3
	Elective						3
							12
						Total:	60

	Track 3						credits
Fall 2012	MATH	181	1001	11:00 AM	12:40 PM	MW	4
	CHEM	121	1002	9:30 AM	12:15 PM	TUES	4
	ENG	101	1005	9:30 AM	10:45 AM	MW	3
	EPY	150	1005	2:30 PM	3:45 PM	TR	3
	MUS	121	1001	4:00 PM	6:45 PM	THURS	3
							17
Spring 2013	ENG	102	1006	9:00 AM	11:45 AM	WED	3
	MATH	182	1002	5:00 PM	6:45 PM	TR	4
	PHIL	200	1001	7:00 PM	9:45 PM	WED	3
	CHEM	122	1001	1:00 PM	3:45 PM	TUES	4
							14
Fall 2013	PHYS	180	1001	11:00 AM	12:15 PM	ME	3
	PHYS	180L	1001	1:00 PM	3:45 PM	MON	1
	CH	202	1001	7:00 PM	9:45 PM	TUES	3
	Elective						3
	Elective						3
	Elective						3
							16
Spring 2014	CH	203	1001	1:00 PM	3:45 PM	TUES	3
	Elective						3
	Elective						3
	Elective						3
	Elective						3
							15
						Total:	62

	Track 4						credits
Fall 2012	MATH	181	1001	11:00 AM	12:40 PM	MW	4
	CHEM	121	1002	9:30 AM	12:15 PM	TUES	4
	ENG	101	1005	9:30 AM	10:45 AM	MW	3
	EPY	150	1005	2:30 PM	3:45 PM	TR	3
	MUS	121	1001	4:00 PM	6:45 PM	THURS	3
							17
Spring 2013	ENG	102	1005	11:00 AM	12:15 PM	TR	3
	CHEM	122	1001	1:00 PM	3:45 PM	TUES	4
	PHYS	180	1001	4:00 PM	5:15 PM	MW	3
	PHYS	180L	1002	1:00 PM	3:45 PM	WED	1
	HIST	105	1003	4:00 PM	6:45 PM	THURS	3
							14
Fall 2013	CH	202	1001	7:00 PM	9:45 PM	TUES	3
	Elective						3
	Elective						3
	Elective						3
	Elective						3
							15
Spring 2014	CH	203	1001	1:00 PM	3:45 PM	TUES	3
	Elective						3
	Elective						3
	Elective						3
	Elective						3
							15
						Total:	61

	FALLON							credits
Fall 2012	ENG	101	1010	FALLON	4:00 PM	5:15 PM	TR	3
	THTR	180	1001	FALLON	7:00 PM	9:45 PM	WED	3
	MATH	181	1006	WEB	WEB			4
	CHEM	121	1010	FALLON	7:00 PM	9:45 PM	TUES	4
	ANTH	101	1004	FALLON	1:00 PM	2:15 PM	TR	3
								17
Spring 2013	ENG	102	1010	WEB				3
	HIST	106	1005	FALLON	4:00 PM	6:45 PM	WED	3
	MATH	182	1008	FALLON	5:00 PM	6:45 PM	TR	4
	CHEM	122	1004	FALLON	1:00 PM	3:45 PM	MON	4
								14
Fall 2013	HIST	105	1004	FALLON	1:00 PM	3:45 PM	TUES	3
	HIST	111	1003	FALLON	9:30 AM	10:45 AM	TR	3
	GEOL	101	1002	FALLON	1:00 PM	3:45 PM	THURS	3
	PHYS	151	1003	FALLON	5:30 PM	6:45 PM	TR	4
	MATH	283	1004	FALLON	5:15 PM	6:55 PM	MW	4
								17
Spring 2014	BIOL	100	1004	FALLON	4:00 PM	5:15 PM	MW	3
	GEOG	103	1002	FALLON	4:00 PM	6:45 PM	TUES	3
	Elective							3
	Elective							3
								12
							Total:	60

	DOUGLAS							credits
Fall 2012	CHEM	121	1008	DOUGLAS	11:00 AM	1:45 PM	WED	4
	HUM	101	1002	DOUGLAS	1:00 PM	3:45 PM	THURS	3
	HIST	111	1005	WEB				3
	MATH	181	1003	DOUGLAS	5:00 PM	6:45 PM	TR	4
	PSC	103	1005	DOUGLAS	7:00 PM	9:45 PM	TUES	3
								17
Spring 2013	ENG	101	1008	DOUGLAS	1:00 PM	3:45 PM	THURS	3
	HIST	106	1004	DOUGLAS	4:00 PM	6:45 PM	WED	3
	MATH	182	1003	DOUGLAS	5:00 PM	6:45 PM	TR	4
	GEOG	103	1003	WEB				3
	Elective							3
								16
Fall 2013	ENG	102	1009	WEB				3
	HIST	105	1003	DOUGLAS	4:00 PM	6:45 PM	THURS	3
	PSY	101	1007	DOUGLAS	7:00 PM	9:45 PM	TUES	3
	BIOL	190	1001	CARSON	9:30 AM	12:15 PM	TUES	3
	BIOL	190L	1001	CARSON	9:30 AM	12:15 PM	THURS	1
	Elective							3
								16
Spring 2014	BIOL	191	1001	CARSON	9:30 AM	12:15 PM	TUES	3
	BIOL	191L	1001	CARSON	9:30 AM	12:15 PM	THURS	1
	MATH	283	1001	CARSON	5:15 PM	6:55 PM	MW	4
	BIOL	113	1003	WEB				3
								14
							Total:	60

Curriculum Review Areas 5-9 (2.F.5-9)

5. Reviews of Courses in the last three years
NONE

6. Reviews of General Education in the last three years
NONE

7. Catalog Information
The Curriculum Committee approved changes to the new Associate of Science Degree and deactivated the old emphases on December 2, 2011. As detailed in #1 above, the information the college publishes about the AS Program differs depending on where you find it.

Course outlines within the Liberal Arts Division were reviewed, and in some cases updated, during the Spring 2014 semester. Further review involving new general education and institutional outcomes will be ongoing and will provide additional opportunities to ensure consistency in course outlines and catalog information.

8. Required Course Outlines
In the absence of formal degree emphases, course requirements for the Associate of Science degree outside of general education follow transfer agreements (see *course sequence* graphic in #3). Course outlines for all such required courses can be found in online catalogs through wnc.edu or myWNC.

9. Evidence for Locating and Using Appropriate Resources
The most recent formal review of WNC's General Education Program (see WNC General Education Program Review Report, March 2009) looked at all existing degree programs in relation to required courses and

student learning outcomes in course outlines (WNC Gen. Ed. Review Page 8). All Associate of Science degree emphases were determined to be in compliance with general education student learning outcome #4: “Students who complete a degree at WNC are expected to demonstrate they: Have effective and efficient learning skills, including the location and evaluation of information.”

The new statement of general education student learning outcomes includes, “Locate, evaluate, and appropriately use information from multiple resources to complete projects, activities, and papers.” As mentioned earlier, it will take time to fully embed the new general education outcome language in existing course outlines; however, outcome #4 in particular changed very little in specific language or spirit. It should be noted that with the recent acceptance of Institutional Learning Outcomes, programs like the AS degree now have concrete targets for knowledge or skill beyond general education--these statements also include reference to location, evaluation, and appropriate use of information.

Findings and Recommendations (2.G)

Below are brief summaries; a link at the bottom of the page provides details.

0. (General) Assign Associate of Science Program Lead Faculty.

1 .(Re: PR Goal 1.4) Conduct an assessment project focused on writing requirements, expectations, and performance within the sciences.

2. (Re: PR Goal 2.1) Replace the Associate of Science mission statement and student learning outcomes as detailed in sections 1.A and 1.B. **College and Program Mission (1.A)**

3. (Re: PR Goal 2.2) Clarify roles within program review process and intent of language. See detail.

4. (Re: PR Goal 2.3) Review all courses listed under *AS Science Requirement Group C.*

5. (Re: PR Goal 2.5) Develop 5-year assessment cycle in key AS areas with focused faculty oversight to ensure consistent progress and reporting.

6. (Re: PR Goal 3.3) Advising: **ASPR Faculty Advisement recommendation**

7. (Re: PR Goal 3.4) Explore efficacy of and opportunity for expanded online offerings in direct support of the Associate of Science Program.

8. (Re: PR Goal 2.1) See "preliminary

geoscience faculty response (footnote) to proposed AS program outcomes." **Program SLO Course Matrix (1.D.3)**

9. (Re: PR Goal 2.3) Develop Associate of Science degree *Program Requirements*:

Sub section: Detailed ASPR Recommendations (2.G.1)

Detailed ASPR Recommendations (2.G.1)

0. Provide release time (3 iu/sem) for Associate of Science Program Lead Faculty. Responsibilities:

- Monitor and report progress on program review recommendations
- Oversee development, progress, and reporting on 5-year assessment plan for the AS program
- Assist discipline or emphasis specific faculty groups maintain and develop assessment projects
- Facilitate cross disciplinary assessment projects
- Work with IR to ensure data delivery for assessment and/or review is complete and timely
- Lead AS Program Review Team during 5-year reporting cycle

1. With oversight provided by Associate of Science Program Lead Faculty (see recommendation #0) enlist a multidisciplinary science faculty committee to:

- Develop basic guidelines/expectations for writing in the sciences
- Develop or select a rubric relevant to writing in the sciences
- Collect student work from a variety of disciplines and assess via rubric
- Produce a focused assessment report with specific recommendations

2. With oversight provided by Associate of Science Program Lead Faculty, ensure opportunities for all faculty and relevant committees to vet mission and outcomes language proposed by the Associate of Science Program Review Team. If necessary, convene program review team members and science faculty volunteers to consider revisions. Ensure approval by March 1, 2016 for update of 2016-17 program guide.

3. Recommendations specific to the program review process as defined in **Academic Program Review Guidelines**.

- Recommend release time for an academic faculty member to monitor assessment projects in AS and facilitate the 5-year cycle of program review. (1 for AS, 1 for AA, and together they can help with a periodic review of GENED and AGS).
- Clarify the role of PARC with respect to support and guidance in the process
- Clarify intent of section 1.B in relation to *Program Goals and Outcomes*. In previous program reviews these appear to be program 'review' goals rather than program goals.

4. In response to the ongoing process of updating General Education course objectives toward alignment with new GESLOs, certain courses under the AS Science Requirement have been suggested for removal from GE credit status (CHEM 220, CPE 201, ME 241, 242) with paperwork submitted April 2015. A full review of all 'Group C' AS Science Requirement courses is recommended to ensure consistency.

5. In cooperation with PARC and with oversight from Associate of Science Program Lead Faculty, pending approval of updated program mission and outcomes, enlist a multidisciplinary science faculty committee to develop a 5-year assessment cycle plan.

6. **ASPR Faculty Advisement recommendation**. [2014 CCSSE #6 " While attending this college, what has been your best source of academic advising (academic planning, course recommendations, graduation requirements, etc.)?"

- 273/543 = 50% chose 'Academic Advisor (faculty)'
- 35/543 = 7% chose 'Academic Advisor (not faculty)'
- 109/543 = 20% chose 'Friends, family, or other students'

Suggested Fall 2015: Develop Welcome & Advising Letter for all Associate of Science (AS) students
Specific tasks: Create a letter for all declared AS students at WNC welcoming them to the institution and informing them of advising options that will keep them on track to graduate in a timely manner, opportunities in the community and chosen field, and transfer options to UNR.
Measures of Success: Letter will be completed by the start of the Spring 2016.
This will keep students on track to graduate and provide a mentor who can help guide them through WNC and the transfer process to a University.

7. Pending revision of the Distance Education Committee structure in Fall 2015, the DE Committee will conduct an analysis of offerings in relation to all college programs. Request recommendations for new offerings relevant to AS degree completion and support of program learning outcomes.

8. Geoscience faculty recommendations regarding learning outcomes. See footnote at the bottom of the following page: **Program SLO Course Matrix (1.D.3)**

9. Develop Associate of Science degree *Program Requirements*: Both the AS and AA transfer degrees are defined by their individual general education requirements. For the purposes of program review and improved clarity for student advisement, it may be beneficial to state general education requirements that are consistent between the AA and AS degrees and to install *program requirements* that define the fundamental differences between the two. For example, the AS

degree currently requires six units of mathematics which include Math 181 or higher. This requirement is the clearest distinction between the AA and AS programs; in that sense, the mathematics requirement effectively operates as a *program requirement*.

Link to possible alternative AS degree program description: **ASPR Rec9--Possible Alternative Description for AS Degree Requirements.pdf**

End of Report-- Back to: Associate of Science Program Review 2015

Faculty Advising Recommendation

ASPR Faculty Advisement recommendation

Site Visit Agenda November 20, 2015

Date:Friday 11/20/2015
Location: WNC Carson Campus

- 930-1130am Program review discussion in Bristlecone 344 with Program Review Team, Internal and External Reviewers, Pres. Burton, VPASA Wynegar, Division Director Scott Morrison and members of PARC.
- 1130-12 Tour of AS program facilities.
- 12-1pm Working lunch in President's Board Room BRIS 135 with student panel interview with reviewers, students.
- 1-2pm Student panel interview follow-up [location?] with Program Review Team, Reviewers, Pres. Burton, VPASA Wynegar, Division Director Scott Morrison and members of PARC.