



## Welcome and Contact Information

Welcome to the NC State Engineering Programs at UNC Asheville! This handbook is intended to provide an easily accessible collection of the administrative information students need to navigate our programs. Please read it carefully, and keep it handy for reference as you make progress toward the completion of your degree.

Program faculty and staff take great pride in being available to students for help and guidance. If you can't find the information you need in this handbook, please don't hesitate to contact any of the faculty or staff, starting with:

NC State Engineering Programs Office – RRO 204

Diane Morgan, dmorgan@unca.edu, Program Assistant, 204h Phone: (828) 251-6641.

Dr. Mahmut Reyhanoglu  
RRO 204i

Phone: (828) 251-6944

Email: reyhanoglu@unca.edu

Ms. Cheryl Alderman, Assoc. Dir.  
RRO 204g

Phone: (828) 251-6943

Email: calderma@unca.edu

A complete program contact list is available on the Program Website under *Contact Us* at [www.engr.ncsu.edu/mechatronics/](http://www.engr.ncsu.edu/mechatronics/) or <https://engineering.unca.edu/>

## What Is Engineering?

According to ABET (the organization responsible for certifying the quality of engineering education in the United States), “Engineering is the profession in which knowledge of the mathematical and natural sciences, gained by study, experience, and practice, is applied with judgment to develop ways to utilize, economically, the materials and forces of nature for the benefit of mankind.” The key words in this definition are “applied” and “develop.” Engineers are an essential part of the teams creating the real-world products and processes that shape the future. The term “engineering” is also used to describe the creative development activity performed by these teams.

The members of engineering teams, their activities, and their skills exist along a continuum of roles. Technicians work at the more concrete end of the continuum, closest to actual hardware and processes (think of a mechanic tuning cars, or a machinist fabricating parts). Scientists work at the more abstract end of the continuum, primarily concerned with discerning the laws of the universe and creating new knowledge. In between are engineers and engineering technologists, who are responsible for bridging the gap separating the scientists’ abstract knowledge from the technicians’ concrete products and processes. Engineering technologists work more closely with technicians, while engineers (also known as “engineering scientists” or “classical engineers”) work more closely with scientists.

In actual practice, the lines of activity and responsibility on engineering teams are nowhere near as clear-cut as implied in the paragraph above. All of these roles offer the prospect of interesting, meaningful, well-compensated careers.

## General Program Overview

Students at UNC Asheville can follow either of two paths to an NC State engineering degree:

- 1) The Bachelor of Science in Engineering (BSE) with Mechatronics Concentration (JEM) is a four year program combining aspects of mechanical, electrical, and computer engineering. Mechatronics students take all of their courses at UNC Asheville. Graduates receive a degree issued jointly by NC State and UNC Asheville. NC State began offering Asheville students the Bachelor of Science in Engineering with Mechatronics Concentration in 1999. Since 2009, the degree has been granted jointly by UNC Asheville and NC State. **Students are referred to Section 2 of this handbook for details on the Mechatronics or JEM degree.**
- 2) The Two-plus-Two Engineering Transfer Program (2+2) is for students pursuing degrees in other engineering disciplines (Aerospace, Civil, Mechanical, etc.). Two-plus-Two students spend their freshman and sophomore years at UNC Asheville, and then move to NC State in Raleigh for their junior and senior years. Some degree programs employ a 1+3 schedule. Students follow the degree requirements of the NCSU curriculum of their choice while enrolled at UNCA. Graduates receive a degree issued by NC State. UNC Asheville has offered a 2+2 program leading to NC State engineering degrees since 1988. **Students are referred to Section 3 of this handbook for details on the Two-plus-Two Transfer Program.**

Students following either path benefit from a unique combination of assets: the extensive resources of a major research university, with the intimate campus atmosphere and personal attention of a small liberal arts school; the rigorous, focused depth of an engineering curriculum, with the flexible, holistic breadth of an integrated liberal studies program; cutting edge technological education, in one of the nation's most desirable places to live.

## Section 1 Administrative Information for All Engineering Students

The joint nature of the NC State Engineering Programs at UNC Asheville sometimes poses challenges. The best strategy for minimizing problems is to avoid them by paying attention to the necessary procedures. Please note the important details listed below concerning enrollment in NC State engineering coursework at UNC Asheville:

1. You must be enrolled for your engineering coursework at both NC State and UNC Asheville. Engineering coursework includes all classes beginning with the departmental designators E, ECE, JEM, MAE, and MSE. If you have not enrolled for your engineering courses at both institutions, please contact the main program office *immediately*.
2. Engineering Online (EOL) courses are those which are broadcast to distance education (DE) sites around the state. Most originate on the main NC State campus in Raleigh, though some are broadcast from other locations, including UNC Asheville. EOL classes typically meet in RRO 112, RRO 203, RAM 011 or, rarely, in RRO 129. EOL coursework follows the NC State academic calendar, which can be found at the ncsu.edu website. Please note the first day of classes at NC State. You must start attending your EOL classes on the date that NC State begins classes.
3. All academic actions regarding your NC State classes (add, drop, etc.) must conform to NC State deadlines. The last day to drop and the last day to add a course are in the NC State calendar and there are **NO EXCEPTIONS**. Any action you take with regard to an NC State class must be accompanied by the same action at UNC Asheville. Note: UNC Asheville deadlines are typically different from those of NC State. In every case, the earlier deadline applies.
4. Be certain to check both your NC State email account and your UNC Asheville email account *daily*. You will be receiving important information related to your coursework through these accounts. It is your responsibility to stay current on this information. It is recommended that you have all of your email forwarded to one preferred account.
5. Class attendance is mandatory, unless otherwise arranged with your instructor. Education is not simply the passive receipt of information from instructors by students, no matter how much the DE format may remind you of watching television. It is your responsibility to make an active contribution to your classes by participating fully in them.
6. Engineering is a rigorous profession. Please prepare yourself for the commitment and intensity it will take to be successful in your engineering coursework. You must be ready to spend the time and energy required to perform at the level expected of engineers. If you have any doubt that you are anything less than 100% ready to embark on your semester, consult your advisor *immediately*.
7. The NC State Course Web Sites can be found at <http://engineeringonline.ncsu.edu> See Page 7 for more detailed instructions.  
For example: [http://engineeringonline.ncsu.edu/onlinecourses/FALL\\_2016\\_siteHP.html](http://engineeringonline.ncsu.edu/onlinecourses/FALL_2016_siteHP.html)  
Student may need to enter NC State Unity ID and password to access course materials.
8. Attendance at a minimum of 80% is required to retain access to archived lectures. Students can access archived lectures via the NCSU Moodle page or under item 7 above.

## **How to be a successful DE student:**

An important aspect of our engineering courses is that many of them are provided to us by Distance Education (DE) technology by NC State, College of Engineering, EngineeringOnline (EOL). Engineering courses at UNC Asheville are typically offered in live, interactive connections with a concurrent section at NC State. Other classes are offered on a delayed basis, and some are offered as traditional live classes at UNC Asheville.

1. Come to class always, regardless of the delivery mode. Attendance is the highest single indicator of the likelihood of your success. Attendance is checked every class period and sent to your professor.
2. Realize that DE classes from NC State follow all rules / regulations of NC State including registration, drop dates, exam dates, etc. Enrollment is also required through UNC Asheville, and any changes must be processed by both universities.
3. Always check your NC State email (or have it automatically forwarded to another regularly checked email address). Your NC State professors will use your NC State email address to tell you important messages.
4. Don't be shy to ask questions and interact with the remote class during lecture - they are glad to see / hear you. If you ask a question, remember to talk into the microphone. When possible, sit towards the front and center of the classroom so you will be in camera view and your professor in Raleigh can see you.
5. You are encouraged to interact with your professor outside of class even though he is in Raleigh. Usually you can post questions and concerns to the WolfWare discussion forum, or you can email the professor directly.
6. We scan your class materials to NC State. Thus, when you submit homework, tests, or other assignments, be sure to use engineering paper (unless otherwise approved to use regular paper), write with a dark pen or pencil, write only on one side, don't write near the edges, number each page (e.g. 1/4, 2/4, 3/4, ...etc.), write your name on each page. See the next page for a complete discussion.
7. If you notice any technical problems with the incoming video or audio, please report the problem as soon as possible to either the facilitator or the studio staff person in the control room.
8. If teleconference office hours or review sessions are established for your class - be sure to attend even if you don't have a question. You will benefit from the extra materials and discussions.
9. If you have any questions about anything - be proactive and ask ahead of time and as early as possible. All problems are easier solved with more time and advance notice.

Also, remember that your Asheville facilitator is available to help you succeed in your classes. However, you must take responsibility for your own university education including reading the course materials, completing assignments on time, preparing for exams, abiding by the university rules, and coming to class.

## Format Requirements for Student Work

Most of your homework, tests, labs and projects will have to be scanned to NC State for grading. The scanning process adds a few requirements to the format of work turned in. Please heed the following requirements. Failure to do so may result in delay or deducted points.

1. **Write legibly, darkly and large enough** (*at least 12 pt font size*).
2. Leave a **¼ inch BLANK margin** around all sides of each page.  
Scanners typically miss the outer ¼ inch.
3. Write on **one side of paper** only.
4. Use a **complete header**:  
First page: full name, Class ID, Assignment No., page number, date  
All other pages: Last name and page number (see next item)
5. **Number all pages** including top page, in the upper right corner of the page.  
Include both the page number and the total page count. Examples:  
1 of 7, 2 of 7, 3 of 7, ... 7 of 7      or      1/7, 2/7, 3/7, ... 7/7
6. **Use 8 ½ x 11 inch paper only.** Smaller notebook paper jams the scanner (...and jamming often results in crumpling and tearing).  
  
Engineering paper (light grid on one side) is ideal.  
  
Remove spiral bound tear-out tatters completely. (must still be 8 ½ x 11)
7. **Show all your work.** If you do not get full credit for a correct answer, then at least get maximum partial credit. The only way to do that is to show your work to demonstrate that you comprehend the solution technique.
8. **Use a paperclip instead of a staple.** Occasionally a stapled test will be given to you and the staple will be removed prior to scanning but this will make the pages stick together and not feed correctly.

## Inclement Weather Policies for Engineering Distance Education Classes

IF...	THEN...
<p>UNC Asheville is CLOSED Check <a href="http://www.unca.edu">www.unca.edu</a></p>	<p>All Classes are cancelled, including DE classes. Students should view archived lecture prior to next class meeting. Quizzes, HW, etc. are moved to next class meeting unless otherwise indicated</p>
<p>UNC Asheville is on LATE START Check <a href="http://www.unca.edu">www.unca.edu</a></p>	<p>DE class scheduled earlier than Start Time is cancelled. View archived lecture prior to next class meeting.</p> <p>DE classes scheduled after Start Time occur at regular time (unless NC State is altered as well. Check <a href="http://www.ncsu.edu">www.ncsu.edu</a>).</p> <p>UNC Asheville classes and local engineering classes meet on the delayed and shortened schedule of UNC Asheville.</p> <p>Scheduling conflicts may arise – students should attend live classes and view archives if possible. Discuss conflicts with course facilitator or instructor.</p>
<p>NC State is closed, but UNC Asheville is open</p>	<p>DE Class is cancelled. Instructor will determine any adjustment to schedule.</p>
<p>NC State on altered schedule Check <a href="http://www.ncsu.edu">www.ncsu.edu</a> UNC Asheville is open</p>	<p>DE class is held or cancelled as per NC State website posting. Instructor will determine any adjustment to schedule due to cancelled classes.</p>

**Students are urged to use their judgment on travel during inclement weather.**

In the event of an individual weather-related absence, student should promptly notify facilitator.

In the event of class cancellation, archived lecture will be made available to all enrolled students regardless of attendance history.

**ARCHIVED LECTURES**

To view archived lectures, student needs Unity ID, password and default password.

Contact [calderma@unca.edu](mailto:calderma@unca.edu) if this information is not known

Go to the EngineeringOnline website: <http://engineeringonline.ncsu.edu/>

In right sidebar under ACCESS COURSE INFORMATION

Click on “Semester Year Site-Based Homepages”

Find the course of interest and click on the **HOME PAGE** button.

Lectures and course notes can be accessed in two ways:

Course Home Page link at the bottom or

Video Lectures & Notes tab in black banner

It is suggested that either link be bookmarked for quick access.

# Student IDs, Email Accounts, Computer Access and Passwords

When enrolled at UNC Asheville and taking an engineering course, you will have the following:  
(Keep the information below in a secure place)

## 1. UNC Asheville Student ID

You will be assigned a permanent 9-digit UNC Asheville student ID. It is on your OneCard.

930 \_\_\_\_\_

## 2. UNC Asheville E-mail Address

You will have an E-mail address as follows: \_\_\_\_\_@unca.edu.

It will have a maximum of 8 characters: first & middle initials plus 6 characters of last name (possibly a number at end). You will choose a password.

## 3. NC State Student ID

You will be assigned a permanent 9-digit NC State student ID.

\_\_\_\_\_

## 4. NC State Username – also called the Unity ID

You will be issued a UNITY ID which allows access to NC State websites.

It will have a maximum of 8 characters (first & middle initials plus 6 characters of last name (possibly a number at end) \_\_\_\_\_

## 5. NC State Email Address

The full address is xxxxxxxx@ncsu.edu where xxxxxxxx = Unity ID

Be sure to check both your UNC Asheville and NC State email accounts daily.

## 6. NC State Default Password

Your initial (and permanent default) password will be 8 digits.

You should change this password upon first login.

Digits 1-4 of your password are the last four digits of your NC State Student ID

Digits 5-6 are the birth month (01-12 for Jan-Dec); digits 7-8 are the birth day of (01-31)

\_\_\_\_\_

Last four numbers of NC State ID    Birth Month    Birth Day

If you forget your ID or password, contact NC State Programs Office, RRO 204g, 828/251-6943.

## 7. Engineering Computer Labs

### How do I Log In?

Logins for our computers are based on your UNC Asheville user name and password (same as OnePort credentials). If you cannot login, first try re-syncing your UNC Asheville password:

Go to <http://luminis4.unca.edu/cp/home/loginf> Click on "Change your password" and follow the prompts. ITS Help: 828/251-6445, select option 1.

## **Do I have any filespace and how does it work?**

Engineering users do have filespace (500MB initially) that will be setup when you first login. You will need to check and make sure it worked by opening Windows Explorer and seeing if you have a drive letter "P:" mapped to "ncsu1". In this network drive you will see many folders including "My Documents". If you do not see this, then please try logging out and back in. If it still doesn't work, you need to contact UNCA ITS Help [helpdesk@unca.edu](mailto:helpdesk@unca.edu) -- otherwise data will be saved only locally and will be **lost**.

## **Anything else I should know?**

Personal settings should follow you around similarly to our previous system.

## **Problems or any additional questions?**

Contact UNCA ITS at [helpdesk@unca.edu](mailto:helpdesk@unca.edu). The problem can't be fixed unless it is reported.

## **How to Forward Email to another account**

### **Both UNC Asheville and NC State use Gmail as the email provider**

To forward your email, first login to the Gmail account you wish to forward. Then, follow these steps:

1. Click on the 'gear' at the top-right and select "Settings"
2. Select the **Forwarding and POP/IMAP** tab.
3. Click on the "Add a forwarding address" button.
4. Enter the forwarding address you would like to use and click the "Next" button.
5. Check the forwarding address and click "Proceed" button (or "Cancel" and re-enter if needed).
6. Next, an access code will be sent to the forwarding account. Enter this code and click on "Verify". At this point you are **NOT** finished!
7. If successful the forwarding menu will change, but forwarding will still be **disabled**. You must select the radio button to the left of "Forward a copy of incoming..." for it to work. You can also choose what the server should do with the copies of the emails.
8. Finally, click the "Save Changes" button at the bottom of the screen.

Repeat these steps if you want to forward more than one of your Gmail accounts.

It is recommended that you check your UNC Asheville and NC State email every day.

It is suggested that you forward your various email accounts to a single account of your choosing, and be sure to check it every day.

NC State and NC State faculty will contact you via your NC State email.

UNC Asheville and the Engineering Program will contact you via your UNC Asheville email.

## Prerequisite and Corequisite List

CHEM 132	yes &	MATH 167 or higher	8/1/17
CHEM 111	yes &	-	CHEM 132
MATH 191	yes &	High school algebra/trigonometry	-
MATH 192	yes &	MATH 191 C or better	-
MATH 291		MATH 192 C or better	-
MATH 394	yes	MATH 291	-
PHYS 221	yes &	MATH 191 C or better	MATH 192
PHYS 222		MATH 192 PHYS 221 C or better C or better	MATH 291
STAT 225		MATH 191 C or better	-
LANG 120	yes	-	
E 101	yes &	Freshman	-
ECE 109	yes	-	
ECE 200	yes	MATH 192 PHYS 221 C or better C or better	Cum GPA 2.5 or more
ECE 209	yes	ECE 109 C- or better	-
ECE 211	yes	ECE 200 C- or better	ECE 220
ECE 212	yes	ECE 109 C- or better	-
ECE 220	yes	ECE 200 C- or better	-
ECE 306		ECE 209 ECE 212 C- or better C- or better	-
ECE 310		ECE 212 C- or better	-
ECE 455		MAE 435	-
ECE 456		-	MAE 435
JEM 123		-	E 101
JEM 180		-	JEM 123
JEM 360		JEM 180, ECE 209, junior standing	ECE 306
JEM 484		ECE 306, JEM 360, MAE 201, 214 & 435	-
JEM 485		JEM 484	-
MAE 206	yes	PHYS 221 MATH 192 C or better C or better	Cum GPA 2.5 or more #
MAE 208	yes	MAE 206 MATH 291 C- or better	Cum GPA 2.5 or more #
MAE 201 (301)	yes	MATH 291 PHYS 222	
MAE 308		MATH 291 MAE 208 C- or better	ECE 220*, MAE 301
MAE 310		MAE 201(301) ECE 220* C- or better C- or better	
MAE 214 (314)	yes	MAE 206 MATH 291 C- or better	
MAE 315		MAE 208 ECE 220* C- or better C- or better	
MAE 316		MAE 214(314) C- or better	
MAE 435		ECE 220* MAE 315 C- or better	-
MSE 201		CHEM 132 C or better	-

& For this C-Wall class, a grade of C or better is required (not C-).

\* In substitution for MATH 394 (stated MAE prerequisite).

# For 2+2 students transferring to NC State, GPA co-requisite must be satisfied with NC State Cum GPA.

## **C-Wall Courses**

Engineering courses which require a minimum passing grade of C- or C are called “C-Wall” (“see-wall) courses.

Beginning with classes taken January 2, 2013, engineering students must have grades of C or better in:  
MATH 191    MATH 192    CHEM 132    CHEM 111    PHYS 221    E 101

For JEM students, the following courses have a minimum grade requirement of C-:

ECE 109	ECE 211	MAE 206	MAE 214
ECE 200	ECE 212	MAE 208	LANG 120
ECE 209	ECE 220	MAE 201	

For 2+2 students, a generalized list of courses which require a minimum grade of C- follows. These are determined for each curriculum. 2+2 students should review NC State department requirements.

CSCI 181	ECE 109	MAE 206	MATH 394
LANG 120	ECE 209	MAE 208	
ECE 200	ECE 212	MAE 201	
ECE 211	ECE 220	MAE 214	

## **GPA and Registration Requirements for Engineering Students**

For registration in:

- ECE 200: Intro to Signals, Circuits and Systems
- MAE 206: Engineering Statics
- MAE 208: Engineering Dynamics
- MAE 201: Engineering Thermodynamics I
- MAE 214: Solid Mechanics

Student must have a cumulative UNC Asheville GPA of 2.500 or higher.

## **Engineering Classes**

An engineering class offered at UNC Asheville has the prefix E, ECE, JEM, MAE or MSE. For such classes, special registration and enrollment requirements exist.

Classes of UNCA which have an engineering theme have the prefix ENGR. These are not strictly engineering classes, but may be of interest to engineering students.

## **Academic Calendar**

NC State and UNC Asheville each have their own institutional academic calendar. These calendars often differ on start and end dates, breaks, final exams and enrollment deadlines.

For classes originating at NC State, the NC State calendar is followed.

For classes originating at UNC Asheville, the UNC Asheville calendar is followed.

The NC State academic calendar can be found at <http://www.ncsu.edu/registrar/calendars/>.

The UNC Asheville academic calendar can be found at <http://registrar.unca.edu/academic-calendar>.

An Engineering Start-Up calendar is typically provided to clarify start dates for each class, lab, etc.

## **Start and End Dates**

NC State classes begin and end on the NC State academic calendar.

UNC Asheville classes begin and end on the UNC Asheville academic calendar.

Some local modifications are made, such as possible observance of UNC Asheville Undergraduate Research Day. Course facilitators provide necessary information.

## **Breaks**

Academic breaks may differ between NC State and UNC Asheville, such as fall or spring break. Our site follows the break schedule of UNC Asheville. Some modification of assignments or adjustment in lecture viewing may be necessary to remain on track. Course facilitators provide guidance as needed.

## **Final Exams**

NC State classes follow the NC State final exam schedule.

UNC Asheville classes follow the UNC Asheville final exam schedule.

In the event of a conflict, the student should bring this to the attention of the facilitator ASAP.

Students at UNC Asheville may need to remain on campus after UNC Asheville finals end to complete NC State finals. Accommodations for dorm residence should be arranged in advance through UNC Asheville Residence Office.

## **Drop / Add Policies**

The first week of the semester is called the Add/Drop Period. Students may freely adjust their schedule as needed. At the end of this period, a student's schedule becomes fixed and all classes will appear on the academic transcript. Any enrollment changes in engineering classes must be made through both UNC Asheville and NC State (see engineering advisor).

## **Class Withdrawal**

After the Add/Drop Period and until the Withdrawal Deadline, students may withdraw from a class. UNC Asheville limits the number of withdrawals to a maximum of three courses in an academic career. NC State limits withdrawals to a maximum of 16 credits (applies to engineering courses only). A grade of W will be assigned on the transcript. Engineering classes abide by the NC State withdrawal deadline. If a student withdraws from an engineering class through NC State, the student must also withdraw from the class through UNC Asheville. To withdraw, a student should seek the assistance of the Engineering Adviser.

## **Term Withdrawal**

At any time after the first day of the class, the withdrawal from all engineering courses in a semester is called Term Withdrawal at NC State. Once a request for Term Withdrawal has been processed, the student cannot add courses until the next semester.

If an unmatriculated student seeks to withdraw from all engineering courses in a semester, the student should see the Engineering Advisor.

If a matriculated Mechatronics student seeks to withdraw from all courses, the student should see the Engineering Advisor, but will also be required to contact the UNC Asheville Counseling Center.

## **Grading Policies**

The Grading policies of NC State and UNC Asheville differ.

NC State uses a 13-point grading policy (F, D-, D, D+, C-, C, C+, B-, B, B+, A-, A, A+).

UNC Asheville uses an 11-point grading policy (F, D, D+, C-, C, C+, B-, B, B+, A-, A). For engineering courses, grades of D- are recorded as D; grades of A+ are recorded as A.

## **Grade Replacement Policies**

The Grade Replacement policies of NC State and UNC Asheville differ.

UNC Asheville allows the replacement of up to 12 credits for courses in which a grade of C- or lower was earned. For courses repeated under this policy, the original grade is excluded from the UNC Asheville GPA calculation. Students must submit a Course Repeat form to the OneStop Office prior to registration and indicate if the replacement policy should be applied.

NC State allows the replacement of up to two classes for courses in which a grade of C- or lower was earned. See engineering advisor to submit a request. For courses repeated under this policy, the original grade is excluded from the NC State GPA calculation.

Engineering courses which are repeated may be handled or recorded differently by NC State and UNC Asheville for the purposes of grade replacement and GPA calculation. Regardless, the graduation requirements of each institution must be met internally for JEM students.

## **Progress Toward Degree**

Students enrolled full-time are expected to demonstrate Progress Toward Degree Completion. As per university requirements, a minimum of 24 cr. should be completed each academic year. Student should have a degree plan on file with their adviser. If a student is not making satisfactory progress, the adviser will schedule a meeting.

## **Two Strikes Rule of NC State**

NC State allows a student to attempt a given course twice. If after two attempts a student has not passed the course, further attempts are not allowed with permission of the Assistant Dean, College of Engineering, NC State. A withdrawal or an audit counts as an attempt.

## Academic Standing

Academic Standing at NC State is based on a student's cumulative GPA at NC State. Academic Standing at UNC Asheville is based on a student's UNC Asheville cumulative GPA. It is possible to be on suspension at NC State, but not at UNC Asheville. In such a case, a student is barred from engineering courses at UNC Asheville until the NC State suspension is lifted.

NC State requirements are:

**Good Standing:** maintain a GPA of 2.000 or higher

**Academic Warning:** cumulative GPA less than 2.000, must see adviser for counseling, 14 cr. Max

Students are limited to a maximum of two engineering courses while on academic warning.

**Academic Suspension:** GPA threshold varies, at least one semester of suspension required

**Return to University-UNC Asheville:** 14 cr. max, GPA for re-entry semester must meet requirements

**Return to University-NC State:** While on Suspension, a student may enroll in up to two courses through NC State Distance Education as a means of improving his/her GPA. Enrollment in engineering courses is not allowed while on suspension.

If, while a student has NC State Non-Degree-Seeking (NDS) status, the NC State GPA falls below 1.0, the student is suspended from further DE classes.

UNC Asheville requirements are:

<b>Total Attempted Hours</b>	<b>Minimum GPA Requirement</b>
0-23	1.00 if < 1.0, student is suspended for one semester
24-44	1.50
45-74	1.75
75 and above	2.00 (required for graduation)

## Graduation Requirements on GPA

UNC Asheville requires the cumulative GPA to be 2.000 or higher. This includes any grade replacement as per UNC Asheville policies.

NC State requires the cumulative GPA to be 2.000 or higher. This includes any grade replacement as per NC State policies.

NC State and UNCA also require the Major GPA to be 2.000. In the JEM curriculum, major courses are those with a prefix of ECE, EGM or MAE. NC State C-Rule Exception: If all major courses were earned with grades of C- or higher, then the major GPA may be less than 2.000. There is no equivalent UNCA rule; the UNCA major GPA must be 2.000.

## How To Check your GPA

**How to Check your UNC Asheville GPA** Go to [www.unca.edu](http://www.unca.edu) OnePort, log on Student Records Unofficial Academic Transcript .....and click SUBMIT to see your transcript.

**How to check your NC State GPA** Go to [www.ncsu.edu](http://www.ncsu.edu) MyPackPortal, log on Academic Records, click on TRANSCRIPT.

## The Importance of Your MATH GPA

For 2+2s....  
at the time you both apply to NC State and arrive at NC State....

For JEMs...  
at the time you apply to matriculate (declare your major)....

The average of your last two math classes must be 2.500 or higher.

Courses which can be used in this calculation are:

MATH 191: Calculus I	4 cr.
MATH 192: Calculus II	4 cr.
MATH 291: Calculus III	4 cr.
ECE 220: Analytical Foundations of ECE	3 cr.

In addition, any 300-level or higher MATH class may be used.

Note: STAT 225 may NOT be used.

In general, you may not take 300-level or higher engineering courses unless you have matriculated.

## GPA Calculation Example

### Fall Semester - FRESHMAN

Course	Credits	Grade	Grade Value	Grade Points
CHEM 132	3	C	2.00	6.00
CHEM 111	1	A	4.00	4.00
E 101	1	A	4.00	4.00
LANG 120	4	C-	1.67	6.68
MATH 191	4	C+	2.33	9.32
DEPT 178	3	B	3.00	9.00
TOTALS	16	////////	////////	39.00

Term/Semester GPA 2.438

Cumulative GPA 2.438

### Spring Semester - FRESHMAN

Course	Credits	Grade	Grade Value	Grade Points
MATH 192	4	C	2.00	8.00
PHYS 221	4	B-	2.67	10.68
HUM 124	4	D	1.00	4.00
ECE 109	3	B+	3.33	9.99
JEM 180	2	C	2.00	6.00
TOTALS	17	////////	////////	38.67

Term/Semester GPA 2.275

Cumulative GPA 2.354

### Summer - Repeat Hum 124; pass with Grade A, exclude previous grade of D

Course	Credits	Grade	Grade Value	Grade Points
HUM 124	4	A	4.00	16.00
TOTALS	4	////////	////////	16.00

Term/Semester GPA 4.000

Cumulative GPA 2.717

### Fall Semester - SOPHOMORE

Course	Credits	Grade	Grade Value	Grade Points
ECE 209	3	A	4.00	12.00
ECE 200	4	B	3.00	12.00
MAE 206	3	C	2.00	6.00
MATH 291	4	B	3.00	12.00
PHYS 222	4	A-	3.67	14.68
TOTALS	18	////////	////////	56.68

Term/Semester GPA 3.149

Cumulative GPA 2.870

## Resources

Math Lab  
RRO, 3<sup>rd</sup> Floor

Writing Center,  
Ramsey Library, main level, make an appointment, <https://writingcenter.unca.edu/>

Physics Tutorial  
Inquire at Physics Office, RRO 124, 251-6442

Counseling Center  
Health and Counseling Center, 118 W. T. Weaver Blvd, 251-6520

Career Centers and Career Fairs  
UNC Asheville, Highsmith Union, Sherrill Center  
NC State website

IEEE, SAE, SWE Student Branches

Scholarships  
See our website

### **Computer Lab for Engineering Students      RRO 206**

Open when building is accessible.

After hours, a building pass is required for access. UNCA Security can request this of you. Keep it and your Onecard with you at all times.

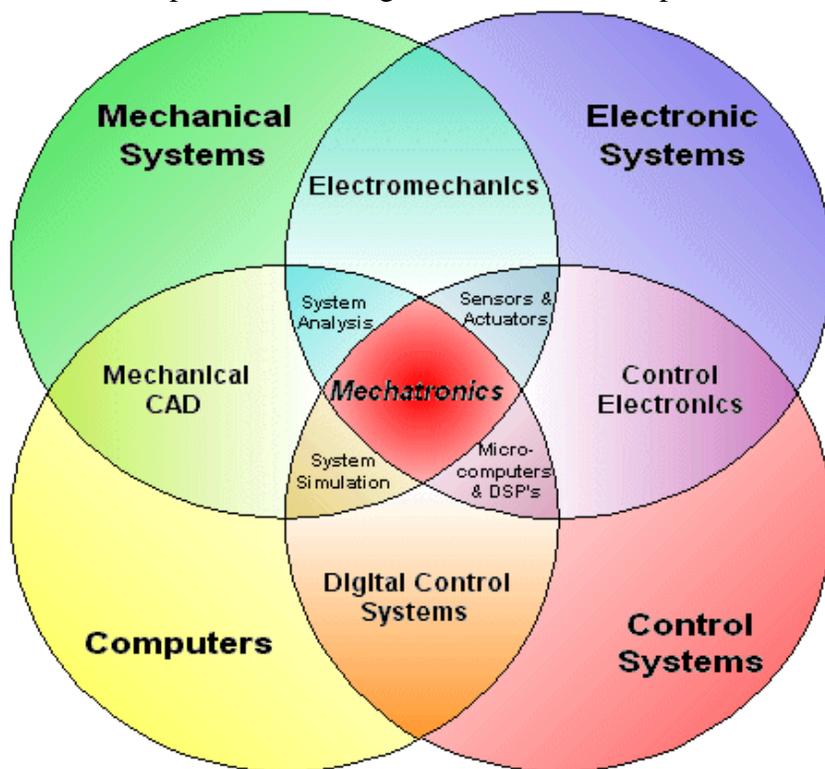
Watch for an email from Diane Morgan at the beginning of each semester to request a pass.

## Section 2 Bachelor of Science in Engineering – Mechatronics Concentration (JEM)

### What Is Mechatronics?

Mechatronics is a blend of mechanical engineering, electrical engineering, computer control and information technology. Mechatronics is a design process to create more functional and adaptable products. The word was first coined in Japan in the 1960s to refer to the synergistic blend of mechanics and electronics. But over the years mechatronics has come to mean a methodology for designing products that exhibit fast, precise performance. These characteristics can be achieved by considering not only the mechanical design, but also the use of servo controls, sensors, and electronics.

Mechatronics was first used in terms of the computer control of electric motors by an engineer at Japan's Yaskawa Electric Co. Many engineers contend that mechatronics grew out of robotics. Early robotic arms, then unable to coordinate their movements without sensory feedback, benefited greatly from advances in kinematics, dynamics, controls, sensor technology, and high-level programming. During the 1970s, mechatronics was concerned with servo technology used in products such as automatic door openers, vending machines, and autofocus cameras. In the 1980s, as information technology was introduced, engineers began to embed microprocessors in mechanical systems to improve their performance. The 1990s saw the full arrival of the mechatronic age because of the increased use of computational intelligence in mechatronic products and systems.



## **Why Study Mechatronics?**

Mechatronics has been popular in Japan and continental Europe for several years, but has been slow to gain industrial and academic acceptance as a field of study and practice in Great Britain and the United States. In the past, machine and product design has been the domain of mechanical engineers. After the machine was designed by mechanical engineers, solutions to control and programming problems were added by software and computer engineers. This sequential engineering approach usually resulted in suboptimal designs.

The prime role of mechatronics is one of initiation and integration throughout the design process, with the mechatronics engineer as the leader. Experts in the interdisciplinary mechatronics field must acquire general knowledge of various techniques and be able to master the entire designing process. They must be able to use the specialized knowledge resources of other people and the particular blend of technologies that will provide the most economic, innovative, elegant, and appropriate solution to the problem at hand. Industry needs mechatronics engineers to continue to rapidly develop innovative products with performance, quality, and low cost.

## **Where Do Mechatronics Engineers Work?**

Mechatronic devices or “smart” devices have become common in our technologically advanced society. Examples of mechatronic devices include robots, anti-lock brakes, photocopiers, clothes dryers and computer disk drives. Mechatronic devices can be found in medicine and surgery, agriculture, buildings and homes, the toy and entertainment industry, intelligent aids for the elderly and disabled. Employment opportunities exist in manufacturing as well as in design, development, and research.

## **The Curriculum**

The Mechatronics curriculum combines the best that two nationally recognized universities have to offer. NC State provides the engineering component, comprising course work from the Departments of Electrical and Computer Engineering (ECE), Materials Science & Engineering (MSE), Mechanical and Aerospace Engineering (MAE), and Mechatronics (JEM). Hands-on labs are integral to the engineering course work. UNC Asheville provides an engineering-themed Humanities and Social Science component with a rich liberal arts foundation.

All students in the 2+2 Program take the same courses during their freshman year, except for one course which depends on the specific major being pursued. The sophomore year has some minor differences. Many of the requirements for NC State engineering degrees parallel the requirements for UNC Asheville science majors, but vary when it comes to humanities and physical education standards. The universities also have different transfer credit policies.

# Plan of Study

## Joint NC State – UNC Asheville

### Bachelor of Science in Engineering Curriculum Mechatronics Concentration (JEM148)

Effective for those entering before August 2015

FALL SEMESTER

SPRING SEMESTER

#### Freshman Year

MATH 191	Calculus I	4#	MATH 192	Calculus II	4#
LANG 120	Fndns of Academic Writing	4\$	PHYS 221	Physics I	4#
CHEM 132	General Chemistry	3#	ECE 109	<i>Intro to Computer Systems</i> \$	3\$
CHEM 111	General Chemistry Lab	1#	EGM 180	<i>Intro to Mechatronics Lab</i>	2
E 101	<i>Intro to Engr &amp; Prob Solving</i>	1	HUM 124	The Ancient World	<u>4</u>
[DEPT] 178	LAC: First Year Colloq	<u>3<sup>a</sup></u>			17
		16			

#### Sophomore Year

MATH 291	Calculus III	4	ECE 211	Electric Circuits	4\$
PHYS 222	Physics II	4	ECE 212	<i>Fundamentals of Logic Design</i>	3\$
ECE 200	<i>Intro to Signals, Circ &amp; Systems</i>	4\$	ECE 220	<i>Analy Foundations of ECE</i>	3\$
ECE 209	<i>Computer System Programm'g</i>	3\$	MAE 208	<i>Engineering Dynamics</i>	3\$
MAE 206	<i>Engineering Statics</i>	<u>3\$</u>	ECON 102	Microeconomics	<u>3</u>
		18			16

#### Junior Year

ECE 301	Linear Systems	3	ECE 310	Design of Complex Digital Sys	3
MAE 301	<i>Engr Thermodynamics I</i>	3\$	MAE 314	<i>Solid Mechanics</i>	3\$
MAE 315	<i>Dynamics of Machines</i>	3	MAE 435	<i>Principles of Automatic Control</i>	3
MSE 201	<i>Struc &amp; Prop of Engr Matls</i>	3	HUM 214	Rise of European Civilization	<u>4</u>
EGM 360	<i>Adv Mechatronics Design Lab</i>	1			13
ARTS 310	Arts and Ideas	<u>3<sup>b</sup></u>			
		16			

#### Senior Year

EGM 484	Senior Design Mechatronic Engr I	3	ECE 455	Computer Control of Robots	3
MAE 310	<i>Heat Transfer Fundamentals</i>	3	EGM 485	<i>Senior Design Mechatronic Engr II</i>	1
HUM 324	The Modern World	4	MAE 316	<i>Strength of Mech Components</i>	3
	Approved Advised Elective	<u>3<sup>c</sup></u>	STAT 225	Intro to Calc-based Statistics	4
		13	LA 478	Liberal Studies Senior Colloq	<u>4<sup>d</sup></u>
					15

Credit Hours Required: 124

Italics indicates NCSU Engineering course.

<sup>a</sup> LAC 178 is not required for transfer students with 25 credits or more. For such students, Minimum Credit Hours Required is 121.

<sup>b</sup> Preferably any course which satisfies the ARTS requirement and is designated as DI, Diversity Intensive.

<sup>c</sup> MAE 308, Fluid Dynamics; ECE 456, Mechatronics or Advised Elective approved by Director.

<sup>d</sup> or HUM 414

Students must satisfy UNC Asheville foreign language proficiency requirement via testing or credit courses.

# Grade of C or better required.

\$ Grade of C- or better required.

5/28/14

# Plan of Study

## Joint NC State – UNC Asheville

### Bachelor of Science in Engineering Curriculum

#### Mechatronics Concentration (JEM158)

Effective for students entering August 1, 2015 and after

#### FALL SEMESTER

#### SPRING SEMESTER

#### Freshman Year

MATH 191	Calculus I	4#	MATH 192	Calculus II	4#
LANG 120	Academic Writing & Crit Inquiry	4^	PHYS 221	Physics I	4#
CHEM 132	General Chemistry	3#	ECE 109	<i>Intro to Computer Systems \$</i>	3^
CHEM 111	General Chemistry Lab	1#	JEM 180	<i>Intro to Mechatronics Lab</i>	2
E 101	<i>Intro to Engr &amp; Prob Solving</i>	1	HUM 124	The Ancient World	<u>4</u>
JEM 123	<i>Intro to CAD for Mec Engr</i>	1			17
[DEPT] 178	LAC: First Year Colloq	<u>3<sup>a</sup></u>			
		17			

#### Sophomore Year

MATH 291	Calculus III	4	ECE 211	Electric Circuits	4^
PHYS 222	Physics II	4	ECE 212	<i>Fundamentals of Logic Design</i>	3^
ECE 200	<i>Intro to Signals, Circ &amp; Systems</i>	4^	ECE 220	<i>Analy Foundations of ECE</i>	3^
ECE 209	<i>Computer System Programm'g</i>	3^	MAE 208	<i>Engineering Dynamics</i>	3^
MAE 206	<i>Engineering Statics</i>	<u>3^</u>	ECON 102	Prin of Microeconomics	<u>3</u>
		18			16

#### Junior Year

ECE 306	Embedded Systems	3	ECE 310	Design of Complex Digital Sys	3
JEM 360	<i>Adv Mechatronics Design Lab</i>	2	ECE 456	<i>Mechatronics</i>	3
MAE 201	<i>Engr Thermodynamics I</i>	3^	MAE 214	<i>Solid Mechanics</i>	3^
MAE 315	<i>Dynamics of Machines</i>	3	MAE 435	<i>Principles of Automatic Control</i>	3
ARTS 310	Arts and Ideas	<u>3<sup>b</sup></u>	HUM 214	Rise of European Civilization	<u>4</u>
		14			16

#### Senior Year

JEM 484	Senior Design Mechatronic Engr I	3	JEM 485	Senior Design Mechatronic Engr II	3
MAE 308	<i>Fluid Mechanics</i>	3	MAE 316	<i>Strength of Mech Components</i>	3
MAE 310	<i>Heat Transfer Fundamentals</i>	3	LA 478	Liberal Studies Senior Colloq	4 <sup>d</sup>
HUM 324	The Modern World	4	STAT 225	Intro to Calc-based Statistics	<u>4</u>
	<i>Approved Advised Elective</i>	<u>3<sup>c</sup></u>			14
		16			

Credit Hours Required: 128

*Italics* indicates NC State Engineering course. Engineering courses are offered in the semester as shown.

<sup>a</sup> LAC 178 is not required for transfer students with 25 credits or more; Minimum Credit Hours Required is 125.

<sup>b</sup> Preferably any course which satisfies the ARTS requirement and is designated as DI, Diversity Intensive.

<sup>c</sup> JEM 420, ECE 455, MSE 201 or *Advised Elective* approved by Director.

<sup>d</sup> or HUM 414(4).

Students must satisfy UNC Asheville foreign language proficiency requirement via testing or credit courses.

# Grade of C or better required.

^ Grade of C- or better required.

8/1/2017

## **Mechatronics Program Educational Objectives**

Within a few years of graduation, alumni of the Joint UNC Asheville - NC State BSE – Mechatronics Concentration degree will ....

Attain productive professional careers in mechatronics engineering or related fields.

Function in the workplace with appropriate professional and ethical responsibilities.

Make decisions with accountability for the social and environmental impact of their engineering practices.

Interact effectively with a diversity of individuals while viewing their own work in the broader context of our global society.

Attain technical excellence by engaging in life-long learning.

### **To our students:**

These Program Educational Objectives (PEOs) form the core of our self-assessment and continuous improvement activities as we strive to provide the best possible engineering education in the JEM degree. ABET, the accrediting body for engineering degrees in the United States, judges our program based on these PEOs and the student outcomes that result. Successful mastery of engineering knowledge, student feedback and entry of our graduates into the engineering workforce are key components in this assessment. Copies of your tests and projects will likely be reviewed by ABET Evaluators at some time in the future. Revised and Approved July 1, 2006

## **Senior Design Projects**

Senior Projects combine the design and fabrication process with fundamentals of mechanical engineering and electrical and computer engineering. Recent projects have included an autonomous 4-wheel drive 'Quad Rover', computer-controlled tracking solar energy systems, a mechatronic system that lifts and tilts a person in a wheelchair so s/he can receive medical attention without the risk of patient transfer, and a robotic fire-suppression vehicle. Designed and built from the ground up, these types of activities provide real-life, hands-on applications of an interdisciplinary engineering education that emphasizes teamwork skills. Mechatronics Engineering laboratory activities create a venue for a spectrum of design work. Line-following robots, fighting battle-bots, robots that self-navigate through uneven terrain and other automated systems are a few of the recent student projects. In the Mechatronics Program, there is hands-on design or lab activity in almost every semester.

## Internship Opportunities

Many students in the Mechatronics program have participated in internship employment at a number of local engineering companies including Meritor, Cane Creek Cycling, BorgWarner, and Eaton. These internships not only provide firsthand experience at the engineering practice, but in many instances have led to full-time jobs upon graduation. The UNC Asheville Career Center works closely with industry representatives to support listings of engineering jobs and internships and connect students to exciting work experiences.

## Employment and Professional Opportunities

Local, national, and international engineering companies such as Eaton, BorgWarner, and Cane Creek Cycling need students who have been a part of the unique and high-caliber engineering education that our Mechatronics program offers. Their strong support reflects the steady demand for our graduates. Approximately 90 percent of all the Mechatronics graduates are employed in challenging and exciting engineering positions in the Asheville area. Our program brings professional organizations such as the IEEE (Institute for Electrical and Electronic Engineers) to the university through active student branches, meetings, and other networking opportunities.

## Matriculation - How to Declare a Mechatronics Major

If you satisfy the requirements below, you are eligible to declare a major in Mechatronics, also known as matriculation. The process has two parts:

- 1) Approval by NC State College of Engineering, and
- 2) Major Declaration at UNC Asheville

The process begins with a matriculation application - see your engineering advisor. Upon approval at NC State, your UNC Asheville Major Declaration form will be submitted by your advisor.

### Matriculation Requirements for JEM:

1. Have completed the following courses with a grade of C or better:  
CHEM 132                      MATH 191                      PHYS 221  
CHEM 111                      MATH 192                      E 101

Have completed the following courses with a grade of C- or better:

JEM 180                      LANG 120

2. Have a Cumulative UNC Asheville GPA or 3.00 or better.
3. Have a Cumulative GPA of 2.500 or better in the last two math courses taken.  
(Note: if you have not achieved this GPA at the time you have completed MATH 291, then you may use ECE 220 as a math course to satisfy this requirement, or any other 300-level-or-above math course.)

## **UNC Asheville Policies on Transfer Credit which affect JEM Students**

Permission to take a course at another institution is required for any transfer credit to UNC Asheville.

No transfer credit is accepted in the last 30 credits of the degree (senior year).  
A grade of C or better must be earned for transfer.

No transfer credit from two-year colleges is allowed in the last 60 credits of the degree (junior and senior years). In other words, in junior year transfer credit is only accepted from four-year institutions.

## **Notes on the UNC Asheville Integrated Liberal Studies Requirements**

### **Intensives**

The Intensives requirements of UNC Asheville are typically satisfied with the following courses:

<u>Writing Intensive (1):</u>	JEM 485
<u>Information Literacy Intensive (1):</u>	JEM 484
<u>Quantitative Intensive (1):</u>	MATH 192
<u>Diversity Intensive (1):</u>	ARTS 310 (must be designated DI)

### **Foreign Language Proficiency**

JEM students must satisfy the Foreign Language requirements of UNC Asheville by demonstrating competency through the first year level or above. Possible avenues include:

UNC Asheville or college transferable credit for first year level foreign language

UNC Asheville or college transferable credit for language above the first year level

Placement test results which places the student above the first year level.

College credit for foreign language is not included in the JEM curriculum display because the requirement can be satisfied with proficiency.

## **Section 3 Two-plus-Two Engineering Transfer Program (2+2)**

The 2+2 Engineering Transfer Program allows students to complete the first two years of an engineering curriculum at UNC Asheville and finish their education in two more years at NC State in Raleigh. Students following certain 2+2 curricula must attend summer school at NC State between their sophomore and junior years in order to complete their degrees in four years.

Regardless of curriculum preference, all students in the 2+2 Engineering Transfer Program take the same courses during their freshman year, with the exception of one course. The sophomore year has some minor differences. Many of the requirements for NC State engineering parallel the requirements for UNC Asheville science majors but vary when it comes to humanities and physical education standards. The universities also have different transfer credit policies.

### **Degree Programs**

The Bachelor of Science in Engineering degree 2+2 transfer programs include the following:

- Environmental Engineering
- Civil Engineering
- Industrial Engineering
- Construction Engineering
- Mechanical Engineering
- Computer Engineering
- Electrical Engineering

These curricula are also supported, but must be completed on a 1+3:

- Aerospace Engineering
- Biological Engineering
- Biomedical Engineering
- Chemical Engineering
- Materials Engineering
- Paper Science & Engineering
- Nuclear Engineering
- Textile Engineering

### **Engineering Courses**

Nine required sophomore-level NC State engineering courses are offered at UNC Asheville. Some NC State course work is taught by NC State faculty residing on the UNC Asheville campus, while some is delivered to UNC Asheville via live distance education technology. All non-engineering coursework in both programs is taught by UNC Asheville faculty. In selecting their non-engineering coursework, 2+2 students follow the General Education Program (GEP) requirements of NC State.

## Transfer Policies

Ideally, students working toward an engineering degree should transfer when they have completed approximately the first half of the curriculum. Transfer admission standards vary with each degree program according to the space available and the number of applicants. Most require a minimum grade-point average of 3.0. Mechanical and Aerospace require 3.5; Biomedical requires 3.7. To transfer into an NC State engineering curriculum (the process of matriculation), students must have completed 30 credits or more including the following courses:

- Chemistry—1 semester (CHEM 132 + 111) (with a grade of C or better)
- Calculus—2 semesters (MATH 191 + 192) (with a grade of C or better)
- English Composition—1 semester (4 cr.) (LANG 120) (with a grade of C- or better)
- Calculus-based Physics—1 semester (PHYS 221) (with a grade of C or better)
- Humanities or Social Science—1 semester (with a grade of C- or better)

Students must have a Cumulative GPA of 2.500 or better in the last two math courses taken at the time of transfer. (Note: if the student has not achieved this GPA at the time MATH 291 is completed, then ECE 220, or any other 300-level-or-above math course, may be used to satisfy this requirement.)

If NC State courses have been taken, a cumulative GPA of 2.0 or better is required at NC State.

If you satisfy these requirements or have them in progress, you are eligible to apply for transfer to the NC State College of Engineering. Please discuss this with your engineering advisor before beginning the application process. Mid-year transfers are not allowed. The deadline to apply for Fall admission is February 15. Admission is HIGHLY competitive.

## Cooperative Education

NC State College of Engineering has an active Cooperative Education Program, enabling 2+2 students to alternate on-the-job experience with classroom learning and graduate with a co-op certificate after 12 months of work in a structured situation. Students can become eligible for the co-op program when they meet admission requirements for one of the NC State engineering degree programs.

## Scholarship Opportunities

A variety of scholarships are available to 2+2 students. Please visit our Web site at [www.unca.edu/engineering/](http://www.unca.edu/engineering/) for more details. Annual application deadline is April 15.

## Should a 2+2 student take the course *Dept 178*?

As a 2+2 student at UNC Asheville, you are not required to take *Dept 178* (for freshmen). However, the Liberal Arts Colloquium (LAC) course is an excellent introduction to the resources at UNC Asheville and skills necessary to succeed in college. In that many 2+2 students decide to remain at UNC Asheville and pursue the BSE-Mechatronics Concentration degree (JEM), it is recommended that you take an appropriate LAC course. LAC courses are topical in nature and many intriguing themes are offered each year. An LAC course is required for the JEM degree.

**UNCA Equivalent Courses**  
**Two-Plus-Two Engineering Program**  
**North Carolina State University College of Engineering**  
**GEP Requirements**  
**Humanities, Social Science, Visual & Performing Arts, and Interdisciplinary Perspectives**  
**04/18/17**

A total of seven courses (21 credit hours) are required.

Underline indicates no prerequisite required. Numbers in Parentheses indicate credit other than (3).

All courses must be completed with regular grading (not S/U or pass/fail).

REQUIREMENT	UNCA COURSES (3 cr. unless indicated (4)) which satisfy requirement	COURSE
<b>Humanities</b> Two courses from different disciplines <i>Special major requirements in ME, AE and MSE met by*</i>	LIT(all 4) 324, 357 HIST(all 4) 305, <u>315</u> , 348 HIST(all 4) 362, 364  PHIL(all 4) <u>100</u> , <u>200*</u> , <u>250</u>  HUM(4) <u>124</u> (GK)	      _____      _____
<b>Social Science</b> Introductory Economics	ECON <u>102</u> Microeconomics	_____
<b>Social Science</b> One course <i>Special major requirements in ENE</i>	POLS(all 4) <u>220</u> , 321, 359    POLS <u>281</u> (GK) PSYC <u>100</u> , 200 SOC(all 4) <u>100</u> , <u>200</u> SOC <u>210</u> , <u>221</u> (USD)  ANTH(4) <u>100</u> (GK)	      _____      _____
<b>Interdisciplinary Perspectives</b> Two courses <i>Special major requirements in BE, IE, IEF, AE, ME and MSE</i>		      _____      _____
<b>Additional Breadth</b> One course from either Humanities, Social Science or Visual & Performing Arts		_____
<b><i>The following requirements must also be satisfied:</i></b>		
<b>US Diversity (USD)</b> One course	SOC(all 4) <u>210</u> , <u>221</u> (USD)	_____
<b>Global Knowledge (GK)</b> One course	POLS(4) <u>281</u> (GK) ANTH(4) <u>100</u> (GK) HUM(4) <u>124</u> (GK)	   _____   _____
<b>Foreign Language</b> Competency at the NCSU 102 level is a graduation requirement.	Foreign Lang 110 + 120 or 130 or 200-level or above <b><i>Other ways to satisfy this:</i></b> Community College: Foreign Lang 111 + 112 High School: 2 years with a C(77) or better average	      _____      _____

## Physical Education Requirements for 2+2 Transfer Program Students

The NC State requirement for Physical Education is:

PE 10*	Wellness and Fitness Elective	1 cr.
PE ***	Physical Education (activity)	<u>1 cr.</u>
	TOTAL	2 cr.

Below are various ways to satisfy the requirement.....

COURSE	Credit	NC State Equivalent
<b><u>UNC Asheville Route</u></b>		
HWP 153 (3 cr.)	3 cr.	PE 10*
Any HW activity class	1 cr.	PE ***
<b><u>Community College Route</u></b>		
PED 110	2 cr.	PE 10*
Any PED activity class	1 cr.	PE ***

---

## When to Apply?

**Be sure to apply to NC State by the deadline of Feb. 15.**

**Please note:** A pending decision for some transfer applicants will require a final transcript by June 1 with grades for completed spring coursework. Those applicants should receive a decision by June 15.

---

## How to Apply?

Visit the websites below and follow instructions for online application.

Go to <https://www.ncsu.edu/admissions>, click on **Undergraduate Application**, then **Transfer Students tab Application Form** .... **fill out the Common Application, submit it, pay application fee.**

Be sure to use your SS# and to use the EXACT name you have on file at NC State already.

Be sure to check off Early Admission (NOT Regular Admission – decision in May)

Be sure to list NC State as a previous institution if you've taken any engineering at UNCA (E 101, etc.)

**PLEASE NOTE:** The following are NOT required: College Report; Letter of Recommendation.

A Secondary School Final Report is required only if an applicant is admitted.

The “mid-semester” grade report is actually a mid-year grade report with Fall semester grades.

*Enter your first choice major. If you are open to other options in the event you are denied admission, you should make your advisor aware of this so it can be communicated to NC State. Otherwise, you will not be considered for any other major within engineering. You may not change majors within your first year at NC State; you must follow the curriculum to which you are accepted.*

**Information on housing, parking, tours, visits .... and more** <http://www.ncsu.edu/admissions>

Also, visit the **NC State College of Engineering Transfer Admissions page:**

<http://www.engr.ncsu.edu/academics/undergrad/admission/transfer-admission>

---

**Transcripts?** .... (This differs from what the Admissions website says)

**UNCA** Have a post-fall-semester (“mid-semester”) and a final UNCA transcript sent to:

Cheryl Alderman

NC State Engineering Progs. at UNCA

UNC Asheville CPO# 2360

One Univ Hgts Asheville NC 28804

*Final transcript is required:*

*Give both forms to Cheryl NOW*

*Cheryl must annotate transcripts*

*& forward them to NC State*

**All Others:** Send to NC State Admissions as indicated

NC State Box 7103

Raleigh NC 27695-7103

*This includes:*

*High School, AP Scores*

*All Other Colleges Attended*

---

## Admission Decision?

You will hear directly from NC State Undergraduate Admissions on the decision in your case.

Be sure to promptly return the enrollment response card indicating your intent to enroll or not.

If you have problems or do not hear a decision by a stated deadline, contact [calderma@unca.edu](mailto:calderma@unca.edu)

---

## Transfer Scholarship?

A student with a strong GPA can apply for a transfer scholarship **once admitted** through the

**Pack ASSIST Portal**. Must be US citizens or have perm. US residency.

<https://studentservices.ncsu.edu/2017/01/packassist/>

Use April 30 as deadline.

---

**Check your AP Scores – if you received any scores of 3, NC State may not accept for credit.**

## Index

ABET	2	Graduation GPA, minimum	14
Academic Standing	14	Graduation Requirements	14
Academic Suspension	14		
Academic Warning	14	Homework Format	5, 6
		Humanities & Social Science, HumSS	27
Add/Drop	12		
Archived Lectures	4, 7		
Attendance	4, 5	Inclement Weather	7
		Institute of Elec & Electronics Engineers, IEEE	23
		Intensives, JEM	24
Calendar, academic	12	Interaction	5
		Internships, JEM	23
Computer Access	8	Introductory Colloquium	21, 22
Computer Labs, Engineering	17		
Contacts, Department	2	Joint Engineering degree, JEM	18
Co-op	26		
Corequisites	10	LAC DEPT 178 for 2+2	26
Course Websites	4	LAC DEPT 178 for JEM	21, 22
Cumulative GPA, Example	16	LA 478	21, 22
Curriculum, JEM	19, 20,21		
C-Wall	10, 11	Major	14
		Major GPA	14
Deadlines, Academic	4	Math	15
Directory, Department	2	Math GPA	15
Distance Education, DE	4, 5	Matriculation	23
		Mechatronics	18, 19
Email	4, 5, 8, 9	Mechatronics Curriculum	19-21,
Employment, JEM	23	Mechatronics PEOs	22
Engineering Programs, Transfer	25		
Engineering, What is	2	Office Hours	5
EngineeringOnline, EOL	4, 5	Overview	3
Enrollment Actions	4, 5		
		Passwords	8
Facilitator	5	PE Requirements for 2+2	28
Final Exams	12	Prefix, class	12
Foreign Language Proficiency, 2+2	27	Prerequisites	10
Foreign Language Proficiency, JEM	24	Professional Societies	23
		Program Educational Objectives, JEM	22
GEP, 2+2	27	Progress Toward Degree	13
GPA	11, 14, 15, 16		
GPA, Checking Your Own	15		

GPA, Registration Requirements	11	Registration	4, 5, 11
Grading, Grade Replacement	13	Resources, Academic	17

## Index continued

Scholarships	17, 26
Senior Colloquium, LA 478	21-22
Senior Design Projects, JEM	22
Society of Automotive Engineers, SAE	17
Student IDs	8
Studios	4
Success	4, 5
Suspension, Academic	14
Technical Problems	5
Transfer Policies of UNCA, JEM	24
Transfer to NC State, 2+2	25-29
Two Strikes Rule	14
Two-plus-Two, 2+2	25
Unity ID	8
Warning, Academic	14
Welcome	2
Withdrawal	12, 13