

**AGREEMENT OF INTERUNIVERSITY COOPERATION
FOR THE GRANTING OF A DOUBLE SECOND CYCLE DEGREE**

Between

Alma Mater Studiorum – Università di Bologna (hereafter referred to as “University of Bologna” or “Unibo”), represented by its Rector Prof. Giovanni Molari, Via Zamboni 33 – 40126 Bologna, Italy

Rep. 1346
Proc. 322

and

North Carolina State University (hereafter referred to as “NCSU”), represented by its Executive Vice Chancellor and Provost Warwick Arden, Raleigh, NC 27695, United States of America

Together named “the Parties”

Provided that

- both Universities are interested in establishing a long-term collaboration and a cultural exchange partnership;
- the Italian Ministerial Decree “DM 270/04” allows Italian universities to jointly grant degrees (2nd cycle) with other foreign universities;
- NCSU has the authority to establish dual (double) degree programs at the undergraduate and graduate levels in partnership with domestic and/or overseas universities in accordance with the rules governing academic program development, which in the case of dual (double) degrees requires notification provided to the Southern Association of Colleges and Schools Commission on Colleges (SACSCOC) as the national body for the accreditation of degree-granting higher education institutions in the Southern states;
- the Department of Ingegneria civile, chimica, ambientale e dei materiali – DICAM of the University of Bologna and the Department of Chemical and Biomolecular Engineering of the North Carolina State University have a common interest in creating an integrated study programme in the field of Chemical Engineering, by which enrolled students of both Universities will be able to get a double degree qualification;
- both Universities, with their resources and funds and in accordance with the law and regulations of their respective country, shall collaborate and host all students, faculty members and administrative staff who participate in the mobility programme as described in this Agreement.

It is agreed and stipulated as follows:

Art. 1 - Preamble

Preamble and Annexes are an integral part of this Agreement.

Art. 2 – Objective of the Agreement

The Parties agree to establish an integrated nominally 2 year study programme which provides for the exchange of applicant students for a period of two semesters, at the end of which, both Universities will grant a second cycle (Master’s level) degree: Laurea Magistrale in Ingegneria Chimica e di Processo, of University of Bologna (two years, 120 ECTS) and Master of Science in Chemical Engineering of North Carolina State University (two years, 40 U.S. credit hour).

Art. 3 - Students

3.1 Students Exchange

The exchange should be balanced and involve an equivalent number of students from both Universities, where possible.

Both Universities agree that the number of participating students will not be more than 5 (five) units from each university per academic year. Parties shall be able to jointly agree on a higher number of participants upon a notice exchange between the Parties.

All exams and courses successfully passed at the Host University by student shall be automatically recognized by the Home University.

Students involved in the mobility programme shall also enjoy the benefits and shall be likewise subject to the regulations and norms which are in force in the Universities concerned by the programme.

3.2 Selection of students

Students admitted to the double degree programme will be selected by each University according to its own criteria and modalities, which will be agreed by the relevant degree programmes activated at both partner Universities.

For Unibo students, a call for application will be published in January for students of the first year with deadline at the end of the exam session (around the 20th of February) as to inform the students and the partner university by mid-March in time for VISA applications.

NCSU students will be nominated by the CBE faculty and will meet the admission requirements of Unibo's two-year master's program, published at

<https://corsi.unibo.it/2cycle/ChemicalProcessEngineering-STEM/how-to-enrol>

3.3 Enrolment and Mobility

Students from the University of Bologna who want to attend the integrated study programme have to be regularly enrolled at the degree programme Laurea Magistrale in Ingegneria Chimica e di Processo, international curriculum "Sustainable Chemical and Biochemical Technology for Environment and Materials – STEM". They must have an adequate knowledge of the English language certified by TOEFL (minimum score 80) or IELTS (minimum 6.5 overall) and they must be entitled of a valid visa or residence permit.

After having achieved 60 ECTS during their first year of study, students in their second year of study shall be transferred to NCSU in order to attend the teaching activities offered within the second year of the Master of Science in Chemical Engineering in accordance with the correspondence table annexed to the present agreement (Annex 1). Students must obtain a minimum of 20 U.S. credits (equivalent to 60 ECTS) provided by the study programme at the partner University. In particular, they obtain 6 U.S. credits for the Master's Thesis Research and the award of the degree of NCSU. The 6 U.S. credit above-mentioned will be recognised by Unibo as the preparation for the final examination for 12 ECTS. University of Bologna students finally come back to Bologna in order to discuss their final thesis obtaining 6 ECTS and the awarding of the degree of the University of Bologna.

Students from NCSU, who want to attend the integrated study programme, have to be regularly enrolled at the degree programme of Master of Science in Chemical Engineering, they must have an adequate knowledge of the English language and must have or be entitled to obtain a valid visa or residence permit.

In their second year of study, students, after having achieved 20 U.S. credits, shall be transferred to the University of Bologna in order to attend the teaching activities provided by the second year of the Laurea Magistrale in Ingegneria Chimica e di Processo, international curriculum "Sustainable Chemical and Biochemical Technology for Environment and Materials – STEM" in accordance with the correspondence table annexed to the present agreement (Annex 1).

Students must obtain 60 ECTS (equivalent to 20 U.S. credits) provided by the study programme at the University of Bologna and they must discuss their final thesis in Bologna obtaining the degree Laurea Magistrale in Ingegneria Chimica e di Processo.

All students participating in the programme will defend the master thesis at the University of Bologna. NCSU student will receive the NCSU degree by fulfilling all the course-based curricular requirements for the degree; no thesis is required by NCSU.

3.4 Exemption from university admission fees

During the mobility period, students will remain enrolled in their Home University and they will be registered at the Host University as dual-degree students in order to have their data entered in the University system and to have a “student ID” which allow them to get access to University services. During the period that they are registered students at the Host Institution, tuition and fees will be paid by students to their Home Institution. All other charges, including health insurance, shall be borne by the students themselves.

3.5 Certifications

Host Universities shall release and grant each mobility programme student a Transcript of Records indicating his/her attended teaching activities and his/her academic performances and number of credits obtained at the partner University.

3.6 Insurance obligations

All students will be required to demonstrate proof of health and accident insurance coverage that meets the standards of both the Home and Host Universities in accordance with their normal requirements for full-time students. Each University will inform the incoming students of these requirements, which must be met during the period of mobility at the Host Institution, as well as during travel. Proof of insurance shall be provided to the Host University ahead of arrival.

The University of Bologna confirms that its regularly enrolled students are insured against any incident that they may suffer during their period of stay abroad for the activities concerned by this Agreement and that they are insured for legal liability against damage which they may involuntarily cause to third party (people and their properties). Health insurance is not provided by the University of Bologna which will inform students that they have to personally provide their health insurance during the whole period of their VISA as required by USA Federal regulations.

All NCSU students participating in study abroad programs or other university-affiliated international travel are required to be enrolled in the **GeoBlue international health insurance policy** for the duration of their abroad program. While at their home institution, NCSU students will have insurance either through the GSSP if supported on an RA or TA, or through the UNC System Health Insurance Plan.

3.7 Services offered

Students participating into the mobility programme shall benefit from all services offered by the Host University to its regular enrolled students.

3.8 Fellowship

Each University may grant the available fellowships to its students who intend to participate into the study programme, on the basis of a proper selection procedure. While there is no obligation for the Host University to provide financial assistance to mobility students, if the Host University wishes to provide financial assistance (for example a grant, stipend or scholarship) to the mobility student, the Host University must notify the Home University in writing of the source and amount of such funding.

Art. 4 – Didactics

4.1 Study programme

The common integrated study programme is attached to this Agreement (correspondence table – Annex 1).

Language of instruction within the programmes will be English.

Study programme covers all the period from the beginnings of study to the last exams, to include the degree.

Exams and study period duration shall be organized in a balanced form and shall find justification and validation in both partner Universities, according to the provisions of articles 2 and 3 and to bonds included in the attached study programme.

It can be modified by mutual consent between the Parties, to no detriment of students already enrolled.

4.2 Equivalence of credits and grading tables

University of Bologna and NCSU adopt different criteria for the measurement of credits. Considering the classroom and/or direct faculty instruction time and student work outside of the classroom the correspondence between the teaching activities offered by the Parties is 1 (one) NC State credit hour is equivalent to 3 (three) ECTS. The Parties also establish to use the conversion table of grades attached to this Agreement (Annex 2).

4.3 Course review

Faculty teams from NCSU and UniBo worked jointly under the guidance of experts in the academic and research areas at both institutions, including the Director of Graduate Programs and the Department Head in Chemical and Biomolecular Engineering to articulate and understand the curricular and research requirements for the respective degrees, which involved a course review and course equivalency assessment that will continue on a regular basis for the duration of the double degree.

4.4 Student learning outcomes

As outlined below, will be assessed by the Institutions in accordance with their respective assessment policies, procedures and timelines.

Dual degree programme learning outcomes:

4.4.1. Ability to apply concepts of mathematics and science to engineering;

4.4.2. Ability to design and model systems, components, and processes of chemical engineering

4.4.3. Ability to work in multi-disciplinary environment;

4.4.4. Ability to identify new problems in chemical engineering and solve them by applying the concepts learned in the classroom, creativity, and analytical thinking;

4.4.5. Ability to communicate the design and the results of chemical engineering experiments and processes in a quantitative and effective manner;

4.4.6. Ability to apply technical solutions in chemical engineering to contemporary issues in an ethical way;

4.4.7. Ability to identify next-generation problems that can be solved by chemical engineers.

Outcome assessment at NCSU:

4.4.8. Direct assessment by the faculty: homework assignments, written tests taken in class, and final projects/term paper;

4.4.9. Indirect assessment by peer students: oral presentations in group meetings;

4.4.10. Production of manuscripts summarizing the results of the research exchange to be submitted to peer-reviewed journals or to national and international meetings in the field of chemical engineering (AIChE and ACS);

4.4.11. Filing of joint intellectual property resulting from research conducted at the home/host institution.

Outcome assessment at UNIBO:

4.4.12. Direct assessment by the professors in charge of teaching activities; final projects/term paper, midterm and/or final exams

4.4.13. Final dissertation (written paper and oral presentation in front of a jury).

4.5 Award of the degree qualifications

Students participating in the integrated study programme and completing the study programme as described in article 3.3 on the basis of the correspondence table annexed to this agreement will obtain the awarding of the degree qualifications as follows:

4.5.1 NCSU students participating in the integrated study programme obtain the degree qualification Laurea Magistrale in Ingegneria Chimica e di Processo at the University of Bologna where they defend the final dissertation and they will also be awarded the Master of Science in Chemical Engineering degree at NCSU.

4.5.2 Unibo students participating in the integrated study programme obtain the degree qualification Master of Science in Chemical Engineering at NCSU once they have completed their Master's Thesis Research and they will obtain the degree awarded by Unibo after having defended their final dissertation at Unibo.

Reference offices for students participating in the double degree programme are listed in the Annex 3 to this Agreement.

Art. 5 – Exchange of faculty members and administrative staff

5.1 Exchange modalities

Each University is responsible for any employment and travel expectations for their respective faculty and administrative staff participating in the mobility programme under this Agreement, in conformity with the law and juridical rules in force in the country concerned under the exchange.

Personnel participating under this Agreement will continue to comply with the contractual obligations of their Home University and will continue to receive the due remuneration and to benefit from the rights they are entitled of for their juridical position, according to the legislative norms existing in the home country. The Home University shall consider the duration of the stay.

Unibo shall consider the duration of the stay for their faculty as ordinary service for all purposes.

5.2 Activities for teachers and administrative personnel

Faculty members and researchers can hold courses and lectures, carry out tutorship activities, participate in seminars, be part of exam, final thesis and doctorate commissions at the partner University, and take part into research activities and meetings for student exchange programme planning, evaluation and development, held at the partner University. For the expenses concerning the mobility of teaching staff members and research fellows, each University will cover all the costs for their own professors and research fellows according to the availability of Erasmus Plus Programme funds or other funds for research.

The administrative staff will have the possibility of participating in meetings for student exchange programme planning, evaluation and development and will be able to carry out special visits in order to analyse the management systems operating at the partner University, according to the availability of funds.

The Parties agree that all the financial agreements will have to be negotiated and will depend on the availability of funds.

During their period at the Host University, the faculty members and the researchers participating in said exchange, to carry out the above-mentioned activities, shall be considered as staff “on a mission” abroad.

5.3 Faculty credentialing

All faculty directly involved in teaching courses and supervising students pertaining to this program have the requisite qualifications as determined by their University and accreditation bodies. For accreditation purposes each institution will share participating faculty CVs.

5.4 Insurance obligation

NCSU confirms that its employees and staff (teachers and administrative personnel) has to personally provide to her/his health insurance during the whole period of the VISA as required by USA Federal regulations.

The University of Bologna confirms that its teaching and administrative staff are insured against any incident that they may suffer during their period of stay abroad for the activities concerned by this Agreement and that they are insured for legal liability against damage which they may involuntarily cause to third party (people and their properties). Employees and staff of the University of Bologna has to personally provide to her/his health insurance during the whole period of VISA as required by USA Federal regulations.

NCSU staff/employees can also obtain business and international travel insurance through the Office of Insurance & Risk Management. Otherwise, NCSU staff/employees are covered under NCSU's self-insurance program and the North Carolina Defense of State Employees Act. Coverage for medical care and evacuation for medical/political/natural disasters is available through GeoBlue for faculty/staff business travelers and in-bound international students.

Art. 6 – Prevention and security

Both Parties shall supply each mobility programme participant with detailed information about the specific risks existing in the work environment in which they will operate and carry out their function and with necessary documentation about the prevention and emergency security measures and provisions in force in relation to their activity and about the persons in charge of this, in conformity with the legislative norms and regulations in force in the country of the Host University.

Art. 7 – Use of name / Logo

Each party may use the logos, names and other marks of the other Parties only in connection with the programme. Each party anticipates the other Party's participation in press announcements, marketing and other reasonable promotional activities involving the double-degree programme through the appropriate use of the logos, names and marks of the Parties.

Art. 8 - Intellectual Property

Each of the Parties acknowledges and agrees that any and all of the Intellectual Property Rights, or other proprietary rights, in respect of any literature, materials, research or teaching methods, procedures, processes and/or the learning experience in relation to or in connection with the Programme and any parts thereof, are and shall remain the sole property of its owner and, save as expressly set out herein, nothing in this Agreement is intended to transfer ownership or create any licensed rights under any such Intellectual Property Rights or other proprietary rights.

The learning materials and any other literature, materials, research methods, procedures, processes or programmes in which a party has Intellectual Property Rights relating to or in connection with the Programme and which are disclosed to the other party pursuant to this Agreement may be used by the other party solely for the purposes of performing its obligations under, and during the period of, this Agreement and for no other purpose.

Art. 9 – Other activities

The Parties can enter into other agreements for other purposes beyond the mobility and activities for this double degree agreement. Further cooperation projects, including intensive courses, distance teachings, joint research, organization of seminars, symposia, and interviews on common interest topics and all other activities consolidating the cooperation, will be encouraged by both Parties. These

new activities will be subject to an additional Agreement document, which will be stipulated by both Parties.

Both Parties agree to promote this programme in their catalogues and websites. All costs will be maintained by the individual institutions, unless otherwise specified in writing and agreed upon by both Parties.

Art. 10 – Data Protection

Regarding personal data transmission Unibo shall meet the requirements of the EU General Data Protection Regulation and act upon accordingly. NCSU will comply with all applicable state and federal laws related to student privacy and education records, including but not limited to the Family Educational Rights and Privacy Act (“FERPA”), and comply with the EU General Data Protection Regulation, to the extent that it applies to NCSU.

Art. 11 – Responsible for the Agreement

Each University shall appoint a coordinator for the Cooperation Agreement.

Art. 12 – Evaluation of the programme

The Parties will consult each other when appropriate, but at least once a year, in order to evaluate the programme development, to draw up a report about the ongoing initiatives and to elaborate other cooperation programmes.

Art. 13 – Controversies

In the event of any controversy arising from this agreement the Parties will endeavor to resolve the matter amicably and in good faith.

Art. 14 – Duration of the Agreement

This Agreement will operate from the last date of signing and will be effective for a period of five years from academic year 2022/2023: in particular the first cohort of students will enroll in academic year 2022/2023 and the last cohort of students will enroll in academic year 2025/2026. This Agreement may be extended in writing between the Parties and for an equal period following the prior revision of the performance of the programme.

The Agreement may be amended in writing with the mutual consent of the Parties in compliance with reference to rules and regulations and guidelines of Governing Bodies where applicable.

This Agreement may be terminated at the request of either party provided that a minimum of six (6) months' prior written notice is given to the other party to enable satisfactory arrangements to be put in place for students already participating in the program and those to whom an offer of a place on the Programme has been formally made. Both Parties shall be equally responsible for such arrangements. Any modification or termination of the Agreement shall be carried out in such a way as to ensure no damage for the participants in the programme already underway.

If any of the partner University wishes to withdraw, it must be guaranteed that all the students admitted to the withdrawing University will be able to regularly complete their studies.

Annexes can be individually modified by mutual consent between the Parties by means of an exchange of notes between the partner Universities, to no detriment to the students already enrolled.

Art. 15 – Southern Association of Colleges and Schools Commission on Colleges Disclaimer

North Carolina State University is accredited by the Southern Association of Colleges and Schools Commission on Colleges (SACSCOC) to award bachelor, master and PhD degrees. The University of Bologna is not accredited by the Commission on Colleges and the accreditation of North Carolina State University does not extend to or include the University of Bologna or its students. Further, although North Carolina State University agrees to accept certain course-work from the University

of Bologna to be applied toward an award from North Carolina State University, that course-work may not be accepted by other colleges or universities in transfer, even if it appears on a transcript from North Carolina State University. The decision to accept course-work in transfer from any institution is made by the institution considering the acceptance of credits and course-work.

Art. 16 – Copies and language


This Agreement is subscribed in two originals in English.

This Agreement may be executed in one or more counterparts, each of which will constitute an original, but all of which together will constitute one instrument.

IN WITNESS WHEREOF, the authorized representatives of the Institutions have executed this Agreement on the date(s) indicated below:

Bologna, date DIC 23, 2021

ALMA MATER STUDIORUM – UNIVERSITÀ DI BOLOGNA
The Rector, Prof. Giovanni Molari



Raleigh, date Nov 10, 2021

NORTH CAROLINA STATE UNIVERSITY
Executive Vice Chancellor and Provost, Warwick Arden



ANNEX 1 – CORRESPONDENCE TABLES

Unibo Students:

Year 1 at Unibo

Fall	Class			ECTS		Class code
	Numerical methods			6		
	Thermodynamics of Energy and Material			6		
	Fluid Mechanics and Transport Phenomena			9		
	Option Materials	ECTS	Class Code	Option Bio/pharma	ECTS	Class code
	Materials Chemistry	9		Chemical Reactors design and Materials	6	
			Industrial and Environmental Biotechnology (Module 2)	6		
Spring	Class			ECTS		Class code
	Sustainable Design of Chemical Processes			6		
	Chemical Engineering Equipment Design			9		
	Process Safety Engineering			6		
	Option Materials	ECTS	Class Code	Option Bio/pharma	ECTS	Class code
	Ceramics Technology and materials characterization	9		Industrial Ecology	6	
TOTAL CREDITS (ECTS)				60		

Year 2 at NC State

Fall	Option Materials	US CTS	Class Code	Option Bio/pharma	US CTS	Class code
	Polymer Science and Technology	3	CHE 543	Separation Processes For Biological Materials	3	CHE 752
	Conventional and Emerging Nanomanufacturing Techniques and Their Applications in Nanosystems	3	CHE 568	Fundamentals of Bio-Nanotechnology	3	CHE 562
	Polymer Blends and Alloys	3	CHE 761	ChE elective	3	
	Research credits (thesis)	2		Research credits (thesis)	2	
Spring	Class TBD	3		Advanced Biomanufacturing and Biocatalysis	3	CHE 577
	Research credits (thesis)	6		Research credits (thesis)	6	
TOTAL CREDITS (US CTS)				20		

NCSU Students
Year 1 at NCSU

	Class		US CTS		Class code	
	Fall	Chemical Engineering Process Modeling		3		CHE 711
Chemical Reaction Engineering		3		CHE 717		
Thermodynamics I		3		CHE 713		
Introduction to Chemical Engineering Research		2		CHE 701		
Spring	Chemical Engineering Projects		3		CHE 597	
	Transport Phenomena		3		CHE 715	
	Option Materials	US CTS	Class Code	Option Bio/pharma	US CTS	Class code
	ChE elective (e.g., Polymer Rheology)	3	CHE 596	Advanced Biomanufacturing and Biocatalysis	3	CHE 577
TOTAL CREDITS (US CTS)			20			

Year 2 at Unibo

	Option Materials	ECTS	Class Code	Option Bio/pharma	ECTS	Class code
Fall	Composite materials and Technology	6		Bioreactors and downstream processes	9	
	Materials Chemistry	9		Industrial and Environmental Biotechnology	9	
	Elective	3		Elective	3	
	Research credits (thesis)	12		Research credits (thesis)	9	
Spring	Ceramics Technology and materials characterization	9		Pharmaceutical Technologies	6	
	Chemical lab	3		Chemical lab	3	
	Research credits (thesis)	18		Research credits (thesis)	21	
TOTAL CREDITS (ECTS)				60		

STEM OPZIONE MATERIALS				Students enrolled at UNIBO first year UNIBO				Students enrolled at NCSU first year NCSU			
1st YEAR				Tipo	US corr	ECTS	ECTS corr US credits				
MAT/08	Numerical methods	C	2	6	9	3	CHE 711	Chemical Engineering Process Modeling 3.			
ING-IND/24	Thermodynamics of energy and materials	B	2	6	9	3	CHE 713	Thermodynamics I 3.			
ING-IND/27	SUSTAINABLE DESIGN OF CHEMICAL PROCESSI	B	2	6							
ING-IND/24	Fluid Mechanics and Transport Phenomena	B	3	9	9	3	CHE 715	Transport Phenomena			
ING-IND/25	Chemical Engineering Equipment Design	B	3	9	9	3	CHE 717	Chemical Reaction Engineering			
ING-IND/25	Process Safety Engineering	B	2	6	9	3	CHE 697	Advanced Chemical Engineering Projects			
	Elective Lab	F	1	3	3	1	CHE 693	Master's Supervised Research			
	Elective Lab	F	1	3	3	1	CHE 696	Summer Thesis Research			
	Elective Lab	F	1	3	3	1	CHE 601	Seminar 1.			
	Elective Course/soft skills	D	2	6	6	2	CHE 701	Introduction to Chemical Engineering Research			
			20	60	60	20					
2nd YEAR Second year at NCSU				US credits	ECTS corr	Second year at UNIBO				Tipo	
CHE 543	Polymer Science and Technology		3	9	6	2	ING-IND/22	Composite materials and Technology		B	
CHE 560	Chemical Processing of Electronic Materials		3	9	6	2	ING-IND/24	Advanced Transport Phenomena in Polymers and		B	
CHE 761	Polymer Blends and Alloys		3	9	9	3	CHIM/07	Materials Chemistry		C	
Elective, e.g. CHE 596	Polymer Rheology		3	9	9	3	ING-IND/22	Ceramics Technology and Materials Characterization M		B	
CHE 568	Nanomanufacturing Techniques and Their Applications in Nanosystems		2	6	6	2	ING-IND/22	Polymer Science and Technology or ACKNOWLEDGEMENT of BS course CHE461 Polymer Science and Technology		B	
					6	2		Elective or Internship		D	
CHE 695	Master's Thesis Research		6	18	18	6		Preparation for the final examination Abroad 12 ECTS		E	
								Final Examination (to be held in Bologna - 6 ECTS)			
			20	60	60	20					

STEM OPZIONE BIO				Students enrolled at UNIBO first year UNIBO				Students enrolled at NCSU first year NCSU			
1st YEAR				Tipo	US corr	ECTS	ECTS corr US credits				
MAT/08	Numerical methods	C	2	6	9	3	CHE 711	Chemical Engineering Process Modeling 3.			
ING-IND/24	Thermodynamics of energy and materials	B	2	6	9	3	CHE 713	Thermodynamics I 3.			
ING-IND/27	SUSTAINABLE DESIGN OF CHEMICAL PROCESSI	B	2	6							
ING-IND/24	Fluid Mechanics and Transport Phenomena	B	3	9	9	3	CHE 715	Transport Phenomena			
ING-IND/25	Chemical Engineering Equipment Design	B	3	9	9	3	CHE 717	Chemical Reaction Engineering			
ING-IND/25	Process Safety Engineering	B	2	6	9	3	CHE 697	Advanced Chemical Engineering Projects			
	Elective Lab	F	1	3	3	1	CHE 693	Master's Supervised Research			
	Elective Lab	F	1	3	3	1	CHE 696	Summer Thesis Research			
	Elective Lab	F	1	3	3	1	CHE 601	Seminar 1.			
	Elective Course/soft skills	D	2	6	6	2	CHE 701	Introduction to Chemical Engineering Research			
			20	60	60	20					
2nd YEAR Second year at NCSU				US credits	ECTS corr	Second year at UNIBO				Tipo	
CHE 797	Advanced Chemical Engineering Projects		3	9	9	3	CHIM/11	Industrial and Environmental Biotechnology M		C	
CHE 752	Separation Processes For Biological Materials 3		3	9	9	3	ING-IND/24	Bioreactors and Downstream Processes M		B	
CHE 546	Design and Analysis of Chemical Reactors		3	9	6	2	ING-IND/25	Chemical reactors Design and Biomedical Materials or acknowledgment of BS course CHE 446 Design and Analysis of Chemical Reactors		B	
CHE 551	Biochemical Engineering		3	9	6	2	ING-IND/25	Industrial Ecology or acknowledgement BS course CHE 463 Fermentation of Recombinant Microorganisms		B	
CHE 575	Advances in pollution prevention: Environmental management for the future		2	6	6	2	ING-IND/27	Pharmaceutical Technologies		B	
					6	2		Elective or Internship		D	
CHE 695	Master's Thesis Research		6	18	18	6		Preparation for the final examination Abroad 12 ECTS		E	
								Final Examination (to be held in Bologna - 6 ECTS)			
			20	60	60	20					

ANNEX 2 - CONVERSION TABLE OF GRADES

The following table for converting grades will be applied:

Grades @ NCSU	Grades @ UNIBO
A+	30L
A	30
A-	28
B+	26
B	25
B-	24
C+	23
C	22
C-	21
D+	20
D	19
D-	18
F	Not passed / respinto

ANNEX 3 – REFERENCE OFFICES

Alma Mater Studiorum – Università di Bologna

Office: Settore Servizi Didattici "Ingegneria-Architettura"- Ufficio Supporto alla didattica e ai corsi di studio – DICAM Area Formazione e Dottorato – AFORM

Dott.sse Alessia Di Cintio, Serena Trapani

Address: Viale del Risorgimento 2 – 40136 Bologna

Ph.: +39 051 20 93956

E-mail: dicam.didattica@unibo.it

Office: Area Formazione e Dottorato – AFORM- Alma Mater Studiorum - Università di Bologna

Dott.ssa Lara Sorrentino, Coordinatrice Generale Settore Servizi Didattici "Ingegneria-Architettura"

General Coordinator Engineering and Architecture Education Services

Address: Viale del Risorgimento 2 – 40136 Bologna

Ph: +39 051-2093758; +39 3397344600

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North Carolina State University

Chemical and Biomolecular Engineering Department:

Dr. Sindee Simon, Professor and Head, Department of Chemical and Biomolecular Engineering, Engineering Building I, slsimon@ncsu.edu, (919) 515 7455

Dr. Saad Khan, INVISTA Professor, Dept. of Chemical and Biomolecular Engineering, khan@ncsu.edu, Engineering Building 1, room 2034, (919) 515 4519

Dr. Stefano Menegatti, Assistant Professor, Dept. of Chemical and Biomolecular Engineering, smenega@ncsu.edu , Engineering Building 1, room 1054, (919) 515 6398

College of Engineering:

Dr. Richard Gould, Interim Associate Dean for Graduate Programs, gould@ncsu.edu, Engineering Building 3, (919)-515-5236

Dr. Louis A. Martin-Vega, PhD, Dean - College of Engineering, lmartinv@ncsu.edu, Fitts-Woolard Hall, (919)-515-2311