NORTH CAROLINA SCHOOL OF SCIENCE AND MATHEMATICS

Distance Education and Extended Programs

February 6, 2009

Dear <Principal name>:

This is a follow-up letter to the one we sent you in November. We hope that you put the **NCSSM Interactive Videoconference (IVC)** courses in your school's 2009-2010 course catalog and have had students register. If you did not, we still look forward to the opportunity to partner with your school for Interactive Videoconference (IVC) distance learning for the 2009-2010 school year.

The enclosed course catalog can also be found on our website: www.dlt.ncssm.edu/distance_learning

It is now time for your school to sign up for courses for 2009-2010. Enclosed you will find the **NCSSM Distance Education 2009-2010 Course Request Forms**. To complete the forms, fill in the names of the courses requested for ***fall*** and ***spring***, the preferred time, and the number of students who have registered or who you expect to register to take the class. The completed **Course Request Form**, your **2009-2010 school bell schedule** (as you know it to be now) and **calendar** should be faxed to us by **March 2, 2009**.

The NCSSM Distance Education calendar is also included. Please make sure that you look over the calendar carefully and make your school personnel and students aware of the dates that we will be broadcasting.

These materials are being mailed to your Head Counselor and Distance Education facilitator. Please ensure that one person is designated as the Contact Person for your school and will complete the registration process.

We anticipate that by **March 23, 2009** we will contact your designated Contact Person to confirm the courses and times we are able to offer your school.

These courses are being offered to all high schools who receive video network service from NC ITS.
Please consider in your distance learning curriculum planning that:

- *Videoconferencing provides an environment most similar to the traditional classroom*
- *Class sessions are all recorded enabling student access if they miss class or need to review content*
- *NCSSM videoconferencing courses are offered with no tuition costs*
- *NCSSM videoconferencing courses are taught by instructors who have at minimum a masters degree in their subject area and who are accustomed to teaching high school students*

NCSSM Distance Education is enthusiastically committed to fulfill its mandated outreach mission to the State. Please do not hesitate to contact me or my staff for additional information.

Sincerely,

Anna DeConti, Dean
Distance Education and Extended Programs

CC: Head of Counseling and Distance Education facilitator
Enclosures: (2) Course Request Forms, Fall & Spring; 2009-2010 Course Descriptions; 2009-2010 NCSSM Distance Education Calendar

2009-2010
North Carolina School of Science and Mathematics
Distance Education Course Descriptions

SCIENCE

Honors Forensic Science (Fall & Spring semesters)
Time: First Block in the Fall, First and Third Block in the Spring
This course focuses on crime scene investigation, including evidence collection, processing a scene, and lab techniques used to decipher and incriminate the wrongdoer. Through lab work, field trips, demonstrations by experts, and guest speakers, students explore major areas of forensic science: fingerprinting, shoe and tire impressions, identification of hair, fibers and glass fragments, DNA; application of force and motion from blood splatters and tire skids; and forensic anthropology (the study of bone structures and features).

Prerequisite: Completion of Biology I and completion of Algebra II
Materials requirements: *A $20 per student consumable materials fee will be invoiced at the start of the semester.* Each student must have a graphing calculator (TI-83, TI-84 or TI-89) that they may take home. Books and some equipment on loan from NCSSM; schools are responsible for materials. A list of additional needed materials will be provided.
Site requirements: Students must have computer access to Internet in DL classroom and Facilitator assistance to set up labs.
Recommended weight: Honors

Honors Genetics and Biotechnology (Fall & Spring semesters)
Time: First and Third Block in the Fall, First and Fourth Block in the Spring
What do crime scene investigations, agriculture, medicine, conservation biology and manufacturing have in common? They have all been revolutionized by biotechnology! Almost every day we read about new developments in the rapidly changing fields of genetics and DNA-based biotechnology. In this course, students will first explore classical genetics and then move onto examining the structure and function of DNA and proteins. With state-of-the-art laboratory experiments, students will analyze DNA fingerprints from a crime scene, genetically transform bacteria and investigate their own DNA! Finally, they will survey the applications of biotechnology in many diverse fields and discuss in depth how biotechnology is changing our daily lives and our future. With the decline of traditional manufacturing in North Carolina, biotechnology is positioned to become a vital part of North Carolina's 21st century economy.

Prerequisite: Completion of Biology I with a B or higher and completion of Algebra II.
Materials requirements: *A $20 per student consumable materials fee will be invoiced at the start of the semester.* Books and curricular materials on loan from NCSSM
Site requirements: Students must have computer access to Internet in DL classroom and Facilitator assistance to set up labs.
Recommended weight: Honors

Honors Physics (Fall semester only)
Time: Fourth Block
This course is a hands-on, inquiry based introductory course which combines both "conceptual" and "mathematical" approaches to learning physics. The course covers the laws of mechanics and their applications. Students will learn to solve real problems by investigating real systems. Investigations will cover physics topics that are fun and engaging for the students. Students will design experiments, use accurate measuring equipment and construct and test conclusions based on accurate data.

Prerequisite: Completion of Algebra II with a C or higher
Materials: *A $20 per student consumable materials fee will be invoiced at the start of the semester.* Each student must have a graphing calculator (TI-83, TI-84 or TI-89) that they may take home. Books and curricular materials on loan from NCSSM
Site Requirements: Students must have computer access to Internet in DL classroom
Recommended weight: Honors

MATHEMATICS

Honors Calculus/AP Calculus AB Course (year-long)
Time: Third Block
This course is rich in technology and applications, and prepares students for the AP Calculus AB Exam. AP Calculus develops the student's understanding of the concepts of calculus (functions, graphs, limits, derivatives and integrals) and provides experience with methods and applications. The course encourages the geometric, numerical, analytical, and verbal expression of concepts, results, and problems.

Prerequisite: Completion of Precalculus with an "A" and the recommendation of the math teacher. Students should have a strong background in algebra and functions, including polynomial, exponential, logarithmic, and trigonometric. They should also be familiar with numerical, graphical, algebraic and verbal problem analysis – with or without a calculator. *****Schools will be asked to supply the following student information: PSAT score, EOC Algebra II (raw or adjusted score), Precalculus teacher recommendation***
Material requirements: Each student must have a graphing calculator (TI Inspire, TI-89 preferred, TI-83+, TI-84 acceptable) that they may take home. Books and curricular materials on loan from NCSSM
Site requirements: Students must have computer access to Internet in DL classroom
Recommended weight: Honors first semester, AP second semester

Discrete Mathematics (Fall semester only)
Time: Second Block
This course offers an overview of many applications of mathematics, especially in the social and management sciences. Topics covered include a selection of the following: fair division of resources and costs, voting methods, apportionment of legislative bodies, power of voting coalitions, finance, probability with Markov chains, linear programming, game theory, and mathematical models using matrices. Students are expected to be involved in formulating problems, applying the appropriate mathematics to find a solution, and evaluating the solution. Computers and calculators are incorporated as computational and modeling aids.

Prerequisite: Completion of Algebra II with a B or better
Material requirements: Students must have a graphing calculator (TI-83+ or TI-84 acceptable) that they may take home. Books must be supplied by your school
Site requirements: Student access to computer with Internet during class time required weekly
Recommended weight: Honors

Honors Precalculus Trigonometry (Fall semester only)
Time: Second Block
In conjunction with the Honors Precalculus Algebra this course is designed to provide skill development in order to prepare students for NCSSM Distance Education year-long Honors Calculus/AP Calculus course sequence. Precalculus topics include: the six trigonometric functions and their inverses, transformations, sinusoids, equation solving, identities, solving triangles, both right and oblique, polar graphs and parametric equations. A heavy emphasis will be placed on problem solving.

Prerequisite: Students should have the following: an "A" in Algebra II (a 4 on the EOC), recommendation by the Algebra II teacher
Material requirements: Students must have a graphing calculator (TI Nspire, TI-89 preferred, TI-83+, TI-84 acceptable) that they may take home. Books and curricular materials on loan from NCSSM
Site requirements: Students must have computer access to Internet in DL classroom
Recommended weight: Honors

Honors Precalculus Algebra (Spring semester only)
Time: Second Block

In conjunction with the Honors Precalculus Trigonometry, this course is designed to provide skill development in order to prepare students for NCSSM Distance Education year-long Honors Calculus/AP Calculus course sequence. Precalculus topics include: (functions power, polynomial, rational, radical, exponential and logarithmic) and their transformations, data analysis as it applies to functions, iteration , sequences and series and parametric equations. A heavy emphasis will be placed on problem solving.

Prerequisite: Students should have the following: an "A" in Algebra II (a 4 on the EOC), recommendation by the Algebra II teacher
Material requirements: Students must have a graphing calculator (TI Nspire, TI-89 preferred, TI-83+, TI-84 acceptable) that they may take home. Books and curricular materials on loan from NCSSM
Site requirements: Students must have computer access to Internet in DL classroom
Recommended weight: Honors

Honors Statistics/AP Statistics (year-long)
Time: Second Block
This year long course covers the content of a typical introductory college course in statistics. In colleges and universities, the number of students who take a statistics course is almost as large as the number of students who take a calculus course. (At least one statistics course is typically required for majors such as engineering, psychology, sociology, health science, mathematics, and business.) This course will be taught as two one-semester courses. The first semester will provide an overview and introduction to statistics, and introduce students to the major concepts and the tools for collecting, analyzing, and drawing conclusions from data. The second semester will extend the development of first semester topics and prepare students for the AP exam. . *****Schools will be asked to supply the following student information: PSAT score, EOC Algebra II (raw or adjusted score), Algebra II teacher recommendation***

Prerequisite: Students must have completed a course beyond Algebra II with a C average or better and have satisfactory algebra skills. They must also possess sufficient mathematical maturity and quantitative reasoning ability.
Material requirements: Each student must have a TI-83+ or TI-84 (preferred) graphing calculator that they may take home. Books and curricular materials on loan from NCSSM
Site requirements: Access to a computer lab is required.
Recommended weight: Honors first semester, AP second semester

HUMANITIES

Honors African American Studies (Spring semester only)
Time: First Block
This interdisciplinary course provides an introduction to African American history, literature, and culture. Students examine significant social, political, economic, and religious issues as well as issues of identity in the lives of African Americans from the sixteenth century to the present. In addition to readings in historical backgrounds and documents, students explore texts ranging from slave narratives, folktales, and spirituals to the works of writers, artists, and musicians during the Harlem Renaissance to contemporary works by such writers as Alice Walker and Henry Lewis Gates and filmmaker Spike Lee. Through a variety of assignments and activities, students continue to develop their skills in reading, speaking, and research, with special emphasis on the writing process.

Prerequisite: None
Materials: Books must be supplied by your school
Site requirements: Occasional student access to computer with Internet during class time
Recommended weight: Honors

Honors Composition: A Study of American Conflict (Fall semester only)
Time: First Block
Through readings, art, cartoons and film students will work together to develop an understanding of how conflict and the methods of addressing that conflict have shaped the American identity. How internal conflict and power struggles have been more transformative than wars in our understanding of what it means to live, work and exist in contemporary America. Some topics will include:

- Contact between the Native Americans and Puritans (it wasn't all pumpkin pie and Thanksgiving)
- The Debate over Slavery (How you defend the indefensible?)
- The "Woman's Sphere" (Where exactly is a "woman's place"? Why?)
- Wealth, Work and Class Conflict (The Haves and the Have Nots)
- Japanese Internment and Cultural Identity (American Concentration Camps in the land of the free)
- Policy and Protest in the Vietnam War (What are we fighting for? Don't ask me…)

Students will explore these topics through analytical discussion, research and composition in a hybrid environment (IVC and online). Students should be self-motivated.
Prerequisites: Students must have taken Civics and Economics. It would be helpful but not mandatory if students have taken U.S. History.
Materials: Books must be supplied by your school.
Site requirements: Computers with Internet access available in IVC classroom and for homework
Recommended weight: Honors

Mandarin Chinese I/ Mandarin Chinese II (year-long)
Time: Fourth Block
Chinese I is designed to provide students with the fundamentals for learning to understand, speak, and begin to read and write Mandarin Chinese. During the first semester (Mandarin I), the course focuses on developing accurate pronunciation and tones, learning to understand the spoken language in context and developing a foundation of basic sentence patterns, questions and every day vocabulary. The writing system (radicals and stroke order) is introduced and computers are used to help students develop their character recognition skills.

Prerequisite: Recommendation by school counselor for Mandarin Chinese I; C or better in the first semester Chinese I course to continue to the Chinese II level in second semester
Materials: A fee of $20 per **school** will be assessed for calligraphy supplies NCSSM will invoice site.
A fee of $10 per **student** will be assessed for the online students account. (NCSSM is picking up the majority of the cost.)
Site requirements: Student access to computer with Internet during class time. Computers must be installed with the following software prior to the start of the school year: Microsoft's East Asian language support in Windows so as to enable simplified Chinese characters typing recognition, and Pinyinput typing pinyin with tone marks:
Recommended weight: General

Ethics and Leadership (Fall and Spring semesters)
Time: Second Block in the Fall, Third Block in the Spring
This course is ideal for students interested in careers in Medicine, Business, or Psychology. Students will explore introductory philosophical ethical frameworks and their relationships to morality and decision making. Students will apply leadership and ethical theory to small scale issues of importance in schools (cheating, lying, stealing, and plagiarism) along with large scale modern ethical dilemmas such as euthanasia, organ donation, cloning and animal rights. Case studies in areas such as research policies involving humans, business practices, racism, genetics and global stewardship will help students develop a personal ethical framework.

Prerequisite: None
Materials: Books must be supplied by your school
Site requirements: Students must have computer access to Internet in DL classroom
Recommended weight: Honors

Honors Music Appreciation (Fall semester only) (Due to economic considerations, this course will not be offered)
Time: Fourth Block
This course provides opportunities to become familiar with the basic elements of music. Through a chronological exploration of style periods in Western music, this course will increase students' appreciation for the music they already know and love. Students learn to aurally recognize and comprehend the various elements of music that define style, genre, and period, and develop the vocabulary to discuss them. Listening materials are drawn from a variety of sources: classical music, non-Western music, American popular music (particularly jazz, country, rock, hip-hop), and the American folk tradition. The course also gives an overview of some popular and traditional world music. The course assumes the student has no knowledge of musical notation.

Prerequisite: None
Materials: Books must be supplied by your school
Site requirements: Occasional student access to computer with Internet during class time
Recommended weight: Honors

Honors Psychology (Fall & Spring semesters)
Time: Third Block in the Fall, Second Block in the Spring
This introductory course includes topics such as: developmental psychology, neural structure of the human body, learning and memory, perception, stress and conflict, abnormal behavior, family interactions, how to understand and manage emotions, the nature of consciousness, and exploring the meaning of dreams. This course requires active class participation, and students are encouraged to relate the material in the course with their own life experiences. Guest lecturers will present topics of their particular expertise.

Prerequisite: None
Materials: Books must be supplied by your school
Site requirements: Occasional student access to computer with Internet during class time
Recommended weight: Honors

Honors US History/AP US History (year-long)
Time: First Block
This course examines critical issues in American history from the Colonial Era to the present such as race relations, ethnic tensions, conflict (both domestic and foreign), management-worker relations, the role of government in the economy and the lives of its citizens, and the meaning of democracy. Students are expected to analyze and critically review a variety of materials including texts, print and non-print primary sources, and interpretive readings. Emphasis is placed on developing writing and rhetoric skills. Preparation for the US History EOC test is also emphasized.

Prerequisite: ***Schools will be asked to supply the following student information: PSAT score, EOC Civics test (raw or adjusted score), Social studies teacher recommendation***
Materials: Books and curricular materials on loan from NCSSM
Site requirements: Students must have computer access to Internet in DL classroom
Recommended weight: Honors first semester, AP second semester

CHARACTERISTICS OF A SUCCESSFUL DISTANCE LEARNER

According to our Distance Education faculty: "*A successful distance learner is ……..…..*"

- enthusiastic about the subject matter
- willing to learn and is motivated to study
- a responsible independent learner – requires maturity and self-motivation
- interested in making connections to their own lives
- confident enough to speak up! –not shy about asking questions when they don't understand (including outside of class) and volunteering ideas and solutions when responses are solicited by the teacher in a very public and uncomfortable (at least initially) forum
- willing to take "learning risks" including sharing work over the air or to engage in hands- on classroom activities that he/she might not feel comfortable with
- hard-working and takes pride in doing excellent work – student is willing and has the time available to prepare carefully before class and to complete their homework assignments, about 30 minutes a night
- self-disciplined and has the study skills (including time management) necessary to learn without the physical presence of the instructor
- one who has the prerequisite preparation for the course
- able to use basic PC technology - e.g. search for academically appropriate web sites, add attachments to emails, navigate web sites, mark favorite sites
- honest – many times students are trusted to complete their own work and to NOT share their work on various assignments
- patient with technology – it breaks, sometimes often
- respectful of the other students in their "joint" classroom (especially in the multi-school courses) and show understanding of the problems other sites have, knowing that their site will have their own problems eventually
- willing and able to come to all classes! - it's very hard to make up missed DL classes
- able to pay attention to a monitor
- able to work without letting other students distract them

THE NORTH CAROLINA SCHOOL OF SCIENCE AND MATHEMATICS

Distance Education **Fall 2009** Course Request Form

Name of School: _____ Date _____

Contact Person: _____ email _____ Phone _____

Questions? Call Karl Coleman (919) 416-2658 or Peg Kirk (919) 416-2632

Please use a separate sheet of paper for comments or other information you would like us to know in considering your request.

- **Select only one time slot per block**
- **Select only one course per block**

Fall 2009

To earn course credit, students must be scheduled to attend the entire period. If your students cannot attend the entire scheduled time for a class, please do not select that class.

Select only one time slot per block	**Select only one course per block**	**Please indicate the number of students officially registered**
○ 7:45-9:15	○ **Year Long:** Honors/AP US History	_____
○ 8:15-9:45	○ **Semester:** Honors Genetics & Biotechnology	_____
○ 8:00-9:30	○ **Semester:** Honors American Literature and Composition	_____
	○ **Semester:** Honors Forensics	_____
○ 9:30-11:00	○ **Semester:** Honors Precalculus trigonometry	_____
○ 9:45-11:15	○ **Semester:** Special Topics: Ethics & Leadership	_____
○ 10:00-11:30	○ **Semester:** Honors Discrete Math	_____
	○ **Year Long:** Honors/AP Statistics	_____
○ 11:05-12:35	○ **Year Long:** Honors/AP Calculus	_____
○ 11:20-12:50	○ **Semester:** Honors Psychology	_____
○ 11:35-1:05	○ **Semester:** Honors Genetics & Biotechnology	_____
○ 11:45-1:20	○ **Semester:** Honors Physics	_____
○ 1:20-2:50	○ **Year Long:** Honors Mandarin Chinese I&II	_____
○ 1:30-3:00	○ **Semester:** Honors Music Appreciation	_____
○ 1:45-3:15		

Requests are based on actual student registrations YES NO (Please circle)

Fax this form along with the following to us by <u>March 2, 2009</u>:

- **2009-2010 school calendar (or most recent calendar)**
- **2009-2010 bell schedule (or most recent bell schedule)**

Fax (919) 416-2650

THE NORTH CAROLINA SCHOOL OF SCIENCE AND MATHEMATICS

Distance Education **Spring 2010** Course Request Form

Name of School: _____ Date _____

Contact Person: _____ email _____ Phone _____

Questions? Call Karl Coleman (919) 416-2658 or Peg Kirk (919) 416-2632

Please use a separate sheet of paper for comments or other information you would like us to know in considering your request.

- **Select only one time slot per block**
- **Select only one course per block**

Spring 2010

To earn course credit, students must be scheduled to attend the entire period. If your students cannot attend the entire scheduled time for a class, please do not select that class.

Select only one time slot per block	**Select only one course per block**	**Please indicate the number of students officially registered**
○ 7:45-9:15	○ **Year Long:** Honors/AP US History	_____
○ 8:00-9:30	○ **Semester:** Honors Genetics & Biotechnology	_____
○ 8:15-9:45	○ **Semester:** Honors Forensics	_____
	○ **Semester:** Honors African American Studies	_____
○ 9:30-11:00	○ **Semester:** Precalculus algebra	_____
○ 9:45-11:15	○ **Semester:** Honors Psychology	_____
○ 10:00-11:30	○ **Year Long:** Honors/AP Statistics	_____
	○ **Semester:** AFM	_____
○ 11:05-12:35	○ **Year Long:** Honors/AP Calculus	_____
○ 11:20-12:50	○ **Semester:** Special Topics: Ethics & Leadership	_____
○ 11:35-1:05	○ **Semester:** Honors Forensics	_____
○ 11:45-1:20		
○ 1:20-2:50	○ **Year Long:** Honors Mandarin Chinese I&II	_____
○ 1:30-3:00	○ **Semester:** Honors Genetics & Biotechnology	_____
○ 1:45-3:15		

Requests are based on actual student registrations YES NO (Please circle)

Fax this form along with the following to us by <u>March 2, 2009</u>:

- **2009-2010 school calendar (or most recent calendar)**
- **2009-2010 bell schedule (or most recent bell schedule)**

Fax (919) 416-2650

North Carolina School of Science and Mathematics
Distance Education Department
2009 – 2010 School Year Calendar

- It is the intent of the NCSSM Distance Education Department that end-of-quarter report cards report cards be considered the official grade report of the courses taken by your students from this institution.
- The NCSSM calendar adheres to the state mandate of 180 days of instruction and the legislative mandate for school year start/end dates.
- When calendars do not align provisions should be made to permit students to attend, or complete work assigned. Classes will be video streamed and archived for student retrieval outside of class. **Students will be responsible for the material covered.**
- Senior grade deadlines will be determined in coordination with individual school sites.

August 25*	First day of classes-*Schools with an earlier start date please notify NCSSM.
September 7	Labor Day Holiday
September 25	1st quarter progress reports issued
October 27	**End of 1st quarter (45 instructional days)**
October 28	1st quarter Break
October 29	Start of 2nd quarter
November 11	Veteran's Day
November 25-27	Thanksgiving Holiday
November 30	Classes resume
December 3	2nd quarter progress reports issued
Dec. 23-Jan. 1	Winter Break
January 4	Classes resume
January 15	**End of 2nd quarter (45 instructional days)**
January 18	Martin Luther King Jr. Holiday
January 19	Semester Break
January 20*	Start of 3rd quarter (2nd Semester)
February 15	President's Day
February 22	3rd quarter progress reports issued
March 24	**End of 3rd quarter (45 instructional days)**
March 25	Start of 4th quarter
April 2-April 9⁂	Spring Break
April 12⁂	Classes resume
May 3	4th quarter progress reports issued
May 31	Memorial Day Holiday
June 4	**End of 4th quarter (45 instructional days)**

⁂***tentative: may be adjusted by DE instructor***