

“EXCELLENCE THROUGH COLLABORATIVE COMMUNITIES OF LEARNERS”

AURORA UNIVERSITY SYLLABUS

Course Number: NSM 6208

Course Title: QuarkNet Teacher Institute III

3 Semester Hours Graduate Credit

- 1. Catalog Description:** QuarkNet Teacher Institute III introduces secondary teachers to contemporary research techniques and the principal concepts of particle physics. Teachers work collaboratively with a team of institute leaders who are researchers and teachers.
- 2. Course Overview:** Participants spend five days in sessions in which they design, build and perform experiments. The group may reduce and analyze experimental data to discover introductory physics concepts hidden in particle physics experiments. They may also design and build equipment for use in student classroom experiments. Participants will identify one topic of study from the week and design a student activity for use in the academic year.
- 3. Student Learning Objectives:**
The student will:
 - Participate in a research experience under the direction of a team of scientists and teachers.
 - Apply physics concepts that they teach their students to the research experience at hand.
 - Evaluate the research experience for opportunities for their students’ engagement.
 - Design a student activity that explores the research experience at hand.
- 4. Teaching Methods/Class Format:** Participants meet daily to study and perform research together. Participants perform investigations in small groups with the aid and direction of a team of experienced leaders.
- 5. Texts and Required Reading:** None. Articles may be introduced as necessary.
- 6. Units of Work:**
Participants will work for one week (40 hours).
- 7. Class Assignments:** Each participant will submit a written classroom transfer plan that relates to the materials explored in this course. This plan will fully describe the lesson(s) that participants will implement during the academic year. The lessons can include movies, discussions, lab activities, research assignments or other appropriate activities. The plan will contain the following sections: Overview, Learner Objectives, Alignment with Local Standards, Activity Description and Assessment.

8. Evaluation and Grading Procedures: Participation, presentations and reports are all equally weighted. Please see attached rubrics for details.

A (4 quality points per course unit) - Excellent. Denotes work that is consistently at the highest level of achievement in a graduate college or university course. A score of 90-100 on included rubric.

B (3 quality points per course unit) - Good. Denotes work that consistently meets the high level of college or university standards for academic performance in a graduate college or university course. A score of 80-89 on included rubric.

C (2 quality points per course unit) - The lowest passing grade. Denotes work that does not meet in all respects college or university standards for academic performance in a graduate college or university course. A score of 70-79 on included rubric.

F (0 quality points per course unit) - Denotes work that fails to meet graduate college or university standards for academic performance in a graduate college or university course. A score of <70 on the included rubric.

- 9. Bibliography:** Bibliographies are prepared by the leadership team and are contemporary to the course offering. Bibliographies are made available to students approximately one month prior to start date.
- 10. Attendance Policy:** Students are required to attend all classes and to participate in class discussions, small group activities, experimental and experiential group exercises and projects.
- 11. Academic Honesty and Integrity:** Students are expected to maintain academic honesty and integrity as students at Aurora University by doing their own work to the best of their ability. Academic dishonesty (cheating, fabrication, plagiarism, etc.) will result in the student receiving a zero for that test, assignment or paper.
- 12. Final Examination Policy:** There will be no final exam. Final reports and accompanying material serve as the final evaluation.
- 13. American Disabilities Act:** Students who have any condition, either permanent or temporary, which might affect their ability to perform in this class are encouraged to inform the instructor at the beginning of the term. Adaptations of teaching methods, class materials, including text and reading materials or testing may be made as needed to provide for equitable participation.

The course grade is determined by the following rubric:

<i>An "A" student will:</i> <i>50 points</i>	<i>A "B" student will:</i> <i>40 points</i>	<i>A "C" student will:</i> <i>30 points</i>	<i>An "F" student will:</i> <i>10 points</i>
Attend promptly and regularly, offer insightful comments within group discussions, and articulate constructive criticism as needed.	Attend promptly and regularly and offer thoughtful comments within group discussions.	Attend promptly or regularly and offer comments within group discussions.	Attend irregularly, offer minimal comments within group discussions, and make little effort to articulate constructive criticism.
Complete a classroom transfer project that earns 14-15 points.	Complete a classroom transfer project with a score of 12-13 points.	Complete a classroom transfer project with a score of 10-11 points	Final project is missing or yields <10 points.

The Classroom Transfer Plan is scored with the following rubric:

Section	3 points	2 points	1 point
Overview	The overview includes the following items: classroom context, curriculum context, and pre-requisite topics considered crucial for success.	The overview is incomplete and contains only two of the three required for full marks.	The plan contains no overview.
Learner Objectives	The plan includes well-articulated objectives appropriate to student development and related to workshop topics.	The plan includes poorly developed objectives that do not match student characteristics or workshop topics.	The plan contains no objectives.
Alignment with Local Standards	The plan includes detailed, articulated alignment to the local standards that drive the teacher's work and includes references to those standards.	The plan only provides a list of local standards with no effort to articulate how the activities help the students achieve them.	There is no effort to align the plan with standards.
Activity Description	The plan includes a complete student activity (or description).	The plan includes an incomplete student activity (or description).	The student activity is not described or missing.
Assessment	The plan includes a description of the assessment of student learning that measures student performance on learner objectives.	There is an assessment, but no effort to align it to learner objectives.	There is no assessment plan.