**Course title:** Understanding Teaching Practices (Part 1)
**Course credits:** 4 credits
**Course code:** SCE103.2

**Course Description:**
This course is designed to introduce graduate students with some pedagogical approaches in classroom-based STEM education through a variety of resources. In the course, the graduate students will be engaged in literature reading, field-visits for class observations, analyze prerecorded sessions of teaching activities, enactment of classroom teaching, specific design experiences based on curricular content and assessment techniques, and reflective exercises. The fieldwork locations will be informed to graduate students following the school systems availability and scheduling.

**Learning Objectives:**

- To understand various components constituting teaching & learning and thereby develop a deeper appreciation of self-preparation for the pedagogic exercises.
- To develop skills for noticing discipline specific responsiveness through post-facto VP activities video-analysis exercises
- To obtain first-hand experience of teaching in schools in strict as well as flexible curricular setting.
- To explore and demonstrate linkages between educational theories with pedagogic practices in school settings

**Assessment:** The course will involve two assessments. First assignment is based on teaching assignments and carries 30% weightage. The second assessment is based on VP observational data analysis and carries 30% weightage. A total of 20% score is reserved for reflective exercises following the teaching which will be assessed through reflective-diaries and group discussions. The remaining 20% score is reserved for participation in discussion of literature and design activities.

**Proposed exercises and readings:**

- **Field visit** involves shadowing an in-service high-school teacher for 2 chapters of grade VIII or IX (or college teacher for grade XI) depending on graduate students' interest. A field notes diary needs to be maintained by the graduate students during the activity to note the observations of ongoing discourses and reflect on the teaching-learning processes post-facto. [~ 4 weeks equivalent]
- Some **pre-recorded sessions of students' workshops** of a variety of science and mathematics learning activities recorded for research purposes will be used for the research analysis activity. The graduate students, after receiving ethics training (as a part of this course), will be engaging with some of these recordings to explore the disciplinary teaching-learning practices and teaching practice as a whole. [~ 4 weeks equivalent]
- The **design experience** will use insights from previous tasks and focus on enriching the learning experiences for students through specific task-building activity. [~ 2 weeks equivalent]
- **Literature review** [~ 4 weeks equivalent]
  **Some suggestive readings:**
  1. Hiebert, J., Morris, A, Berk, D. Jansen, A. (2007). Preparing teachers to learn from teaching. Journal of Teacher Education, 58(1), 47–61.
  2. Neumann, K., Kind , V., & Harms, U. (2019) Probing the amalgam: the relationship between science teachers' content, pedagogical and pedagogical content knowledge, *International Journal of Science Education*, 41:7, 847-861, DOI: 10.1080/09500693.2018.1497217

3. E A Van Es and M G Sherin (2007) Mathematics teachers' 'learning to notice' in the context of video club, Teaching and teacher Education 24 (2) 244-276
4. Gehrtz J, Brantner M, Andrews T C (2022) How are undergraduate STEM instructors leveraging student thinking? (2022) International Journal of STEM Education, 9(1), ar 18
5. Problematising teacher education practice in India: Developing a research agenda (2014) Education as change, Vol 18, S5-S18
6. Chapter 1 from Communities of Practice, Learning, Meaning and Identity (1999) by Etienne Wenger
7. Selective articles from Teacher Plus and Voice of Teachers and Teacher Educators magazines

**Course time and day:** Friday 9.00 AM- 1.00 PM (4 hours per week)

**Course start date:** 8 August 2025

**Venue:** Rm 209, HBCSE main building

**Facilitator:** Deepa Chari

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