

HARVARD MEDICAL SCHOOL JOINT PROGRAM IN NUCLEAR MEDICINE

COURSE OUTLINE 2008/2009

Course Title: Radiopharmaceutical Chemistry

**Course Instructor(s)
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Objective(s): To provide trainees with a basic knowledge of the physical and chemical principles underlying the design of radiopharmaceuticals used in clinical nuclear medicine.

Criteria for Successful Completion of This Course

To be announced

- Texts:**
- Fundamentals of Nuclear Pharmacy by Gopal B. Saha. Fifth Edition. Springer-Verlag, New York, 2004.
 - Handouts from various sources:
 1. Nuclear Medicine by Harbert, Eckelman and Neumann. Thieme Medical Publishers, New York, 1996
 2. Principles of Nuclear Medicine by Wagner, Szabo and Buchanan. Saunders, 1996.
 3. Chart of the Nuclides. General Electric Company, 15th Edition, 1997.
 - Literature references as needed

Lecture Location(s): Laboratory for Experimental Nuclear Medicine conference room, Armenise Building, Harvard Medical School: Room D2-136

Course Title: Radiopharmaceutical Chemistry**Course Schedule****Time: 8:00 – 9:00 AM**

| Day | Date | Topic | Instructor | Reading/Assignment |
|------------|-------------|---------------------------------------------------------------------------------------------------------|--------------------------|---------------------------|
| Mon | 1/12 | Stability Valley Modes of Radioactive Decay Decay Schemes and Decay Equations | A.G. Jones A. Mahmood | |
| Fri | 1/16 | Decay Equations and Radioactive Equilibrium Radionuclide Generators Principles and Practice | A.G. Jones A. Mahmood | |
| Mon | 1/19 | No Lecture – Martin Luther King Day | A.G. Jones A. Mahmood | |
| Fri | 1/23 | Radionuclide Production Nuclear Reactions-Reactors and Accelerators | A.G. Jones A. Mahmood | |
| Mon | 1/26 | Technitium Chemistry Radiopharmaceutical Kit Design & Quality Control of Radiopharmaceuticals | A.G. Jones A. Mahmood | |
| Fri | 1/30 | Early Technitium Radiopharmaceuticals | A.G. Jones A. Mahmood | |
| Mon | 2/2 | Recent Technitium Radiopharmaceuticals | A.G. Jones A. Mahmood | |
| Fri | 2/6 | Design Concepts for Targeted- Radiopharmaceuticals | A.G. Jones A. Mahmood | |
| Mon | 2/9 | Receptor-Targeting Radiopharmaceuticals: Peptides, Proteins and Antibodies Small Molecules Agents | A.G. Jones A. Mahmood | |
| Fri | 2/13 | Other Radiometals (SPECT and PET) | A.G. Jones A. Mahmood | |
| Mon | 2/16 | No Lecture Presidents Day | A.G. Jones A. Mahmood | |
| Fri | 2/20 | Iodinated Agents Therapy with Open Sources | A.G. Jones A. Mahmood | |
| Mon | 2/23 | Positron Emitters – F-18, C-11: Part 1 | A.G. Jones A. Mahmood | |
| Fri | 2/27 | Positron Emitters – F-18, C-11: Part 2 | A.G. Jones A. Mahmood | |
| Mon | 3/2 | Lecture Cancelled Due to Snow | | |
| Fri | 3/6 | No Lecture: ABNM In Training Exam | A.G. Jones A. Mahmood | |
| Mon | 3/9 | Recent Concepts in Molecular Imaging ImagingGene Expression-Reporter Gene Probes | A.G. Jones A. Mahmood | |
| Fri | 3/13 | Regulatory Issues with Routine and Experimental Agents | A.G. Jones A. Mahmood | |
| Mon | 3/16 | Discussion Group | A.G. Jones A. Mahmood | |
| Fri | 3/20 | Review | A.G. Jones A. Mahmood | |
| Mon | 3/23 | Exam | A.G. Jones A. Mahmood | |

Additional Notes: