GCOE Mechanical Systems Innovation PhD Educational Program

2011.04.01

		Program Name	Primary Instructor(s)	Description / Overview	Points Minimum 40/year
Graduate courses	General courses	Engineering Literacy Ⅰ (1cr.)	Prof. Maruyama (Mech.) Prof. Okubo (Chem.) Prof. Yokono (GMSI)	Course is centered around Technological Literacy.	5-15 (A=15, B=10, C=5)
		Engineering Literacy Ⅱ (1cr.)	Prof. Maruyama (Mech.) Prof. Okubo (Chem.) Prof. Yokono (GMSI)	Course is centered around knowledge of the law.	5-15 (A=15, B=10, C=5)
		Engineering Literacy Ⅲ (1cr.)	Prof. Suzuki (Aero.) Prof. Koseki (Mater.) Prof. Mitsuishi (Mech.)	Course is centered around Language Literacy.	5-15 (A=15, B=10, C=5)
		Engineering Competency Ⅰ (2cr.)	Prof. Kaneko (Mech.) Prof. Yokono (GMSI) Prof. Mitsuishi (Mech.)	Project Based Learning to cultivating the leadership skills needed to engage actively in industry and academia.	maximum of 20
		Engineering Competency Ⅱ (2cr.)	Prof. Suga (Precision) Prof. Takamasu (Precision) Prof. Yokono (GMSI)	Approximately 2-6 month investigation of at least one topic through collaborative research or a domestic/international internship	maximum of 20
		Engineering Competency Ⅲ (2cr.)	Prof. Watanabe (Mater.) Lect. Einarsson (GMSI) Prof. Mitsuishi (Mech.)	English-only camp where Japanese and international participants discuss and exchange ideas on various engineering-related researc	maximum of 20
	Advanced topics	Exercise Course of Extended Nanospace (2 cr.)	Prof. Sakai (Mech.) Prof. Suzuki (Mech.) Prof. Watanabe (Mater.)	Application of the extended nanospace. MEMS or Simulation exercise for extended nanospace	maximum of 20
		Fundamental Theory of Extended Nanospace (2 cr.)	Prof. Maruyama (Mech.)	Molecular dynamics and fundamental theory of the extended nanospace	5-15 (A=15, B=10, C=5)
		Nano/Micro Devices (2 cr.)	Prof. Kitamori (Appl. Chem.)	Realization of devices based on fundamentals of extened nanospace	5-15 (A=15, B=10, C=5)
		Nano/Micro Mechanical Systems (2 cr	Prof. Takamasu (Precision)	Synthesis of innovative mechanical systems through integration of nano/micro devices, with real-world examples	5-15 (A=15, B=10, C=5)
		Nano/Micro Medical Systems (2 cr.)	Prof. Matsumoto (Mech.) Prof. Mitsuishi (Mech.)	Gene therapy, ultrasonic diagnostics and treatment, etc. Fundamentals and realization of nano/micro systesms.	5-15 (A=15, B=10, C=5)
		Nano/Micro Energy Systems (2 cr.)	Prof. Kasagi (Mech.) Prof. Suzuki (Mech.)	Study of the fundamentals of microscale thermal hydraulics, micro energy conversion sytems, etc. and their implementation.	5-15 (A=15, B=10, C=5)
Seminars, symposia, etc.	Evening Seminar		Prof. Sakai (Mech.)	Approx. once a month, a speaker will be invited to give an evening seminar. Some seminars will be followed by an informal discussion	2 per seminar
	Open Seminar		Each GMSI Member	A public seminar given by an expert invited from outside the university.	2 per seminar
	Workshop		Each GMSI Member	Discussion on various topics, such as a PhD's career path, involving educators both within and from outside the university	5-10 per workshop
	Domestic Symposium		Prof. Yoshimura (Sys. Inn.) Prof. Takeda (Aero.) Prof. Ikuhara (Mater.)	Symposia on GMSI-realted topics involving both GMSI program members and their domestic collaborators	5-10 per workshop
	International Symposium		Prof. Yoshimura (Sys. Inn.) Prof. Takeda (Aero.) Prof. Ikuhara (Mater.)	Symposia on GMSI-realted topics involving both GMSI program members and their international collaborators	5-10 per workshop
	International Base Workshop		Each GMSI Member	Workshop on GMSI-realted topics involving both GMSI program members and their international collaborators in international base	5-10 per workshop
	Secondary Advisor System		Prof. Ishihara (Mech.)	Gives GMSI RAs the opportunity to obtain guidance and direction from a related faculty member in addition to their current advisor	5