Abteilung für
Reine Mathematik

WS 2012/13

Vorlesung:	**Mean curvature flow**
Dozent:	**Dr. Roberta Alessandroni**
Zeit/Ort:	**Do 14–16 Uhr, SR 127, Eckerstraße 1**
Übungen:	**zweistündig nach Vereinbarung**
Tutorium:	**N. N.**
Web-Seite:	http://home.mathematik.uni-freiburg.de/alessandroni/

Inhalt:

The topic of this course is the mean curvature flow for smooth embedded hypersurfaces in the $(n+1)$-dimensional Euclidean space. We will discuss the case of compact convex surfaces: short time existence of solutions, maximum and comparison principle, preservation of convexity, regularity and convergence to a round point. Particular attention will be given also to selfsimilar and translating solutions to the mean curvature flow and to its 1-dimensional version, the curve shortening flow.
The course addresses to Master and PhD students with basic knowledge of differential geometry.

Literatur:

1.) G. Huisken, *Flow by mean curvature of convex surfaces into spheres*, J. Diff. Geom. **20** (1984) 237–266.
2.) K. Ecker, *Regularity theory for mean curvature flow*, Progress in nonlinear differential equations and their applications, **75**, Birkhäuser, Boston, 2004.

Typisches Semester:	Master
ECTS-Punkte:	6 Punkte
Studienschwerpunkt:	Reine Mathematik
Nützliche Vorkenntnisse:	Differentialgeometrie
Sprechstunde Dozent:	Donnerstag 10:00–11:00 Uhr, Raum 206, Eckerstr. 1