

Compulsory Modules Computer Science

A total of 25 credits are to be effected in the following compulsory modules:

ID.	Module description	Type	Sem	SWS	ECTS	Exam type	Exam duration	Language
IN2021	Computer Aided Medical Procedures	4L	WS	4	6	oral/ written	30-40/ 90 min.	English
IN2022	Computer Aided Medical Procedures II	2L+2E	SS	4	5	oral/ written	30-40/ 90 min.	English
IN2107	Master Seminar	2S	WS/ SS	2	4	Essay+Presentation		German/ English
IN ????	Clinical Internship	6P	WS	6	10	Report+Presentation		English

Compulsory Modules Medicine

A total of 22 credits are to be effected in the following compulsory modules:

ID.	Module description	Type	Sem	SWS	ECTS	Exam type	Exam duration	Language
????	Medical Instrumentation	2P	WS	2	4	written	90 min.	English
????	Clinical Applications and Techniques of Computer Aided Surgery	2P	WS	2	4	written	90 min.	English
????	Computer Aided Trauma Surgery	2P	WS	2	4	written	90 min.	English
????	Imaging in Radiology, Nuclear Medicine and Radiation Therapy	2P	SS	2	4	written	90 min.	English
????	Medical Information Processing	2L	WS	2	3	written	90 min.	English
????	Pathophysiology	2L	WS	2	3	written	90 min.	English

Elective Modules Imaging

A minimum of 8 credits are to be effected in the following elective modules:

ID.	Module description	Type	Sem	SWS	ECTS	Exam type	Exam duration	Language
PH????	Biomedizinische Physik 1	2L	WS	2	4	written	90 min.	German
PH2002	Biomedizinische Physik 2	2L	SS	2	4	written	90 min.	German
EI3999	Introduction to Biological Imaging	2L+1E	WS	3	4	written	90 min.	English
EI????	Case Studies on Modern Imaging	2L+1E	SS	3	4	written	90 min.	English

Elective Modules Mathematical Methods and Scientific Computing

A minimum of 8 credits are to be effected in the following elective modules:

ID.	Module description	Type	Sem	SWS	ECTS	Exam type	Exam duration	Language
IN2001	Algorithms of Scientific Computing	4L+2E	SS	6	8	oral/ written	30/120 min	English
IN2002	Algorithms of Scientific Computing II	2L+1E	WS	3	4	oral/ written	30/ 60-100 min.	English
IN2005	Introduction to Scientific Computing	2L	WS	2	3	oral/ written	30/90 min.	English
IN2124	Basic Mahtemactical Tools for Imaging and Visualization	2L+2E	WS	4	5	written	120 min.	English
IN2141	Introduction to Scientific Computing II	2L+1E	SS	3	4	oral/ written	30/ 90-120 min.	English
IN2156	Numerical Programming	4L+2E	WS	6	8	written	120 min.	English
IN3400	Selected Topics in the Area of Algorithms and Scientific Computing	-	-	-	-	-	-	German/ English

Elective Modules Programming and Software Engineering

A minimum of 3 credits are to be effected in the following elective modules:

ID.	Module description	Type	Sem	SWS	ECTS	Exam type	Exam duration	Language
IN1503	Advanced Programming	2L+2E	WS	4	5	oral/ written	30/ 90-120 min.	English
IN2087	Software Engineering für betriebliche Anwendungen - Masterkurs	2L+2E	SS	4	5	written	120 min.	German
IN2126	Software Engineering I	3L+2E	WS	5	6	written	90-150 min.	German/ English
IN2157	Fundamental Algorithms	2L	WS	2	3	written	90 min.	Englisch
IN2187	Software Engineering for Engineers	3L+1E	SS	4	5	oral/ written	-	English

IN3050	Selected Topics in the Area of Software Engineering	-	-	-	-	-	-	German/ English
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Elective Modules Image Processing, Computer Vision and Pattern Recognition

A minimum of 10 credits are to be effected in the following elective modules:

ID.	Module description	Type	Sem	SWS	ECTS	Exam type	Exam duration	Language
IN2023	Methoden der industriellen Bildverarbeitung	2L	SS	2	3	written	30 min.	German
IN2057	3D Computer Vision	2L+2E	SS	4	5	oral/ written	30/90 min.	English
IN2064	Maschine Learning	3L+2E	WS	5	6	written	90 min.	English
IN2065	Maschine Learning II	3L	unregelm.	3	4	oral	25 min.	German
IN2123	3D Computer Vision II	2L+2E	WS	4	5	oral/ written	30/90 min.	English
IN2133	Basics of Computer Vision	3L	WS	3	4	oral/ written	20/75 min.	English
IN2210	Tracking and Detection in Computer Vision	2L+2E	WS	4	5	written	90-120 min.	English
IN2228	Multiple View Geometry	4L+2E	unregelm.	6	8	oral/ written	120-180 min.	English
IN2237	Variational Methods and Convex Optimization in Computer Vision II	2L+1E	WS	3	4	written	90 min.	English
IN2238	Analysis of Three-Dimensional Shapes	2L+1E	WS	3	4	written	90 min.	English
IN3200	Selected topics in the Area of Computer Vision and Pattern Recognition	-	-	-	-	-	-	German/ English

Elective Modules Computer Graphics, Augmented Reality and Visualization

A minimum of 10 credits are to be effected in the following elective modules:

ID.	Module description	Type	Sem	SWS	ECTS	Exam type	Exam duration	Language
IN2015	Image Synthesis	3L	WS	3	4	oral	30-45 min.	German
IN2018	Augmented Reality	2L+2E	WS	4	5	oral/ written	20/ 90 min.	English
IN2020	Geometrieverarbeitung	3L	unregelm.	3	4	oral	20 – 60 min.	German
IN2025	Simulation und Animation	3L	SS	3	4	oral	20-60 min.	German
IN2026	Scientific Visualization	3L	WS	3	4	oral/ written	30-45/ 60-100 min.	English
IN2111	3D User Interfaces	2L+2E	SS	4	5	oral/ written	20/90 min.	English
IN2112	2D Graphical User Interfaces for Desktop-based and mobile Computer Applications	2L+2E	WS	4	5	oral/ written	20/90 min.	English

IN2139	Information Visualization	2L+2E	SS	4	5	oral/ written	20/90 min.	English
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Elective Modules Soft Skills

A minimum of 2 credits are to be effected in the following elective modules:

ID.	Module description	Type	Sem	SWS	ECTS	Exam type	Exam duration	Language
IN9030	Begegnung in Kulturen - Interkulturelle Kommunikation	2S	WS/ SS	2	3	written	??	German
IN9016	Didaktische Grundlagen für Informatiker: Konzepte der Didaktik und Psychologie für Bildungsmaßnahmen und E-Learning Systeme	2S	SS	2	3	oral/written	20-30/ 60-70 min.	German
IN9028	Didaktisches und pädagogisches Training für Tutoren	2S	WS/ SS	2	3	oral	30 min.	German
IN9024	Die Entwicklung der modernen Informationsgesellschaft	2S	WS	2	4	oral/written	??	German
IN9032	Geist, Gehirn, Maschine	1L	WS	1	2	??		German
WI0001 59	Geschäftsidee und Markt: Businessplan-Grundlagenseminar	2S	WS	2	4	written	??	German
WI0001 80	Geschäftsmodell, Vertrieb und Finanzen: Businessplan-Aufbauseminar	2S	SS	2	4	written	??	German
IN9039	Global Business Studies - Consulting Seminar (GBS)	3S	WS/ SS	3	5	Essay+Presentation		English
IN9006	Gründung und Führung kleiner Softwareorientierter Unternehmen	1S	SS	1	2	Essay+Presentation		German
WI0002 20	Grundzüge der Volkswirtschaftslehre	2L	WS/ SS	2	3	written	60 min.	German
IN9027	International Higher Education Systems	2S	WS	2	4	Essay+Presentation		English
IN9003	Informatikrecht	2L	WS/ SS	2	3	written	90 min.	German

IN9015	Informationskompetenz	2L	SS	2	3	written	60 min.	German
IN9025	Innovative Unternehmer	2L	WS/SS	2	4	written	90 min.	German
IN9034	Intercultural Aspects of Working in Global Teams	2S	WS/SS	2	4	Essay+Presentation		English
IN9001	Kommunikation und Team	2S	SS	2	4	Essay+Presentation		German
IN9036	Master Your Thesis!	2S	??	2	4	Presentation		German/English
IN9017	Existenzgründung	2S	WS/SS	2	4	Essay+Presentation		German
IN9038	Medical Imaging Entrepreneurship	1L	WS/SS	1	2	Essay+Presentation		English
ED0034	Medizin, Körper und Konsum	2E	SS	2	2	oral	20 min.	German
IN9002	Public Relations	2L	WS/SS	2	3	written	90 min.	German/English
IN9011	Seminar Projektmanagemant	2S	WS	2	4	Essay+Presentation		German
IN9010	Seminar Wissenschaftler und Ethik	2S	??	2	4	Essay+Presentation		German
IN9007	SET-Tutor	1S	WS	1	2	Presentation		German
IN9009	Sich und andere führen	2S	SS	2	4	Presentation		German
ED0038	Technic, Economy, and Society	2L	WS/SS	2	3	Presentation		German/English
IN9026	Trendseminar CDTM	4S	WS/SS	4	8	oral/written	??	English
IN9029	Was ist Zeit? Grundlagen der Zeit in Natur, Technik, Wirtschaft, Kultur und Gesellschaft	1L	WS/SS	1	2	oral	??	German

In addition to these, students are welcome to effect credits in soft skills events offered by the Carl-von-Linde Akademie.

Description:

Sem. = Semester, WS = Winter term, SS = Summer term; SWS = hours per semester week; L = Lecture; E = Excecise; S = Seminar; P = Practical Course