your international career | Bachelor of Engineering

PRINT MEDIA TECHNOLOGIES

HOCHSCHULE DER MEDIEN

»To become a qualified specialist in the field of Print Media means to become a technical engineer, creative designer, and capable business executive all at the same time.«

HOCHSCHULE
DER MEDIEN

Just round the corner!

In the south of Stuttgart's large university campus in the district of Vaihingen lies the *Hochschule der Medien*. Home to the Max Planck and Fraunhofer institutes, the campus boasts award-winning architecture and well equipped facilities for students to take advantage of. The vast range of sports opportunities, well maintained libraries, and events make student life at the HdM engaging and entertaining.

Whilst being located on the periphery of Stuttgart, but only three S-Bahn stations to the city centre, the HdM is ideally situated having the Rotwildpark on the campus doorstep, where the picturesque Bärenseen and the Bärenschlössle can be found. Stuttgart has a lot to offer culturally, such as the State Gallery and Art Museum, the State Theater with plays, ballet, and opera and numerous cinemas. The city's key landmarks include the TV tower, the Wilhelma Zoo, the Mercedes-Benz Museum, the Weissenhofsiedlung, and the Cannstatter Wasen – all of which are absolutely worth visiting. There is a range of great night clubs for all sorts of music tastes along the Theodor-Heuss-Straße and the numerous quaint pubs and bars in the city center are also very popular amongst students.

HdM aims at securing and strengthening the position of Baden-Wuerttemberg's media industry over the long term – by encouraging and helping students to settle here and promoting cooperative ventures between the media industry and world-leading businesses.

Watch out for the blank space!

Print Media Technologies, a Bachelor of Engineering program at Hochschule der Medien in Stuttgart, Germany, is a unique study course which combines creativity, science, technology, economics, intercultural studies, corporate management and languages.

It's aimed at students who are interested in working within an international environment. All lectures are held in English and each student studies a foreign language as part of the curriculum. Therefore, most graduates speak three languages, which strongly supports worldwide employment.

There is a high demand for graduates across the industry, and the Print Media Technologies bachelor degree will help you develop fundamental skills to flourish in whatever area interests you most. Marketing, management, production, research and design are the main parts you could focus on. The six-month work placement in the 5th semester is an excellent opportunity to gain industry experience and explore future employment possibilities.

The duration of this Bachelor of Engineering in Print Media Technologies is a minimum of 7 semesters (3.5 years). Have a look at the next pages for insights from our students and visit our webpage *www.hdm-stuttgart.de/pmt* for more details about the structure of the degree programme, including details of all the courses you will attend.

»Print communication is a massive and a fascinating industry. To become a qualified specialist in the field means to become a technical engineer, a creative designer, and a capable business executive all at the same time.«
(Hunter Bliss, Student, 2017)

A Bachelor in Print Media Technologies opens the door to personal growth and discovery. As you learn to say ‘Hello’ in German, make friends and eat exciting new food, it is bound to take your self-confidence to the next level. In the new environment at the Hochschule der Medien you are able to enter a new world in media and in exciting technologies.

Graduates of Print Media Technologies have a wide range of careers to choose from. Your employer may be a global business involved in media production and engineering or even a creative technologist. You will be prepared to work in marketing, management, production, research and design.

Structure and academic contents

1	Introduction to Media Technology	Material Science (1)	Business Management	Information Technology	STEM (1)	Language Course (1)
2	Traineeship in Printing	Material Science (2)	Pre-Media Technology and Color	STEM (2)		Language Course (2)
3	Digital Printing	3D Printing	Post Press Technologies	Product Development (1)	STEM (3)	Language Course (3)
4	Advanced Lab	Sustainability	Commercial Printing	Packaging Printing	Product Development (2)	Language Course (4)
5	Internship					Language Course (5)
	Mobility Window or Optional Courses					
6	Production and Material Management	Campaign Management		Projects, Excursions, Tutorials (PET)	Advanced Lab	Academic Work
			Optional Courses			
7	Thesis		International Management and Law	Finance and Controlling	Advanced Lab	Projects, Excursions, Tutorials (PET)

PRACTICAL SKILLS | TECHNOLOGY | SOCIAL SKILLS | MANAGEMENT | SCIENCE | LANGUAGE SKILLS

As all offered courses at Hochschule der Medien, Print Media Technologies is credit rated. For each semester you should achieve 30 credit points and you need to accumulate a total of 210 credits to be awarded the Bachelor of Engineering qualification.

If you manage to achieve 30 credits (ECTS) per semester, you will graduate after seven semesters (3½ years). This is the recommended manner to accomplish this Bachelor.

STEM = Science, Technology, Engineering, Mechanics

Printing is all around us, on nearly everything we interact with in daily life, wherever we are.

In this efficient digital age, print makes our lives more colourful. We love colour! The symbiosis between the Internet and print media has revolutionised the way we communicate, which has triggered new marketing strategies and a whole range of exciting new printed products.

Creating a real product is the ultimate goal for us. It evolves through diligent team work and is based upon a foundation of jointly developed ideas, converting the abstract into tangible piece of art.

Sheer Endless Applications!

Commercial printing is any technology used for printing marketing collaterals, books, newspapers, flyers, booklets, magazines, posters and single sheets. This involves non-impact and impact printing.

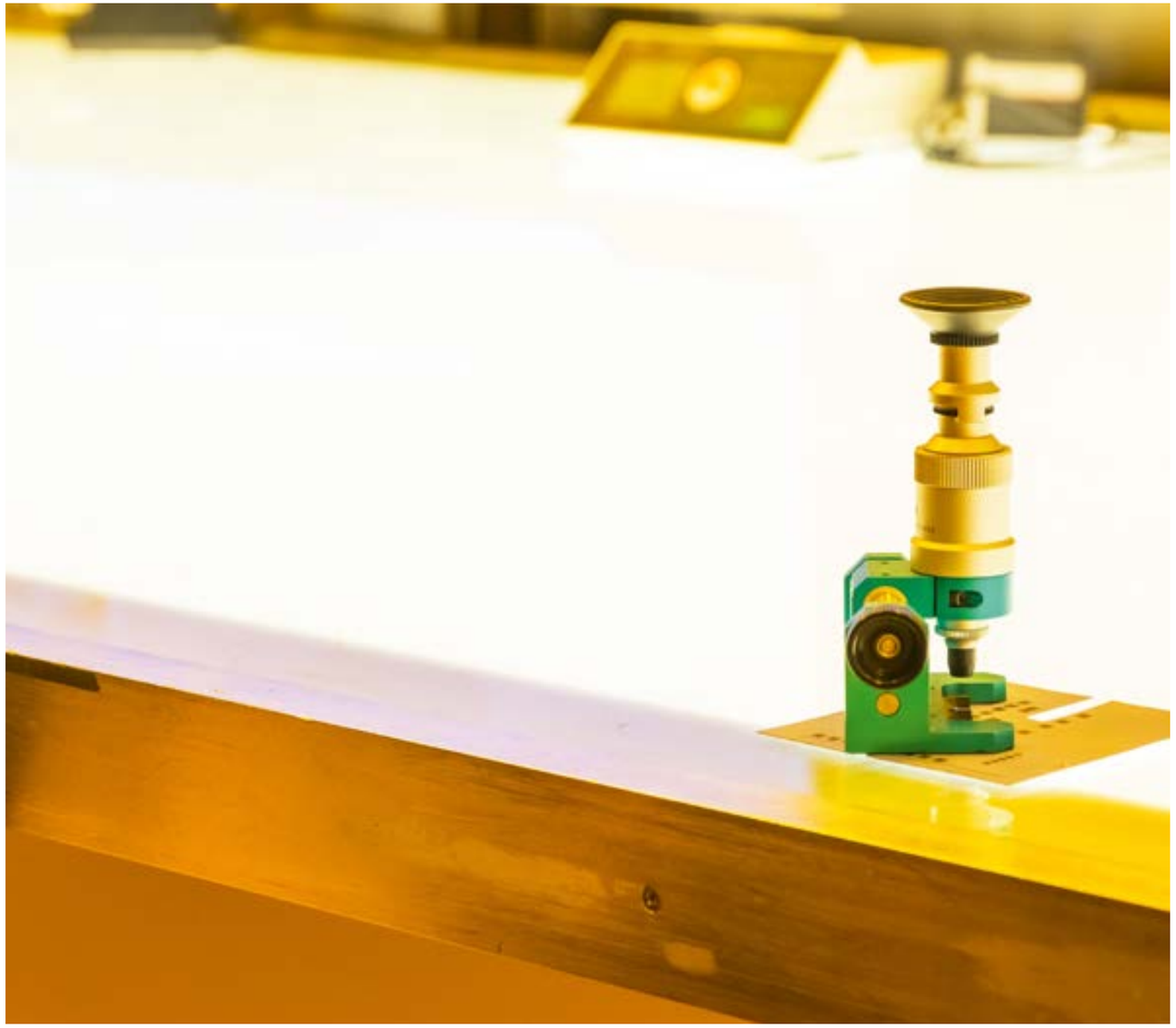
Non-impact printing involves anything that uses digital data for direct printing. Digital printing presses use variable data for the individualisation and personalisation of printed images. It is widely used in advertising. Variable–data printing (VDP) is a digital printing technology using information from a database or external source. Elements such as text, graphics and images may be modified or exchanged from one printed sheet to the next, without stopping the printing process. The subject is about programming, workflows, file formats, functional principles and designs of different press technologies. It includes methods of colour printing and screening processes.

Impact printing involves any printing technologies using printing plates. Lithography is a process widely used for commercial printing. This technology is employed for printing magazines, newsletters, tabloids and books. The technology involves large web- or sheet-fed offset presses, which run at high speeds.

Packaging is a growing market, from corrugated boxes to self-adhesive labels, from shrink films to deep-freeze packaging, from potato crisp bags to milk containers, and from poly-tubes to snack food wrappers.

Flexography is the major technology used in packaging printing. It is a process that utilises a flexible relief printing plate referred to as a photopolymer plate. It is essentially a modern version of letterpress which is largely employed for printing on all types of flexible substrates, including plastic, metallic films, cellophane, and paper. New trends in packaging printing concern wellness, lifestyle, health, intelligent packaging and individualisation. These trends deliver a growing demand and a greater diversity for printed flexible packaging, paper and board.

Décor Printing is an application which involves the printing of wrapping paper, furniture design, carpet design, tiles, toys and many more creative products that require bespoke printing technologies. The technologies are primarily for creating multiple forms of seamless interior design such as wood or floor patterns. The technologies used are rotogravure, screen-printing and ink-jet pinting.



Rotogravure, for instance, is an intaglio printing process that uses rotary printing capable of producing continuous tone images.

Large copper plated steel cylinders are engraved with the chosen design using a laser or diamond tipped stylus. The engravings are referred to as 'cells' and are etched in differing depths, with deeper cells providing more intense colour. It requires an understanding for the special demands of substrates and the ability to discriminate and judge printed material in terms of material parameters and colorimetry.

Textile printing is an application used in the production of garmets, curtains, bags, and industrial textiles. Screen printing is a typical technology used for printing on textiles. This printing method is similar to a stencil in that once a background is applied with printing paste, the coloured dye is then printed on the part of the fabric that is exposed. The subject covers general concepts in exposure, coating, metallic inks, speciality and textile materials. Another print technology used may be ink-jet. This technology is particular popular for individulisation. It requires an in-depth knowledge of VDP and material sciences.

Functional printing is a segment of industrial printing. Functional printing is the ability of a printed substance to actually perform a function, such as ink that illuminates or conducts electrical current. This includes printed batteries and even printed antennae. The ability to print electronics is still an industry at its infancy. Functional printing is opening new doors for industrial manufacturers and process engineers charged with ever changing market demands. Ink manufacturers are glad to follow suit. Printed electronics is expected to be a major market in the future. Examples are OLEDs and smart devices. The subject requires a detailed understanding of screen-printing, the prevalent printing technique in this application.

Security printing is an application which involves many different technologies that deal with the printing of items such as banknotes, passports, tamper-evident labels, product authentication tools, stock certificates, postage stamps and identity cards.

The main goal of security printing is to prevent forgery, tampering, or counterfeiting. This subject requires an understanding for counterfeit protection, pre-press procedures and speciality printing.

3D Printing is a new application which is still in its infancy. It involves a large number of different technologies used for additive manufacturing. This technology refers to many processes that are employed to synthesize a three-dimensional object. Top computer graphics software will integrate to 3D printing, resulting in friendly modelling tools. It is said to revolutionise many parts of the industry. This subject requires a detailed understanding of the principles, the science and mathematical theory and the ability to apply this to your individual project.

The faculty runs a unique, state-of-the-art learning center equipped with advanced media technology and some of the latest printing machines used in the industry.

This well-equipped centre features a number of laboratories and studios, including digital and commercial printing presses, creative printing set-ups, 3D printers, packaging printing equipment and the latest post press units used for binding and finishing.

Many of the machines have been generously sponsored by our industry partners.

BRITTANY

My name is Brittany and I am a Print Media Technologies (PMT) student at Hochschule der Medien – Stuttgart. I am from Southern California and my background is in business, communications, and fashion design. I decided to major in PMT because I believe it is the foundation for all business communications. In a digital age, markets have become saturated with online advertising, but print allows a company to convey its brand with unique aesthetic qualities of font, color, images, and texture.

As a Print Media Technologies student, I examine all components of printing as each plays a vital role in creating a high-quality product! One of those being pre-press. The pre-press process is the phase between the layout creation and final print product. Pre-press includes but is not limited to, color management, imposition, Computer to Plate (CPT), and proofing.

HdM's pre-media facility offers students the latest digital technologies available to the media industry. This includes various design software packages such as Adobe InDesign, Illustrator, and Photoshop, as well as an industry-standard pre-press workflow software. The access to necessary software programs allows students to follow along with professors in class, receive feedback in real-time and create tangible products all within the classroom environment.

As a result, I have gained valuable insight into the print workflow processes and developed a deeper understanding of the customer journey. As an aspiring business owner, understanding pre-press is imperative as within this process customer expectations are agreed upon with contract proofs. Studying at HdM has afforded me the opportunity to strengthen my skill set in this subject and others within the printing field!

First come, first served!

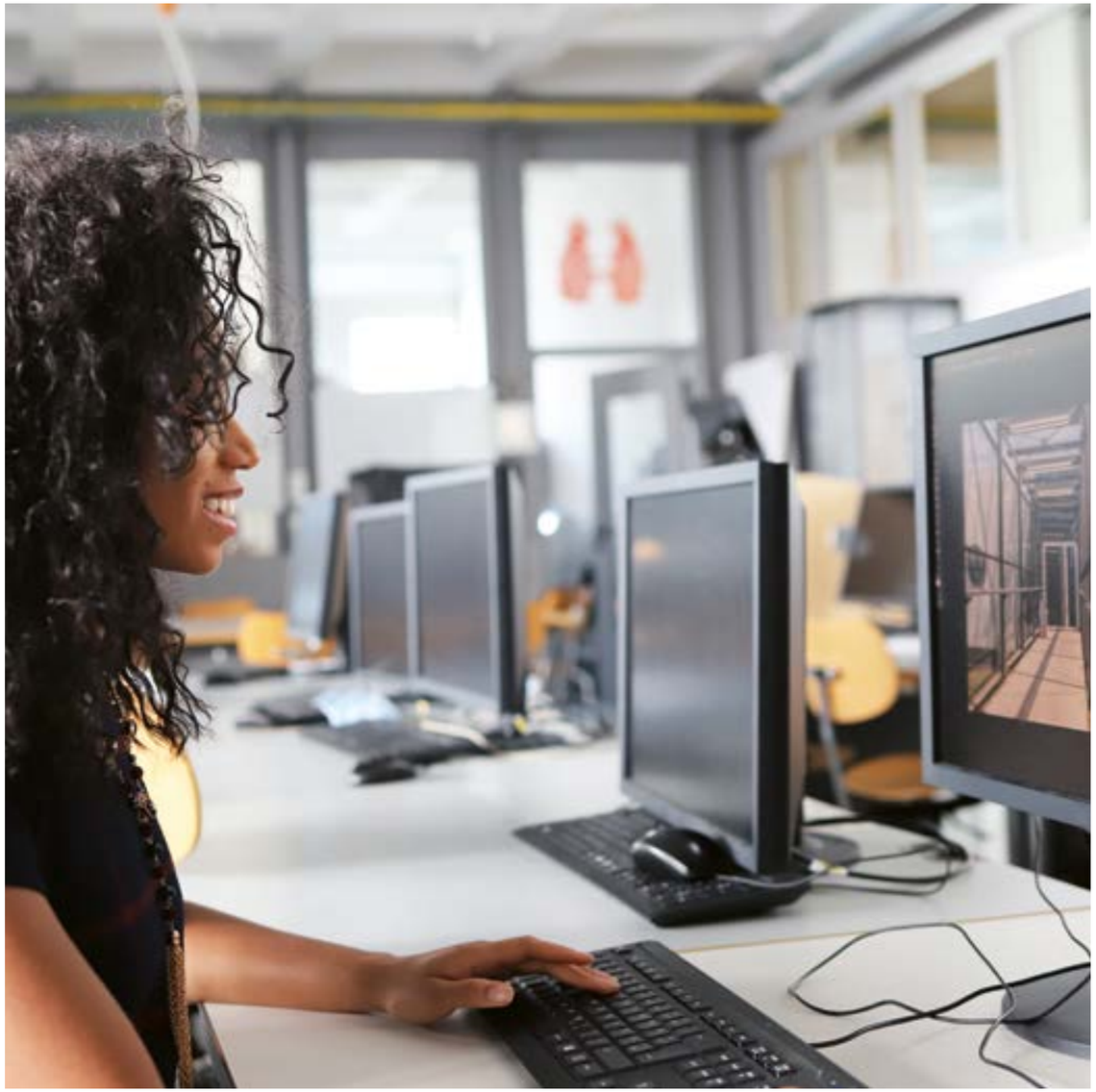
A process to produce, adapt and deliver multi-channel, multi-market communications that maximise brand engagement.

Pre-Media is anything that happens to a piece of artwork to take it from its original state when completed by the creator to a form that is ready for public consumption. This can range from colour correcting a photograph to post production and colour management to preparing a PDF for printing. This includes various pre-press technologies and systems.

Because Pre-Press is a specific type of pre-media, pre-press activities are considered a pre-media process. It involves graphic communications manufacturing processes with emphasis on the variety of pre-media technologies available, and their application.

It includes design, layout, typography, fotography, retouching, computer graphic imaging (CGI), impositioning, proofing, raster image processing (RIP), computer to plate (CTP) or computer to press or web-to-print, material selection, colorimetric science, colour management and finally finger printing.

The software used in the HdM are used to create layouts and do retouching or post-production. These Pre-Press Computers also have professional programs for preparing and planning print jobs installed. Students can use these software at any time for all their projects. Apart from software, we also have different devices to measure ink, substrates and print quality.



ZEESHAN

Mi chiamo Mohammad Zeeshan Mehmood e vengo da Brescia, una città situata nel nord dell'Italia, ma i miei genitori vengono dal Pakistan. Ho vissuto per 5 anni nel Regno Unito, dove ho completato i miei esami di Maturità, dopo di che mi sono trasferito in Germania per studiare Print Media Technologies alla Hochschule der Medien.

Allora perché sono venuto qui? La risposta è molto semplice: Questo corso di studio è unico in Europa. Semplicemente non troverete da nessun'altra parte, un corso di studio internazionale che integra l'ingegneria, il business e il design con la stampa e i media e che ha una grande attenzione al futuro.

Ciò che mi affascina di più è l'ascesa e il potenziale della stampa di dati variabili (VDP). Si tratta di una delle tecnologie fondamentali della stampa che avrà un ruolo importante nel futuro. Permette di stampare prodotti individualizzati e personalizzati in una sola volta a piena velocità di stampa, senza dover fermare la macchina. Oggi, con l'aumento dell'uso dei social media, è importante connettersi con i clienti di tutto il mondo riflettendo i loro valori e interessi personali. Per questo motivo, molte aree del settore utilizzano sempre più spesso questo metodo per produrre una varietà di prodotti, che vanno dalle cartoline e brochure al packaging.

Siamo molto felici di avere qui una macchina da stampa digitale, la HP Indigo. Per esempio, questo volantino è stato stampato proprio su questa macchina! Perciò ho deciso di dare un'occhiata più da vicino, lavorando con i nostri professori del reparto stampa digitale. Qui, sono responsabile dell'elaborazione degli ordini dei nostri colleghi studenti tramite il negozio Web2Print e del funzionamento della macchina da stampa HP Indigo e anche della nostra macchina a getto d'inchiostro per stampare questi ordini in base alle loro esigenze.

My name is Mohammad Zeeshan Mehmood, and I come from Brescia, a city situated in the North of Italy – my parents however, come from Pakistan. I lived in the UK for 5 years, where I completed my A-levels, after which I moved to Germany, to study Print Media Technologies at Hochschule der Medien.

So why did I come here? The answer is very simple: This study course is unique in Europe. You are simply not going to find anywhere else, an international study course that integrates Engineering, Business and Design with print and media and has a big focus on the future.

What fascinates me the most, is the rise and potential of variable data printing (VDP). It is one of the key printing technologies that will play a huge role in the future. It allows individualised and personalised products to be printed in one go at full printing speed, without having to stop the machine. Nowadays, with the increase in usage of social media, it is important to connect with customers all around the world by reflecting their personal values and interests. Hence, many areas in the industry are increasingly using this method to produce a variety of products, ranging from postcards and brochures to packaging.

We are very happy to have a digital press here, the HP Indigo. Therefore, I decided to take a closer look by working with our professors in the digital printing department. Here, I am responsible for processing orders from our fellow students via the Web2Print shop and operating the HP Indigo press as well as our inkjet machine to print these orders according to their needs.

Something personal!

Digital Printing is used to print variable data. It is employed for individualized or personalized products. This includes commercial print products, advertising, labels, film or flexible packaging. It involves sending an image directly to the printer using digital files such as PDFs. Digital printing allows on-demand printing, and variable data printing for individualized and personalized products.

Variable data printing is also known as variable information printing or variable imaging. This is a form of digital printing, in which elements such as text, graphics and images are changed from one printed piece to the next, without stopping or slowing down the printing process. Variable Data Printing goes hand in hand with the Internet. Images may be modified or exchanged by using a server based Internet platform.

The global commercial printing market is poised for substantial growth over the next seven years. Individualised printing in advertising, packaging and commercial, will respond to new product needs of business customers.

There is a trend to advanced digital high-speed inkjet technology and complex toner based systems using variable data and allowing the creation of individualised and personalised print. This trend is due to the fact that printed mailings are identified as a more effective way to receive a higher individual customer response. At HdM we feature a HP Indigo 5r digital press.

ANNA

Меня зовут Анна Колесова и я родом из Карелии, северо-западной части России. Я всегда мечтала путешествовать по миру и быть в международном кругу. Поэтому, сразу после окончания школы я поехала учиться в Финляндию, где у меня появилась возможность поехать на два семестра по обмену в Нидерланды и Чехию.

Курс обучения Технологии печатных СМИ в Hochschule der Medien предоставляет мне возможность сочетать креативный способ мышления с техническим подходом. Передовые технологии университета и опытные профессора, работающие в Hdm, помогают студентам попробовать себя в разных направлениях печати. Сразу с первого семестра меня заинтересовала трафаретная печать, возможности которой позволяют переносить изображения на разные поверхности, такие как ткань, пластик, стекло и различные трехмерные объекты. Трафаретные печатные машины в Hdm так же доступны студентам для их дизайнерских проектов. Кроме того, метод трафаретной печати используется для изготовления печатной электроники, включающие в себя, сенсоры, батареи и разные компоненты для смартфонов, компьютеров и автомобилей.

Чтобы глубже погрузиться в область печатной электроники, я начала работать вместе с командой исследователей в нашем университете, проводя опыты и выполняя всевозможные задания связанные с печатью очень тонких и пластичных батарей и сенсоров. Я уверена, что печатная электроника будет играть огромную роль в скором будущем. И я надеюсь, что через пару лет смогу внести вклад в развитие этой области.

My name is Anna Kolesova and I come from the Northern part of Russia. I have always seen myself as part of the international society and wanted to explore the world. For that reason, I moved to Finland for my first bachelor degree program directly after finishing high school. During that time, I had the chance to have exchange semesters in the Netherlands and Czech Republic.

The study course Print Media Technologies gives me the opportunity to combine a creative way of thinking with an engineering approach. Because of the advanced technologies that the HdM offers and the experts who are working there, the students get a lot of opportunities to explore different areas of printing. Straight away in the first semester I became very interested to find out about the many possibilities of screen-printing technologies, that are able to transfer the ink on different kind of substrates. for example textile, plastic, glass, and various three-dimensional objects. This printing process is also employed for food, medical and luxury packaging and any other commercial print products. Besides, screen printing is used to produce printed electronics such as antennas in cars, sensors, batteries, certain components in smartphones and computers. Various screen-printing presses are available in our university to students for their design projects.

Because of my initial interest, I decided to further explore the area of printed electronics, working together with a research team and assisting them on the projects of producing very thin batteries and sensors. I believe that printed electronics will play a big role in our future, and in a couple of years I hope to be able to contribute to the further development of this technology.

A real mesh of relations!

Screen Printing is one of the oldest printing processes. It was largely introduced to Western Europe from Asia sometime in the late 18th century. It is a printing technique whereby a mesh is used to transfer ink onto a substrate, except in areas made impermeable to the ink by a blocking stencil.

A blade or squeegee is moved across the screen to fill the open mesh apertures with ink, and a reverse stroke then causes the screen to touch the substrate momentarily along a line of contact. This causes the ink to wet the substrate and be pulled out of the mesh apertures as the screen springs back after the blade has passed.

There are three common types of screen printing presses. The 'flat-bed', 'cylinder' and 'rotary' press. While the public thinks of garments in conjunction with screen printing, the technique is used on tens of thousands of items, including decals, clock and watch faces, balloons, and many other products. The technique has even been adapted for more advanced uses, such as laying down conductors and resistors in multi-layer circuits using thin ceramic layers as the substrate. It also applies to smartphones in which the circuitry is printed in screen to save space, batteries and many more functional features.

Our university features two flatbed screen printing machines, both manual and automatic, as well as a round surface machine. Students often use them for their own projects, mostly shirts and bags. Apart from this, it also features a Lab we use for research on printed electronics.

BAQER

اسمي باقر. لقد أتيت من إقليم كردستان في شمال العراق. تدير عائلتي أعمال بإختصاص الطباعة وهذا أحد الأسباب التي دفعتني إلى دراسة تقنيات الوسائط المطبوعة.

لقد اخترت ألمانيا وبالتحديد **Hochschule der Medien** لأنها واحدة من الجامعات القليلة التي تقوم بتدريس تقنيات الوسائط المطبوعة باللغة الإنجليزية وتتميز بمركز تكنولوجي كبير مزود بأحدث المعدات. يقدم البرنامج المنتمي اليه العديد من الفرص الرائعة للطلاب المهتمين بالتواصل الجرافيكي.

إن أكثر التقنيات الرائعة التي أعمل بها في الوقت الحالي هي تقنية الروتوغرافيور. توفر هذه التقنية معيار جودة طباعة عاليًا وكما مطلوب في الديكور وطباعة التعبئة والتغليف. تحتوي الجامعة على مطبعة ويب كبيرة الحجم من نوع **Bobst Rotomec MW 60** لدينا أيضا البيئة التكنولوجية لنقش اسطوانات الحفر في الموقع وهذا يعد أمر فريد لجامعة تعليمية.

الدراسة في ألمانيا تستحق كل دقيقة وقبل كل شيء، إنها ممتعة جدا. تقدم الجامعة العديد من المشاريع المثيرة للاهتمام والتي تشمل الصناعة. نذهب احيانا في العديد من الرحلات الجامعية حيث لدينا الفرصة للتعلم منها.

My name is Baqer. I come from Kurdistan, north of Iraq. My family runs a printing business; one of the reasons that made me study Print Media Technologies.

I have chosen Germany and specifically the Hochschule der Medien because it is one of the few universities that teaches Print Media Technologies in English and features a large technology center with state of the art equipment. The program offers many great opportunities for students who are interested in graphic communication.

At the moment the most fascinating technology I am working with is rotogravure. This technology provides a high print quality standard which is required for décor and packaging printing. The university features a rather large Bobst Rotomec MW 60 web press. We also have the technological environment to engrave gravure cylinders on site. This is unique for an educational university.

Studying in Germany is worth every minute and above all good fun. The university offers many interesting projects which involve the industry. We go on many excursions and have the opportunity to learn from the industry as well.

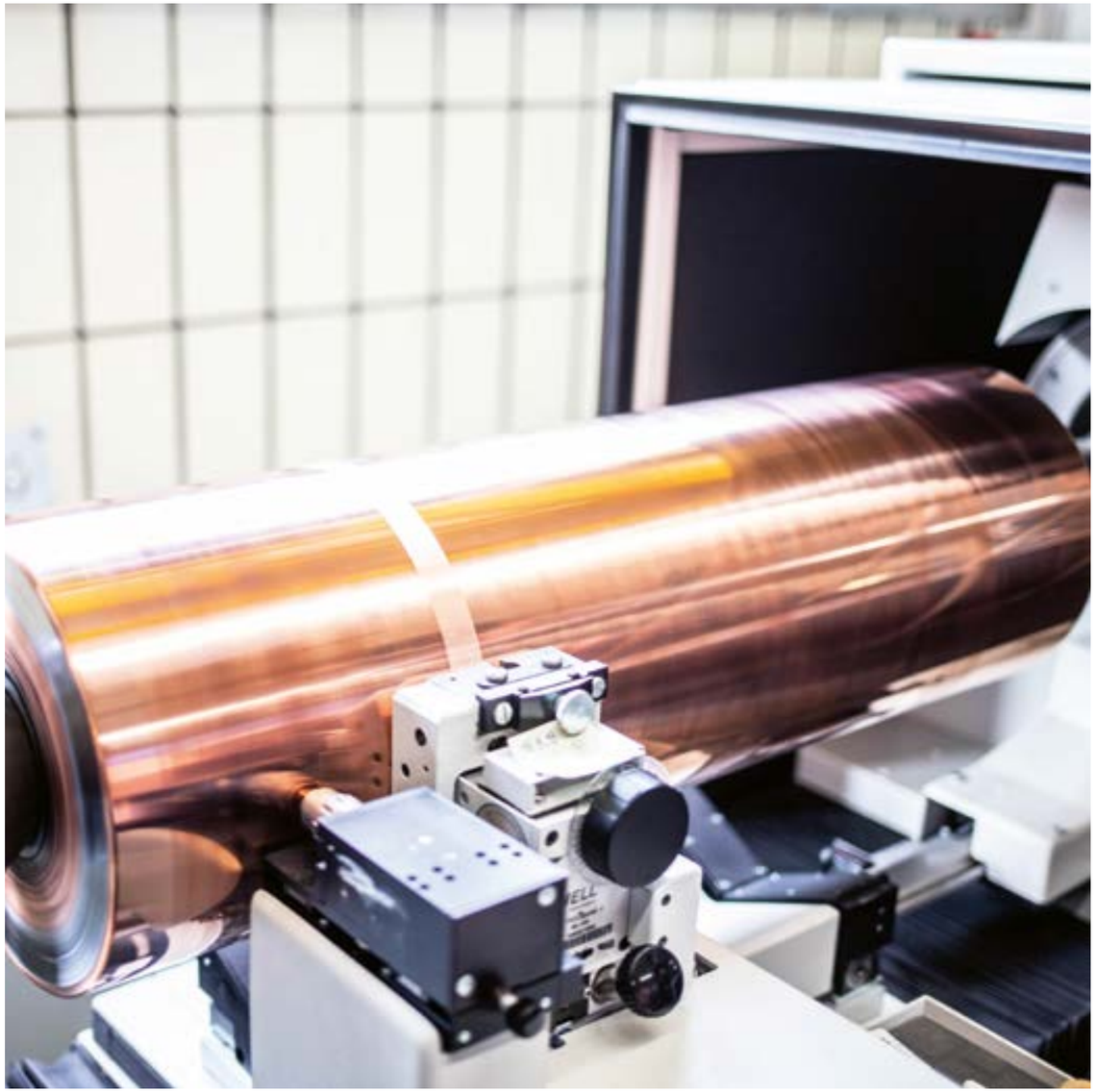
No teasing – please!

Rotogravure is used for large volume printing applications. It is used in packaging and décor printing, anything which needs a continuous design. A typical application is packaging of gummy bears. Apart from that, every big name catalogue, many famous newspapers and high quality packages are produced in gravure printing.

Large copper plated steel cylinders are engraved with a given design. The cylinder is partially immersed in the ink tray, filling the recessed cells.

As the cylinder rotates, it draws excess ink onto its surface and into the cells. Next, the substrate gets sandwiched between the impression roller and the gravure cylinder: this is where the ink gets transferred from the recessed cells to the web.

Our rotogravure machine is the Rotomec MW 60 from Bobst, Enulec and Bsteltromat. At our university, we prepare the printing cylinders with diamond and laser engraving.



WILLIAM

我是陳俊維，今年23歲。我的英文名字是 William。我是一名來自台灣且有著印刷背景的學生。過去五十年，我的家族企業深耕在台灣與中國大陸的多個城市，為世界頂尖客戶製作最高品質的包裝盒。我們使用UV平版印刷的方式，專精於生產美妝保養、香水、藥品、高級酒類及其他產品的包裝與設計。我們一貫的作業系統包含買進與儲備原物料，乃至於製版、設計，而後的印刷與多元的後道加工技術，直至出貨，全部都能一手掌握。

身為一位學生，兩年前我毅然決然選擇到德國這個印刷之最的國家學習印刷科技的技術。於是，在斯圖加特媒體學院我開始就讀了由系主任Jansen教授所規劃的「印刷媒體科技」學士學位。在這個精心安排的學程中，我們能夠學習並真實接觸到非常多元的印刷技術，譬如平版印刷、柔版印刷、凹版印刷、數位印刷、絲網印刷，乃至於3D打印技術，都是我們學習的項目。

其中，平版印刷成為我最感興趣的科目之一。在斯圖加特媒體學院的科技中心—商業印刷部，我們所使用的是海德堡 生產的自動平版印刷機：海德堡速霸 Heidelberg Speedmaster CD 74 全程採自動化的作業流程；同時，我們也在科技中心生產自己的印刷版。在不同的課堂上，我們都能接近並操作這些機器，進行實際包裝印刷或是其他要求高品質的工作。當然，在學生操作機器的時候，專業的教授們會在一旁予以我們支持和協助。

個人認為，我非常享受並珍視在斯圖加特媒體學院的一切經驗，並且與我班上來自世界各地的同學、同事們融洽地相處合作！

I am Chun-Wei Chen. I go by William as a nickname. I am a student with a printing background from Taiwan. My family business, based in cities in Taiwan and China, dedicates in UV-offset package-printing for world-class customers for the past 50 years. We specialise in the fields of cosmetic packages, perfume packages, medicine packages, beverage packages, and other high quality packages. Our complete line of workflow starts from buying papers and substrates, to designing and finalizing, plate-making, printing, post production, until shipping.

As a student, I made a decision to come to Germany in the purpose of learning printing technologies from the best printing country. I started my studies with Professor Volker Jansen's Print Media Technologies in Hochschule der Medien Stuttgart.

In this programme things are taken precisely, as we learn about various sorts of printing methods such as Offset, Flexography, Gravure, Digital printing, 3D printing and screen printing. In particular, offset printing draws my best attention as I have a business related to it. In our commercial printing department in the HdM, we use an automated offset press (Heidelberg Speedmaster CD 74) employing a digitised workflow system; we also develop the printing plates on site. This printing process is generally used for high quality print jobs, and additionally used for printing on cardboard for packaging. Often, we are allowed to operate the machines for our projects with professional supervisors with us.

Personally, I really enjoy working alongside my international colleagues and value this experience here in the HdM a lot!

Quite a repelling relationship!

Lithography is a method of printing originally based on the immiscibility of oil and water. In modern lithography, the image is made of a polymer coating applied to a flexible plastic or metal plate. The image is printed offset, by transferring the image onto a flexible sheet or rubber blanket which is than printed to the substrate. The image on the plate emulsion is created by direct laser imaging in a CTP device known as a platesetter.

The positive image on the plate is the emulsion that remains after imaging. The plate is affixed to a cylinder on a printing press. Dampening rollers apply water, which covers the blank portions of the plate but, simultaneously being repelled by the emulsion of the image area.

Hydrophobic ink, which is repelled by the water and only adheres to the emulsion of the image area, is then applied by the inking rollers. The plate rolls against a cylinder covered with a rubber blanket, which picks up the ink and transfers it to the paper with uniform pressure. The paper passes between the blanket cylinder and a counter-pressure or impression cylinder and the image is transferred to the paper.

The offset printing process is commonly used for cardboard packaging like cereal boxes. It's also used for magazines and other high volume printing products. This flyer was printed with our Speedmaster CD 74 from Heidelberg. The used printing plates were also produced on location.

BHARGAV

હું ભારતનો ભાર્ગવ ઠેસીયા છું . મેં પ્રિંટ મીડિયા ટેક્નોલોજી પસંદ કરી કારણ કે પેકેજિંગ પ્રિન્ટિંગ ઉદ્યોગ ફક્ત ભારતમાં જ નહીં, પણ સમગ્ર વિશ્વમાં ઝડપથી વિકસી રહ્યો છે. આ અભ્યાસ કાર્યક્રમ મારા માટે યોગ્ય છે કારણ કે તે અંગ્રેજીમાં શીખવવામાં આવે છે અને તે આંતરરાષ્ટ્રીય છે. તેમાં વિવિધ કોર્સ મોડ્યુલો છે જેમાં ડિજિટલ પ્રિન્ટિંગ, ફ્લેક્સોગ્રાફિ, ગ્રેવ્યુર પ્રિન્ટીંગ અને ઘણા વધુ શામેલ છે. બધાથી ઉપર, ફ્લેક્સોગ્રાફિ એ એક કોર્સ છે જેમાં મને ખાસ રસ છે. તદુ પરાંત, ફ્લેક્સોગ્રાફિ પ્રિન્ટિંગને પેકેજિંગ ઉદ્યોગના સૌથી મોટા બજારોમાંનું એક માનવામાં આવે છે. તે લવચીક સબસ્ટ્રેટ્સ, કાગળ અને કાર્ડબોર્ડ પર છાપવા માટે કાર્યરત છે જેમાં પેકેજિંગનો સૌથી સામાન્ય વપરાશ છે.

મીડિયા કોલેજ, આપણી પાસે એક મોટું ટેકનોલોજી કેન્દ્ર છે, જ્યાં આપણે મશીનો ચલાવતા નિરીક્ષણ કરીએ છીએ અને સમજીએ છીએ કે તેઓ કેવી રીતે કાર્ય કરે છે. ફ્લેક્સોગ્રાફિ પ્રિન્ટિંગ માટે, અમે ફિશર કંપની તરફથી 6 એસ -8 ફ્લેક્સો પ્રેસનો ઉપયોગ કરીએ છીએ અભ્યાસ માટે યોગ્ય દેશ પસંદ કરવા વિશે વાત કરતા, મારા માટે પ્રથમ પસંદગી હંમેશાં જર્મની તેના ભૌગોલિક સ્થાન અને સંસ્કૃતિને કારણે હતી. તે યુરોપના મધ્યમાં સ્થિત છે જે આ દેશને વિશેષ બનાવે છે. લોકો, ભાષા અને મજબૂત પરંપરા કારણે જર્મન સંસ્કૃતિ મારા માટે જેથી રસપ્રદ છે.. હકીકતમાં, જર્મની કવિઓ અને ચિંતકોના ઘરે પાછા દેશ તરીકે ઓળખાય છે. જર્મનીના સમૃદ્ધ ઇતિહાસમાં જર્મન સંસ્કૃતિ પ્રભાવિત અને આકાર પામી રહી છે, કારણ કે યુરોપના ઇતિહાસમાં દેશની મુખ્ય ભૂમિકા છે. તે પવિત્ર રોમન સામ્રાજ્યનો એક મહત્વપૂર્ણ ભાગ હતો, અને તે પછીની દુ નિયાની એક સૌથી સ્થિર અર્થવ્યવસ્થા હતી.

I am Bhargav Thesiya from India. I chose Print Media Technologies because the packaging printing industry is rapidly growing, not only in India, but also in the whole world. This study program is perfect for me since it is taught in English and it is international. It has different course modules which include digital printing, flexography, gravure printing and many more.

Above all, flexography is the course in which I am particularly interested. Moreover, flexographic printing is considered as one of the biggest markets in the packaging industry. It is employed for printing on flexible substrates, paper and cardboard with the most common usage being in packaging.

In Hochschule der Medien, we have a large technology centre, where we observe the machines running and understand how they work. For flexographic printing, we use a 6S-8 flexo press from the company Fischer & Krecke. It belongs to the DFTA, the so called "German Flexographic Technical Association" and it is primarily used for research and development.

Talking about choosing the right country for studying, the first choice for me was always Germany because of its geographical location and culture. It is located in the heart of Europe which makes this country special. The people, language, and strong traditions are the reasons why German culture is so interesting for me. As a matter of fact, Germany is known as the country of poets and thinkers back home. The German culture has been influenced and shaped throughout Germany's rich history, since the country has had a key role in the history of Europe.

With bag and baggage!

Flexography is a printing process which utilises a flexible relief plate. This may be a photopolymer or rubber plate. The technology is used for printing non-porous, flexible substrates, which are required for various types of food packaging. An example is the household sugar package.

A flexographic print is made by creating a positively mirrored master of the required image as a 3D relief in a polymer material. The image areas are raised above the non image areas. The ink is transferred from the ink roll which is partially immersed in the ink tank.

Then it transfers to the anilox or ceramic roll whose texture holds a specific amount of ink since it is covered with millions of small cells holding the exact same volume that enable it to meter ink to the printing plate in a uniform thickness evenly and quickly. The required amount of ink is transferred by using a chambered doctor blade system which removes excess ink from the anilox roller before inking the printing plate.

The substrate, usually a web, is finally sandwiched between the plate and the impression cylinder to transfer the image. The web is fed through a dryer, which allows the inks to dry.

The Flexopress 6S-8 from Fischer & Krecke belongs to the DFTA (German Flexographic Technical Association). They are using it for research and ink testing, for example.

BABAR

ہیلو میں بابر نفیس ہوں۔ میں کراچی ، پاکستان سے آیا ہوں ، جو ایک میٹروپولیٹن اور دنیا کا ایک گنجان آباد شہر ہے۔ میں ۲۵ سال کا ہوں اور یہ میرا دوسرا بیچلر پروگرام ہے ، پچھلا پروگرام بزنس اسٹڈیز میں تھا۔ جس چیز نے مجھے اپنے دوسرے بیچلرز کے لیے پڑھنے میں مجبور کیا وہ ہے ایک بالکل مختلف ماحول ، اخلاقیات ، اصولوں اور اچھی پرنٹنگ ہے۔

پوسٹ پریس اتنا ہی اہم ہے جتنا پری پریس اور خود پرنٹنگ کرنا۔ تکمیل مختلف ٹیکنالوجیوں کے ذریعہ کی جاتی ہے۔ ہماری یونیورسٹی میں پوسٹ پریس ڈیپارٹمنٹ میں تہ کرنے ، کاٹنے ، پابند کرنے اور خصوصی اثرات شامل کرنے جیسے ایمبوسنگ یا لیزر کٹنگ والے پرزوں کے لئے خصوصی آلات شامل ہیں۔ مثال کے طور پر ، طلباء نے اپنے چھپی ہوئی پروجیکٹس کو مولر مارٹینی (ویریو) سے حال ہی میں نصب کامل بائنڈر پر مکمل کیا ، یا وہ ایم بی او فولڈنگ آلات استعمال کر سکتے ہیں۔ ایک نئی سلائی مشین یونیورسٹی ، جو ڈیجیٹل پرنٹ مصنوعات کے پابند ہونے کے لئے وقف ہے ، حال ہی میں انسٹال کی گئی ہے۔ ہمیں پوسٹ پریس اور فنشنگ کی ضرورت کیوں ہے؟ کیونکہ اس سے حتمی مصنوع میں اضافی قیمت مل جاتی ہے ، جو صارفین کو اس سے زیادہ دلکش بناتی ہے۔ چونکہ جرمنی یورپ کے وسط میں ہے ، لہذا میرے لئے سفر کرنا اور نئے لوگوں سے ملنا آسان ہے ، جو میں کرنا پسند کرتا ہوں۔ اس پروگرام کے بارے میں میرا پسندیدہ حصہ سیر و تفریح ہے جو ہمیں سب سے پہلے دکھاتا ہے جہاں پرنٹنگ کی صنعت اتنی آگے بڑھ چکی ہے۔ میرا مستقبل کا مقصد یہ ہے کہ میں اس بیچلر سے اپنے علم اور تجربے کو اپنے خاندان کے آفسیٹ پرنٹنگ کے کاروبار میں لگاؤں۔ اس کی بنیاد ۵۰ سال سے زیادہ پہلے رکھی گئی تھی جہاں ہم ملٹی نیشنل جیسے گلیکسو سمتھ کلین ، ٹویوٹا وغیرہ کے لئے پیکیجنگ اور تجارتی مواد چھاپتے ہیں۔

I am Babar Nafees. I come from Karachi, Pakistan, which is a metropolitan and one of the densely populated cities in the world. I am 25 and this is my second bachelor program, the first one was in Business Studies. What made me come for my second bachelors is the challenge of a completely different environment, ethics, norms and of course to learn the science behind good printing.

Post press is equally as important as pre-press and printing itself. Finishing is done via various technologies. The Post Press Department in our university features state of the art equipment for folding, cutting, binding and adding special effects like embossing or laser cutting parts. For example, students complete their printed projects on a recently installed perfect binder from Müller Martini (Vareo), or they may use MBO folding equipment. A new stitching machine Univers, which is dedicated to the binding of digital print products, has recently been installed. Why we need post press and finishing? Because it adds extra value to the final product, which makes it more appealing to the customers.

Since Germany is in the center of Europe, it's easy for me to travel and meet new people, which is something I love to do. My favorite part about this program are the excursions which shows us first hand where the printing industry has gone so far. My future goal is to apply my knowledge and experience from this bachelor into my family's offset printing business. It was founded more than 50 years ago where we print packaging and commercial materials for multinationals like Glaxo Smith Klein, Toyota etc.

This arrangement is binding!

Post-Press technologies include anything which is applied after printing, for example binding and finishing.

Binding involves folding and fastening of individual sheets together, while finishing involves additional decorative actions, such as die-stamping, embossing or laser cutting. Lamination is another possibility. It is available in both gloss and matt finish. The printed sheets are then folded and glued so we get the final look of the printed product.

Although binding is a post-press function, binding considerations need to be dealt with in the pre-press phase of any print job. There are many different ways to bind press sheets, and certain binding allowances need to be made, which vary by binding type. The correct imposition needs to be determined at this time, as well. Imposition issues are usually the purview of the person responsible for the assembly of all the page elements.

Post-press technologies involve a combination of different processes. These include: guillotine and rotary cutting, specialty folding, magazine and paperback production, case binding, stationery and loose-leaf binding, saddle stitching, thread binding and thread sealing, embossing and debossing, hot foil stamping, make-up and securing, Laser die cutting and engraving and many more processes.

ARNE

Hallo, ich bin Arne, ein Drucker aus dem Norden Deutschlands. Nachdem ich mein Abitur gemacht hatte, habe ich einige Zeit in der Industrie gearbeitet. Doch meine Neugierde brachte mich hier nach Stuttgart, um mehr über die "farbenfrohe" Industrie zu lernen, in der ich arbeitete. Hier entdeckte ich dann die ganze Bandbreite der Druckindustrie.

Was mir an unserem Kurs besonders gefällt, ist die Möglichkeit, Gedanken und Ideen vom Bildschirm ins echte Leben zu bringen. Das ist auch der Grund, warum ich viel Zeit in unserem 3D Labor in der HdM verbringe. Hier kann ich mit den Möglichkeiten der "additiven Fertigung" herumspielen und Daten in physische Objekte verwandeln.

Heutzutage sind Dinge möglich, die wir uns vor zwanzig Jahren nicht mal vorstellen konnten. Jetzt stell Dir einmal vor, wir hätten eine Technologie, mit der wir Maschinenteile, Prototypen oder sogar Prothesen für Menschen lokal und auf Knopfdruck herstellen könnten.

Das hört sich nach den Star Trek Replikatoren an, oder? Doch die Technologie ist schon hier, in ihren Kinderschuhen. 3D Druck – oder genauer, additive Fertigung – ist ein Teil dessen, was in unserem Kurs gelehrt wird und unter den Studenten sehr beliebt ist. Sogar Studenten anderer Kurse nehmen daran teil.

Wir haben eine Auswahl verschiedener Maschinen in unserem 3D Labor, die jeder nutzen kann und wir arbeiten daran, unsere Flotte stetig zu erweitern um zusammen mit den Professoren neue und interessante Projekte zu beginnen.

Hi, I am Arne, a printer from the north of Germany. After finishing my Abitur, I worked in the industry for a little while. My curiosity brought me here to Stuttgart, to learn more about the „colorful" industry I've been working in. Here I discovered the whole breadth of print.

What I especially like about our course, is the possibility to bring thoughts and ideas from the screen into real life. This is also the reason, why at the moment I am spending most of my time in our 3D printing lab in the HdM. Here I can play around with the possibilities of "additive manufacturing" and transform data to physical objects.

Today things are possible that could not even have been imagined twenty years ago. Just imagine now, we had a technology that would create machine parts, prototypes or even prosthetics for humans locally and only by the push of a button.

Sounds like Star Trek's Replicators, right? The technology is already here, in its infancy. 3D printing, or more accurately Additive Manufacturing, is part of what is covered in our course, and it is very popular amongst our students - even students from other courses.

We have an array of different machines in our 3D lab that can be used, and we continue to build up our fleet of printers for new and interesting projects for students and professors to embark on together.

Creation close at hand!

We are about to witness the next industrial revolution. *3D printing*, also known as additive manufacturing (AM), refers to processes used to synthesise a three-dimensional object. More computer graphics and CAD software will support direct printing from within the software, consequently making printing easier for the end user. Top computer graphics software will integrate to 3D printing. 3D printing is said to revolutionise many parts of the industry.

3D Printers are melting filament, most commonly PLA, in their print heads. Then the liquid material is pushed through a nozzle, onto the printing bed. There it is immediately cooling down enough to be hardened again. Through printing layer onto layer and therefore building up the model, the print is finished. Nowadays there are different options available like using different filaments for one model or building electronics into the 3D printed model.

The HdM has its own initiative for 3D print. Any student can use the 3D printers at the university and print their own models. In the industry, additive manufacturing is used in many different fields, ranging from printing car parts or decorative articles to printing backup devices for rockets.

LARA & CALLUM

Applicants are expected to be interested in print media, therefore a personal statement is highly valued. You can find all requirements for the enrolment on our Webpage.

Three of our Print Media Technologies students, Lara Philipp, Callum Bruce and Brittany Wiltz, with help of our academic staff and our dean, designed and produced this brochure. Each brochure was printed, bound and finished using equipment and machines in our technology centre at Hochschule der Medien.

All of the photographs that have been used are from Print Media Technologies Students: Lara Philipp, Callum Bruce, Moataz Khalil Shazli and Hunter Bliss.

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Check out our website to get more information on Print Media Technologies and additionally follow us on social media to get insights on our course of studies.

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