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## B) Materials Technology

Materials Technology degree programme offers a syllabus comprising processing, manufacturing and fabrication of materials and opens doors to employment in a range of industries. The applications and implementations related to metals, ceramics, glass, polymers and their versatile outcome composites will be extensively studied. The programme is equipped with modern and advanced material testing apparatus and also with a Pilot Plant (mini factory) for ceramic-based industrial applications. The technological and business skills gained from the course modules along with the industrial training will equip students with their first step towards the fulfilling industry requirements.

### Academic Staff

**Dr. B.A. Karunaratne**

B.Sc.(Hons)( Perad.), M.Sc. (Perad.), Ph.D.(Perad.)

**Vice Chancellor**

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**Dr. H.A.N Dharmagunawardhane**

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**Ms. R.A. Jayarathna**

B.Tech. (Hons.) (UWU), M.Sc. (Peradeniya)

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**Mr. J.W.K.S.J Jayasundara**  
**B.Sc. Eng(Hons.)(Perad)**  
**Lecturer (Temporary)**



**Ms. P.G.S.M. Chandrasena**  
**Lecturer (Temporary)**  
**B.Sc.(Hons.)(RUSL)**



### **Visiting Academic Staff**

**Dr. C. L. Ranatunga.**  
**B.Sc. (Hons.)(J'pura), M.Phil. (J'pura), Ph.D. (Colombo)**  
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### **Degree Programme Requirements**

Students must fulfill the conditions mentioned in this prospectus under the “Degree Awarding Criteria” along with the following requirements

Students must complete

- At least 72 credits from the Engineering Sciences & Design courses (ESD) including compulsory courses

AND

- At least 18 credits from Mathematics, Basic Sciences and Computing (MBC) including compulsory courses

AND

- At least 18 credits from the Complementary studies (CST) including compulsory courses

The department reserve the right to amend the prospectus if there is a need to adjust the curriculum per accreditation requirements. Such amendments will be promptly notified to students.

## Materials Technology Modules

Year	Semester	Course code	Subject	Credits	Status	Type
1	1	CMT 1301	Fundamentals of Physics for Technology	3	C	MBC
		CMT 1302	Fundamentals of Chemistry for Technology	3	C	MBC
		CMT 1303	Fundamentals of Mathematics for Technology	3	C	MBC
		CMT 1304	Fundamentals of Computer for Technology	3	C	MBC
		CML 1201	Personality Development (Soft Skills)	2	C	CST
		CML 1202	Presentation Skills	2	C	CST
		CMT 1005	Communication Skills I (English)	0	C	CST
		<b>1 - 1 Total</b>			<b>C-16</b>	
	2	ENT 1301	Introduction to Basic Electronics	3	C	ESD
		ENT 1302	Fundamentals of Electricity and Magnetism	3	C	ESD
		CMT 1207	Mathematics for Technology	2	C	MBC
		CMT 1208	Computer Programming for Technology	2	C	MBC
		ENT 1204	Workshop Technology I	2	C	ESD
		CML 1203	Principles of Management	2	C	CST
		CML 1204	Health and Wellbeing	2	C	CST
		CMT 1009	Communication Skills II	0	C	CST
		ENT 1203	Engineering Drawing	2	C	ESD
		ICT 1306	Introduction to Internet of Things	3	O	ESD
		<b>1 - 2 Total</b>			<b>C-18 O-3</b>	

Year	Semester	Course code	Subject	Credits	Status	Type	
2	1	MTT 2301	Fundamentals of Solid State Physics	3	C	ESD	
		MTT 2302	Chemistry for Materials Technology	3	C	ESD	
		MTT 2303	Introduction to Ceramic Technology	3	C	ESD	
		MTT 2204	Computer Aided Design (CAD)	2	C	ESD	
		MTT 2205	Introduction to Metallurgy	2	C	ESD	
		CMT 2301	Fundamentals of Statistics for Technology; Probability and Statistics	3	C	MBC	
		CML 2201	Humanities and Social Sciences	1	C	CST	
		CML 2202	Engineering Economics	2	C	CST	
		CMT 2002	Communication Skills III	0	C	CST	
		ICT 2202	Operating Systems	2	O	ESD	
		ICT 2304	Object Oriented Programming	3	O	ESD	
		MTT 2206	Graphical Programming	2	O	ESD	
		EET 2202	Electrical Measurements and Instrumentation	2	O	ESD	
		<b>2 - 1 Total</b>				<b>C-19 O-09</b>	
	2	2	MTT 2310	Mechanical Behavior of Materials	3	C	ESD
			MTT 2311	Ceramic Technology I	3	C	ESD
			MTT 2207	Measurements, Error Analysis and Instrumentation	2	C	ESD
			MTT 2208	Chemical Engineering Sciences	2	C	ESD
			MTT 2209	Introduction to Polymer Technology	2	C	ESD
			CMT 2103	Mathematical Methods and Computational Methods, Applications of software	1	C	MBC
			CML 2204	Foreign Language	2	C	CST
			CML 2205	Ethics in Science and Technology	2	C	CST
			ICT 2206	Multimedia and Web Technology	2	O	ESD
<b>2 - 2 Total</b>				<b>C-17 O-02</b>			

Year	Semester	Course code	Subject	Credits	Status	Type
3	1	MTT 3308	Polymer Technology I	3	C	ESD
		MTT 3307	Metallurgy I	3	C	ESD
		MTT 3306	Ceramic Technology II	3	C	ESD
		MTT 3105	Research Methodology and Scientific Writing	1	C	
		MTT 3202	Degradation of Materials	2	C	ESD
		MTT 3103	Ceramic Pilot Plant Practices	1	O	ESD
		MTT 3204	Workshop Technology II	2	C	ESD
		MTT 3101	Industrial Safety	1	C	ESD
		CML 3101	Legal and Patent aspects	1	O	CST
		<b>3 - 1 Total</b>			<b>C-15</b>	
	2	MTT 3609	Industrial Training	6	C	ESD
<b>3 - 2 Total</b>			<b>C-06</b>			
4	1	MTT 4201	Fluid Mechanics and Engineering Thermodynamics	2	C	ESD
		MTT 4202	Non Destructive Testing of Materials	2	C	ESD
		MTT 4219	Applied Mechanics	2	C	ESD
		MTT 4303	Ceramic Technology III	3	O†	ESD
		MTT 4104	Glass Technology	1	O	ESD
		MTT 4305	Polymer Technology II	3	O†	ESD
		MTT 4206	Mineral Processing	2	O	ESD
		MTT 4307	Metallurgy II	3	O†	ESD
		MTT 4820	Research Project (Continue)		C	ESD
		MTT 4108	Directed Reading	1	O	ESD
		MTT 4109	Seminar	1	O	ESD
		MTT 4210	Work Shadowing	2	O	ESD
		CML 4201	Entrepreneurship	2	C	CST
	<b>4 - 1 Total</b>			<b>C-08</b>		
			<b>O-16</b>			

Year	Semester	Course code	Subject	Credits	Status	Type
4	2	MTT 4311	Advanced Materials	3	O	ESD
		MTT 4312	Advanced Instrumental Techniques and Characterization of Materials	3	O	ESD
		MTT 4213	Manufacturing Systems	2	O	ESD
		MTT 4114	Quality Management	1	C	ESD
		MTT 4215	Cleaner Production	2	C	ESD
		MTT 4216	Industrial Metrology	2	O	ESD
		MTT 4217	Composite Materials	2	O	ESD
		MTT 4218	Paint Technology	2	O	ESD
		MTT 4820	Research Project	8	C	ESD
<b>4 - 2 Total</b>				<b>C-11</b> <b>O-14</b>		

\***CMT**: Common Courses for all Technology Programs, **CML**: Complementary Courses, **EET**: Courses offered by Electrical and Electronic Technology Program, **ENT**: Common Courses for all Engineering Technology Programs, **ICT**: Courses offered by Information and Communication Technology Program, **MTT**: Courses offered by Materials Technology Program, **C**: Compulsory, **O**: Optional, **ESD**: Engineering Science & Design, **MBC**: Mathematics Basic Sciences & Computing, **CST**: Complementary Studies

† Must take at least one of MTT 4303, MTT 4305 or MTT 4307