DEPARTMENT OF MECHANICAL ENGINEERING TECHNOLOGY

DEGREE CHECKLIST FOR ASSOCIATE IN APPLIED SCIENCE AND BACHELOR OF TECHNOLOGY IN MECHANICAL ENGINEERING TECHNOLOGY
For students entering the program Spring 2018 to Spring 2019.

ASSOCIATE DEGREE

GENERAL EDUCATION REQUIRED AND FLEXIBLE COMMON CORE (28 TO 30 CREDITS)

At least 1 course designated WI is required from the Gen Ed Flexible Common Core.

COURSE	COURSE TITLE	PRE/CO REQUISITES	CREDITS
ENG 1101	English Composition I (EC)	**Prereq:** CUNY Read, Write Proficiency	3 credits.
ENG 1121	English Composition II (EC)	**Prereq:** ENG 1101	3 credits.
MAT 1375 [2]	Precalculus or higher (MQR)	**Prereq:** MAT 1275	4 credits.
MAT 1475 [2]	Calculus I (SW)	**Prereq:** MAT 1375	4 credits.
PHYS 1433 [2] **or** PHYS 1441 [2]	General Physics I: Algebra Based (LPS, WI) **or** General Physics I: Calculus Based (LPS, WI)	**Prereq or Coreq:** MAT 1275 or equivalent / **Prereq or Coreq:** MAT 1475 or equivalent	4 to 5 credits.
PHYS 1434 [2] **or** PHYS 1442 [2]	*General Physics II: Algebra Based (SW, WI) **or** *General Physics II: Calculus Based (SW, WI)	**Prereq:** PHYS 1433 / **Prereq:** PHYS 1441	4 to 5 credits.
	*Flexible Common Core Course: WCGI, USED, IS, CE		3 credits.
	*Flexible Common Core Course: WCGI, USED, IS, CE		3 credits.

PROGRAM-SPECIFIC DEGREE REQUIREMENTS (36 CREDITS)

Double Duty[2] Specific courses listed indicate double duty courses, i.e., program degree requirements that also meet general education requirements in that category.

COURSE	COURSE TITLE	PRE/CO REQUISITES	CREDITS
MECH 1101	Manufacturing Processes Laboratory		1 credit.
MECH 1201	Computer-Aided Manufacturing Systems	**Prereq:** IND 1112, MECH 1101, **Prereq or Coreq:** MAT 1275 or higher	3 credits.
MECH 1222	Computer-Aided Engineering Graphics	**Prereq:** IND 1112, **Prereq or Coreq:** MAT 1275 or higher	2 credits.
MECH 1233	Statics and Strength of Materials	**Prereq:** IND 1112, MAT 1275 or higher	3 credits.
MECH 1240	Computer Applications in Mechanical Engineering Technology	**Prereq:** IND 1112, MAT 1275 or higher	2 credits.
MECH 2322	Engineering Materials (WI)	**Prereq or Coreq:** PHYS 1433 or PHYS 1441	3 credits.
MECH 2333	Strength of Materials II	**Prereq:** IND 1112, MECH 1233 **Prereq or Coreq:** MAT 1375 or higher	3 credits.
MECH 2335	Kinematics and Dynamics of Machines	**Prereq:** MECH 1222, 1233, 1240; **Prereq or Coreq:** MAT 1375 or higher	3 credits.
MECH 2410 **or** MECH 2900	Machine Design **or** Internship in Mechanical Engineering Technology	**Prereq:** MAT 1375 or higher, IND 2304, **Prereq or Coreq:** MECH 2333, 2335 **Prereq:** MECH 1201, 1222, 1240	4 credits.
MECH 2426	Materials Testing Laboratory	**Prereq:** MECH 1233, 1240 **Prereq or Coreq:** MAT 1475 or higher, MECH 2333	1 credit.
MECH 2430	Thermodynamics	**Prereq:** MECH 1233, **Prereq or Coreq:** MAT 1475 or higher, and PHYS 1434 or PHYS 1442	3 credits.
IND 1112	Engineering Drawing I		2 credits.
IND 2304	Advanced Solids Modeling	**Prereq:** MECH 1222	2 credits.
EET 1122	Networks I	**Prereq or Coreq:** EET 1102, MAT 1275 or higher, PHYS 1443 or 1441	4 credits.

ASSOCIATE IN APPLIED SCIENCE IN MECHANICAL ENGINEERING TECHNOLOGY: 64 TO 66 CREDITS.
MINIMUM REQUIRED LIBERAL ARTS AND SCIENCES CREDITS: 20 CREDITS.

BACHELOR'S DEGREE

GENERAL EDUCATION FLEXIBLE COMMON CORE AND COLLEGE OPTION REQUIREMENTS (19 CREDITS)

[1] Students must take at least one advanced liberal arts course or choose two sequential courses in a foreign language.

At least 1 course designated WI is required from the College Option or Gen Ed Flexible Common Core.

COURSE	COURSE TITLE	PRE/CO REQUISITES	CREDITS
MAT 1575 [2]	*Calculus II or higher	**Prereq:** MAT 1475	4 credits.
COM 1330	Public Speaking or higher (IS)	**Prereq:** CUNY Read, Write Proficiency	3 credits.
	*Flexible Common Core Course: WCGI, USED, IS, CE		3 credits.
	*Flexible Common Core Course: WCGI, USED, IS, CE		3 credits.
	*Interdisciplinary Course (ID)		3 credits.
	*Liberal Arts Elective (LibArt)[1] or Foreign Language Sequence (FL)[1]		3 credits.

PROGRAM-SPECIFIC DEGREE REQUIREMENTS (29 CREDITS)

COURSE	COURSE TITLE	PRE/CO REQUISITES	CREDITS
MECH 3500	Computer Programming and Applications	**Prereq:** MECH 1240, MAT 1475 or higher	3 credits.
MECH 3510	Advanced Solid Modeling II	**Prereq:** IND 2304	3 credits.
MECH 3600	Mechanical Measurements and Instrumentation	**Prereq:** MECH 1240, MAT 1475 or higher	3 credits.
MECH 3650	Advanced Strength of Materials	**Prereq:** MECH 1233, 2333, MAT 1575 or higher	3 credits.
MECH 4700	Fluid Mechanics	**Prereq:** MAT 1575 or higher **Prereq or Coreq:** MECH 3650	3 credits.
MECH 4730	Finite Element Methods	**Prereq:** MECH 3650, MAT 2680	3 credits.
MECH 4760	Vibration and Advanced Dynamics	**Prereq:** MAT 2680 and MECH 2333	3 credits.
MECH 4850	Senior Design Project (WI)	**Prereq or Coreq:** MECH 4700, 4730	3 credits.
MECH 4860	Project Management	**Prereq:** MECH 2333	2 credits.
MAT 2680	Differential Equations	**Prereq:** MAT 1575	3 credits.

PROGRAM-SPECIFIC ELECTIVE COURSES (12 CREDITS)

COURSE	COURSE TITLE	PRE/CO REQUISITES	CREDITS
MECH	Concentration Area		3 credits.
MECH	Concentration Area		3 credits.
MECH	Concentration Area		3 credits.
MECH	Concentration Area		3 credits.

BACHELOR OF TECHNOLOGY IN MECHANICAL ENGINEERING IN TECHNOLOGY: 121 TO 123 CREDITS.
MINIMUM REQUIRED LIBERAL ARTS AND SCIENCES CREDITS: 40 CREDITS.

PROGRAM-SPECIFIC ELECTIVE COURSES

CONCENTRATION AREA

Mechanical Engineering Technology Series

NOTE: A student may substitute a course from a different concentration with the permission of a faculty advisor.

Students must complete 12 credits from one of the three concentrations.

INDUSTRIAL DESIGN

MECH 3520	Rapid Prototyping
MECH 3550	Simulation and Visualization
MECH 3610	Product Design I
MECH 4710	Product Design II
MECH 4800	Advanced 3-Dimensional Animation

MANUFACTURING SYSTEMS

MECH 3530	Advanced Engineering Materials
MECH 3540	Manufacturing Systems
MECH 3620	Advanced Manufacturing Process
MECH 4720	Plastics Product Manufacturing
MECH 4820	Computer-Integrated Manufacturing

COMPUTER SYSTEMS TECHNOLOGY

MECH 3572	Embedded Systems and Applications in Robotics
MECH 3672	Actuators and Sensors Application in Robotics
MECH 4772	Control Systems in Robotics
MECH 4872	Robotics Systems Design and Applications

SAMPLE COURSE OF STUDY

For Associate in Applied Science and Bachelor of Technology in Mechanical Engineering Technology.

SEMESTER 1 (Total Credits 13)

MECH 1101	Manufacturing Processes Laboratory	1 credit.
IND 1112	Engineering Drawing I	2 credits.
MAT 1375	Precalculus or higher (MQR)	4 credits.
ENG 1101	English Composition I	3 credits.
FlexCore		3 credits.

SEMESTER 2 (Total Credits 18)

MECH 1201	Computer-Aided Manufacturing Systems	3 credits.
MECH 1222	Computer-Aided Engineering Graphics	2 credits.
MECH 1233	Statics and Strength of Materials	3 credits.
MECH 1240	Computer Applications in Mechanical Engineering Technology	2 credits.
MAT 1475	Calculus I or higher (SW)	4 credits.
PHYS 1433/1441	General Physics 1: Algebra Based **or** General Physics I: Calculus Based (LPS)	4 credits.

SEMESTER 3 (Total Credits 15)

IND 2304	Advanced Solids Modeling	2 credits.
MECH 2322	Engineering Materials	3 credits.
MECH 2333	Strength of Materials II	3 credits.
MECH 2335	Kinematics and Dynamics of Machines	3 credits.
PHYS 1434/1442	General Physics II: Algebra Based **or** General Physics II: Calculus Based (SW)	4 credits.

SEMESTER 4 (Total Credits 18)

MECH 2410/2900	Machine Design or Internship in Mechanical Engineering Technology	4 credits.
MECH 2426	Materials Testing Laboratory	1 credit.
MECH 2430	Thermodynamics	3 credits.
EET 1122	Networks I	4 credits.
ENG 1121	English Composition II	3 credits.
Flex Core		3 credits.

SEMESTER 5 (Total Credits 16)

MECH 3500	Computer Programming and Applications	3 credits.
MECH 3510	Advanced Solid Modeling II	3 credits.
MECH Con.	MECH Concentration	3 credits.
MECH Con.	MECH Concentration	3 credits.
MAT 1575	Calculus II or higher	4 credits.

SEMESTER 6 (Total Credits 15)

MECH 3600	Mechanical Measurements and Instrumentation	3 credits.
MECH 3650	Advanced Strength of Materials	3 credits.
MAT 2680	Differential Equations	3 credits.
Flex Core		3 credits.
Flex Core		3 credits.

SEMESTER 7 (Total Credits 15)

MECH 4700	Fluid Mechanics	3 credits.
MECH 4730	Finite Element Methods	3 credits.
MECH 4760	Vibration and Advanced Dynamics	3 credits.
MECH Con.	MECH Concentration	3 credits.
ID	Interdisciplinary Course	3 credits.

SEMESTER 8 (Total Credits 14)

MECH 4850	Senior Design Project	3 credits.
MECH 4860	Project Management	2 credits.
MECH Con.	MECH Concentration	3 credits.
COM 1330	Public Speaking or higher	3 credits.
LibArts [1]		3 credits.

Footnotes

[1] Examples of advanced liberal arts courses include SOC 3301 (prerequisite: ECON 1101); SOC 2403 (prerequisite: PSY 1101). In meeting their general education requirements overall, students must take at least one advanced liberal arts course **or** choose two sequential courses in one of the foreign language (FL) course offerings, such as Arabic (ARB), Spanish (SPA), Chinese (CHN), or French (FREN).

[2] Specific courses listed indicate double duty courses, i.e., program degree requirements that also meet general education requirements. Choosing to take advantage of double duty can speed up progress toward graduation and increase elective credits. Consult with an advisor about your options.

[3] Students who have already completed MAT 1575 may select another mathematics or flexible core course instead.

DEPARTMENT OF MECHANICAL ENGINEERING TECHNOLOGY

DEGREE CHECKLIST FOR ASSOCIATE IN APPLIED SCIENCE INDUSTRIAL DESIGN TECHNOLOGY AND BACHELOR OF TECHNOLOGY IN MECHANICAL ENGINEERING TECHNOLOGY

For students entering the program Spring 2018 to Spring 2019.

ASSOCIATE DEGREE

GENERAL EDUCATION REQUIRED AND FLEXIBLE COMMON CORE (27 TO 28 CREDITS)

COURSE	COURSE TITLE	PRE/CO REQUISITES	CREDITS
ENG 1101	English Composition I (EC)	**Prereq:** CUNY Read and Write Proficiency	3 credits.
ENG 1121	English Composition II (EC)	**Prereq:** ENG 1101	3 credits.
MAT 1275 [2]	College Algebra and Trigonometry or higher (MQR)	**Prereq:** CUNY Proficient	4 credits.
PHYS 1433 [2] **or**	General Physics I: Algebra Based **or** (LPS, WI)	**Prereq or Coreq:** MAT 1275 or equivalent	4 to 5 credits.
PHYS 1441 [2]	General Physics I: Calculus Based (LPS, WI)	**Prereq or Coreq:** MAT 1475 or equivalent	
MAT 1375 [2]	Precalculus I or higher (SW)	**Prereq:** MAT 1275 or higher	4 credits.
	*Flexible Common Core: WCGI, USED, IS, CE		3 credits.
	*Flexible Common Core: WCGI, USED, IS, CE		3 credits.
	*Flexible Common Core: WCGI, USED, IS, CE		3 credits.

PROGRAM-SPECIFIC DEGREE REQUIREMENTS (33 CREDITS)

At least 1 course designated WI is required from the Gen Ed Flexible Common Core.

Course only offered in fall (F). Course only offered in spring (S).

Double Duty[2] Specific courses listed indicate double duty courses, i.e., program degree requirements that also meet general education requirements in that category.

COURSE	COURSE TITLE	PRE/CO REQUISITES	CREDITS
IND 1112	Engineering Drawing I		2 credits.
IND 2313	Industrial Design I (F)	**Prereq:** MAT 1175 or higher, IND 1112	2 credits.
IND 2304	Advanced Solids Modeling	**Prereq:** MECH 1222	2 credits.
IND 2305	Industrial Management (F)		2 credits.
IND 2340	Engineering Structures (F)	**Prereq:** MECH 1222, 1233	2 credits.
IND 2401	Furniture Design (S)	**Prereq:** MECH 1233, IND 2304, 2313	2 credits.
IND 2406	CAD Plant Layout (S)	**Prereq:** MECH 1201, 1222	2 credits.
IND 2410	Industrial Design II (S)	**Prereq:** IND 2313, MECH 1233; **Prereq or Coreq:** IND 2304, MECH 1240	3 credits.
IND 2420	Engineering Animation and Presentation (F)	**Prereq:** MECH 1233, IND 2304	2 credits.
MECH 1101	Manufacturing Processes Laboratory		1 credit.
MECH 1201	Computer-Aided Manufacturing Systems	**Prereq:** IND 1112, MECH 1101; **Prereq or Coreq:** MAT 1275 or higher	3 credits.
MECH 1222	Computer-Aided Engineering Graphics	**Prereq:** IND 1112; **Prereq or Coreq:** MAT 1275 or higher	2 credits.
MECH 1233	Statics and Strength of Materials	**Prereq:** IND 1112; MAT 1275 or higher	3 credits.
MECH 1240	Computer Applications in Mechanical Engineering Technology	**Prereq:** IND 1112; MAT 1275 or higher	2 credits.
MECH 2322	Engineering Materials (WI)	**Prereq or Coreq:** PHYS 1433 or PHYS 1441	3 credits.

ASSOCIATE IN APPLIED SCIENCE IN INDUSTRIAL DESIGN TECHNOLOGY: 60 TO 61 CREDITS.
MINIMUM REQUIRED LIBERAL ARTS AND SCIENCES CREDITS: 20 CREDITS.

BACHELOR'S DEGREE

GENERAL EDUCATION REQUIRED AND FLEXIBLE COMMON CORE AND COLLEGE OPTION REQUIREMENTS (21 TO 22 CREDITS)

Students must take at least one advanced liberal arts course or choose two sequential courses in a foreign language.

At least 1 course designated WI is required from the College Option or Gen Ed Flexible Common Core.

COURSE	COURSE TITLE	PRE/COREQUISITES	CREDITS
MAT 1475 [1][2]	Calculus I or higher (SW)	**Prereq:** MAT 1375	4 credits.
MAT 1575	Calculus II or higher	**Prereq:** MAT 1475	4 credits.
PHYS 1434 **or**	General Physics II: Algebra Based **or** (SW, WI)	**Prereq:** PHYS 1433	4 to 5 credits.
PHYS 1442	General Physics II: Calculus Based (SW, WI)	**Prereq:** PHYS 1441	
	*Flexible Common Core: WCGI, USED, IS, CE		3 credits.
COM 1330	Public Speaking or higher (IS)	**Prereq:** CUNY Read, Write Proficiency	3 credits.
	*Interdisciplinary Course (ID)		3 credits.

PROGRAM-SPECIFIC DEGREE REQUIREMENTS (30 CREDITS)

COURSE	COURSE TITLE	PRE/COREQUISITES	CREDITS
MECH 2333	Strength of Materials II	**Prereq:** IND 1112, MECH 1233, **Prereq or Coreq:** MAT 1375 or higher	3 credits.
MECH 3500	Computer Programming and Applications	**Prereq:** MECH 1240, MAT 1475 or higher	3 credits.
MECH 3510	Advanced Solid Modeling II	**Prereq:** IND 2304	3 credits.
MECH 3600	Mechanical Measurements and Instrumentation	**Prereq:** MECH 1240, MAT 1475 or higher	3 credits.
MECH 3650	Advanced Strength of Materials	**Prereq:** MECH 1233, 2333, MAT 1575 or higher	3 credits.
MECH 4700	Fluid Mechanics	**Prereq:** MAT 1575 or higher **Prereq or Coreq:** MECH 3650	3 credits.
MECH 4730	Finite Element Methods	**Prereq:** MECH 3650, MAT 2680	3 credits.
MECH 4760	Vibration and Advanced Dynamics	**Prereq:** MAT 2680 and MECH 2333	3 credits.
MECH 4850	Senior Design Project (WI)	**Prereq or Coreq:** MECH 4700, 4730	3 credits.
MAT 2680	Differential Equations	**Prereq:** MAT 1575	3 credits.

PROGRAM-SPECIFIC ELECTIVE COURSES (12 CREDITS)

COURSE	COURSE TITLE		CREDITS
MECH	Concentration		3 credits.
MECH	Concentration		3 credits.
MECH	Concentration		3 credits.
MECH	Concentration		3 credits.

BACHELOR OF TECHNOLOGY IN MECHANICAL ENGINEERING IN TECHNOLOGY: 121 TO 123 CREDITS.
MINIMUM REQUIRED LIBERAL ARTS AND SCIENCES CREDITS: 60 CREDITS.

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PROGRAM-SPECIFIC ELECTIVE COURSES

CONCENTRATION AREA

MECHANICAL ENGINEERING TECHNOLOGY SERIES

NOTE: A student may substitute a course from a different concentration with the permission of a faculty advisor.

Courses are 3 credits except where noted ( )

Students must complete 12 credits from one of the three concentrations.

Industrial Design

MECH 3520	Rapid Prototyping	
MECH 3550	Simulation and Visualization	
MECH 3610	Product Design I	
MECH 4710	Product Design II	
MECH 4800	Advanced 3-Dimensional Animation	

Manufacturing Systems

MECH 3530	Advanced Engineering Materials
MECH 3540	Manufacturing Systems
MECH 3620	Advanced Manufacturing Process
MECH 4720	Plastics Product Manufacturing
MECH 4820	Computer-Integrated Manufacturing

Robotics

MECH 3572	Embedded Systems and Applications in Robotics
MECH 3672	Actuators and Sensors Application in Robotics
MECH 4772	Control Systems in Robotics
MECH 4872	Robotics Systems Design and Applications

SAMPLE COURSE OF STUDY

For Associate in Applied Science in Industrial Design Technology and Bachelor of Technology in Mechanical Engineering in Technology.

SEMESTER 1 (Total Credits 14)

MECH 1101	Manufacturing Processes Laboratory	1 credit.
IND 1112	Engineering Drawing I	2 credits.
MAT 1275	College Algebra and Trigonometry	4 credits.
ENG 1101	English Composition I	3 credits.
PHYS 1433	General Physics I: Algebra Based	4 credits.

SEMESTER 2 (Total Credits 17)

MECH 1201	Computer-Aided Manufacturing Systems	3 credits.
MECH 1222	Computer-Aided Engineering Graphics	2 credits.
MECH 1233	Statics and Strength of Materials	3 credits.
MECH 1240	Computer Applications in Mechanical Engineering Technology	2 credits.
MAT 1375	Precalculus I	4 credits.
ENG 1121	English Composition II	3 credits.

SEMESTER 3 (Total Credits 13)

IND 2304	Engineering Structures	2 credits.
IND 2305	Industrial Management	2 credits.
IND 2313	Industrial Design I	2 credits.
IND 2340	Engineering Structures	2 credits.
IND 2420	Engineering Animation and Presentation	2 credits.
FlexCore		3 credits.

SEMESTER 4 (Total Credits 16)

IND 2401	Furniture Design	2 credits.
IND 2406	CAD Plant Layout	2 credits.
IND 2410	Industrial Design II	3 credits.
MECH 2322	Engineering Materials	3 credits.
FlexCore		3 credits.
FlexCore		3 credits.

SEMESTER 5 (Total Credits 17)

MECH 2333	Strength of Materials II	3 credits.
MECH 3510	Advanced Solid Modeling II	3 credits.
PHYS 1434	General Physics II: Algebra Based	4 credits.
MAT 1475	Calculus I	4 credits.
Flex Core		3 credits.

SEMESTER 6 (Total Credits 16)

MECH 3500	Computer Programming and Applications	3 credits.
MECH 3600	Mechanical Measurements and Instrumentation	3 credits.
MECH Con.		3 credits.
MAT 1575	Calculus II	4 credits.
COM 1330	Public Speaking	3 credits.

SEMESTER 7 (Total Credits 15)

MECH 3650	Advanced Strength of Materials	3 credits.
MECH 4700	Fluid Mechanics	3 credits.
MECH Con.		3 credits.
MAT 2680	Differential Equations	3 credits.
ID	Interdisciplinary Course	3 credits.

SEMESTER 8 (Total Credits 15)

MECH 4730	Finite Element Methods	3 credits.
MECH 4760	Vibration and Advanced Dynamics	3 credits.
MECH 4850	Senior Design Project	3 credits.
MECH Con.		3 credits.
MECH Con.		3 credits.

Footnotes

[1] Examples of advanced liberal arts courses include SOC 3301 (prerequisite: ECON 1101); SOC 2403 (prerequisite: PSY 1101). In meeting their general education requirements overall, students must take at least one advanced liberal arts course **or** choose two sequential courses in one of the foreign language (FL) course offerings, such as Arabic (ARB), Spanish (SPA), Chinese (CHN), or French (FREN).

[2] Specific courses listed indicate double duty courses, i.e., program degree requirements that also meet general education requirements. Choosing to take advantage of double duty can speed up progress toward graduation and increase elective credits. Consult with an advisor about your options.