

# Mec E 468 Numerical Simulation in Mechanical Engineering Design

## AUTOMARK REPORT

Semester: Win 2022

Instructor: Prof. David S. Nobes

Student Name:

Assignment: Assignment No 1

PROCESSING DATE: August 15, 2022

*AUTOMark Assessment Grade: 727 out of 727*

*AUTOMark Recommended Grade: 100 out of 100*

**NOTE:** This grade is preliminary only and needs to be confirmed.

The following pages include each of the drawings in the following order:

- Your submission
- Your submission marked by AutoMARK
- The solution

**Other important points:**

- Examples are given on eClass of how to interpret the mark-up symbols used by AUTOMark.
- If you have any questions, discuss with your TA in the next lab time.

DRAWING CREATION DATE: 28-Sep-2010 08:59:34

DRAWING LAST SAVE DATE: 30-Jun-2022 10:37:20

MODEL CREATION DATE: 23-Sep-2010 11:25:48

MODEL LAST SAVE DATE: 30-Jun-2022 10:37:20

AutoMARK details:

- Sheetnames should contain only alphabetical characters
- Weights of feature properties are set by the marker
- AutoMARK v 4.0 software written and designed by Owen Stadlwieser

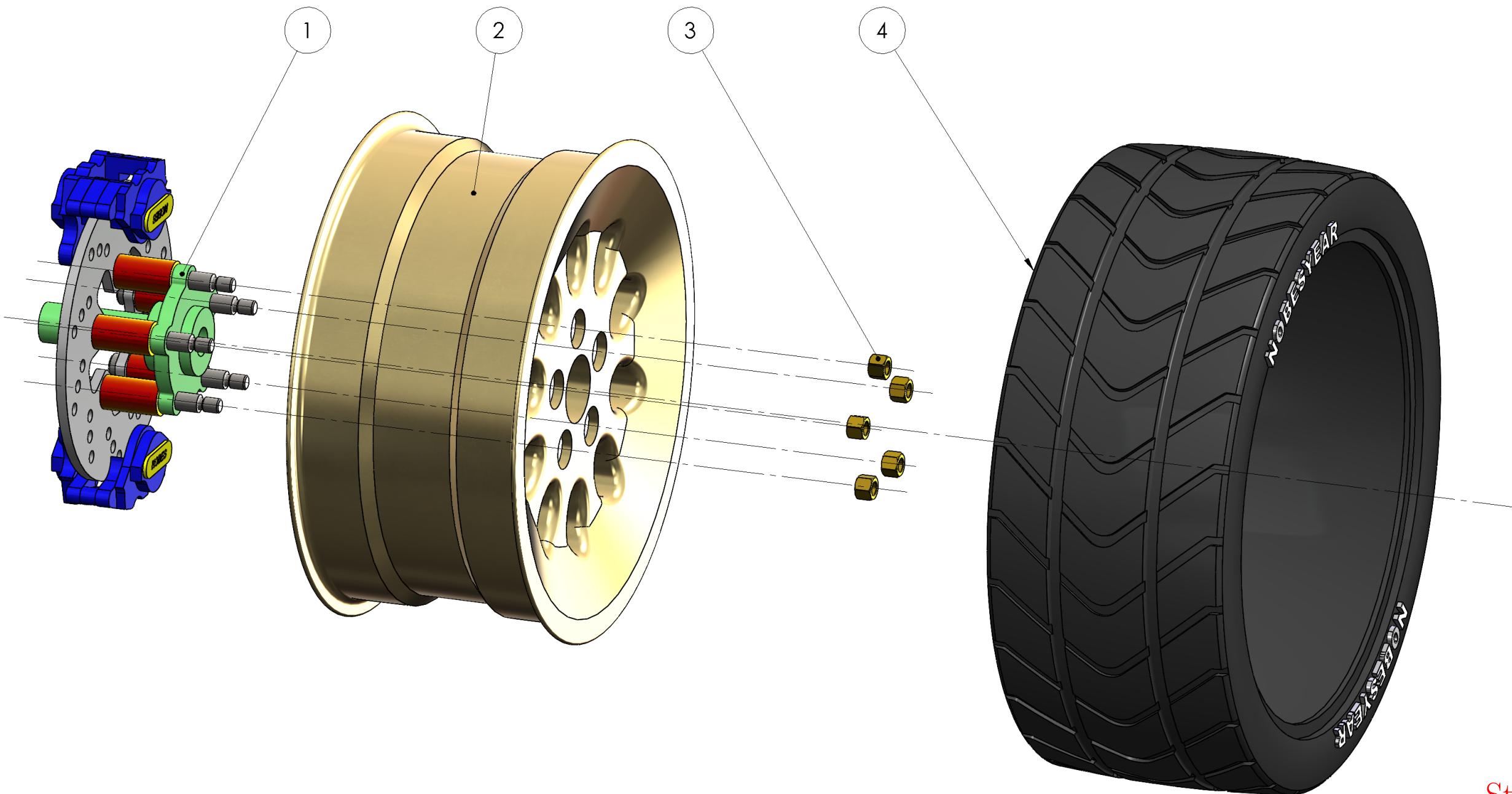
AutoMARK Criterion (The weights of these criterion are decided by the marker):

- DRAWING: SheetOrder, ExtraSheets
- SHEET: SheetPaperSize, SheetScale, SheetTemplate, SheetExtraBOMS, SheetExtraViews, SheetViewTypes, SheetIntersectingBalloons
- BILLOFMATERIALS: BOMTableType, BOMNumberColumns, BOMNumberRows, BOMPosition, BOMTableHeight, BOMTableWidth, BOMFontType, BOMFontSize
- VIEW: ViewScale, ViewDisplayStyle, ViewExtraDimension, ViewPosition, ViewExtraCenterMarks, ViewMass, ViewMaterial, ViewExtraDatums, ViewWrongProjection, ViewExtraCenterlines
- DIMENSION: DimensionDangling, DimensionWrongView, DimensionPosition, DimensionArrowSide, DimensionValue, DimensionBadText
- CENTERLINE: CenterlineDangling, CenterlinePosition
- CENTERMARK: CentermarkDangling, CentermarkPosition, CentermarkShowlines, CentermarkAngle, CentermarkConnectionLines, CentermarkExtensions, CentermarkGap, CentermarkSize, CentermarkGroupedCorrectly
- DATUM: DatumDangling, DatumWrongView, DatumPosition, DatumLabel, DatumDisplayStyle, DatumFilledTriangle
- Balloon: BalloonDangling, BalloonPosition

<i>Symbol/Colour</i>	<i>Meaning</i>
✓	No deductions on feature
Colour	Incorrect value
Colour	Miscellaneous error
Colour	Incorrect Position
Colour	Unrecognized feature
Colour	Missing feature
?	Feature not found on key

8 7 6 5 4 3 2 1

ITEM NO.	SW-File Name(File Name)	SW-Title(Title)	Material	SW-Author(Author)	QTY.
1	MecE265_Car_Hub	Hub, Disk and Calaper Assembly	Various	D.S. Nobes	1
2	dsn_Rim	Custom Low Speed Snow Rim	Pure Gold	D.S.Nobes	1
3	MecE_265_Nut	ACME HTNUT 0.500-20-D-N	Brass	Wyle E. Coyote	5
4	MecE_265_Tire	Snow Plow Car Tire	Rubber	D.S. Nobes	1



### Student Submission

<b>MecE 265</b>	UNLESS OTHERWISE SPECIFIED: DIMENSIONS ARE IN MM TOLERANCES: ANGULAR: $\pm 0.5^\circ$ LINEAR $X = \pm 0.5$ $X.X = \pm 0.1$ $XXX = \pm 0.025$	DRAWN BY: <b>David S. Nobes</b>
Instructor: <b>Dr DS Nobes</b> Fall 2021	Comments:	Lab Day ALL
		SM By <b>D.S.Nobes</b>
	SURFACE FINISH $0.6 \mu\text{m}$	TA Initials DSN
	DO NOT SCALE DRAWING	zacha June 30, 2022 10:37:20 AM September 23, 2010 11:25:48 AM
MATERIAL: Various	FILE NAME: MecE265_Car_Hub_Rim_Tire	SIZE <b>B</b> Assignment Number <b>Assignment 03</b> REV <b>2</b>
SCALE: 1:4 Mass: 175308.62 SHEET 1 OF 3		

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TITLE:

**Hub, Rim, Tire  
Assembly**

8

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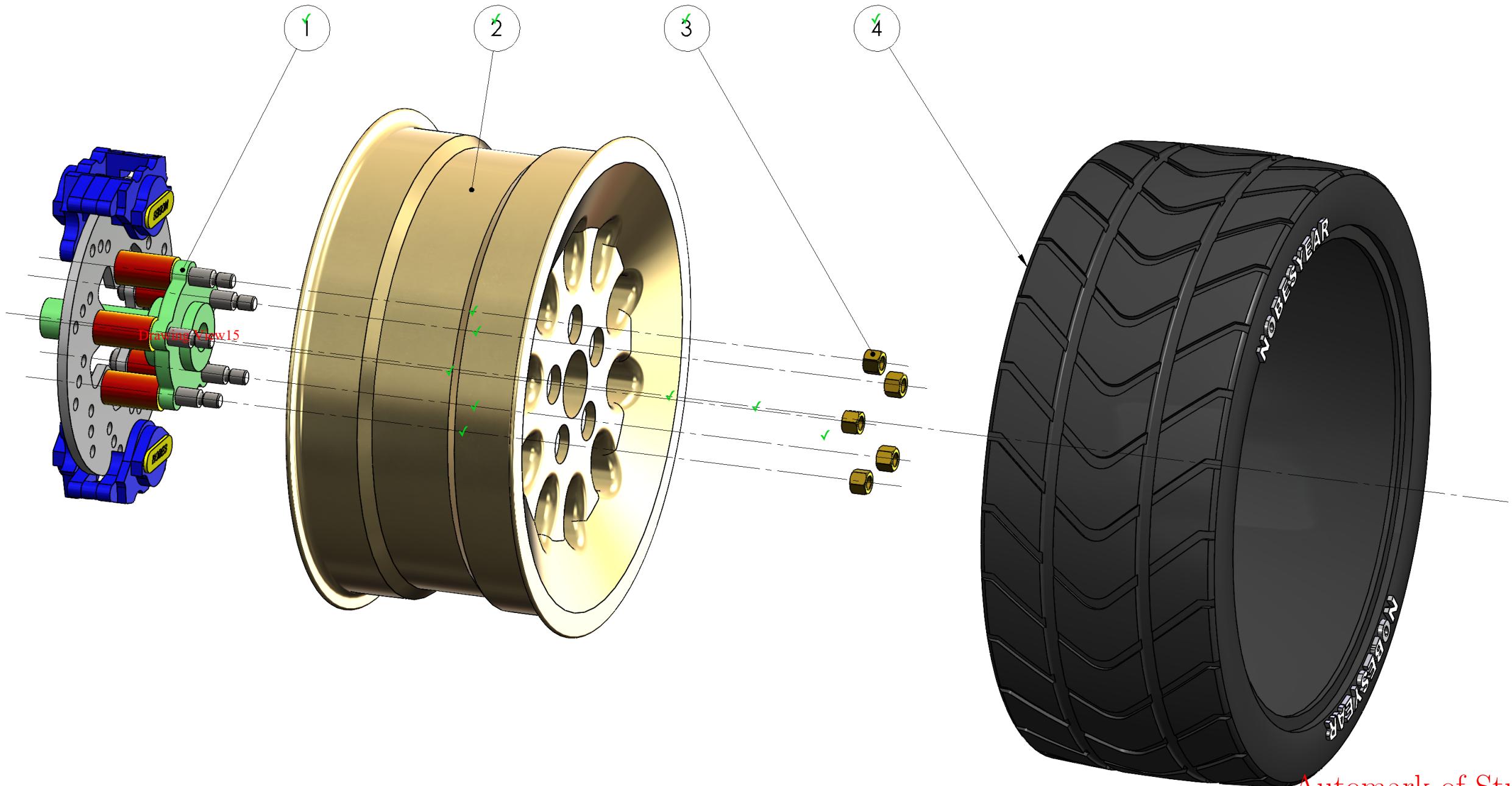
2

Snapped to Corner

Drawing View15: 48/48  
DetailItem439: 40/40  
SHEET TOTAL: 137/137

Correct Height  
Correct Font  
Correct Font Size  
Correct Column Order  
Correct Content

ITEM NO.	SW-File Name(File Name)	SW-Title(Title)	Material	SW-Author(Author)	QTY.
1	MecE265_Car_Hub	Hub, Disk and Calaper Assembly	Various	D.S. Nobes	1
2	dsn_Rim	Custom Low Profile Snow Rim	Pure Gold	D.S.Nobes	1
3	MecE_265_Nut	ACME HTNUT 0.500-20-D-N	Brass	Wyle E. Coyote	5
4	MecE_265_Tire	Snow Plow Car Tire	Rubber	D.S. Nobes	1



Automark of Student Submission

Correct Tangent Line style  
Correct Scale  
Correct Display style

<b>MecE 265</b>	UNLESS OTHERWISE SPECIFIED:	DRAWN BY:
Instructor: <b>Dr DS Nobes</b> Fall 2021	DIMENSIONS ARE IN MM	<b>David S. Nobes</b>
Comments:	TOLERANCES: ANGULAR: $\pm 0.5^\circ$ LINEAR $X = \pm 0.5$ $X.X = \pm 0.1$ $XXX = \pm 0.025$	Lab Day ALL
	SURFACE FINISH $0.6 \mu\text{m}$	SM By <b>D.S.Nobes</b>
	DO NOT SCALE DRAWING	TA Initials DSN
MATERIAL: Various	zacha	
FILE NAME: MecE265_Car_Hub_Rim_Tire	June 30, 2022 10:37:20 AM September 23, 2010 11:25:48 AM	

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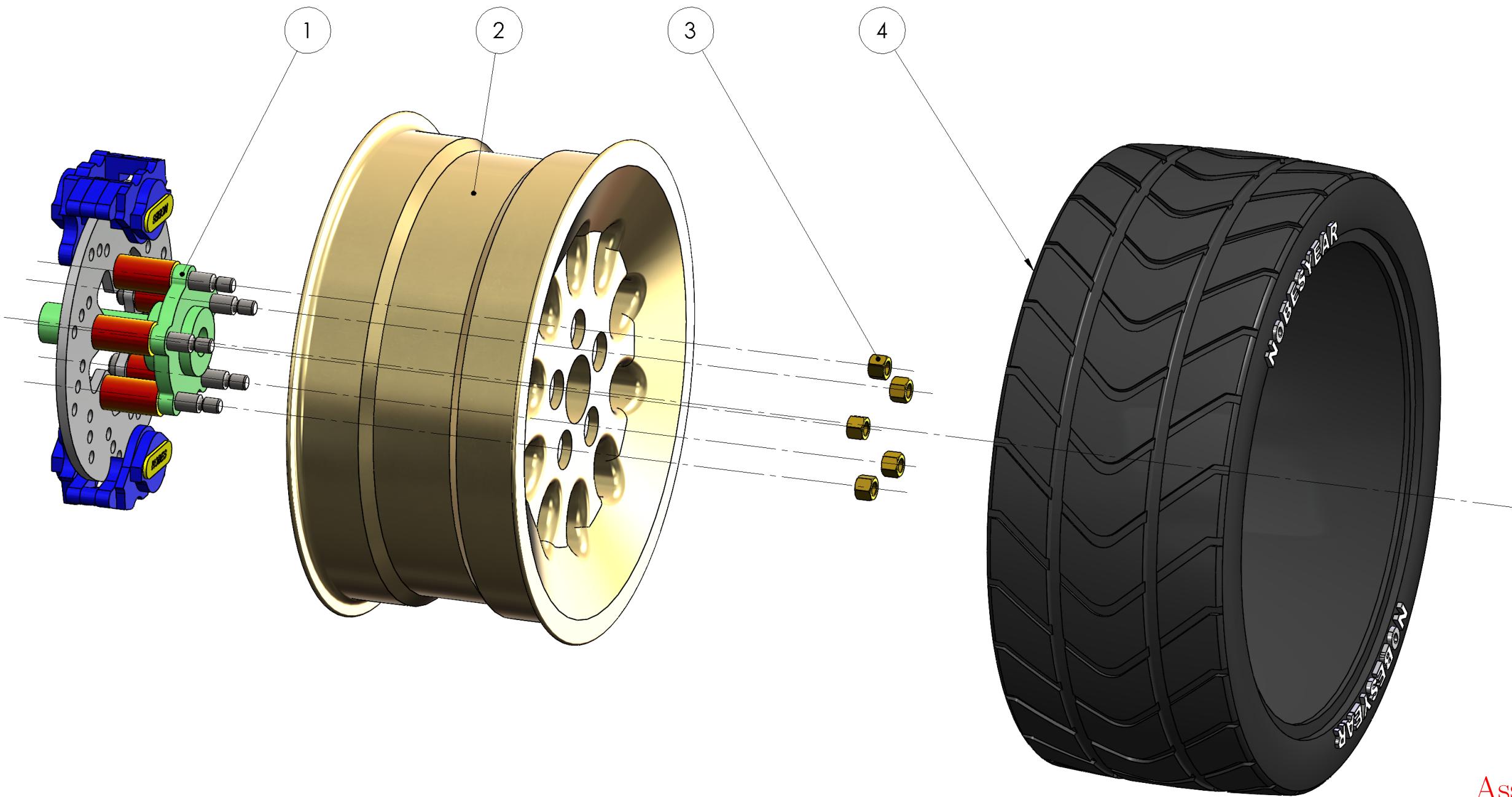
TITLE:

**Hub, Rim, Tire  
Assembly**

SIZE	Assignment Number	REV
<b>B</b>	<b>Assignment 03</b>	2
SCALE: 1:4	Mass: 175308.62	SHEET 1 OF 3

8 7 6 5 4 3 2 1

ITEM NO.	SW-File Name(File Name)	SW-Title(Title)	Material	SW-Author(Author)	QTY.
1	MecE265_Car_Hub	Hub, Disk and Calaper Assembly	Various	D.S. Nobes	1
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3	MecE_265_Nut	ACME HTNUT 0.500-20-D-N	Brass	Wyle E. Coyote	5
4	MecE_265_Tire	Snow Plow Car Tire	Rubber	D.S. Nobes	1



## Assignment Solution

<b>MecE 265</b>	UNLESS OTHERWISE SPECIFIED: DIMENSIONS ARE IN MM TOLERANCES: ANGULAR: $\pm 0.5^\circ$ LINEAR $X = \pm 0.5$ $X.X = \pm 0.1$ $XXX = \pm 0.025$	DRAWN BY: <b>David S. Nobes</b>
Instructor: <b>Dr DS Nobes</b> Fall 2021	Comments:	Lab Day ALL
		SM By <b>D.S.Nobes</b>
	SURFACE FINISH $0.6 \mu\text{m}$	TA Initials DSN
	DO NOT SCALE DRAWING	zacha September 28, 2021 2:35:53 PM September 23, 2010 11:25:48 AM
MATERIAL: Various	FILE NAME: MecE265_Car_Hub_Rim_Tire	TITLE: <b>Hub, Rim, Tire Assembly</b>
SIZE <b>B</b>	Assignment Number <b>Assignment 03</b>	REV 2
SCALE: 1:4 Mass: 175308.62 SHEET 1 OF 3		

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TITLE:

**Hub, Rim, Tire  
Assembly**

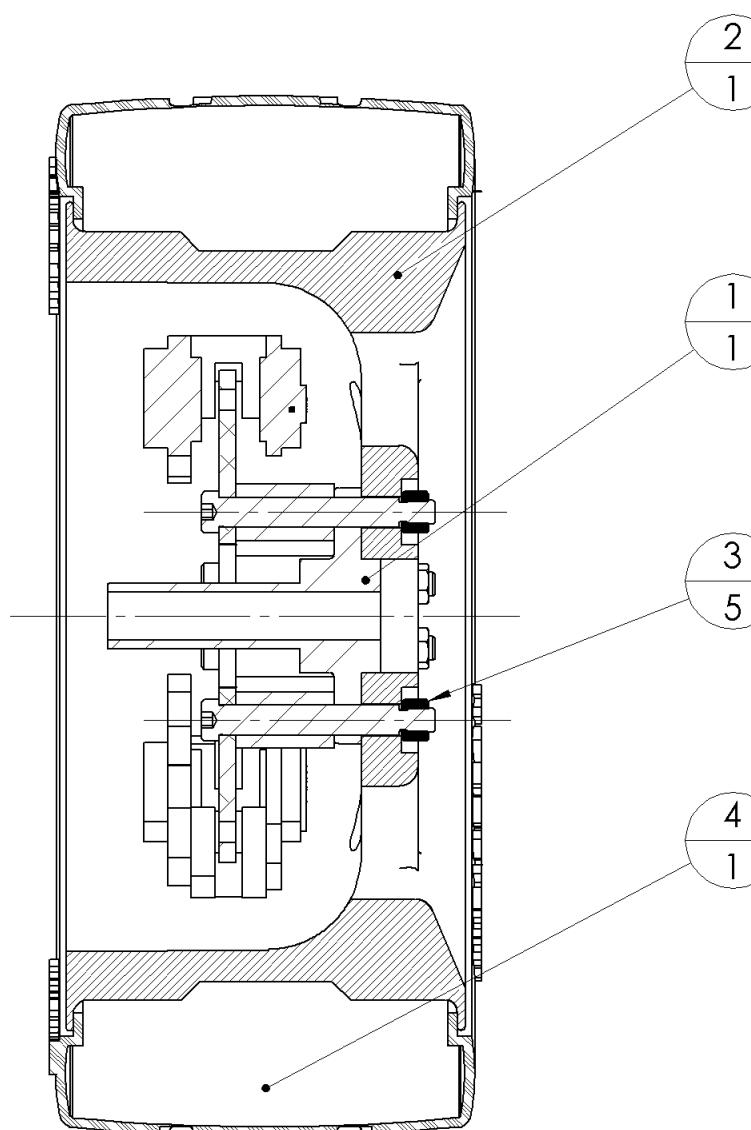
8 7 6 5 4 3 2 1

8 7 6 5 4 3 2 1

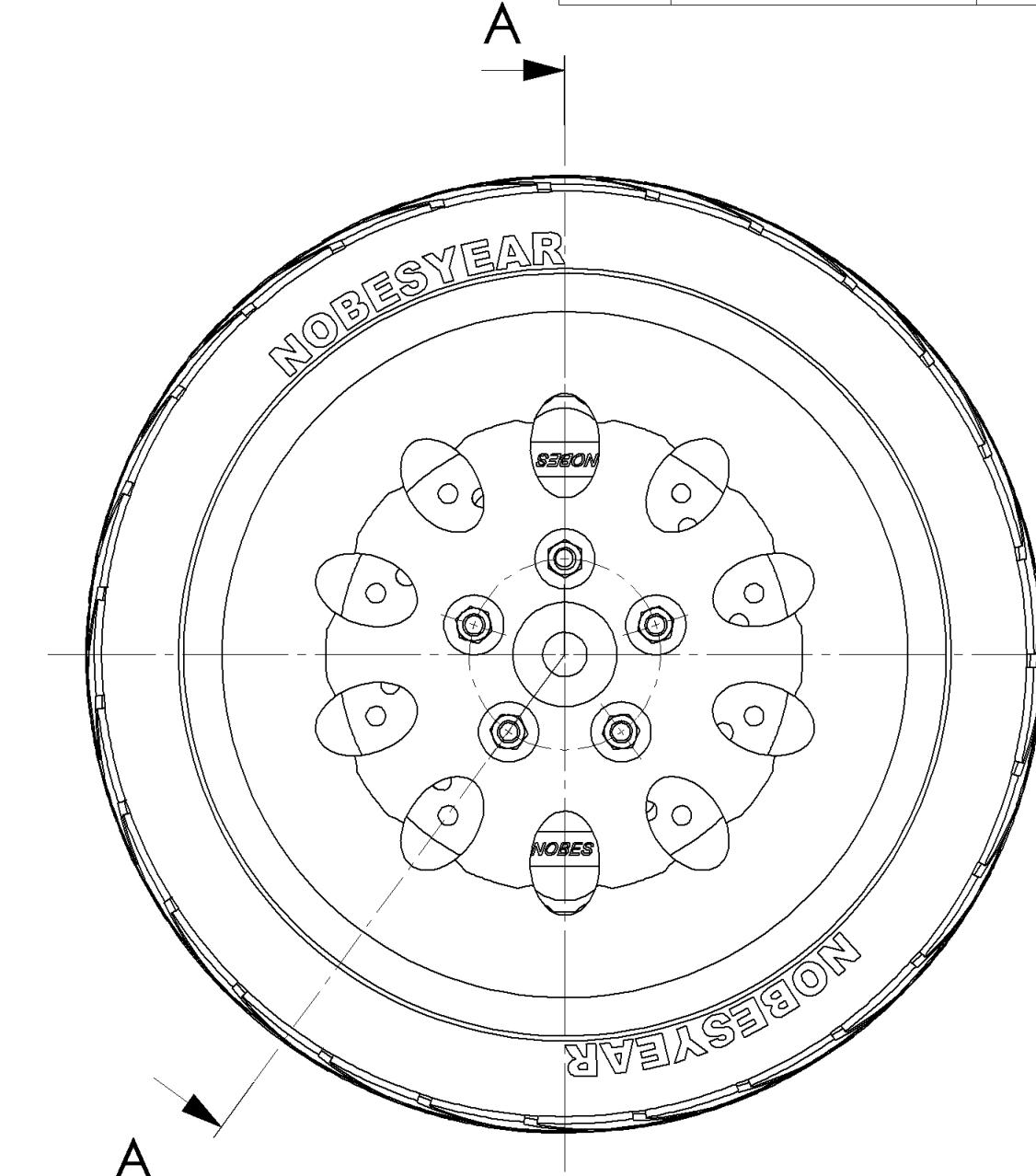
ITEM NO.	SW-File Name(File Name)	SW-Title(Title)	Material	SW-Author(Author)	QTY.
1	MecE265_Car_Hub	Hub, Disk and Calaper Assembly	Various	D.S. Nobes	1
2	dsn_Rim	Custom Low Speed Snow Rim	Pure Gold	D.S.Nobes	1
3	MecE_265_Nut	ACME HTNUT 0.500-20-D-N	Brass	Wyle E. Coyote	5
4	MecE_265_Tire	Snow Plow Car Tire	Rubber	D.S. Nobes	1

D

D



SECTION A-A



<b>MecE 265</b>		UNLESS OTHERWISE SPECIFIED:	DRAWN BY:
Instructor:	Dr DS Nobes	DIMENSIONS ARE IN MM	David S. Nobes
Comments:	Fall 2021	TOLERANCES:	
		ANGULAR: $\pm 0.5^\circ$	
		LINEAR X = $\pm 0.5$ XX = $\pm 0.1$ XXX = $\pm 0.025$	
		SURFACE FINISH $0.6 \mu\text{m}$	
		DO NOT SCALE DRAWING	
MATERIAL: Various			
FILE NAME: MecE265_Car_Hub_Rim_Tire			
zacha			
June 30, 2022 10:37:20 AM			
September 23, 2010 11:25:48 AM			
SIZE <b>B</b>		Assignment Number	REV
		Assignment 03	2
SCALE: 1:4		Mass: 175308.62	SHEET 2 OF 3

Student Submission  
The Department of Mechanical Engineering  
UNIVERSITY OF ALBERTA

TITLE:

Hub, Rim, Tire  
Assembly

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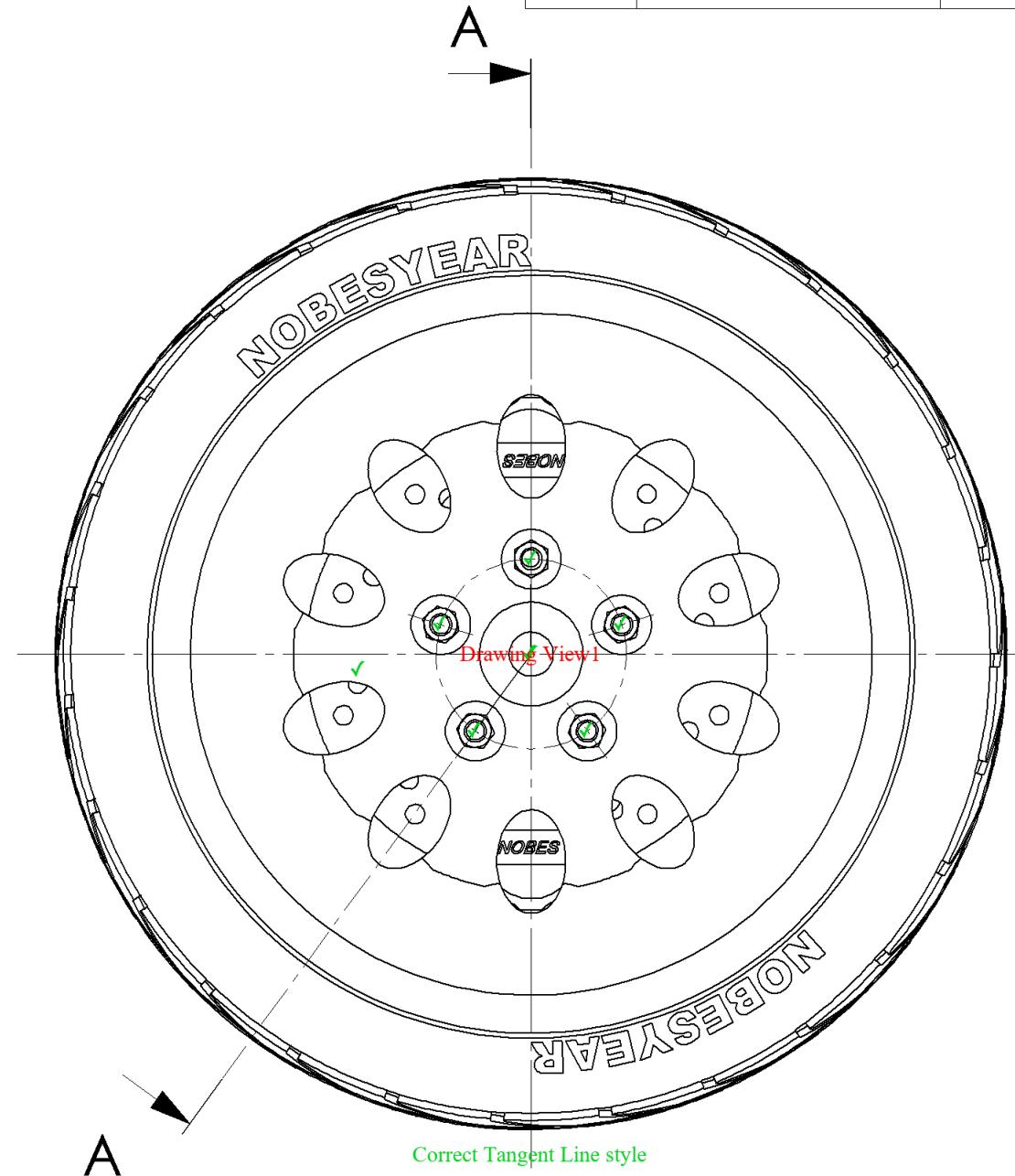
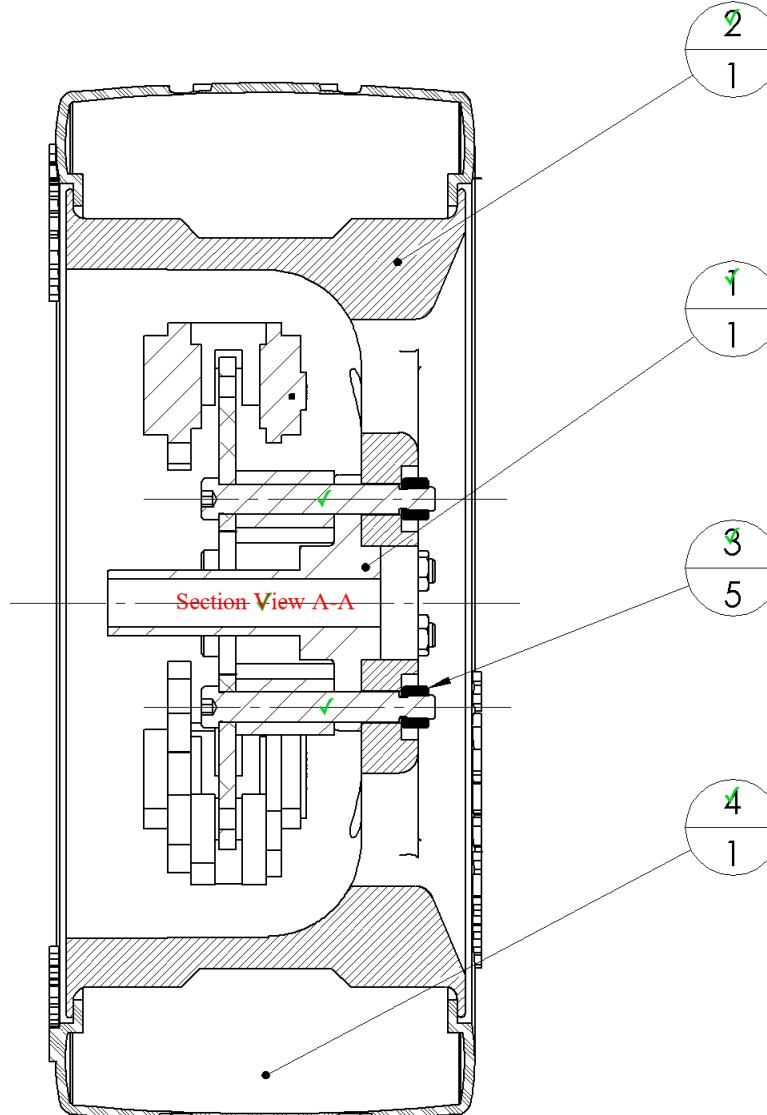
2

Snapped to Corner

Drawing View1: 57/57  
 Section View A-A: 39/39  
 DetailItem493: 40/40  
 SHEET TOTAL: 185/185

Correct Height  
 Correct Font  
 Correct Font Size  
 Correct Column Order  
 Correct Content

ITEM NO.	SW-File Name(File Name)	SW-Title(Title)	Material	SW-Author(Author)	QTY.
1	MecE265_Car_Hub	Hub, Disk and Calaper Assembly	Various	D.S. Nobes	1
2	dsn_Rim	Custom Low Profile Snow Rim	Pure Gold	D.S.Nobes	1
3	MecE_265_Nut	ACME HTNUT 0.500-20-D-N	Brass	Wyle E. Coyote	5
4	MecE_265_Tire	Snow Plow Car Tire	Rubber	D.S. Nobes	1

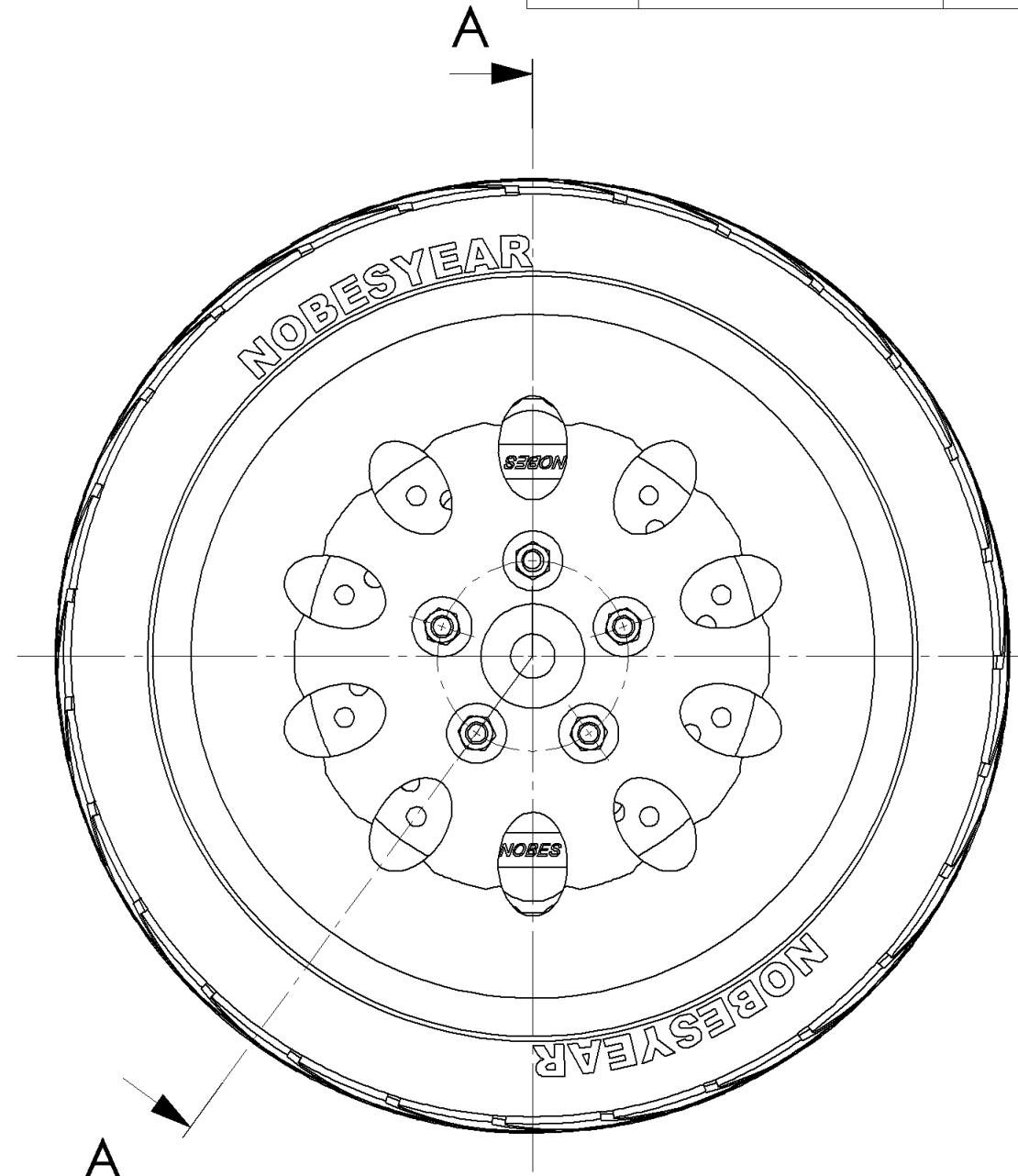
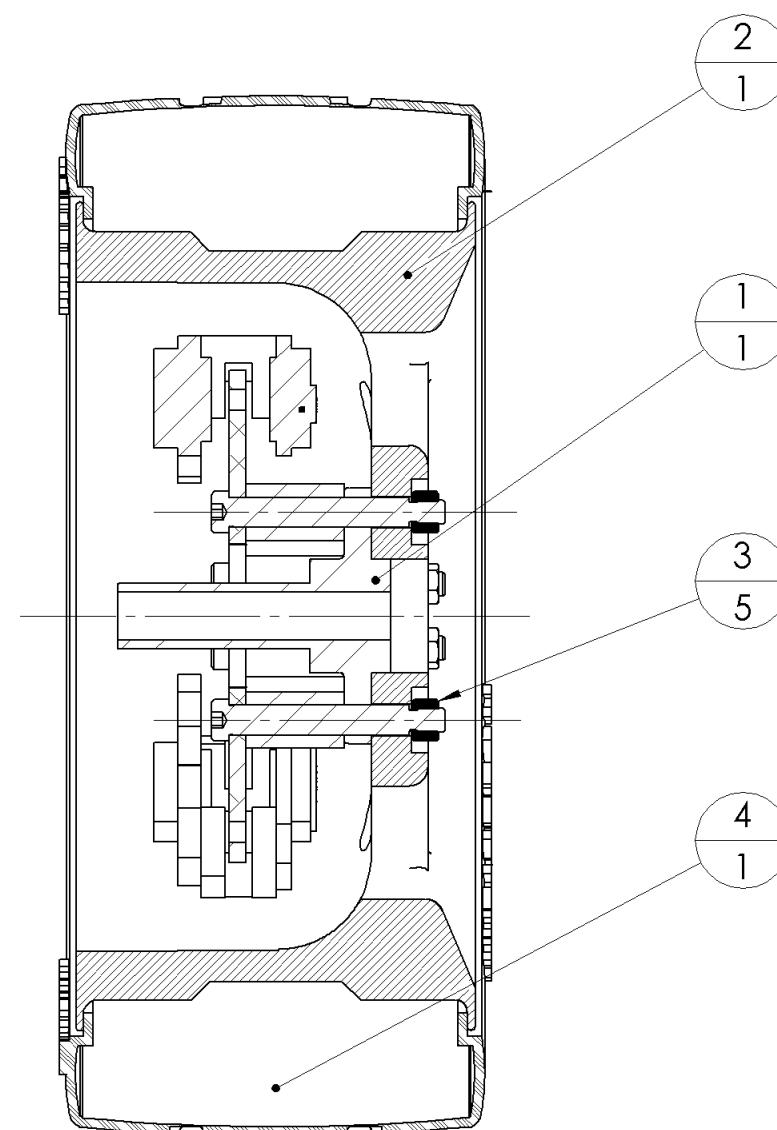


<b>MecE 265</b>		UNLESS OTHERWISE SPECIFIED:
Instructor:	Dr DS Nobes	
Comments:	Fall 2021	
  		DIMENSIONS ARE IN MM TOLERANCES: ANGULAR: $\pm 0.5^\circ$ LINEAR $X = \pm 0.5$ $X.X = \pm 0.1$ $XXX = \pm 0.025$
 		SURFACE FINISH $0.6 \mu\text{m}$ DO NOT SCALE DRAWING
 		MATERIAL: Various FILE NAME: MecE265_Car_Hub_Rim_Tire

**Automark of Student Submission**

The Department of Mechanical Engineering UNIVERSITY OF ALBERTA
TITLE: <b>Hub, Rim, Tire Assembly</b>
SIZE <b>B</b> Assignment Number <b>Assignment 03</b> REV <b>2</b>
SCALE: 1:4 Mass: 175308.62 SHEET 2 OF 3

ITEM NO.	SW-File Name(File Name)	SW-Title(Title)	Material	SW-Author(Author)	QTY.
1	MecE265_Car_Hub	Hub, Disk and Calaper Assembly	Various	D.S. Nobes	1
2	dsn_Rim	Custom Low Speed Snow Rim	Pure Gold	D.S.Nobes	1
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4	MecE_265_Tire	Snow Plow Car Tire	Rubber	D.S. Nobes	1

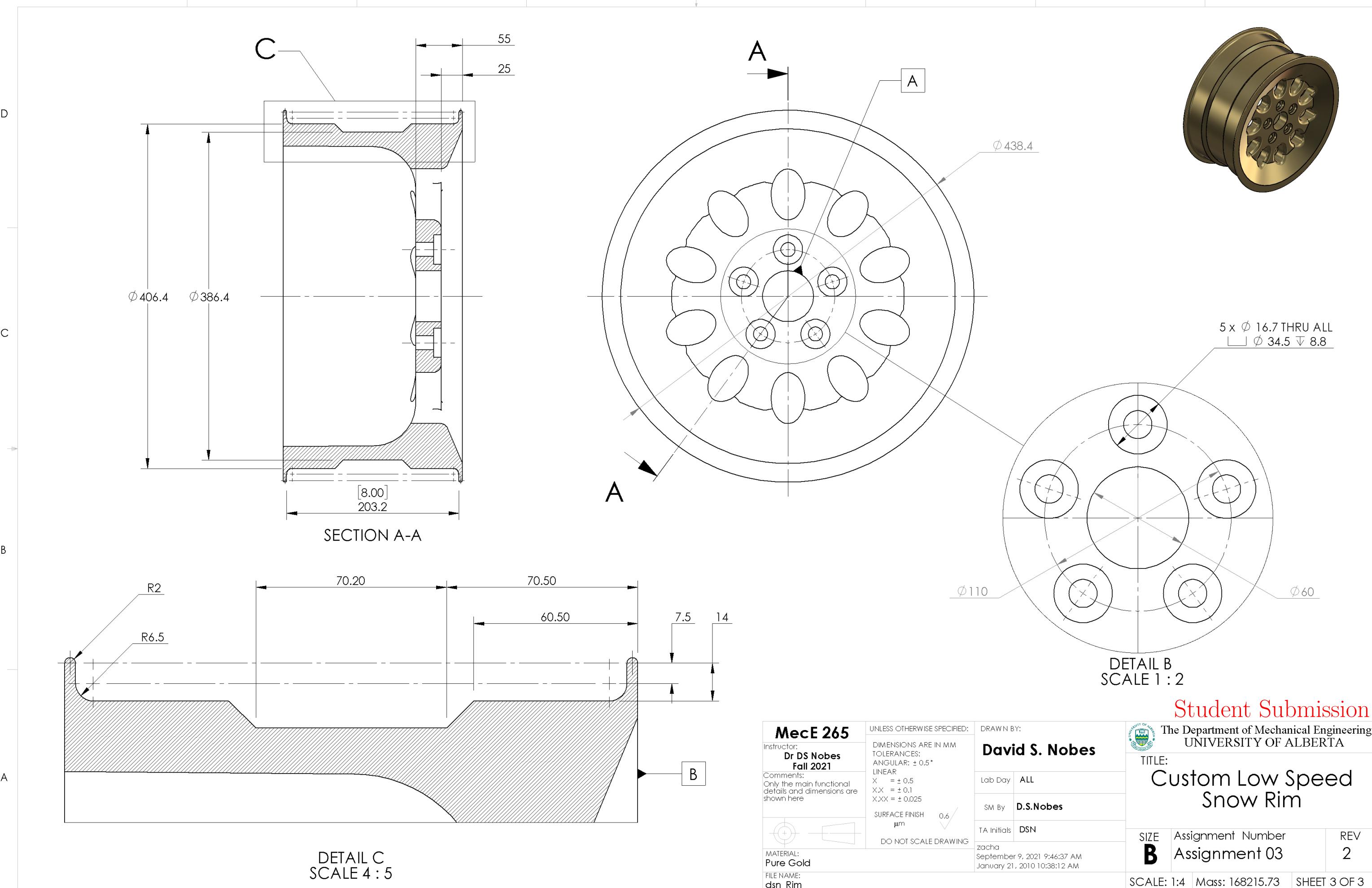


<b>MecE 265</b>		UNLESS OTHERWISE SPECIFIED: DIMENSIONS ARE IN MM TOLERANCES: ANGULAR: $\pm 0.5^\circ$ LINEAR $X = \pm 0.5$ $X.X = \pm 0.1$ $XXX = \pm 0.025$	DRAWN BY: <b>David S. Nobes</b>
Instructor: <b>Dr DS Nobes</b> Fall 2021	Comments:	Lab Day ALL	
		SM By <b>D.S.Nobes</b>	
		TA Initials <b>DSN</b>	
		zacha September 28, 2021 2:35:53 PM September 23, 2010 11:25:48 AM	
MATERIAL: Various		DO NOT SCALE DRAWING	
FILE NAME: MecE265_Car_Hub_Rim_Tire			
<b>B</b>	Assignment Number <b>Assignment 03</b>	REV <b>2</b>	
SCALE: 1:4 Mass: 175308.62 SHEET 2 OF 3			

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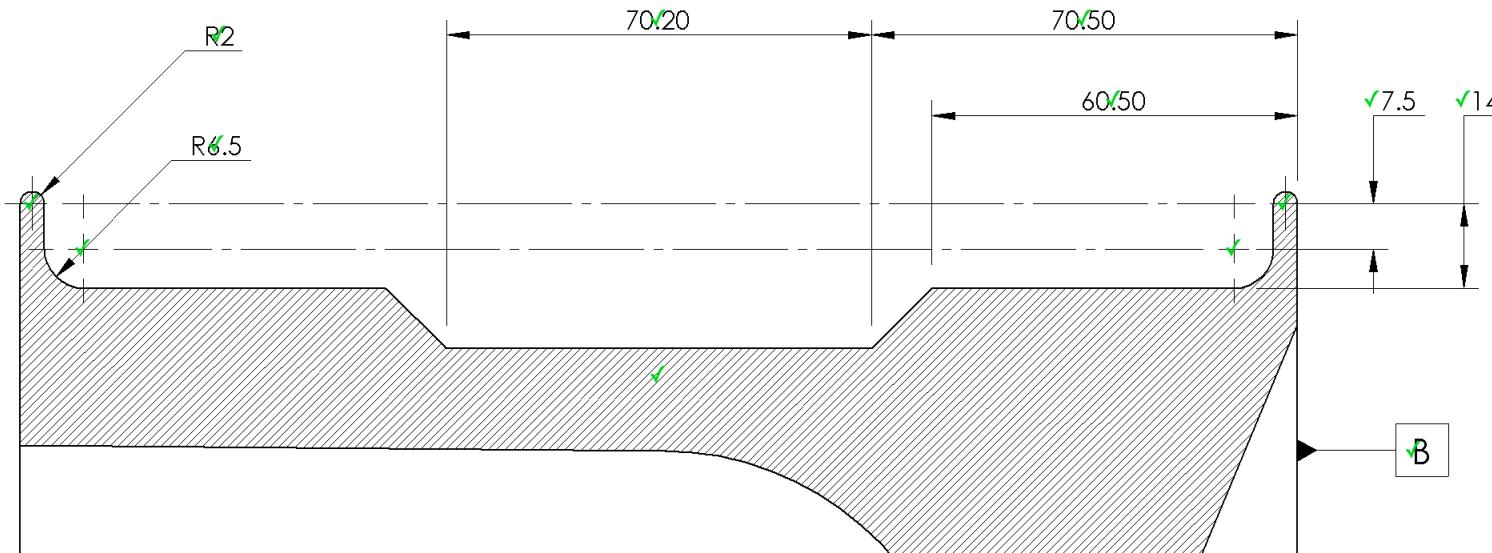
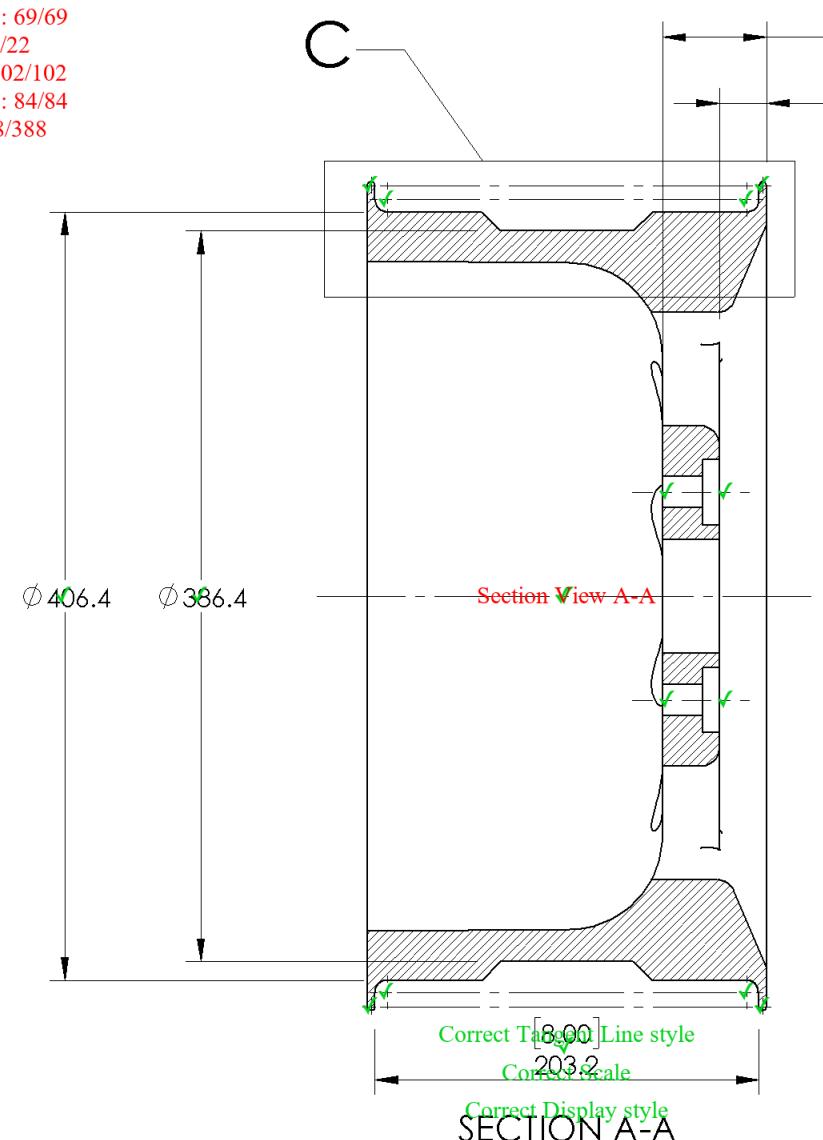
TITLE:  
**Hub, Rim, Tire  
Assembly**

8 7 6 5 4 3 2 1

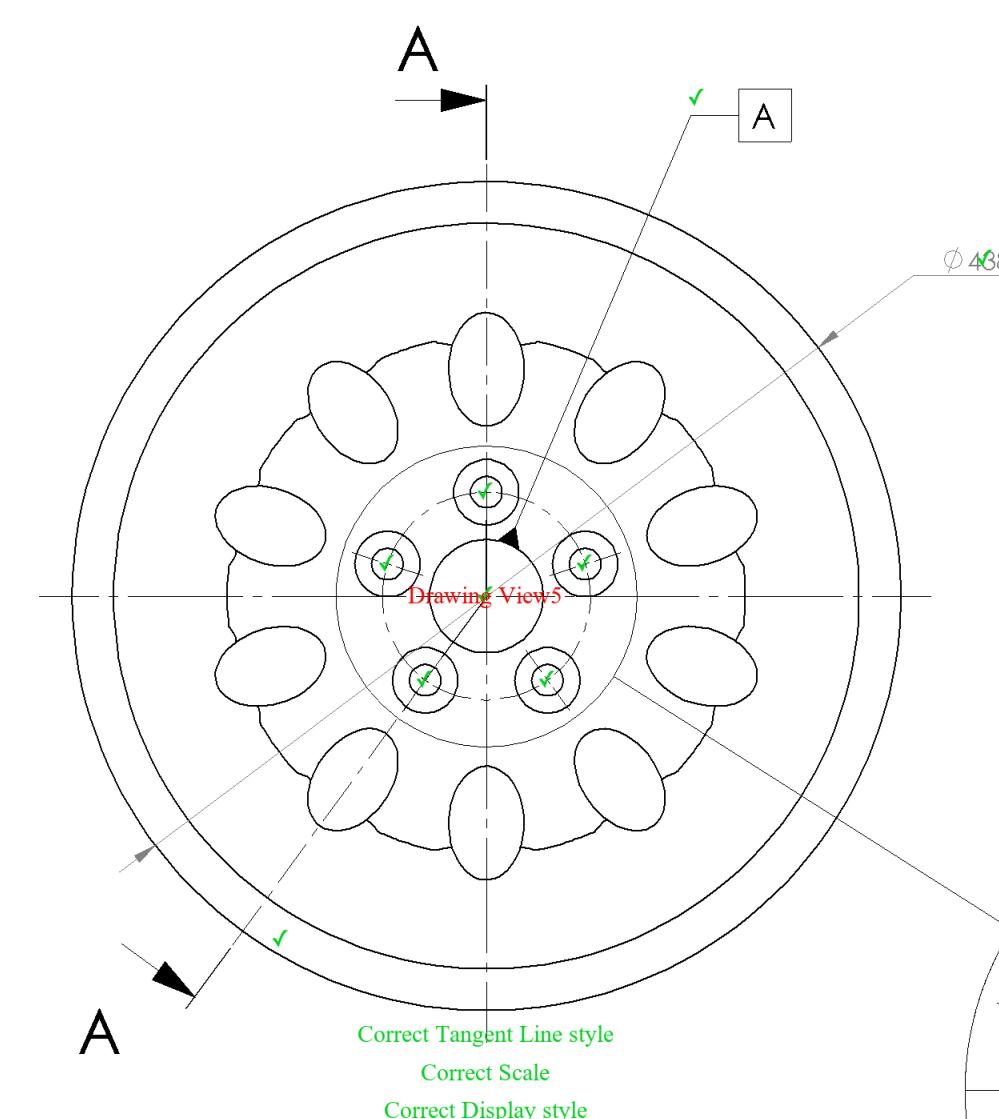


8 7 6 5 4 3 2 1

Drawing View5: 62/62  
Detail View B (1 : 2): 69/69  
Drawing View14: 22/22  
Section View A-A: 102/102  
Detail View C (4 : 5): 84/84  
SHEET TOTAL: 388/388



DETAIL C  
SCALE 4 : 5  
Correct Tangent Line style  
Correct Scale  
Correct Display style



MecE 265		UNLESS OTHERWISE SPECIFIED:
Instructor:	Dr DS Nobes	
Fall 2021		TOLERANCES:
		ANGULAR: $\pm 0.5^\circ$
		LINEAR: $X = \pm 0.5$
		$X.X = \pm 0.1$
		$XXX = \pm 0.025$
		SURFACE FINISH: $0.6 \mu\text{m}$
		DO NOT SCALE DRAWING
MATERIAL:		Pure Gold
FILE NAME:		dsn_Rim

DRAWN BY:  
**David S. Nobes**  
Lab Day ALL  
SM By D.S.Nobes  
TA Initials DSN  
zacha  
September 9, 2021 9:46:37 AM  
January 21, 2010 10:38:12 AM

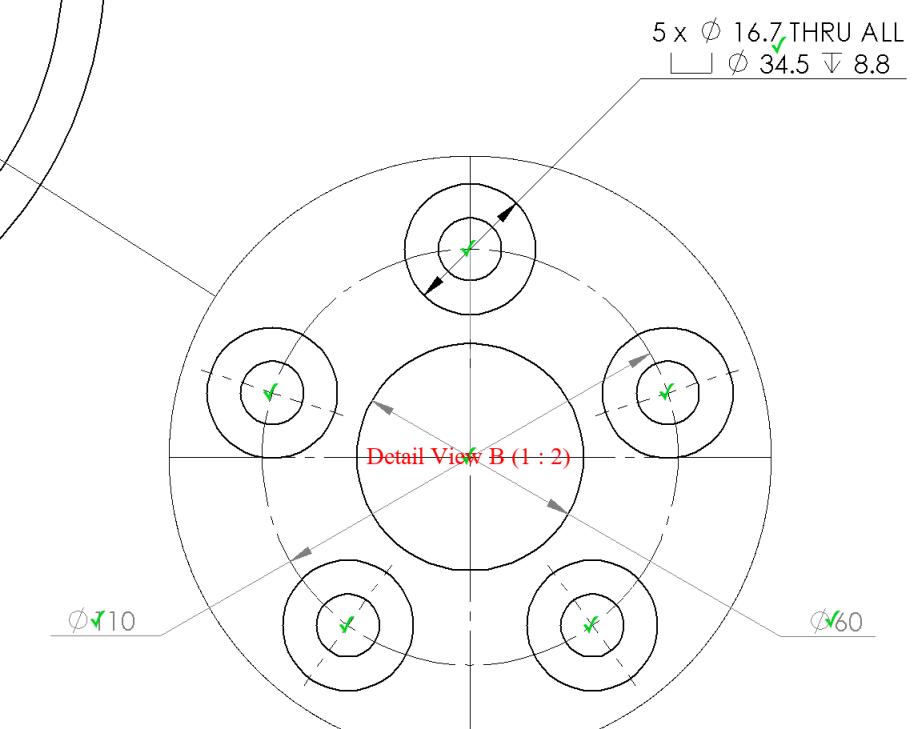
Automate of Student Submission  
The Department of Mechanical Engineering  
UNIVERSITY OF ALBERTA

TITLE:  
**Custom Low Speed Snow Rim**

SIZE	Assignment Number	REV
<b>B</b>	Assignment 03	2
SCALE: 1:4	Mass: 168215.73	SHEET 3 OF 3



Correct Tangent Line style  
Correct Scale  
Correct Display style

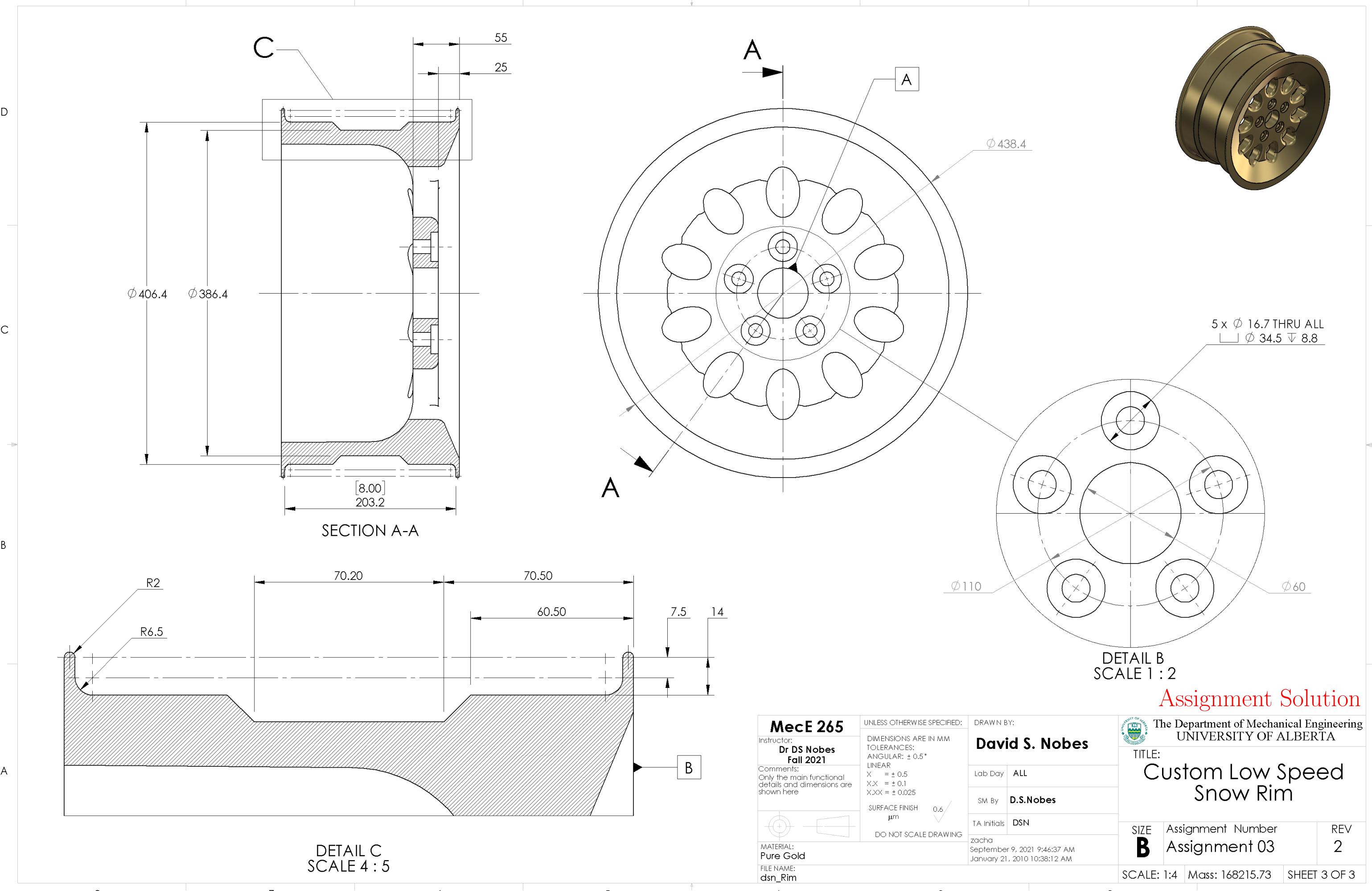


DETAIL B  
SCALE 1 : 2  
Correct Tangent Line style  
Correct Scale  
Correct Display style

The Department of Mechanical Engineering  
UNIVERSITY OF ALBERTA

TITLE:  
**Custom Low Speed Snow Rim**

SIZE	Assignment Number	REV
<b>B</b>	Assignment 03	2
SCALE: 1:4	Mass: 168215.73	SHEET 3 OF 3



## Assignment Solution

<b>MecE 265</b>		UNLESS OTHERWISE SPECIFIED:	DRAWN BY:		The Department of Mechanical Engineering UNIVERSITY OF ALBERTA		
Instructor: <b>Dr DS Nobes</b> <b>Fall 2021</b>	Comments: Only the main functional details and dimensions are shown here	DIMENSIONS ARE IN MM TOLERANCES: ANGULAR: $\pm 0.5^\circ$ LINEAR $X = \pm 0.5$ $X.X = \pm 0.1$ $X.XX = \pm 0.025$	<b>David S. Nobes</b>		TITLE: <b>Custom Low Speed Snow Rim</b>		
		SURFACE FINISH $\mu\text{m}$	Lab Day	ALL			
		0.6	SM By	<b>D.S.Nobes</b>			
			TA Initials	<b>DSN</b>			
		DO NOT SCALE DRAWING	zacha September 9, 2021 9:46:37 AM January 21, 2010 10:38:12 AM		<b>SIZE</b>	Assignment Number <b>Assignment 03</b>	<b>REV</b> <b>2</b>
MATERIAL: <b>Pure Gold</b>					SCALE: 1:4	Mass: 168215.73	SHEET 3 OF 3
FILE NAME: <b>dsn_Rim</b>							