

# 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 10, 2022

*AUTOMark Assessment Grade: 701 out of 727*

*AUTOMark Recommended Grade: 96 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 10:46:31

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

MODEL LAST SAVE DATE: 30-Jun-2022 10:46:31

AutoMARK details:

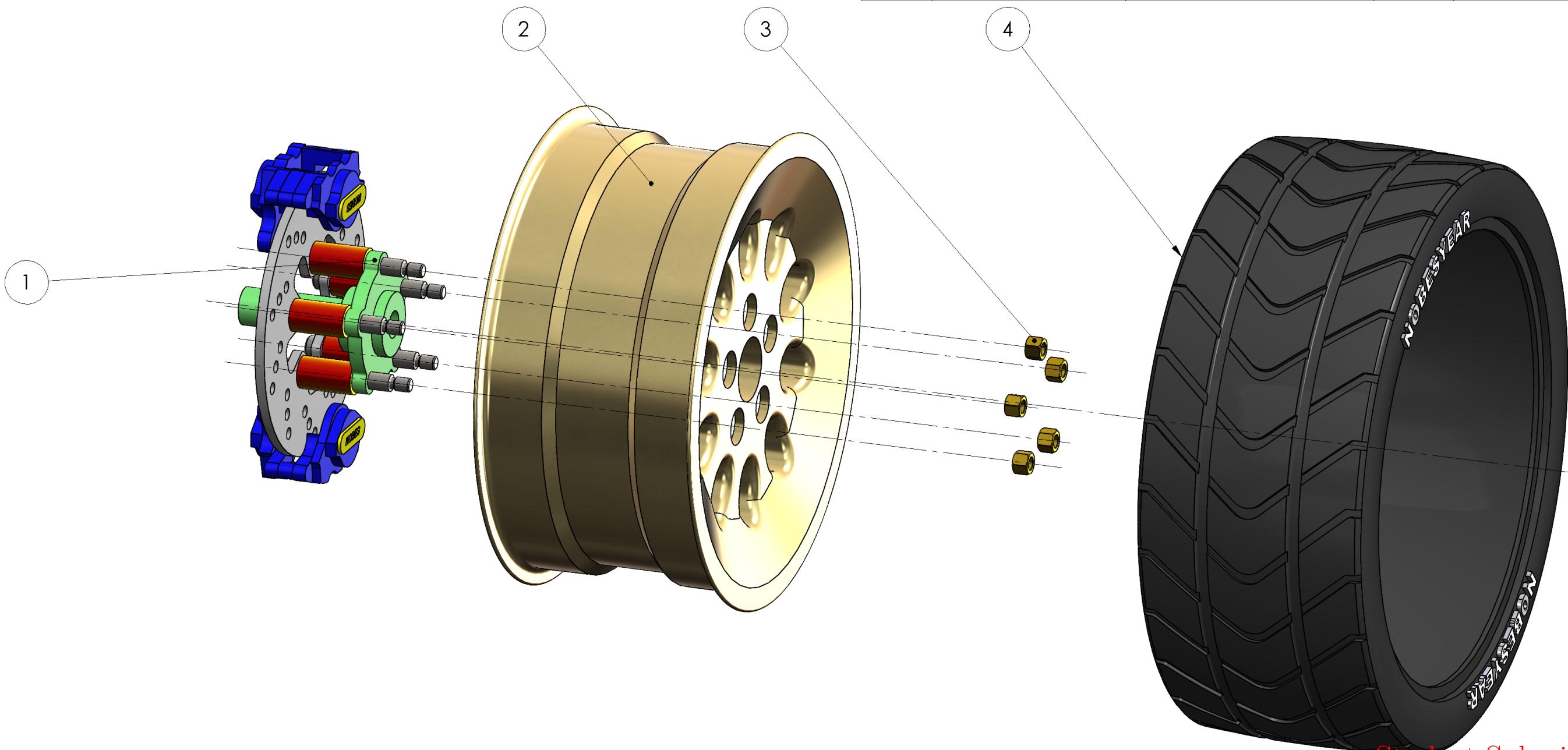
- Sheetnames should contain only alphabetical characters
- Weights of feature properties are set by the marker
- AutoMARK v 4.0 software written and designed by Owen Stadlwieser

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

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>	
		TA Initials <b>DSN</b>	
		zacha June 30, 2022 10:46:31 AM September 23, 2010 11:25:48 AM	
MATERIAL: Various		SIZE <b>B</b> Assignment Number <b>Assignment 03</b>	
FILE NAME: MecE265_Car_Hub_Rim_Tire		REV <b>2</b>	
SCALE: 1:4 Mass: 175308.62 SHEET 1 OF 3			

8

7

6

5

4

3

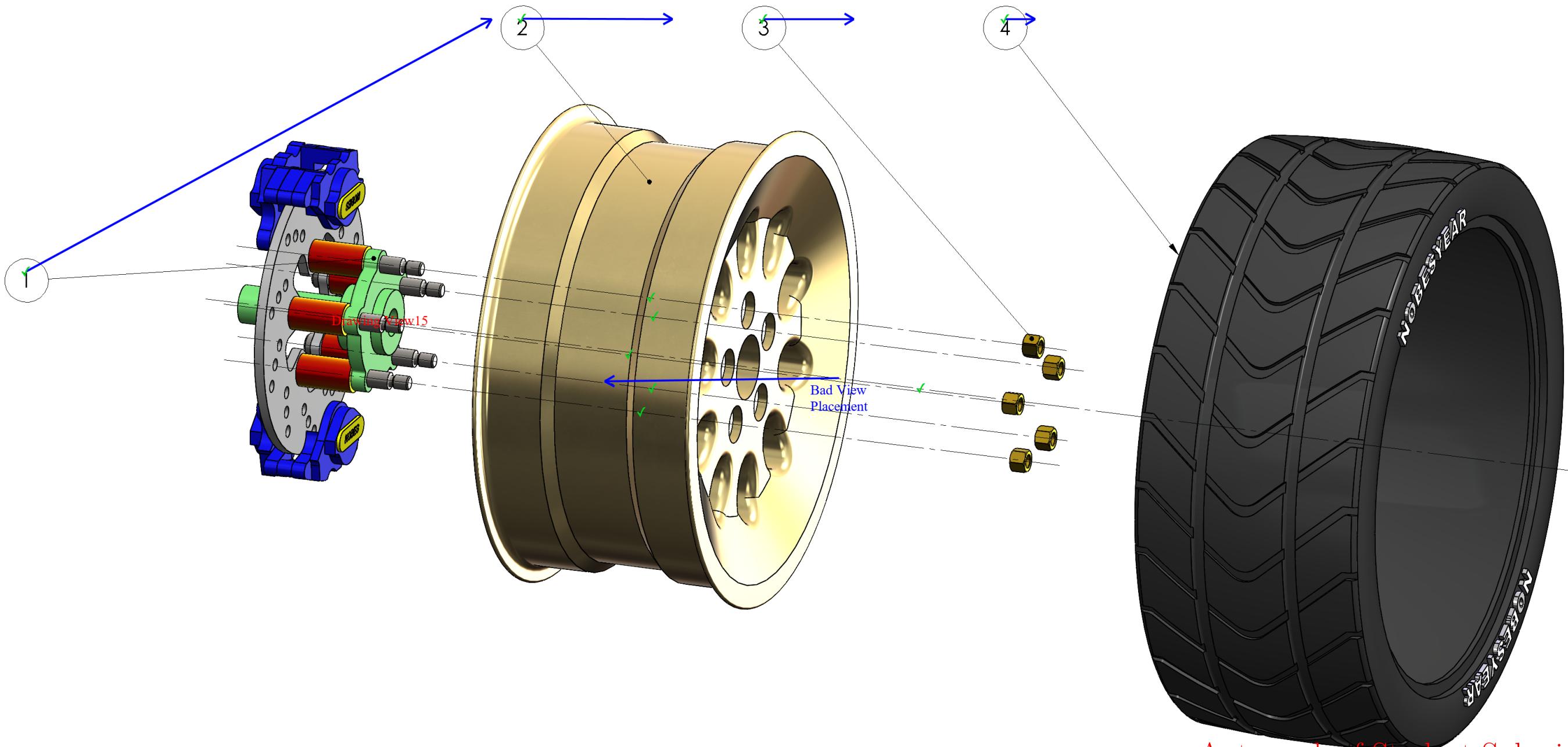
2

Snapped to Corner

Drawing View15: 42/48  
DetailItem439: 40/40  
SHEET TOTAL: 131/137

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

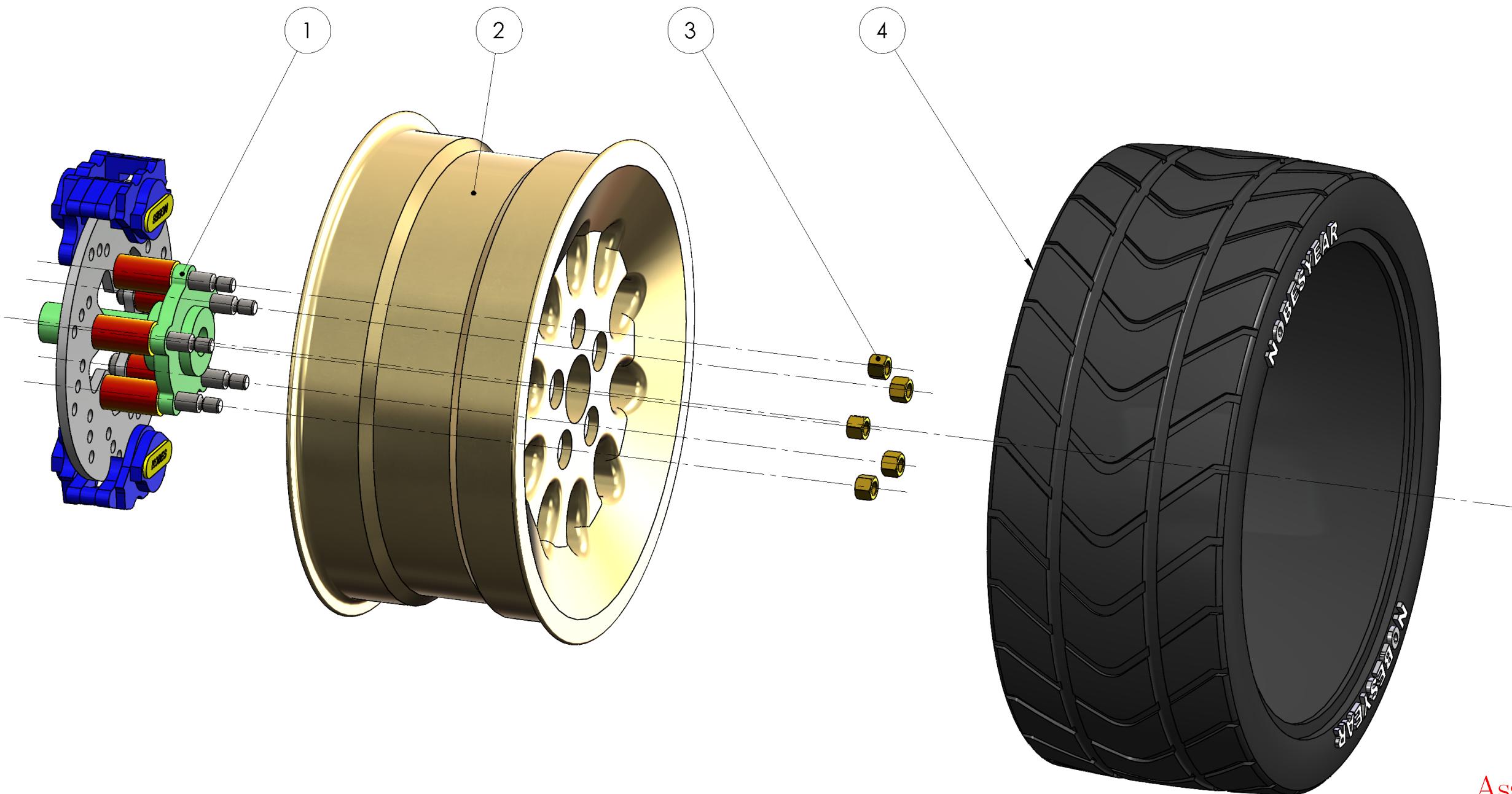


Automark of Student Submission

<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>	The Department of Mechanical Engineering UNIVERSITY OF ALBERTA	
Instructor: <b>Dr DS Nobes</b> Fall 2021	Comments: Correct Tangent Line style Correct Scale Correct Display style		Lab Day ALL	TITLE: <b>Hub, Rim, Tire Assembly</b>	
			SM By <b>D.S.Nobes</b>		
			TA Initials DSN		
			zacha		
			June 30, 2022 10:46:31 AM		
			September 23, 2010 11:25:48 AM		
SIZE <b>B</b> Assignment Number <b>Assignment 03</b>		REV 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
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



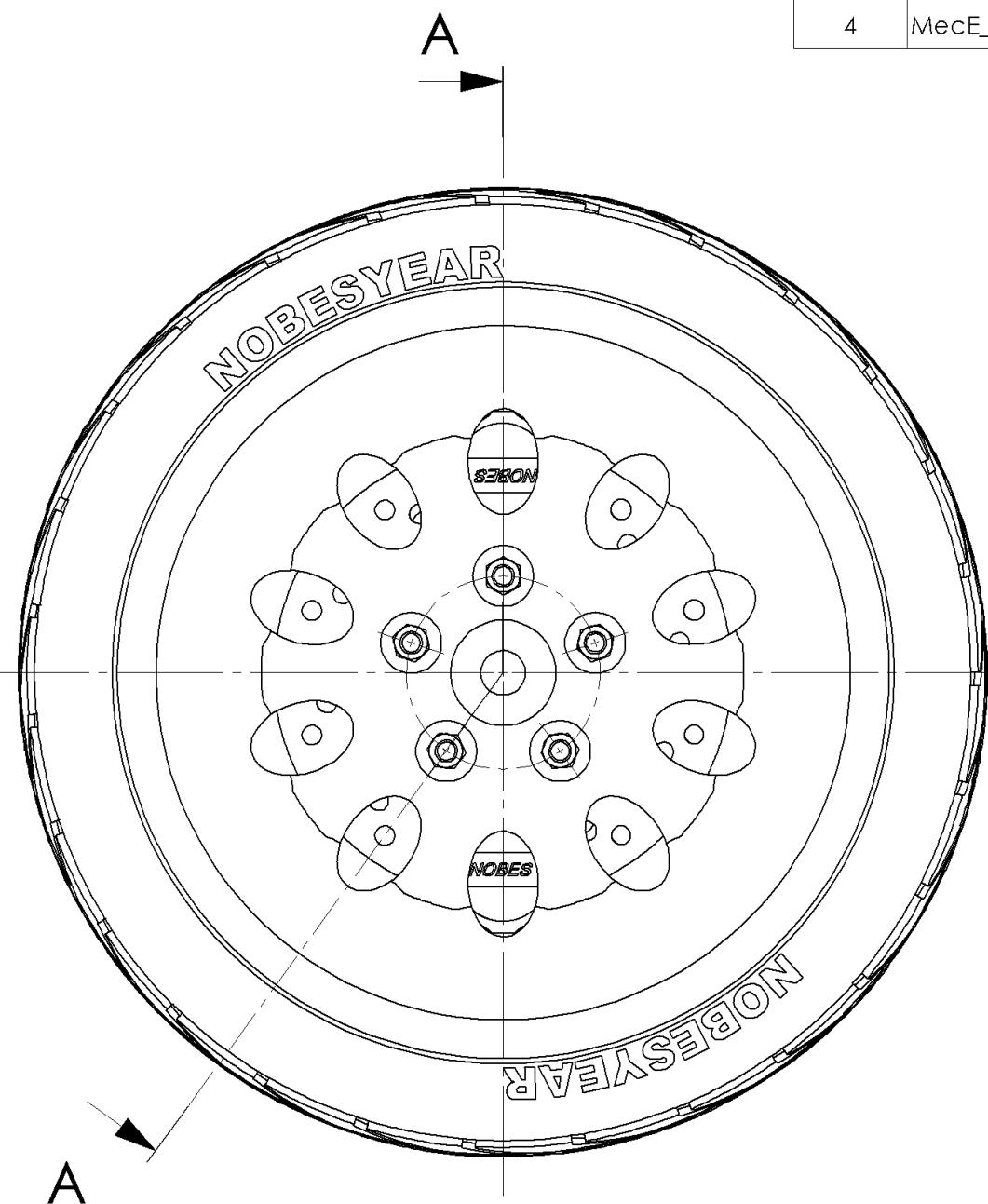
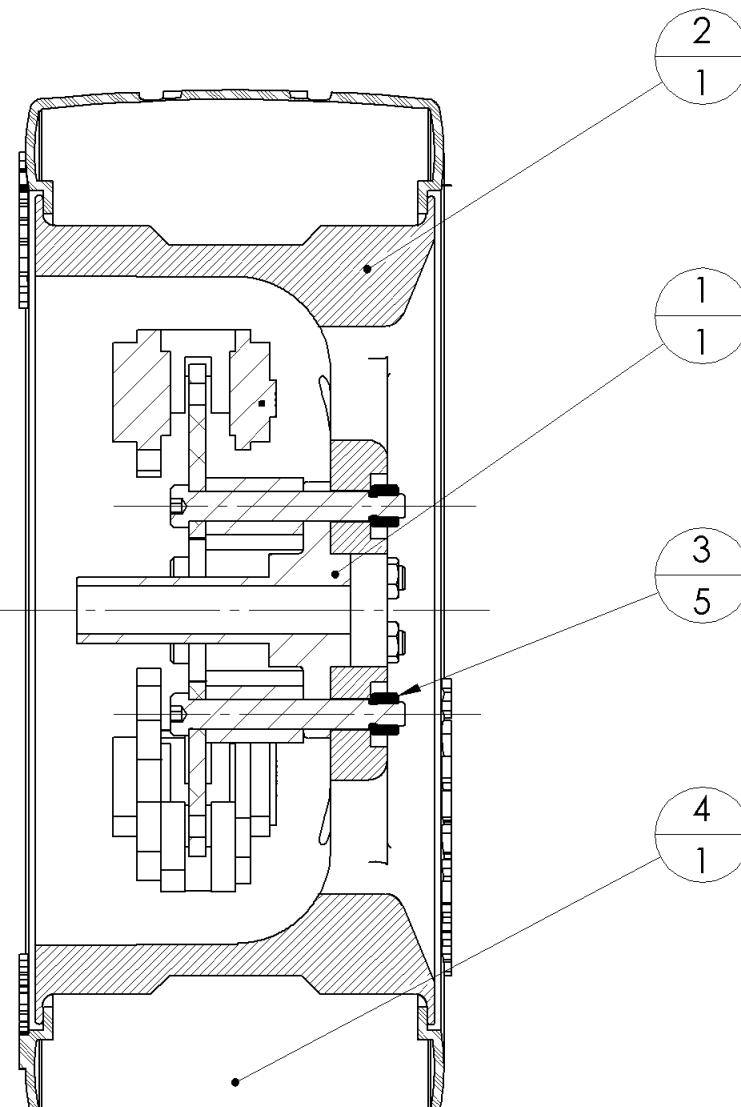
## Assignment Solution

<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>
		TA Initials DSN
		zacha September 28, 2021 2:35:53 PM September 23, 2010 11:25:48 AM
MATERIAL: Various	SURFACE FINISH $0.6 \mu\text{m}$	DO NOT SCALE DRAWING
FILE NAME: MecE265_Car_Hub_Rim_Tire		
<b>SIZE</b> <b>B</b>	Assignment Number <b>Assignment 03</b>	REV 2
SCALE: 1:4 Mass: 175308.62 SHEET 1 OF 3		

The Department of Mechanical Engineering  
UNIVERSITY OF ALBERTA

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

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



SECTION A-A

<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 June 30, 2022 10:46:31 AM 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			

Student Submission  
The Department of Mechanical Engineering  
UNIVERSITY OF ALBERTA

TITLE:

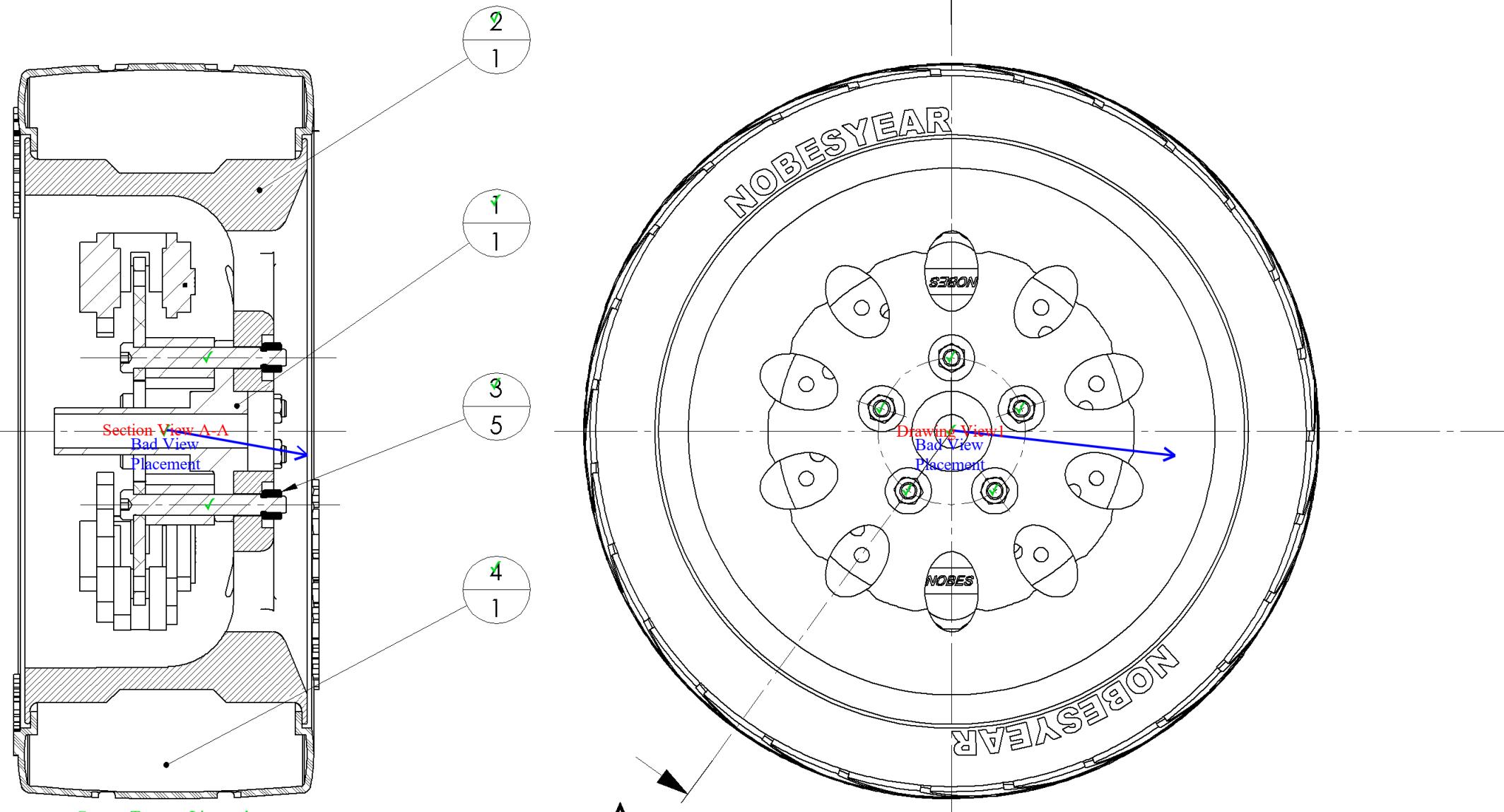
**Hub, Rim, Tire  
Assembly**

8 7 6 5 4 3 2 1 Snapped to Corner

Drawing View1: 50/57  
Section View A-A: 33/39  
DetailItem493: 40/40  
SHEET TOTAL: 172/185

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



Correct Tangent Line style

Correct Scale

Correct Display style

SECTION A-A

Correct Tangent Line style

Correct Scale

Correct Display style

Automark of Student Submission

The Department of Mechanical Engineering  
UNIVERSITY OF ALBERTA

TITLE:

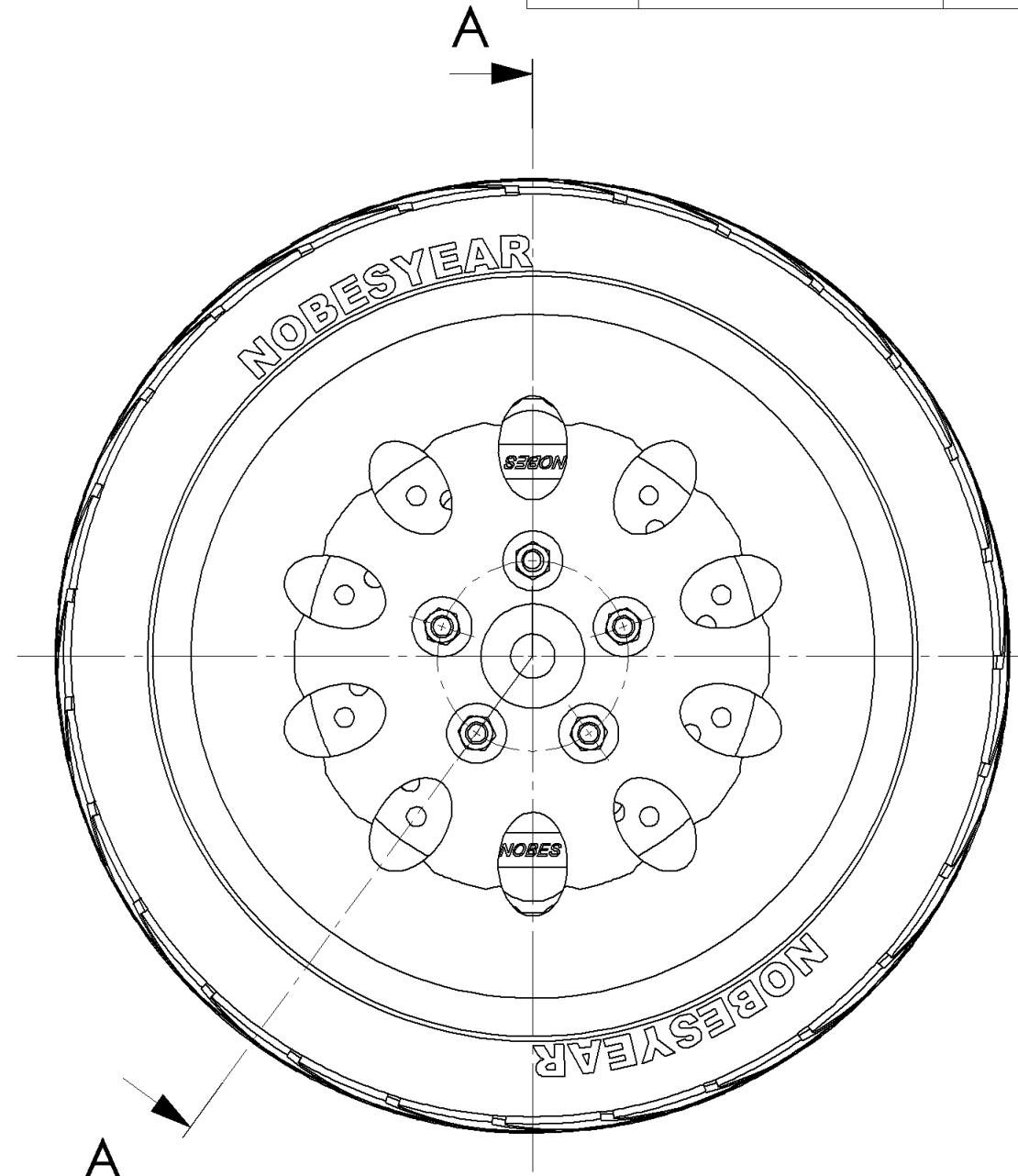
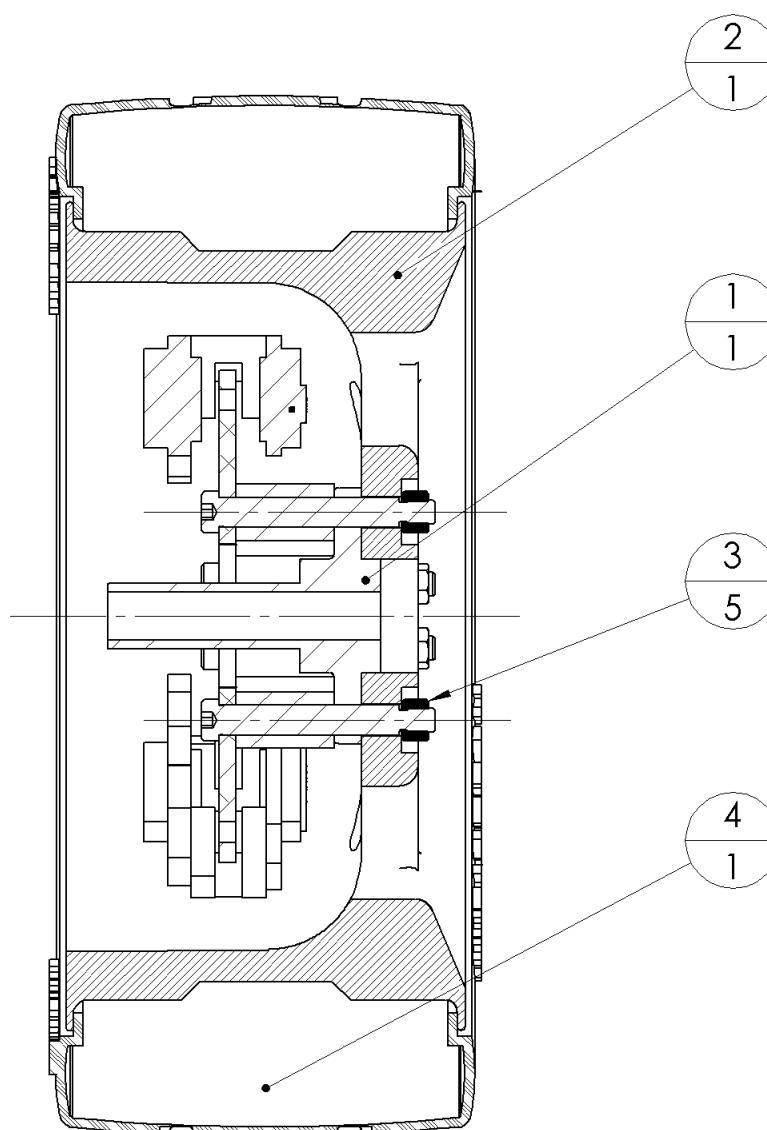
Hub, Rim, Tire  
Assembly

<b>MecE 265</b>	UNLESS OTHERWISE SPECIFIED:
Instructor: <b>Dr DS Nobes</b> Fall 2021	DRAWN BY: <b>David S. Nobes</b>
Comments:	Lab Day ALL
	SM By <b>D.S.Nobes</b>
	TA Initials <b>DSN</b>
	zacha June 30, 2022 10:46:31 AM September 23, 2010 11:25:48 AM
MATERIAL: Various	SURFACE FINISH 0.6 $\mu\text{m}$
FILE NAME: MecE265_Car_Hub_Rim_Tire	DO NOT SCALE DRAWING

SIZE	Assignment Number	REV
<b>B</b>	Assignment 03	2

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
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

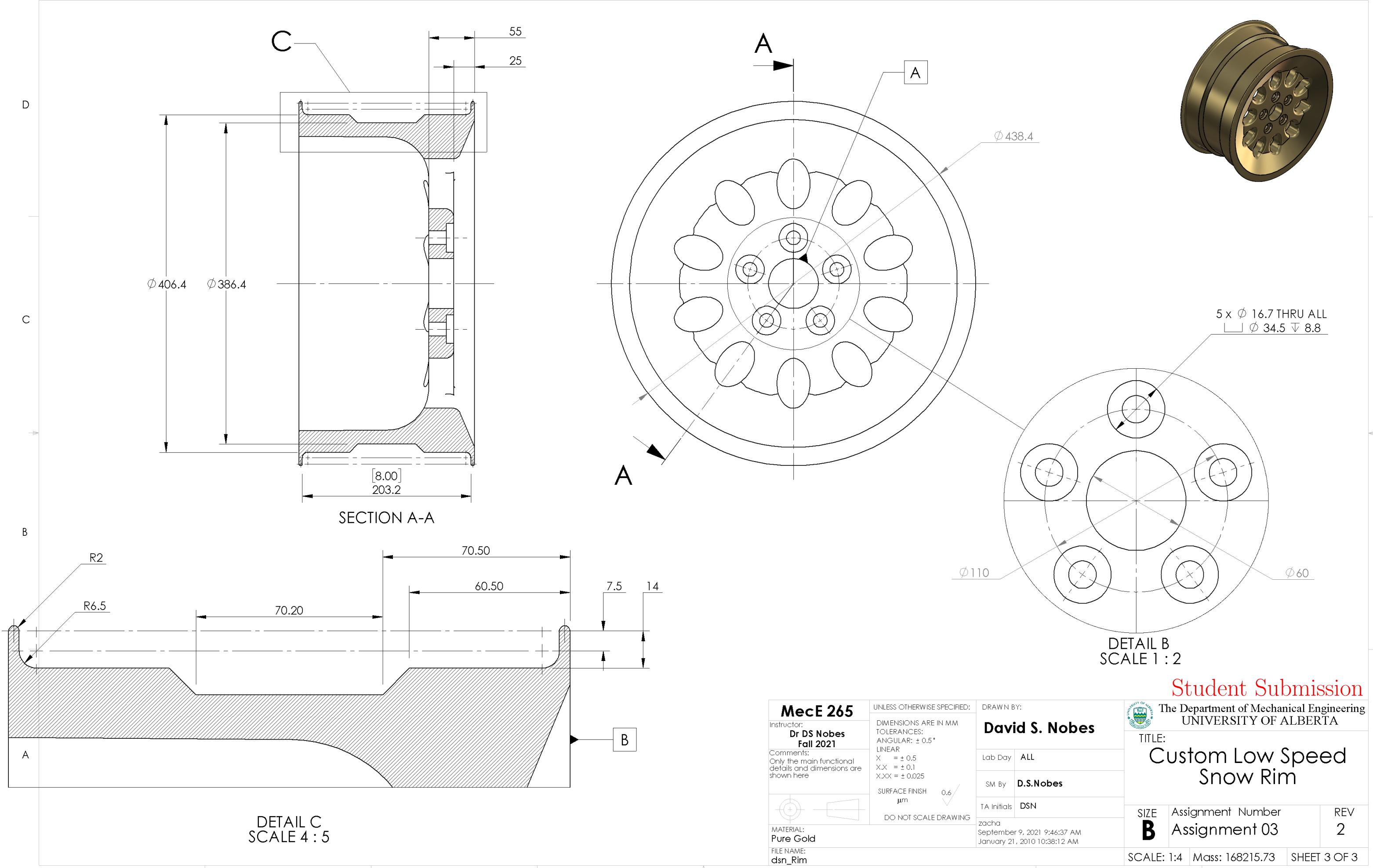


<b>MecE 265</b>		UNLESS OTHERWISE SPECIFIED: DIMENSIONS ARE IN MM TOLERANCES: ANGULAR: $\pm 0.5^\circ$ LINEAR $X = \pm 0.5$ $X.X = \pm 0.1$ $XXX = \pm 0.025$	DRAWN BY: <b>David S. Nobes</b>
Instructor: <b>Dr DS Nobes</b> Fall 2021	Comments:	Lab Day ALL	
		SM By <b>D.S.Nobes</b>	
		TA Initials <b>DSN</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			

The Department of Mechanical Engineering  
UNIVERSITY OF ALBERTA

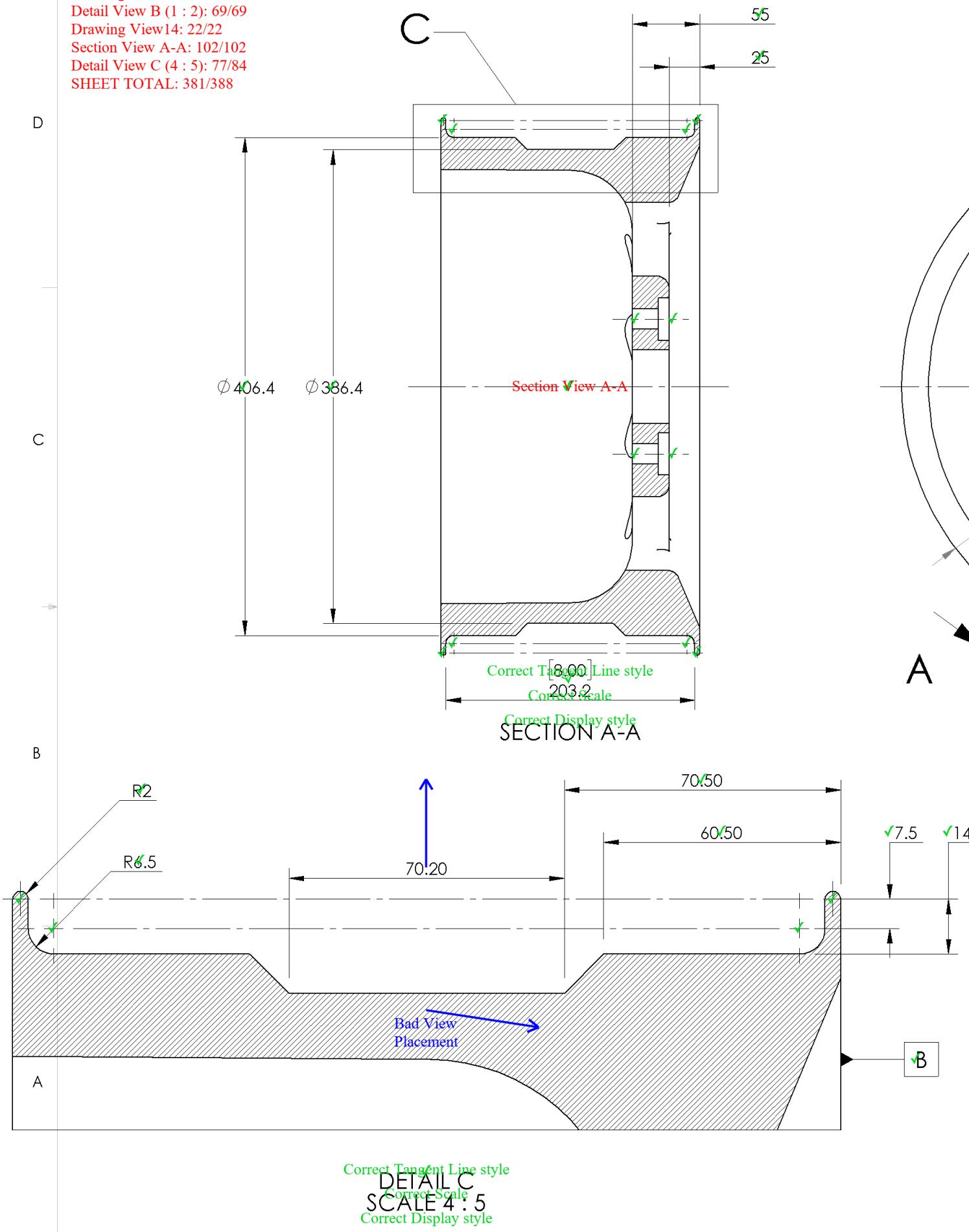
TITLE:  
**Hub, Rim, Tire  
Assembly**

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): 77/84  
SHEET TOTAL: 381/388



**MecE 265**  
Instructor: Dr DS Nobes Fall 2021  
Comments: Only the main functional details and dimensions are shown here  
UNLESS OTHERWISE SPECIFIED:  
DIMENSIONS ARE IN MM  
TOLERANCES:  
ANGULAR:  $\pm 0.5^\circ$   
LINEAR:  $X = \pm 0.5$   
 $X.X = \pm 0.1$   
 $XXX = \pm 0.025$   
SURFACE FINISH:  $0.6 \mu\text{m}$   
DO NOT SCALE DRAWING  
TA Initials: DSN  
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

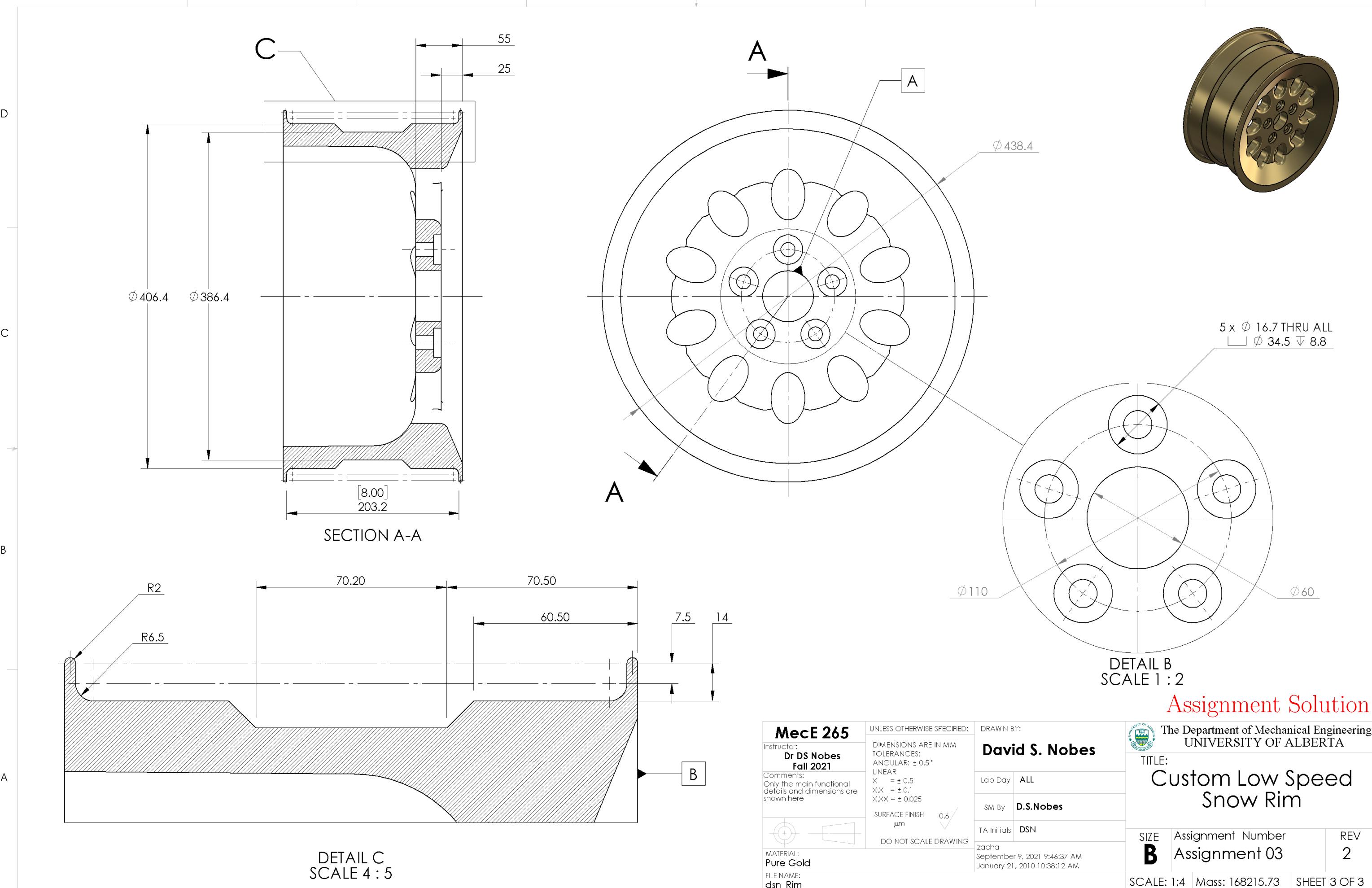
Assignment Number: Assignment 03  
SIZE: B  
REV: 2

SCALE: 1:4 Mass: 168215.73 SHEET 3 OF 3

Correct Tangent Line style  
Correct Scale  
Correct Display style  
The Department of Mechanical Engineering  
UNIVERSITY OF ALBERTA

TITLE: Custom Low Speed Snow Rim

8 7 6 5 4 3 2 1



5 x  $\Phi 16.7$  THRU ALL  
 $\underline{\Phi 34.5 \downarrow 8.8}$

$\Phi 110$        $\Phi 60$

$\Phi 60$

**Assignment Solution**